Draft Submittal

(Pink Paper)

1. ADMINISTRATIVE TOPICS OUTLINE (ES-301-1)
2. CONTROL ROOM SYSTEMS & FACILITY WALK-THROUGH TEST OUTLINE (ES-301-2)
3. ADMINISTRATIVE JPMS
4. IN-PLANT JPMS
5. CONTROL ROOM JPMS (SIMULATOR JPMS)

HATCH DECEMBER 2007 EXAM

05000321/2007301 AND 05000366/2007301

DECEMBER 3 - 6, 2007, AND
DECEMBER 10, 2007, (WRITTEN)

DRAFT REV 1

Facility: **Plant E.I Hatch** Date of Examination: **12/03/2007 – 12/07/2007**

Exam Level: RO SRO-I **SRO-U** Operating Test No.: _____

Control Room Systems@ (8 for RO); (7 for SRO-I); (2 or 3 for **SRO-U**, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
Control Rod and Drive Mechanism / Withdraw Control Rods (rod uncouples)	S A N L	3.1 Reactivity Control – JPM 1.10 (12 min) KA 201003A2.02 (RO 3.7/SRO 3.8),
RCIC / RCIC Start, with start pushbutton failure	S D	3.2 Reactor Water Level Control – JPM 25022 (5 min) KA 217000A2.01 (RO 3.8/SRO 3.7)
Reactor/Turbine pressure regulating system Perform RC-3, Rx pressure control (Bypass valve stuck open) (ESF)	S A N	3.3 Reactor Pressure Control – JPM 20166 – (10 min) KA 241000A2.03 (RO 4.1/SRO 4.2)
HPCI / Place HPCI in Pressure Control Mode	S N	3.4 Heat removal from Reactor Core – JPM 5.15 - (10 min) KA 206000A4.06 (RO 4.3/SRO 4.3)
RHR/LPCI: Containment Spray System Mode / Initiate Drywell Spray with a valve failure	S A D	3.5 Containment Integrity – JPM 25033 (10 minutes) KA 226001A2.11 (RO 3.0/SRO 3.0)
IRM System / IRM failure requiring RPS B scram logic manual actuation	S A N L	3.7 Instrumentation – (15 min) JPM 25063 KA 215003A3.03 (RO 3.7/SRO 3.6)
Plant Ventilation Systems / Verify an Automatic Secondary Containment Isolation	S A M P	3.9 Radioactivity Release – Modified from JPM 13.38 – (13Min) KA 288000A2.04 JPM 20021
A.C. Electrical Distribution / Energize Startup Aux Transformer 2D *(RO only)*	S D	3.6 Electrical – JPM 27.49 (8 min) KA 262001A4.01 (RO 3.4/SRO 3.7)

In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

Emergency Generators / Locally Start an Emergency Diesel Generator using the air start override	A D E	3.6 Electrical - JPM 28.24 (17 min) KA 264000A2.09 (RO 3.7/SRO 4.1)
Loss of Air / Align Emergency Nitrogen to drywell Pneumatics	D R E	3.8 Plant Service Systems – JPM 25028 (16 min) KA 295019AA1.01 (RO 3.5/SRO 3.3)
Scram / Insert a SCRAM using the SDV level switches	D R E	3.1 Reactivity Control – JPM 10.18 (8 min) KA 295006AA1.06 (RO 3.5/SRO 3.6)

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

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Operations Training
JPM

TITLE		
WITHDRAW CONTROL RODS (ROD UNCOUPLES)		
AUTHOR	**MEDIA NUMBER**	**TIME**
D. H. GIDDENS	LR-JP-001.10-00	12 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
NA	CME	10/12/2007

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-001.10**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 () UNIT 2 (X)

TASK TITLE: **WITHDRAW CONTROL RODS (ROD UNCOUPLES)**

JPM NUMBER: LR-JP-001.10-00

TASK STANDARD:

TASK NUMBER: 001.010

OBJECTIVE NUMBER: 001.010.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 2.8

SRO 2.8

K/A CATALOG NUMBER: 201003 A2.02,

K/A CATALOG JTA IMPORTANCE RATING:

RO **3.7**

SRO 3.8

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	**Unit 2**
	34AR-603-248-2 34GO-OPS-065-0 34GO-OPS-001-2

REQUIRED MATERIALS:	**Unit 2**
	34AR-603-248-2 34GO-OPS-065-0

APPROXIMATE COMPLETION TIME: 12 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #104** and leave in **FREEZE**.
2. **INSERT** the following **MALFUNCTIONS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfC12_23	Control rod 10-47 uncoupled			0000

3. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO):**

SVO #	DESCRIPTION	FINAL VALUE	RAMP RATE	ACT. TIME
	none			

4. **INSERT** the following **REMOTE FUNCTIONS:**

REM #	DESCRIPTION	STATUS
	none	

5. **INSERT** the following **ORS OVERRIDES:**

TAG #	P/L	DESCRIPTION	STATUS	ACT. TIME
		none		

6. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. NONE

7. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.
8. **PLACE DANGER TAGS** on the following equipment:

MPL #	COMPONENT	TAGGED POSITION
NONE		

9. **ESTIMATED** Simulator **SETUP TIME**:
10. **Once the operator begins inserting the control rod to re-couple, REMOVE the malfunction.**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Reactor Startup is in progress, 34GO-OPS-001-2 is in progress.
2. Control rods are being withdrawn to increase power per 34GO-OPS-065-0. The current control rod group is 12 with all rods in this group being at position 24.
3. The Control Rod Movement Pre-job Brief and associated checklist have been completed.
4. No one will be performing peer checks but proceed with the task.

INITIATING CUES:

Continue control rod withdrawal in rod group 12.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs: **ALL PROCEDURE STEPS** must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34GO-OPS-065-0.	
2.	Operator verifies the status of the currently latched rod group.	On 2H11-P03, the operator selects each control rod in the currently latched group, observing their position on the four rod display AND comparing to the pull sheet.	
****3.**	The operator selects the first rod to be withdrawn 02-23.	On 2H11-P603, the operator selects the first rod in the currently latched group.	
****4.**	The operator withdraws the selected rod to position 48.	The operator positions both the Rod Movement Control switch and the RONOR switch to the withdraw position and holds them until the rod moves to position 48.	
****5.**	The operator performs a coupling check on the selected control rod.	The operator positions the Rod Movement Control switch to the withdraw position observing for: The red withdraw light illuminates Momentary loss of the "48" position indication The rod does NOT move beyond position "48." Annunciator rod overtravel does NOT illuminate. Documents the check on the movement form.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	The operator selects the next rod to be withdrawn 10-47.	On 2H11-P603, the operator depresses the pushbutton on the select panel for the next rod in the currently latched group.	
**7.	The operator withdraws the selected rod to position 48.	On 2H11-P603, the operator positions both the Rod Movement Control switch and the RONOR switch to the withdraw position and holds them until the rod moves to position 48.	
**8.	The operator performs a coupling check on the selected control rod.	The operator positions the Rod Movement Control switch to the withdraw position observing for: The red withdraw light illuminates Momentary loss of the "48" position indication The rod **MOVES** beyond position 48. Annunciator rod overtravel **DOES** illuminate.	
9.	Operator identifies the procedure needed to perform the task	The operator reviews ARP 34AR-603-248-2, "Rod Over travel."	
10.	Notifies the Shift Supervisor.	The operator reports the status of the control rod which experienced over travel.	

PROMPT: Simulator operator remove the uncouple rod malfunction mfC12_23 for rod 10-47.

**11.	Attempts to re-couple the rod by notching the rod in.	On panel 2H11-P603, the operator inserts the rod from one to three notches using the Rod Movement Switch.	

NOTE: The operator may choose to use continuous withdrawal or notch withdrawal to return the control rod to position 48.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**12.	Withdraw the rod to position 48	On 2H11-P603, the operator positions both the Rod Movement Control switch and the RONOR switch to the withdraw position and holds them until the rod moves to position "48."	
**13.	The operator performs a coupling check on the selected control rod.	The operator positions the Rod Movement Control switch to the withdraw position observing for: The red withdraw light illuminates Momentary loss of the "48" position indication The rod does NOT move beyond position 48. Annunciator rod overtravel does NOT illuminate. Documents the check on the movement form.	
14	Informs supervision of the re-coupling attempt.	The operator reports to the SS that the coupling check was successful.	

PROMPT: When the operator selects the third control rod inform him/her that another operator will assume control rod movement duties and the JPM will be stopped here.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

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Operations Training
JPM

TITLE		
PERFORM A MANUAL RCIC STARTUP (PUSHBUTTON FAILURE)		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-25022-010	3.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R	READY	

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25022**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	03/10/97	Initial development	RAB	RSG
01	03/05/99	Revised due to new simulator computer.	SCB	DHG
02	03/21/00	Format modification	RAB	DHG
03	04/24/00	Made time critical	RAB	DHG
04	05/19/00	Correct simulator setup	RAB	DHG
05	11/03/00	Include objective number	RAB	DHG
06	03/19/02	Include initial operator statement	RAB	RAB
07	02/04/03	Incorporate procedure change	DNM	DHG
08	06/27/05	Revised Initial License statement for successful completion	RAB	RAB
09	05/30/06	Remove Response Cues	RAB	RAB
10		Update KA information	DHG	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE: **PERFORM A MANUAL RCIC STARTUP (PUSHBUTTON FAILURE)**

JPM NUMBER: LR-JP-25022-010

TASK STANDARD: The task shall be completed when the RCIC System is injecting to the Reactor at 400 gpm with turbine speed above 2000 rpm per 34SO-E51-001-2.

TASK NUMBER: 039.002

OBJECTIVE NUMBER: 039.002.C

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.36

SRO 2.93

K/A CATALOG NUMBER: 217000A403, 217000A2.01

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.40, 3.8

SRO 3.30, 3.7

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	34SO-E51-001-2 (current version) 31EO-EOP-010-2 (current version)

REQUIRED MATERIALS:	**Unit 2**
	34SO-E51-001-2 (current version)

APPROXIMATE COMPLETION TIME: 3.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator an to **IC for RTP** and leave in **FREEZE**.

2. **INSERT** the following **MALFUNCTIONS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfE41_107	HPCI Failure to Start (F001 Stuck)			00000
mfE51_109	RCIC Failure To Auto Start			00000
mfN21_87A	Feedwater Pump A Trip			00000
mfN21_87B	Feedwater Pump B Trip			00000

3. **INSERT** the following **REMOTE FUNCTIONS:**

REM #	DESCRIPTION	STATUS
rfE51155	RCIC Torus Suction Bypass	BYPASS

4. **INSERT** the following **ORS OVERRIDES:**

TAG #	P/L	DESCRIPTION	STATUS	ACT. TIME
E51-S33DI	P	RCIC Manual Initiation	OFF	00000

5. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. Place the MSIV control switches to CLOSE.
   B. Allow the simulator to run until RWL as indicated on 2B21-R623A and B is -50 inches.
   C. Acknowledge all annunciators.

6. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.

7. **ESTIMATED** Simulator **SETUP TIME**: **15 Minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The RCIC System is in a Standby Lineup.
2. RWL is decreasing and the MSIVs are closed. RCIC is required for RWL control.
3. 31EO-EOP-010-2 (RC) is in progress. The SS is using 31EO-EOP-010-2, Table 2 for RPV water level restoration.
4. The Shift Support Supervisor has defeated the Torus high level suction transfer logic.

INITIATING CUES:

Start RCIC manually and inject to the Reactor per 34SO-E51-001-2, Reactor Core Isolation Cooling (RCIC) System.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Depress RCIC Manual Initiation Push-button.	At panel 2H11-P602 the operator DEPRESSES the RCIC Manual Initiation push-button.	
2.	Recognize that RCIC has not started and manual startup is required.	At panel 2H11-P602, the operator RECOGNIZES that RCIC has **Failed** To Auto start and that MANUAL initiation is required.	

PROMPT: **IF** the operator reports to the Shift Supervisor that RCIC has failed to autostart and asks for directions, **REPEAT THE INITIATING CUE.**

****3.**	Open 2E51-F046.	At panel 2H11-P602, the operator OPENS Turb Cool Water Vlv 2E51-F046, red light illuminated.	
4.	Start the Barometric Condenser Vacuum Pump.	At panel 2H11-P602, the operator STARTS Barom Cndsr Vac Pump 2E51-C002-2, red light illuminated.	

NOTE: The following step should be performed as the RCIC System starts and comes up to speed.

****5.**	Open 2E51-F045.	At panel 2H11-P602, the operator OPENS Steam To Turbine Vlv, 2E51-F045, red light illuminated.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
6.	Confirm that the minimum flow valve operates as required.	At panel 2H11-P602, the operator VERIFIES that Min Flow Vlv, 2E51-F019, is OPEN when RCIC pump discharge pressure is greater than 128 psig and flow is less than 55 gpm. VERIFIES that Min Flow Vlv, 2E51-F019 is CLOSED when system flow is greater than 79.3 gpm.	
**7.	Open 2E51-F013.	At panel 2H11-P602, the operator OPENS Pump Discharge Vlv, 2E51-F013, red light illuminated.	
8.	Confirms that the RCIC controller operates correctly.	At panel 2H11-P602, the operator VERIFIES that RCIC Turbine Controller, 2E51-R612, controls RCIC speed and flow.	
9.	Confirm that the Barometric Condenser Condensate Pump operates automatically.	At panel 2H11-P602, the operator VERIFIES that RCIC Barom Cndsr Level High annunciator (602-327) is CLEAR.	

PROMPT: **IF** the operator addresses the RCIC BAROM CNDSR LEVEL HIGH annunciator (602-327), **INDICATE** for the operator that the annunciator is extinguished.

PROMPT: **IF** the operator addresses posting High Radiation Areas, as the Shift Supervisor, **INFORM** the operator that Health Physics is posting the area.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses CST level or Torus water level, **INDICATE** for the operator that CST level is 25 feet and Torus level is 148 inches.

PROMPT: **IF** the operator addresses shift from RWL control to pressure control, as the Shift Supervisor, **INFORM** the operator that it is not desired at this time.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

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JPM

TITLE		
PERFORM RC3 (BYPASS VALVE STUCK OPEN)		
AUTHOR	**MEDIA NUMBER**	**TIME**
D. H. GIDDENS	LR-JP-20166-00	10 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
	READY	

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-20166**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE: **PERFORM RC3 (BYPASS VALVE STUCK OPEN)**

JPM NUMBER: LR-JP-20166-00

TASK STANDARD: This task will be met once the MSIVs have been closed.

TASK NUMBER: 201.066

OBJECTIVE NUMBER: 201.066

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.1

SRO 4.1

K/A CATALOG NUMBER: 241000A2.03

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.1

SRO 4.2

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	**Unit 2**
	34AB-C71-001-2

REQUIRED MATERIALS:	**Unit 2**
	34AB-C71-001-2

APPROXIMATE COMPLETION TIME: 10 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to a 100% power IC and leave in **FREEZE**.

2. **INSERT** the following **MALFUNCTIONS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
NONE				

3. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO):**

SVO #	DESCRIPTION	FINAL VALUE	RAMP RATE	ACT. TIME
N37227	C BPV POSITION	.6	100	9999

4. **INSERT** the following **REMOTE FUNCTIONS:**

REM #	DESCRIPTION	STATUS
NONE		

5. **INSERT** the following **ORS OVERRIDES:**

TAG #	P/L	DESCRIPTION	STATUS	ACT. TIME
NONE				

6. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. Perform RC-1 ENSURE THE MODE SWITCH HAS BEEN TAKEN TO **SHUTDOWN**
   B. TRIP ONE RFPT and perform RC-2
   C. Once the mode switch has been placed to shutdown insert SVO N37227 to .6 at a ramp rate of 100.
   D. Allow the simulator to run until reactor pressure has decreased below 920 psi.

7. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.

8. **PLACE DANGER TAGS** on the following equipment:

MPL #	COMPONENT	TAGGED POSITION
NONE		

9. **ESTIMATED** Simulator **SETUP TIME**: **10 minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit Two is shutting down due to fuel problems.
2. Management has decided to insert a scram at this time.
3. Other operator s will be performing RC-1, and RC-2.

INITIATING CUES:

Per 34AB-C71-001-2, PERFORM RC-3.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs: **ALL PROCEDURE STEPS** must be completed for Satisfactory Performance.

			START TIME:_____
1.	MONITOR RPV pressure.	On 2H11-P603 the operator monitors 2C32-R605A, B, C, recorder 2C32-R608, 2C32-R609, or the plasma display.	
****2.**	Confirm Proper Operation Of Pressure Control System (TBV, LLS, etc.).	On the Main Turbine Control panel on 2H11-P650, DETERMINES the "C" BPV has **FAILED** open.	
3.	Informs the SS of pressure system status.	Informs the SS the "C" BPV has failed open.	

PROMPT: when informed that the "C" BPV is failed open **DIRECT** the operator to take appropriate actions.

Note: Closing "either" the inboard or outboard MSIV on each Main Steam lines (MSL) will satisfy the critical step.

****4.**	Close MSIVS **2B21-F022A** AND/OR **2B21-F028A** on the "A" MSL.	Per 34AB-C71-001-2 step 4.13, on panel 2H11-P601, the operator places the control switch for 2B21-F028A to CLOSE. And/or On panel 2H11-P602, the operator places the control switch for 2B21-F028A to CLOSE.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Close MSIVS **2B21-F022B** AND/OR **2B21-F028B** on the "B" MSL.	On panel 2H11-P601, the operator places the control switch for 2B21-F028B to CLOSE. And/or On panel 2H11-P602, the operator places the control switch for 2B21-F028B to CLOSE.	
**6.	Close MSIVS **2B21-F022C** AND/OR **2B21-F028C** on the "C" MSL.	On panel 2H11-P601, the operator places the control switch for 2B21-F028C to CLOSE. And/or On panel 2H11-P602, the operator places the control switch for 2B21-F028C to CLOSE.	
**7.	Close MSIVS **2B21-F022D** AND/OR **2B21-F028D** on the "D" MSL.	On panel 2H11-P601, the operator places the control switch for 2B21-F028D to CLOSE. And/or On panel 2H11-P602, the operator places the control switch for 2B21-F028D to CLOSE.	

PROMPT: Due to the length of time the BPV has remained open Reactor pressure may not return to the LLS arming setpoint for a significant amount of time. Wait at least 3 minutes after the student has completed closing the MSIVs and at that point the evaluator may ask the operator what actions remain to complete RC-3. If the operator replies with the following two steps from RC-3, the evaluator may reply that another operator will take over RC-3 duties and stop the JPM.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
8.	Allow RPV pressure to exceed 1074 psig then cycle any SRV to initiate LLS.	ON panel 2H11-P602, once reactor pressure exceeds 1074, the operator cycles one SRV.	
9.	Maintain RPV pressure between 1074 and 800 psig	On panel 2H11-P603, the operator monitors reactor pressure and confirms LLS is operating properly.	
10.	Notify SS of pressure control system operation.	Notify SS of LLS operation.	

			END TIME:

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

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Operations Training
JPM

TITLE		
PLACE HPCI IN PRESSURE CONTROL MODE		
AUTHOR	**MEDIA NUMBER**	**TIME**
D. H. GIDDENS	LR-JP-005.15.00	10 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
	CME	10/12/2007

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-00515**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 () UNIT 2 (X)

TASK TITLE: **PLACE HPCI IN PRESSURE CONTROL MODE**

JPM NUMBER: LR-JP-005.15.00

TASK STANDARD: The task will be met when HPCI has been placed in pressure control mode.

TASK NUMBER: 005.015

OBJECTIVE NUMBER: 005.015.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.8

SRO 3.8

K/A CATALOG NUMBER: 206000A4.06

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.3

SRO 4.3

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	**Unit 2**
	31EO-EOP-107-2

REQUIRED MATERIALS:	**Unit 2**
	31EO-EOP-107-2

APPROXIMATE COMPLETION TIME: 10 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to a 100% IC and leave in **FREEZE**.

2. **INSERT** the following **MALFUNCTIONS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
NONE				

3. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO):**

SVO #	DESCRIPTION	FINAL VALUE	RAMP RATE	ACT. TIME
NONE				

4. **INSERT** the following **REMOTE FUNCTIONS:**

REM #	DESCRIPTION	STATUS
NONE		

5. **INSERT** the following **ORS OVERRIDES:**

TAG #	P/L	DESCRIPTION	STATUS	ACT. TIME
RFE41_153		HPCI TORUS SUCTION BYPASS	OVRD	0000

6. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. From 100% power insert a manual scram.
   B. Perform RC-1 and RC-2.
   C. Allow the plant to stabilize with turbine bypass valves controlling reactor pressure and RFPTs controlling water level.
   D. Ensure HPCI is in standby with no initiation signal present.

7. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.

8. **PLACE DANGER TAGS** on the following equipment:

MPL #	COMPONENT	TAGGED POSITION
NONE		

9. **ESTIMATED** Simulator **SETUP TIME:** **15**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The unit has been scrammed to allow work on an EHC system leak
2. RFPTs are controlling reactor water level.
3. The HPCI High Torus Level Suction Swap has been over-ridden per 31EO-EOP-100-2.

INITIATING CUES:

Place HPCI in Pressure Control Mode per 31EO-EOP-107-2, "ALTERNATE RPV PRESSURE CONTROL"

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs: **ALL PROCEDURE STEPS** must be completed for Satisfactory Performance.

START TIME:_____

1,	Confirm a HPCI initiation signal does not exist.	On 2H11-P601 verify the HPCI auto initiation light is not illuminated.	
2.	Confirm a HPCI isolation does not exist.	On 2H11-P601 verify the HPCI isolation alarms are not illuminated and that 2E41-F002 and 2E41-F003 are open, red lights illuminated.	
3.	Confirm OPEN/ 2E41-F029, Steam Line Drain 2E41-F003, Outbd Steam Isol 2E41-F028, Steam Line Drain	Verify the red light is illuminated for the following valves; 2E41-F029, panel 2H11-P601 2E41-F003, panel 2H11-P601 2E41-F028, panel 2H11-P602.	
4.	Confirm OPEN 2E41-F002, Inboard Steam Isolation Valve.	On 2H11-P601, verify 2E41-F002 is open, red light illuminated.	
5.	OPEN 2E41-F059, Lube Oil Cooling Wtr Valve.	On 2H11-P601, the operator places the switch 2E41-F059 to open, red light illuminates.	
6.	START HPCI Vacuum Pump.	On 2H11-P601, the operator places the switch for the HPCI vacuum pump to start.	
7.	Confirm CLOSED 2E41-F006, Pump Discharge Valve.	On 2H11-P601, the operator verifies 2E41-F006 is closed, green light illuminated.	
****8.**	OPEN 2E41-F008, Test to CST Valve.	On 2H11-P601, the operator places the switch for 2E41-F008 to the open position, red light illuminates.	
****9.**	OPEN 2E41-F011, Test to CST Valve.	On 2H11-P601, the operator places the switch for 2E41-F011 to the open position, red light illuminates.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**10.	OPEN 2E41-F001, Turbine Steam Supply Valve.	On 2H11-P601, the operator places the switch for 2E41-F001 to the open position, red light illuminates.	
**11.	START the HPCI Auxiliary Oil Pump.	On 2H11-P601, the operator places the switch for the HPCI Auxiliary Pump to start position, red light illuminates.	
12.	Control HPCI turbine speed/system flow, and IF necessary throttle 2E41-F008, Test to CST Vlv, to control Reactor pressure.	On 2H11-P601, the operator adjust HPCI flow controller 2E41-R612 and/or throttles 2E41-F008 to control reactor pressure.	

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
PERFORM A MANUAL INITIATION OF DRYWELL SPRAY (VALVE FAILURE)		
AUTHOR	**MEDIA NUMBER**	**TIME**
D. H. GIDDENS	LR-JP-25033-09	10
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

SOUTHERN COMPANY

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SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25033**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	11/15/99	Initial development	RAB	DHG
01	05/19/00	Correct simulator setup to incorporate instructor comments	RAB	DHG
02	11/06/00	Include objective number	RAB	DHG
03	03/25/02	Include initial operator statement	RAB	RAB
04	02/04/03	Reference 5000gpm limit as referenced in SAG/EOP. Add placing RHR in SP cooling as initial condition.	DNM	DHG
05	05/27/05	Revised Initial License statement for successful completion	RAB	RAB
06	06/30/06	Remove Response Cues	RAB	RAB
07	05/19/07	Correct the value for maximum drywell spray flow, 12500 gpm.	DHG	RAB
08	06/01/07	Revised to have both loops of torus cooling in service	DHG	BKW
09		Update KA information	DHG	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE: **PERFORM A MANUAL INITIATION OF DRYWELL SPRAY (VALVE FAILURE)**

JPM NUMBER: LR-JP-25033-09

TASK STANDARD: The task shall be completed when the RHR System has been initiated in the Drywell Spray Mode, per 34SO-E11-010-2.

TASK NUMBER: 007.001

OBJECTIVE NUMBER: 007.001.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.71

SRO 4.05

K/A CATALOG NUMBER: 226001A403, 226001A2.11

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.50, 3.0

SRO 3.40, 3.0

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	34SO-E11-010-2 (current version) 31EO-EOP-012-2 (current version

REQUIRED MATERIALS:	**Unit 2**
	34SO-E11-010-2 (current version) Key for 2E11-F016 A(B)

APPROXIMATE COMPLETION TIME: 10

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to an **IC 100%** and leave in **FREEZE.**

2. **INSERT** the following **MALFUNCTIONS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfE51_110	RCIC Turbine Trip			00000
mfB21_229B	FW Line B Break Inside Containment (Var)	50	1000	00000
mfB21_48A	Steam Line A Break (After Restrictor) (Var)	2	1000	99999

3. **INSERT** the following **REMOTE FUNCTIONS:**

REM #	DESCRIPTION	STATUS
mfE11_167	2E11-F017A & B Override 5 Min Timer	ORIDE

4. **INSERT** the following **ORS OVERRIDES:**

TAG #	P/L	DESCRIPTION	STATUS	ACT. TIME
diE11-F016A	P	Contmt Spray Outboard Drywell	CLOSE	00000
diE11-F016B	P	Contmt Spray Outboard Drywell	CLOSE	0000

5. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. Take the simulator out of FREEZE.
   B. Close 2N21-F006B. Allow the valve to go FULL CLOSE.
   C. Place the "A" and "B" Loops of RHR in SP Spray.
   D. When the operator starts Drywell spray, activate Malfunction mfB21_48A.
   E. Place both Recirc pumps switches in the TRIP position.
   F Place the Drywell Cooling Fans to "off."

6. **PLACE** the Simulator in **FREEZE** until the crew assumes the shift.

7. **ESTIMATED** Simulator **SETUP TIME**: **20 Minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Torus pressure is greater than 11 psig.
2. Drywell pressure and temperature are within the SAFE region of the Drywell Spray Initiation Limit Curve. (GRAPH 8)
3. Both Recirc pumps are tripped.
4. Both loops of RHR have been placed in SP Spray.
5. All Drywell Cooling fans are tripped.
6. Torus level is <215 inches.
7. 31EO-EOP-012-2, "PC-1 Primary Containment Control" is in progress.
8. The links to override the 5 minute LOCA OPEN interlock for RHR OUTBD INJ VLVs has been OPENED.

INITIATING CUES:

Initiate one loop of RHR in Drywell sprays per 34SO-E11-010-2, "Residual Heat Removal System" to lower drywell pressure to 1.0 psig.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Place the Containment Spray Valve control switch 2E11-S17A/B to the Manual position.	At panel 2H11-P601, the operator PLACES the CONTAINMENT SPRAY VALVE CONTROL switch to MANUAL, white light illuminated. This switch will already be in manual due to having torus sprays in servive.	

NOTE: The operator may throttle or close 2E11-F017A/B even though the RHR System is not injecting into the Reactor.

NOTE: Once the operator selects the loop to be initially used, have the simulator operator **remove** the ORS **diE11-F016** for the **OTHER loop of RHR**

2.	Confirm or start RHR pumps in selected Loop.	At panel 2H11-P601, the operator CONFIRMS the RHR pumps are running in the selected loop, red lights illuminated.	
3.	Open Containment Spray Valve 2E11-F021A/B.	At panel 2H11-P601, the operator PLACES the CNMT SPRAY INBD VLV, 2E11-F021A/B to OPEN, red light illuminated.	
4.	Attempts to slowly throttle open the Containment Spray Outboard Vlv. 2E11-F016A/B to start flow.	At panel 2H11-P601, the operator RECOGNIZES that CNMT SPRAY OUTBD VLV, 2E11-F016A/B failed to OPEN, green light illuminated.	

PROMPT: **WHEN** the operator reports that 2E11-F016A/B will not open, **INFORM** the operator to place the other loop of RHR in Drywell Spray.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Place the Containment Spray Valve control switch 2E11-S17B/A to the Manual position.	At panel 2H11-P601, the operator PLACES the CONTAINMENT SPRAY VALVE CONTROL to MANUAL, white light illuminated.	

NOTE: The operator may throttle or close 2E11-F017B/A even though the RHR System is not injecting into the Reactor.

6.	Confirm or start RHR pumps in selected loop.	At panel 2H11-P601, the operator CONFIRMS the RHR pumps are RUNNING, red lights illuminated.	
**7.	Open Containment Spray Valve 2E11-F021B/A.	At panel 2H11-P601, the operator PLACES the CNMT SPRAY INBD VLV, 2E11-F021B/A, to OPEN, red light illuminated.	
**8.	Slowly throttle open the Containment Spray Outboard Vlv. 2E11-F016B/A to start flow.	At panel 2H11-P601, the operator THROTTLES the CNMT SPRAY OUTBD VLV, 2E11-F016B/A, to OPEN, red light illuminated.	

NOTE: Drywell Spray flow rate must be at least 5000 GPM to ensure an effective drywell pressure reduction (reference EOP/SAG Appendix "C" calculations).

9.	RHR flow rate established within limits.	At panel 2H11-P601, the operator VERIFIES that RHR Flow is less than or equal to 12,500 gpm, but greater than 5,000 gpm, on RHR FLOW 2E11-R603A/B.	

NOTE: This JPM may be stopped once drywell pressure is decreasing.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
MOVE CONTROL RODS IRM FAILURE		
AUTHOR	**MEDIA NUMBER**	**TIME**
DAVE GIDDENS	LR-JP-25063-00	15.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R	READY	

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25063**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE: **MOVE CONTROL RODS IRM FAILURE**

JPM NUMBER: LR-JP-25063-00

TASK STANDARD: The task shall be completed when a half scram has been inserted per 30AC-OPS-003-0.

TASK NUMBER: 001.010

OBJECTIVE NUMBER: 001.010.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.57

SRO 3.52

K/A CATALOG NUMBER: 215003 A.3.03

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.7

SRO 3.60

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	30AC-OPS-003-0 34GO-OPS-065-0 34AR-603-109-2 34AR-603-212-2 (current versions)

REQUIRED MATERIALS:	**Unit 2**
	34GO-OPS-065-0 (current version) 34AR-603-109-2 34AR-603-212-2 Control Rod Movement Sequence Sheet (Step 20)

APPROXIMATE COMPLETION TIME: 15.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC # 105** and leave in **FREEZE**.
2. **withdraw the rods in rod group 16 and select the first rod in group 17..**
3. **INSERT** the following **MALFUNCTIONS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfC51_9D	IRM D FAILURE (UPSCALE) **key 1**			9999
MfC71_60A	RPS FAILS TO AUTO SCRAM			0000

4. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. none

5. **PLACE** the Simulator in **FREEZE** until the **INITIATING CUE** is given.
6. **ESTIMATED** Simulator **SETUP TIME**: **15 Minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A normal plant startup is in progress per 34GO-OPS-001-2, "Plant Startup," and is currently at Step 7.4.3.
2. Rod withdrawal to achieve 6-7% on the APRMs is in progress.
3. Rods in Step 16 of the Pull Sequence have just been completed.
4. Rod Worth Minimizer is operable and has been loaded with the correct movement sequence, which has been approved by the Reactor Engineering Supervisor.
5. The pre-job brief has been completed. A peer checker will not be supplied but continue with the task.

INITIATING CUES:

Withdraw Controls Rods in Step 17 to their withdraw limit.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has IDENTIFIED the correct procedure as 34GO-OPS-065-0.	
2.	Operator reviews the procedure's precautions and limitations.	Operator has REVIEWED the precautions and limitations.	

PROMPT: **WHEN** the operator addresses an approved copy of the Control Rod Movement Sequence Sheet, **GIVE** the operator the Control Rod Movement Sequence Sheet.

3.	Operator identifies the materials that are required.	Operator has IDENTIFIED and OBTAINED Control Rod Movement Sequence Sheet.	

NOTE: The operator may select any control rod in Rod Step 17, although the operator should proceed in consecutive order.

****4.**	Select a control rod in Rod Step 17. (Rod 22-47)	At panel 2H11-P603, the push-button is DEPRESSED on CONTROL ROD SELECT Matrix for selected control rod in Rod Step 17.	
****5.**	Withdraw the control rod to Position 02.	At panel 2H11-P603, ROD MOVEMENT CONTROL switch is momentarily PLACED to "OUT" position and RELEASED.	
6.	Confirm the proper control rod movement.	At panel 2H11-P603, the operator VERIFIES that rod position indicator indicates "02" for rod moved in previous step on Four-Rod Display and/or RWM.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**7.	Withdraw the control rod to Position 04.	At panel 2H11-P603, ROD MOVEMENT CONTROL switch is momentarily PLACED to "OUT" position and RELEASED.	
8.	Confirm the proper control rod movement.	At panel 2H11-P603, the operator VERIFIES that rod position indicator indicates "04" for rod moved in previous step on Four-Rod Display and/or RWM.	
9.	Complete the line, for the selected rod, on the Control Rod Movement Sequence sheet.	On the Control Rod Movement Sequence sheet, on the line for the selected rod (Withdrawn side of sheet), the operator has: Filled in INIT block. Filled in DATE block.	
**10.	Select the next control rod in Rod Step 17. (Rod 346-23)	At panel 2H11-P603, the push-button is DEPRESSED on CONTROL ROD SELECT Matrix for selected control rod in Rod Step 17.	
**11.	Withdraw the control rod to Position 02.	At panel 2H11-P603, ROD MOVEMENT CONTROL switch is momentarily PLACED to "OUT" position and RELEASED.	

PROMPT: Have the simulator operator **activate** malfunction **mfC51_9D**

PROMPT: IF the operator reports the failure of RPS prior to taking action, **REPLY** telling him to take the appropriate actions.

**12.	Respond to annunciator 34AR-603-109-2, Reactor Neutron Monitoring Sys Trip AND 34AR-603-212-2, IRM Bus B Upscale Trip OR INOP	At panel 2H11-P603, the operator recognizes that a automatic scram setpoint has been met but RPS has failed to initiate a half scram in the "B" RPS channel	
**13.	Manually insert a half scram in the "B" channel of RPS.	At panel 2H11-P603, REACTOR "B" channel SCRAM PUSHBUTTONS are depressed.	

NOTE: The task is to insert a half scram and to notify the SS. Once this is done inform the operator that another operator will take over rod movement duties and the JPM will be stopped at this point.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
VERIFY AN AUTOMATIC SECONDARY CONTAINMENT ISOLATION		
AUTHOR	**MEDIA NUMBER**	**TIME**
DAVE GIDDENS	LR-JP-20021-00	13.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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SOUTHERN NUCLEAR OPERATING COMPANY PLANT E. I. HATCH	Page 1 of 1
FORM TITLE: TRAINING MATERIAL REVISION SHEET	

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-20021**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE: **VERIFY AN AUTOMATIC SECONDARY CONTAINMENT ISOLATION**

JPM NUMBER: LR-JP-20021-00

TASK STANDARD: The task shall be completed when the operator has verified that the Reactor Building Ventilation System is isolated per 34AB-T22-003-2.

TASK NUMBER: 013.038

OBJECTIVE NUMBER: 013.038.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.42

SRO 3.42

K/A CATALOG NUMBER: 295034EA103, 288000A2.04

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.00, 3.7

SRO 3.90, 3.8

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	34AB-T22-003-1

REQUIRED MATERIALS:	**Unit 2**
	34AB-T22-003-1 (current revision)

APPROXIMATE COMPLETION TIME: 13.0 Minutes

SIMULATOR SETUP: Refer to simulator setup sheet on the following page

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to an **IC at 1005 RTP** and leave in **FREEZE**.

2. **INSERT** the following **MALFUNCTIONS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfG31_52	RWCU System Leak (0-250 gpm)	50	1000	00000
mfT41_12	2T41-F023A/B FAIL TO CLOSE			00000

3. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO):**

SVO #	DESCRIPTION	FINAL VALUE	RAMP RATE	ACT. TIME
svoD11174	D11-K609A Rx Bldg Pot Contam Area Vnt	23	1000	00000
svoD11175	D11-K609B Rx Bldg Pot Contam Area Vnt	20	1000	00000
svoD11176	D11-K609C Rx Bldg Pot Contam Area Vnt	20	1000	00000
svoD11177	D11-K609D Rx Bldg Pot Contam Area Vnt	23	1000	00000

4. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. Allow the RWCU System to isolate.
   B. Ensure Radiation Monitors 2D11-K609A, B, C, & D are reading approximately 20 mR/hr and RX BLDG POT CONTAM AREA VENT RADN HI-HI (34AR-601-420-2), is illuminated.

5. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.

6. **ESTIMATED** Simulator **SETUP TIME**: **10 Minutes**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator obtains the procedure needed to perform the task.	Operator has obtained procedure 34AB-T22-003-2.	

PROMPT: **IF** the operator checks the radiation monitors 2D11-K609A/B/C/D on 2H11-P606, the following results should be **INDICATED**:

2D11-K609A/B/C/D read approximately 20 mR/hr AND the red trip indicating light for each is illuminated.

If the wrong monitors are identified, the indication will be as observed.

NOTE: It is the intent of the JPM that the operator verify Secondary Containment and determine which valves have failed to isolate. The action to close the unisolated valves is necessary to complete the critical portion of the task.

NOTE: **In the following steps, the parts of the Standard marked with "**" are the critical portion of that step.**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
2.	Operator confirms the following automatic actions: 2T41-C002A & B, STOPS, 2T41-C005A & B, STOPS, 2T41-F003A, CLOSED, **2T41-F023A, CLOSED, 2T46-F003A, OPEN, and 2T46-F001A, OPEN.	At panel 2H11-P657, the operator verifies the following: 2T41-C002A, Refuel Flr Vent Supply Fan, is OFF, green light illuminated. 2T41-C002B, Refuel Flr Vent Supply Fan, is OFF, green light illuminated. 2T41-C005A, Refuel Flr Vent Exh Fan is OFF, green light illuminated. 2T41-C005B, Refuel Flr Vent Exh Fan is OFF, green light illuminated. 2T41-F003A, Refuel Flr Supply Fans Disch Inboard Isol Dmprs, is CLOSED, green light illuminated. **2T41-F023A, Refuel Flr Exhaust Fans Disch/Suction Inboard Dmprs, is **NOT CLOSED**, Red light illuminated. 2T46-F003A, SBGT A Fltr Inlet From Refuel Floor, is OPEN, red light illuminated. 2T46-F001A, SBGT A Fltr Inlet From Rx Bldg, is OPEN, red light illuminated.	
**3.	Place failed isolation valve in its isolated position.	At panel 2H11-P657, the operator places the 2T41-F023A control switch to close.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
4.	Operator confirms or performs the following automatic actions: 2T46-F002A, OPEN, 2T41-C001A & B, STOPS, 2T41-C007A & B, STOPS, and 2T41-F011A, CLOSED.	At panel 2H11-P657, the operator verifies the following: 2T46-F002A, SBGT A Fltr Disch, is OPEN, red light illuminated. 2T41-C001A, Rx Bldg Supply Fan, is OFF, green light illuminated. 2T41-C001B, Rx Bldg Supply Fan, is OFF, green light illuminated. 2T41-C007A, Rx Bldg Vent Exhaust Fan, is OFF, green light illuminated. 2T41-C007B, Rx Bldg Vent Exhaust Fan, is OFF, green light illuminated. 2T41-F011A, Rx Bldg Supply Fans Disch Inboard Isol Dmprs, is CLOSED, green light illuminated.	
5.	Operator confirms or performs the following automatic actions: 2T41-F044A, CLOSED, 2T48-C003, STOPS, and 2T46-D001A, START.	At panel 2H11-P657, the operator has verified the following: 2T41-F044A, Rx Bldg Inboard Isol Dmprs, Inaccessible Areas Exhaust Fans Disch, is CLOSED, green light illuminated. 2T48-C003, Purge Air Supply Fan, is STOPPED, green light illuminated. 2T46-D001A, SBGT Filter Fan A, is STARTED, red light illuminated.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	Operator confirms or performs the following automatic actions: 2T41-F003B, CLOSED, **2T41-F023B, CLOSED, 2T46-F003B, OPEN, 2T46-F001B, OPEN, 2T46-F002B, OPEN, 2T46-D001B, START, 2T41-F011B, CLOSED, 2T41-F044B, CLOSED	At panel 2H11-P654, the operator verifies the position of each of the following valves: 2T41-F003B, Refuel Flr Supply Fans Disch Outboard Isol Dmprs, is CLOSED, green light illuminated. **2T41-F023B, Refuel Flr Exhaust Fans Disch/Suction Outboard Dmprs, is **NOT CLOSED**, red light illuminated. 2T46-F003B, SBGT B Fltr Inlet From Refuel Floor, is OPEN, red light illuminated. 2T46-F001A, SBGT B Fltr Inlet From Rx Bldg, is OPEN, red light illuminated. 2T46-F002B, SBGT B Fltr Disch, is OPEN, red light illuminated. 2T46-D001B, SBGT Filter Fan A, is STARTED, red light illuminated. 2T41-F011B, Rx Bldg Supply Fans Disch Outboard Isol Dmprs, is CLOSED, green light illuminated. 2T41-F044B, Rx Bldg Outboard Isol Dmprs, Inaccessible Areas Exhaust Fans Disch is CLOSED, green light is illuminated.	
**7.	Place failed isolation valve in its isolated position	At panel 2H11-P654, the operator places the switch for 2T41-F023B to CLOSE.	

PROMPT: **WHEN** the operator addresses the UNIT 1 Secondary Containment Isolation on 1H11-P654 and 1H11-P657, **INFORM** the operator that another operator is verifying these actions.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
6.	Operator confirms the following automatic actions: 2P33-C005A & B, STOP, 2T41-F030A & B, CLOSED, and 2T41-F010A & B, CLOSED.	The operator has performed the following: An operator has been dispatched to 2P33-P601A & B to verify STOPPED, 2P33-C005A & B, Pri Cnmt Atmos H2O2 Sample Pumps. An operator has been dispatched to verify CLOSED, 2T41-F030A & B, Reactor Building Vent Exh Fan Control Vanes. An operator has been dispatched to verify CLOSED, 2T41-F010A & B, Reactor Building Vent Supply Fan Control Vanes.	

PROMPT: **IF** the operator addresses Primary Containment isolations, as the Shift Supervisor, **INFORM** the operator that another operator is addressing these isolations.

PROMPT: **IF** the operator addresses turning off the switches for the Fission Product Panels 2D11-P010 and 2D11-P011, as the Shift Supervisor, **INFORM** the operator that the Chemistry Department has been notified to turn the switches off.

PROMPT: **IF** the operator addresses dispatching operators and HP to the affected areas, as the Shift Supervisor, **INFORM** the operator that these personnel have been dispatched.

PROMPT: **IF** the operator addresses the potential need for Emergency Classification, as the Shift Supervisor, **INFORM** the operator that the SOS is investigating a possible classification.

PROMPT: **IF** the operator addresses restoration of Secondary Containment, as the Shift Supervisor, **INFORM** the operator that it is not desired at this time.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
ENERGIZE STARTUP AUXILIARY TRANSFORMER 2D		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-27.49-12	8.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R	READY	

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SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-27.49**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	08/13/93	General revision, include a switching order, word processor change	RAB	RSG
02	08/19/94	Modify simulator setup, adjust format, change time allowance, make initiating cue more specific and include phonetics	RAB	RSG
03	07/23/96	Format change, modify time allowance	RAB	DHG
04	04/10/97	Revised based on feedback from the 1996 Requal annual exam.	SCB	RSG
05	03/05/99	Revised due to new simulator computer.	SCB	DHG
06	02/25/00	Format modification, change time allowance based on running average, procedure change, reference correct section of procedure and change initiating cue to direct operator to the correct section, correct simulator setup	RAB	DHG
07	11/02/00	Include objective number	RAB	DHG
08	03/11/02	Include initial operator statement	RAB	RAB
09	03/08/05	Documentum Revision	DNM	RAB
10	06/13/05	Revised Initial License statement for successful completion	RAB	RAB
11	04/19/06	Remove Response Cues	RAB	RAB
12		Update KA information	DHG	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE: **ENERGIZE STARTUP AUXILIARY TRANSFORMER 2D**

JPM NUMBER: LR-JP-27.49-12

TASK STANDARD: The task will be complete when SUT "2D" is energized per 34SO-S22-001-1.

TASK NUMBER: 027.049

OBJECTIVE NUMBER: 027.049.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.07

SRO 2.83

K/A CATALOG NUMBER: 262001A403, 262001A4.02

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.20, 3.4

SRO 3.40, 3.4

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	34SO-S22-001-1 (current version)

REQUIRED MATERIALS:	**Unit 2**
	34SO-S22-001-1 (current version)

APPROXIMATE COMPLETION TIME: 8.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **100% Power** and leave in **FREEZE**.

2. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**

   A. Transfer 4160 VAC Busses E, F, and G to the alternate power supply
   B. Open PCB 179520 and 179530.

3. **INSERT** the following **ORS OVERRIDES:**

TAG #	P/L	DESCRIPTION	STATUS	ACT. TIME
lo1S40-S43G1	L	Disconnect Switch PCB 179530 green light	OFF	00000
lo1S40-S43R2	L	Disconnect Switch PCB 179530 red light	OFF	00000

4. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.

5. **PLACE DANGER TAGS** on the following equipment:

MPL #	COMPONENT	TAGGED POSITION
PCB 179520	PCB 179520	OPEN
PCB 179530	PCB 179530	OPEN

6. **ESTIMATED** Simulator **SETUP TIME**: **10 Minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Due to a maintenance requirement, SUT "2D" has been de-energized.
2. 4160 VAC Buses "E," "F," and "G" are on their alternate power supply.
3. Work has been satisfactorily completed on the transformer.
4. All lockout relays on the transformer have been reset.
5. The transformer is ready to be re-energized.
6. The Shift Supervisor has notified the Load Dispatcher and a switching order was generated.

INITIATING CUES:

Energize SUT "2D" from 230 kV Bus No. 2 per Step 7.3.1.7.5 of 34SO-S22-001-1.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the required procedure to perform the task.	Operator has identified the required procedure as 34SO-S22-001-1 and where to obtain it.	

PROMPT: **AT** this time, **GIVE** the operator Attachment 1.

PROMPT: **IF** the operator addresses confirming lockout relays reset, **INFORM** the operator that another operator has verified that all "2D" SUT lockout relays are reset.

2.	Have Substation Maintenance close or confirm close: Line Disconnect 179549 Motor Disconnect 179521 Motor Disconnect 179523	The operator has contacted Substation Maintenance to close or confirm CLOSE: Line Disconnect 179549 Motor Disconnect 179521 Motor Disconnect 179523.	
3.	Remove Danger Tag from PCB 179520.	At panel 1H11-P653, operator REMOVES the Danger Tag from PCB 179520.	
****4.**	On panel 1H11-P653, place sync switch SSW BUS No. 2 in the "R" position.	On panel 1H11-P653, operator has PLACED sync switch SSW BUS NO. 2 in the "R" position.	
****5.**	On panel 1H11-P653, place sync switch SSW BUS No. 1 in the "I" position.	On panel 1H11-P653, operator has PLACED sync switch SSW BUS NO. 1 in the "I" position.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	Close PCB 179520 to energize SUT "2D."	On panel 1H11-P653 operator has CLOSED PCB 179520, red light illuminated.	

PROMPT: **IF** the operator addresses closing PCB 179530, as the Shift Supervisor, **INFORM** the operator that it is not desired at this time.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

DATE TODAY

ORDERS ISSUED BY WEST

OPERATOR RECEIVING ORDERS BOOHER

SWITCHING: REMOVE TAG FROM PCB 179520

CLOSE PCB 179520

SWITCHING DONE BY

TIME DATE

DUPLICATE **Leave this copy in book**

ORDER No 109104 A

ATTACHMENT 1

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
LOCALLY START A DIESEL GENERATOR USING THE AIR START OVERRIDE		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-28.24-10	17.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-28.24**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	06/22/95	Initial development	RAB	SMC
01	07/23/96	Format change, modify time allowance	RAB	DHG
02	04/11/97	Revised based on feedback from the 1996 Requal annual exam.	SCB	DHG
03	02/25/00	Format modification, change time allowance based on running average, update K/As	RAB	DHG
04	11/02/00	Correct second prompt following Step 2, include objective number	RAB	DHG
05	03/11/02	Include initial operator statement	RAB	RAB
06	03/08/05	Documentum revision	DNM	RAB
07	05/27/05	Revised Initial License statement for successful completion	RAB	RAB
08	04/19/06	Remove Response Cues	RAB	RAB
09	05/19/07	Clarify the initiating cue	DHG	RAB
10		Update KA information and critical steps	DHG	

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**LOCALLY START A DIESEL GENERATOR USING THE AIR START OVERRIDE**
JPM NUMBER:	LR-JP-28.24-10
TASK STANDARD:	The task shall be completed when the operator has successfully locally started an Emergency Diesel Generator per 34AB-R43-001.
TASK NUMBER:	028.024
OBJECTIVE NUMBER:	028.024.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.86

SRO 3.00

K/A CATALOG NUMBER: 2640002130, 264000 A2 09

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.90, 3.7

SRO 3.40, 4.1

OPERATOR APPLICABILITY: System Operator (SO)

GENERAL REFERENCES:	Unit 1	Unit 2
	34AB-R43-001-1 (current version) 31RS-OPS-002-1 (current version)	34AB-R43-001-2 (current version) 31RS-OPS-002-2 (current version)

REQUIRED MATERIALS:	Unit 1	Unit 2
	34AB-R43-001-1 (current version)	34AB-R43-001-2 (current version)

APPROXIMATE COMPLETION TIME: 17.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A loss of normal and alternate power has simultaneously occurred to Bus "1E" with a failure of its associated Diesel Generator to auto start.
2. The normal and alternate supply breakers for Bus "1E" are open.
3. 31RS-OPS-002-1 (Electrical Restoration) is in progress due to a Control Room evacuation.
4. A fire was NOT the cause of the Control Room evacuation.
5. Actions for D/G "1B" and "1C" are being taken by other operators.

INITIATING CUES:

Manually start the "1A" Emergency Diesel Generator locally using 34AB-R43-001-1, "DIESEL GENERATOR RECOVERY."

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34AB-R43-001-1.	

PROMPT: **WHEN the operator addresses Control Power lights, INDICATE for the operator that they are EXTINGUISHED.**

2.	Confirm Control Power ON lights for Circuits 1 through 4 are illuminated.	At panel 1R43-P003A, the operator observes CONTROL POWER ON CIRCUIT lights and determines they are **NOT** illuminated for Circuits 1 through 4.	
****3.**	Evaluates what effect the lack of control power will have on starting the diesel.	Diagnoses that the diesel will not start using the electrical system and starting air must be manually applied to the diesel.	

PROMPT: **WHEN** the operator addresses restoring Control Power, **INFORM** the operator that Control Power cannot be restored and that starting the Diesel is a PRIORITY.

****4.**	Manually start the Diesel with the Air Start Manual Override.	On the Diesel skid near the Air Start Solenoid, the operator USES the air start manual override on 1R43-F016A, AIR START SOLENOID VALVE, TO START the Diesel Generator.	

PROMPT: **WHEN** the operator addresses Diesel indications, **INDICATE** for the operator that engine speed is greater than 250 rpm, lube oil pressure is greater than 6 PSIG, and the Safety Shutdown System Operative light is extinguished.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **WHEN** the operator addresses Diesel speed, **INDICATE** for the operator that Diesel speed is 900 rpm.

5.	Confirm the Diesel Generator "1A" comes up to rated speed.	At panel 1R43-P003A, the operator VERIFIES Diesel Generator "1A" speed indicates 900 RPM on meter ENGINE RPM 1R43-R024A (accept ±50 rpm).	

PROMPT: **WHEN** the operator addresses generator voltage, **INDICATE** for the operator that voltage is 4160 volts.

6.	Confirm generator voltage comes up to rated voltage (4160 volts).	At panel 1R43-P001A, the operator VERIFIES generator voltage is at rated voltage 4160 volts (accept 4100 to 4400 volts).	

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
7.	Check local indicator readings on panel 1R43-P003A.	At panel 1R43-P003A, the operator IDENTIFIES the following local indicators and verifies readings within limits: JACKET COOLANT DISCH PRES is >20 psig FUEL OIL PRESSURE TO FILTER is >26 psig FUEL OIL PRESSURE TO ENGINE is >10 psig STARTING AIR PRESSURE is 150 to 250 psig RAW WATER PRESSURE is >10 psig CRANKCASE VACUUM is <0.5 inches H_2O SCAVENGING AIR PRESSURE is >0 psig LUBE OIL PRESSURE is >18 psig JACKET COOLANT OUTLET TEMP is 100 to 205°F LUBE OIL TEMP FROM ENGINE is 130 to 230°F ENGINE RPM is 810 to 1000 rpm	

PROMPT: **WHEN** the operator identifies the following indicators, **INDICATE** for the operator the corresponding readings:

Jacket Water Pressure, 26 psig
Fuel Oil Press (Black Hand) to filter, 30 psig
Fuel Oil Press (Red Hand) from filter, 24 psig
Starting Air Pressure, 240 psig
Raw Water Pressure, 28 psig
Crankcase Vacuum, +0.3 inches H_2O
Scavenging Air Pressure, 15 psig
Lube Oil Pressure, 26 psig
Jacket Coolant Outlet Temp, 135°F
Lube Oil Temp from Engine, 140°F
Engine RPM, 900 rpm

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses the RAW WATER PRESS LOW annunciator, **INDICATE** that the annunciator is not alarming.

PROMPT: **IF** the operator addresses operation of other Diesel Generators, as the Shift Supervisor, **INFORM** the operator that another operator will start the remaining Diesel Generators.

PROMPT: **IF** the operator addresses restoration of 4160 VAC Emergency Bus, as the Shift Supervisor, **INFORM** the operator that this will be performed by another operator.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Simultaneously a loss of normal and alternate power has occurred to Bus "2E" with a failure of its associated Diesel Generator to auto start.
2. The normal and alternate supply breakers for Bus "2E" are open.
3. 31RS-OPS-002-2 (Electrical Restoration) is in progress due to a Control Room evacuation.
4. A fire was NOT the cause of the Control Room evacuation.
5. The actions for D/G "2C" are being taken by other operators.

INITIATING CUES:

Manually start the "2A" Emergency Diesel Generator locally using 34AB-R43-001-2, "DIESEL GENERATOR RECOVERY."

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34AB-R43-001-2.	

PROMPT: **WHEN the operator addresses Control Power lights, INDICATE for the operator that they are EXTINGUISHED.**

2.	Confirm Control Power ON lights for Circuits 1 through 4 are illuminated.	At panel 2R43-P003A, the operator observes CONTROL POWER ON CIRCUIT lights and determines they are **NOT** illuminated for Circuits 1 through 4.	
****3.**	Evaluates what effect the lack of control power will have on starting the diesel.	Diagnoses that the diesel will not start using the electrical system and starting air must be manually applied to the diesel.	

PROMPT: **WHEN** the operator addresses restoring Control Power, **INFORM** the operator that Control Power cannot be restored and that starting the Diesel is a PRIORITY.

****4.**	Manually start the Diesel with the Air Start Manual Override Lever.	On the Diesel skid near the Air Start Solenoids, the operator USES 2R43-F099A, AIR START MANUAL OVERRIDE LEVER, TO START the Diesel Generator.	

PROMPT: **WHEN** the operator addresses Diesel indications, **INDICATE** for the operator that engine speed is greater than 250 rpm, lube oil pressure is greater than 6 psig, and the Safety Shutdown System Operative light is extinguished.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
	PROMPT: **WHEN** the operator addresses Diesel speed, **INDICATE** for the operator that Diesel speed is 900 rpm.		
5.	Confirm the Diesel Generator "2A" comes up to rated speed.	At panel 2R43-P003A, the operator VERIFIES Diesel Generator "2"A speed indicates 900 rpm on meter ENGINE RPM 2R43-R024A (accept ±50 rpm).	
	PROMPT: **WHEN** the operator addresses generator voltage, **INDICATE** for the operator that voltage is 4160 volts.		
6.	Confirm generator voltage comes up to rated voltage (4160 volts).	At panel 2R43-P001A, the operator VERIFIES generator voltage is at rated voltage 4160 volts (accept 4100 to 4400 volts).	
7.	Check local indicator readings on panel 2R43-P003A.	At panel 2R43-P003A, the operator IDENTIFIES the following local indicators and verifies readings within limits: Jacket Coolant Disch Pres is >20 psig Fuel Oil Pressure To Filter is >26 psig Fuel Oil Pressure To Engine is >10 psig Starting Air Pressure is 150 to 250 psig Raw Water Pressure is >15 psig Crankcase Vacuum is <0.5 inches H_2O Scavenging Air Pressure is >0 psig Lube Oil Pressure is >18 psig Jacket Coolant Outlet Temp is 100 to 205°F Lube Oil Temp From Engine is 130 to 230°F Engine RPM is 810 to 1000 rpm	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **WHEN** the operator identifies the following indicator, **INDICATE** for the operator the corresponding readings:

Jacket Water Pressure, 26 psig
Fuel Oil Press (Black Hand) to filter, 30 psig
Fuel Oil Press (Red Hand) from filter, 24 psig
Starting Air Pressure, 240 psig
Raw Water Pressure, 28 psig
Crankcase Vacuum, +0.3 inches H_2O
Scavenging Air Pressure, 15 psig
Lube Oil Pressure, 26 psig
Jacket Coolant Outlet Temp, 135°F
Lube Oil Temp from Engine, 140°F
Engine RPM, 900 rpm

PROMPT: **IF** the operator addresses the RAW WATER PRESS LOW annunciator, **INDICATE** that the annunciator is not alarming.

PROMPT: **IF** the operator addresses operation of other Diesel Generators, as the Shift Supervisor, **INFORM** the operator that another operator will start the remaining Diesel Generators.

PROMPT: **IF** the operator addresses restoration of 4160 VAC Emergency Bus, as the Shift Supervisor, **INFORM** the operator that this will be performed by another operator.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
ALIGN EMERGENCY NITROGEN TO DRYWELL PNEUMATICS		
AUTHOR	**MEDIA NUMBER**	**TIME**
DAVE GIDDENS	LR-JP-25028-08	16.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25028**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	11/20/97	Initial development as a result of PRA vs training analysis.	SCB	RSG
01	02/11/98	Revised typographical errors.	SCB	DHG
02	01/20/99	Revised based on evaluator comments.	SCB	DHG
03	03/20/00	Format modification, change time allowance based on running average	RAB	DHG
04	11/03/00	Include objective number	RAB	DHG
05	03/19/02	Incorporate ADY comment, correct Nitrogen pressure readings to agree with procedural requirement, add step to review the procedure, include initial operator statement	RAB	RAB
06	02/24/05	Changed procedure numbers and corrected step reference in initial conditions section of page 2 and 5.	TFP	DHG
07	06/27/05	Revised Initial License statement for successful completion	RAB	RAB
08	06/23/06	Remove Response Cues,.	RAB	RAB
09		delete reference to a fire	DHG	

UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **ALIGN EMERGENCY NITROGEN TO DRYWELL PNEUMATICS**

JPM NUMBER: LR-JP-25028-08

TASK STANDARD: The task shall be complete when the operator aligns the Emergency Nitrogen Bottles in the Reactor Building to the Drywell Pneumatic System.

TASK NUMBER: 042.005

OBJECTIVE NUMBER: 042.005.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 2.86

SRO Not Available

K/A CATALOG NUMBER: 223001A411, 295019 AA1.01

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.10, 3.5

SRO 3.00, 3.3

OPERATOR APPLICABILITY: Systems Operator (SO)

GENERAL REFERENCES:	Unit 1	Unit 2
	34SO-P70-001-1 (current versions)	34AR-700-133-2 34SO-P70-001-2 (current version)

REQUIRED MATERIALS:	Unit 1	Unit 2
	34SO-P70-001-1 (current version)	34SO-P70-001-1 (current version)

APPROXIMATE COMPLETION TIME: 16.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 has experienced a loss of the Nitrogen system.
2. The SS has decided to transfer the SRV pneumatic system to the emergency N2 bottles.

INITIATING CUES:

Align Nitrogen to SRVs from emergency temporary Nitrogen bottles per 34SO-P70-001-1.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator reviews the procedure.	The Operator REVIEWS the procedure.	

PROMPT: **WHEN** addressed by the operator, as the Shift Supervisor, **INFORM** the operator that 1P70-F004 and 1P70-F066 have been verified in the closed position on the 1H11-P700 panel.

NOTE: 1P70-A002A is on top of the Nitrogen bottle.

****2.**	Open Emergency Nitrogen bottle 1P70-A002A outlet valve 1P70-F138A.	On elev. 130RLR09, Nitrogen Bottle outlet valve 1P70-F138A handwheel is TURNED counter clockwise until it stops.	
3.	Confirm correct Nitrogen pressure on 1P70-PCV-F140.	At 130RLR09, the operator CONFIRMS 1P70-PCV-140 indicates between 100-110 psig.	
****4.**	Open Emergency Nitrogen supply header inboard isolation, 1P70-F141.	At 130RLR09, the operator TURNS 1P70-F141, Emergency Nitrogen Supply Header Inboard Isolation valve, parallel with the pipe.	
****5.**	Open Emergency Nitrogen supply isolation, 1P70-F084.	At 130RLR09, the operator TURNS 1P70-F084, Emergency Nitrogen Supply Header Inboard Isolation valve, counter clockwise until it stops.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
6.	Confirm and monitor correct Nitrogen pressure on 1P70-PCV-F140.	At 130RLR09, the operator CONFIRMS 1P70-PCV-140 indicates between 100-110 psig.	

PROMPT: **INFORM** the operator that another operator will continuously monitor nitrogen pressure and replace bottles as necessary.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 has experienced a loss of the Nitrogen system.
2. The annunciator, "DRWL PNEU SYS SUPPLY LINE PRESS LOW" has alarmed on 2H11-P700. ARP 34AR-700-133-2 has been addressed.

INITIATING CUES:

Align nitrogen to SRVs from emergency temporary Nitrogen bottles per 34SO-P70-001-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator reviews the procedure.	The Operator REVIEWS the procedure.	
****2.**	Close Drywell Pneumatic Header Isolation, 2P70-F023.	At 130RBR23, the operator TURNS 2P70-F023, Drywell Pneumatic Header Isolation valve handwheel, clockwise until it stops.	

PROMPT: **IF** the operator sends a SO to check 2P70-F021, **INFORM** the operator that the valve has been closed. 2P70-F021 is located approximately 10 feet behind the Drywell Air Receiver tank, against the wall opposite the Drywell, 5 feet above the floor.

****3.**	Close Drywell Pneumatic Header Isolation, 2P70-F021.	At 158RBR16, the operator TURNS 2P70-F021, Drywell Pneumatic Header Isolation valve handwheel, clockwise until it stops.	

NOTE: 2P70-F138A is on top of the Nitrogen bottle.

****4.**	Open Emergency Nitrogen bottle 2P70-A002A outlet valve |2P70-F138A.	At 130RBR23, the operator TURNS 2P70-F138A, Nitrogen Bottle outlet valve handwheel, counter clockwise until it stops.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
5.	Confirm correct Nitrogen pressure on 2P70-PCV-F140.	On elev. 130RBR23, confirms 2P70-PCV-140 indicates between 100-110 psig.	
****6.**	Open Nitrogen Bottles Pressure Control Valve Isolation valve, 2P70-F141.	At 130RBR23, the operator TURNS 2P70-F141, Nitrogen Bottles Pressure Control Valve Isolation valve handle, until it is parallel with the pipe.	
****7.**	Open Emergency Nitrogen to Drywell Pneumatic header isolation, 2P70-F084.	At 130RBR23, the operator TURNS 2P70-F084, Emergency Nitrogen To Drywell Pneumatic Header Isolation handwheel, counter clockwise until it stops.	
8.	Confirm and monitor correct Nitrogen pressure on 2P70-PCV-F140.	On elev. 130RBR23, confirms 2P70-PCV-140 indicates between 100-110 psig.	

PROMPT: **INFORM** the operator that another operator will continuously monitor nitrogen pressure and replace bottles as necessary.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
FROM OUTSIDE THE CONTROL ROOM, INSERT A MANUAL REACTOR SCRAM USING THE SCRAM DISCHARGE VOLUME LEVEL SWITCHES		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-10.18-14	8.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10.18**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	06/30/89	General revision and format change	JEM	SMC
02	08/07/89	Add LR lesson plan references	JEM	DHG
03	07/23/90	Format revision	JEM	DHG
04	04/25/91	General revision and format change	CME	DHG
05	08/12/92	General revision and format change	WMM	SCB
06	08/27/93	General revision, change arrangement and number of critical steps, expand note explaining use of critical steps, word processor change	RAB	RSG
07	06/10/96	Format change	RAB	DHG
08	03/28/97	Changed cover page to reflect the minimum level at which this JPM is used to evaluate Task performance.	JGK	RSG
09	02/03/00	Format modification, change time allowance based on running average	RAB	DHG
10	10/31/00	Include objective number	RAB	DHG
11	02/27/02	Include initial operator statement	RAB	RAB
12	06/01/05	Deleted "S" from procedure numbers, changed Revision and Rev. numbers to "Current Version," added PROMPT after step #4 on U2 JPM to agree with procedure, Revised Initial License statement for successful completion	BEB RAB	RAB
13	04/06/06	Remove Response Cues	RAB	RAB
14		Update KA information, critical steps	DHG	

UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **FROM OUTSIDE THE CONTROL ROOM, INSERT A MANUAL REACTOR SCRAM USING THE SCRAM DISCHARGE VOLUME LEVEL SWITCHES**

JPM NUMBER: LR-JP-10.18-14

TASK STANDARD: The task shall be completed when the operator has tripped at least one Scram Discharge Volume level switch in both RPS channels per 31RS-OPS-001.

TASK NUMBER: 010.018

OBJECTIVE NUMBER: 010.018.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.80

SRO Not Available

K/A CATALOG NUMBER: 295016G006, 295006 AA1.06

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.10, 3.5

SRO 4.10, 3.6

OPERATOR APPLICABILITY: Systems Operator (SO)

GENERAL REFERENCES:	**Unit 1**	**Unit 2**
	31RS-OPS-001-1 (current version)	31RS-OPS-001-2 (current version)

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	31RS-OPS-001-1 (current version)	31RS-OPS-001-2 (current version)

APPROXIMATE COMPLETION TIME: 8.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A condition has occurred which required the Control Room to be evacuated.
2. The Reactor is NOT shutdown.
3. 31RS-OPS-001-1, SHUTDOWN FROM OUTSIDE CONTROL ROOM, is in progress.

INITIATING CUES:

Insert a scram using the Scram Discharge Volume Level Switches.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 31RS-OPS-001-1.	
2.	Operator identifies the materials that are required.	Operator has identified the required materials and where to obtain them.	

NOTE: It is the intent of the procedure and JPM for all four level switches to be tripped. However, tripping one level switch on "A" side of RPS and one switch on "B" side of RPS will successfully complete the task. The operator should remove the cover from A & B (C & D), trip the switches and then proceed to the other set of switches. The order in which the level switches are tripped is NOT critical.

**3.	Remove the covers from SDV level switches: 1C11-N013A **AND/OR** 1C11-N013C	At location 139RER11, the cover is REMOVED from SDV level switch **1C11-N013A**, **AND/OR** At location 139RER03, the cover is REMOVED from SDV level switch **1C11-N013C**.	
**4.	Remove the covers from SDV level switches: 1C11-N013B **AND/OR** 1C11-N013D	At location 139RER11, the cover is REMOVED from SDV level switch **1C11-N013B**, **AND/OR** At location 139RER03, the cover is REMOVED from SDV level switch **1C11-N013D**.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Trip SDV level switches: 1C11-N013A **AND/OR** 1C11-N013C	At location 139RER11, SDV level switch **1C11-N013A** is TRIPPED, **AND/OR** At location 139RER03, SDV level switch **1C11-N013C** is TRIPPED.	
**6.	Trip SDV level switches: 1C11-N013B **AND/OR** 1C11-N013D	At location 139RER11, SDV level switch **1C11-N013B** is TRIPPED, **AND/OR** At location 139RER03, SDV level switch **1C11-N013D** is TRIPPED.	

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A condition has occurred which required the Control Room to be evacuated.
2. The Reactor is not shutdown.
3. 31RS-OPS-001-2, SHUTDOWN FROM OUTSIDE CONTROL ROOM is in progress.

INITIATING CUES:

Insert a scram using the Scram Discharge Volume Level Switches.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 31RS-OPS-001-2.	
2.	Operator identifies the materials that are required.	Operator has identified the required materials and where to obtain them.	

NOTE: It is the intent of the procedure and JPM for all four level switches to be tripped. However, tripping one level switch on "A" side of RPS and one switch on "B" side of RPS will successfully complete the task. The operator should remove the cover from A & B (C & D), trip the switches and then proceed to the other set of switches. The order in which the level switches are tripped is NOT critical.

****3.**	Remove the covers from SDV level switches: 2C11-N013A **AND/OR** 2C11-N013C	At location 130RBR15, the cover is REMOVED from SDV level switch **2C11-N013A**, **AND/OR** At location 130RBR23, the cover is REMOVED from SDV level switch **2C11-N013C**.	
****4.**	Remove the covers from SDV level switches: 2C11-N013B **AND/OR** 2C11-N013D	At location 130RBR15, the cover is REMOVED from SDV level switch **2C11-N013B**, **AND/OR** At location 130RBR23, the cover is REMOVED from SDV level switch **2C11-N013D**.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Trip SDV level switches: 2C11-N013A **AND/OR** 2C11-N013C	At location 130RBR15, SDV level switch **2C11-N013A** is TRIPPED, **AND/OR** At location 130RBR23, SDV level switch **2C11-N013C** is TRIPPED.	
**6.	Trip SDV level switches: 2C11-N013B **AND/OR** 2C11-N013D	At location 130RBR15, SDV level switch **2C11-N013B** is TRIPPED, **AND/OR** At location 130RBR23, SDV level switch **2C11-N013D** is TRIPPED.	

PROMPT: **WHEN** the operator addresses replacing covers on magnetrol switches, **INFORM** the operator that covers will be replaced by another operator.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
USE A SYSTEM LOGIC DIAGRAM (RCIC)		
AUTHOR	**MEDIA NUMBER**	**TIME**
DAVE GIDDENS	LR-JP-10018-00	15 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10018**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 () UNIT 2 (X)

TASK TITLE:	**USE A SYSTEM LOGIC DIAGRAM (RCIC)**
JPM NUMBER:	LR-JP-10018-00
TASK STANDARD:	The task shall be complete when the operator has determined the failure condition of a relay using Plant Hatch logic drawings.
TASK NUMBER:	100.17
OBJECTIVE NUMBER:	100.017.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.08

SRO 2.67

K/A CATALOG NUMBER: G2.1.24

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.8

SRO 3.1

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	**Unit 2**
	H 27673, H 27675, H 27679

REQUIRED MATERIALS:	**Unit 2**
	H 27673, H 27675, H 27679

APPROXIMATE COMPLETION TIME: 15 Minutes

SETUP: This JPM may be performed at any plant location , i.e. simulator, classroom, assessment room but must have a computer available and connected to the LAN, allowing the student access to plant drawing, Tech Specs, and procedures.

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is at 100% power.
2. Relay 2E51-K52A is inoperative and is de-energized.
3. All other plant components are operable.

INITIATING CUES:

Using plant logic drawings, DETERMINE the effect on the RCIC System due to a failure of relay 2E51-K52A in the de-energized state. The effect on system annunciators is not required.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs: **ALL PROCEDURE STEPS** must be completed for Satisfactory Performance.

START TIME:_____

NOTE: Means that may be used to locate the drawings include TRM LFD–2-RCIC-03, The equipment section of SYNCPOWR, or the reference section of a RCIC procedure. Other means may be used as long as the student does not obtain help from other personnel.

**1.	Operator locates appropriate logic drawings.	Operator identifies drawings H 27673, H 27675, and H 27679.	
2.	Operator identifies the contacts associated with relay 2E51-K52A which effect system equipment.	Operator locates the relay tabulation for 2E41-K52A on plant drawing H 27673.	
**3.	Operator locates and evaluates the status of relay 2E51-K52A during 100% power plant conditions.	On drawing H 27675 the operator locates relay K52A. The operator determines this relay is **energized** when CST water level in normal (not low) and therefore normally energized.	
**4.	Locate the logic drawing and location of 2E51-K52A contacts for valve 2E51-F031.	On drawing H 27679 the operator locates contacts 1-2 in the logic scheme 11, valve 2E51-F031's logic.	
**5.	Operator evaluates the function of 2E51-K52A contacts for valve 2E51-F031.	Determines that upon de-energization of the relay, contacts 1-2 close, sending a signal to 2E51-F031 to **open**.	
**6.	Locate the logic drawing and location of 2E51-K52A contacts for valve 2E51-F029.	On drawing H 27679 the operator locates contacts 3-4 in the logic scheme 14, valve 2E51-F029's logic.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**7.	Operator evaluates the function of 2E51-K52A contacts for valve 2E51-F029.	Determines that upon de-energization of the relay, contacts 3-4 close, sending a signal to 2E51-F029 to **open**.	

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
CONDUCT OF OPERATIONS, SRO ONLY		
AUTHOR	**MEDIA NUMBER**	**TIME**
DAVE GIDDENS	LR-JP-10019-00	15 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10019**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 () UNIT 2 (X)

TASK TITLE:	**CONDUCT OF OPERATIONS, SRO ONLY**
JPM NUMBER:	LR-JP-10019-00
TASK STANDARD:	This task will be met when the student determines whether the mode will change if the mode switch is transferred and whether fuel movement may occur within the core.
TASK NUMBER:	
OBJECTIVE NUMBER:	

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: G2.1.22

K/A CATALOG JTA IMPORTANCE RATING:

RO

SRO 3.3

OPERATOR APPLICABILITY: Reactor Operator (SRO)

GENERAL REFERENCES:	**Unit 2**
	Technical Specifications

REQUIRED MATERIALS:	**Unit 2**
	Technical Specifications

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit Two is shutdown for a refueling outage.
2. Unit Two is in Mode 5 with the mode switch in REFUEL.
3. The reactor head is removed with the fuel pool gates removed.
4. Core unload is in progress.
5. Reactor Mode Switch Interlock Testing requires the reactor mode switch must be transferred to the RUN position for a short period of time.

INITIATING CUES:

With respect to testing of the mode switch,

1) Does Unit Two Tech Specs allow transferring the mode switch under this condition without changing plant mode? and,
2) May fuel unload continue while the mode switch is in RUN?

Justify your answers

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs: **ALL PROCEDURE STEPS** must be completed for Satisfactory Performance.

START TIME:_____

PROMPT: If the SRO does not refer to section 3.10.2 when answering these questions, then **REQUEST** they show you, in tech specs, the bases for their answer.

**1.	DETERMINE whether the plant changes mode when the mode switch is transferred to run.	The SRO refers to tech spec section 3.10.2, Reactor Mode Switch Interlock Testing, and determines that tech spec provides for this action while considering the plant mode UNCHANGED. The answer to question 1 is "**YES**."
**2.	DETERMINE whether fuel movement (core alterations) may continue when the reactor mode switch is transferred to run.	The SRO refers to tech spec section 3.10.2 LCO, Reactor Mode Switch Interlock Testing, and determines that core alterations are **NOT** allowed under these conditions.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
CORRECT RWL INDICATORS FOR HIGH DRYWELL TEMPERATURES		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-25101-10	12 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25101**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	09/24/92	General revision and format change	WMM	RSG
02	09/22/93	General revision, word processor change	RAB	RSG
03	08/14/96	Format change, make step 4 non-critical	RAB	DHG
04	10/07/96	Modified due to procedural correction factor changes	RAB	DHG
05	03/20/00	Format modification, correct graphics, correct and update K/As, correct final values due to procedure changes	RAB	DHG
06	11/06/00	Include objective number	RAB	DHG
07	03/25/02	Include initial operator statement	RAB	RAB
08	06/27/05	Deleted "S" from procedure numbers, changed Revision and Rev. numbers to "Current Version," changed to Nuclear Plant Operator, updated to new fuel zone and wide range indicators, revised Initial License statement for successful completion.	ARB	RAB
09	07/25/06	Remove Response Cues	RAB	RAB
10		Update KA information	DHG	

UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **CORRECT RWL INDICATORS FOR HIGH DRYWELL TEMPERATURES**

JPM NUMBER: LR-JP-25101-10

TASK STANDARD: The task shall be completed when the operator has determined the corrected RWL for the specified instrumentation per 34AB-B21-002.

TASK NUMBER: 201.099

OBJECTIVE NUMBER: 201.099.B

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.57

SRO 3.83

STA 4.00

K/A CATALOG NUMBER: 216000A208, G2.1.25

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.20, 2.8

SRO 3.40, 3.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)
Shift Technical Advisor (STA)

GENERAL REFERENCES:	**Unit 1**	**Unit 2**
	34AB-B21-002-1 (current version)	34AB-B21-002-2 (current version)

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	34AB-B21-002-1 (current version)	34AB-B21-002-2 (current version)

APPROXIMATE COMPLETION TIME: 12 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Reactor has scrammed and the board operator has reported the following:

   Indicated level on 1B21-R604A and 1B21-R623A (Un-compensated reading, Wide Range) is -135 inches.

   Indicated level on 1B21-R604B and 1B21-R623B (Un--compensated reading, Wide Range) is -137 inches.

   Indicated level on 1B21-R623A (Fuel Zone) is -180 inches uncompensated.

INITIATING CUES:

Determine which of these RWL indications are valid and

Report the corrected RWL for all valid RWL instrumentation.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34AB-B21-002-1.	

NOTE: If the operator (STA) indicates that SPDS would be checked, give the operator Supplement 1.

PROMPT: **IF** the operator addresses Drywell temperature indications, **INDICATE** for the operator that temperature is greater than 150°F (Use Supplement 1 if SPDS is addressed).

**2.	Determine if RWL corrections are required.	Using SPDS (or Drywell temp indications) the operator DETERMINES: Drywell temperature is greater than 150°F. RWL corrections **ARE** required.	
3.	Review Caution 1 and Caution 2 on Attachment 1 of 34AB-B21-002-1.	The operator has REVIEWED Caution 1 and Caution 2 on Attachment 1 of 34AB-B21-002-1.	

PROMPT: **IF** the operator addresses instrument behavior, as the board operator, **INFORM** the operator that no erratic behavior for the specified instruments has been observed.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
4.	Confirm there is no indication of erratic instrument behavior.	The operator has VERIFIED, by observation or by addressing the panel operator, that the following RWL instruments show no erratic instrument behavior: 1B21-R604A 1B21-R604B 1B21-R623A (Wide Range) 1B21-R623B (Wide Range) 1B21-R623A (Fuel Zone)	

PROMPT: **WHEN** the operator indicates use of the Diagnostic screen of SPDS, **GIVE** the operator Supplement 2.

5.	Determine highest temperature for RTD Group 1 and 2 (Maximum Run Temperature).	At SPDS panel, the operator has DETERMINED the following Maximum Run Temperatures: RTD Group 1 - 260°F RTD Group 2 - 257°F	

PROMPT: **IF** the operator addresses temperature indications on Panels P654 and P657; indications can be **SIMULATED** using the values from Supplement 2.

****6.**	Determine if the RWL instrument may be used by comparing the Minimum Indicated Level for the associated Maximum Run Temperature.	The operator has DETERMINED the following RWL instruments are **INVALID**: 1B21-R604A 1B21-R604B 1B21-R623A (Wide Range) 1B21-R623B (Wide Range)	

NOTE: The 1B21-R604A & B and 1B21-R623A & B indicators are Invalid because they are below the Minimum Indicated Level per Caution 1 of Attachment 1.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**7.	Determine corrected Fuel Zone Level (1B21-R623A).	Using Attachment 3 of 34AB-B21-002-1, the operator has DETERMINED **Corrected Level** for 1B21-R623A (fuel zone) is -149 inches.	

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Reactor has scrammed and the board operator has reported the following:

   Indicated level on 2B21-R604A and 2B21-R623A (Un--compensated reading, Wide Range) is -135 inches.

   Indicated level on 2B21-R604B and 2B21-R623B (Un--compensated reading, Wide Range) is -137 inches.

   Indicated level on 2B21- R623A (Fuel Zone) is -185 inches uncompensated.

INITIATING CUES:

Determine which of these RWL indications are valid and report the corrected RWL for all valid RWL instrumentation.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34AB-B21-002-2.	

PROMPT: **IF** the operator (STA) indicates that SPDS would be checked, **GIVE** the operator Supplement 1.

PROMPT: **IF** the operator addresses Drywell temperature indications, **INDICATE** for the operator that temperature is greater than 150°F (Use Supplement 1 if SPDS is addressed).

****2.**	Determine if RWL corrections are required.	Using SPDS (or Drywell temp indications) the operator DETERMINES: Drywell temperature is greater than 150°F. RWL corrections **ARE** required.	
3.	Review Caution 1 and Caution 2 on Attachment 1 of 34AB-B21-002-2.	The operator has reviewed Caution 1 and Caution 2 on Attachment 1 of 34AB-B21-002-2.	

PROMPT: **IF** the operator addresses instrument behavior, as the board operator, **INFORM** the operator that no erratic behavior for the specified instruments has been observed.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
4.	Confirm there is no indication of erratic instrument behavior.	The operator has VERIFIED, by observation or by addressing the panel operator, that the following RWL instruments show no erratic instrument behavior: 2B21-R604A 2B21-R604B 2B21-R623A (Wide Range) 2B21-R623B (Wide Range) 2B21- R623A (Fuel Zone)	

PROMPT: **WHEN** the operator indicates use of the Diagnostic screen of SPDS, **GIVE** the operator Supplement 2.

PROMPT: **WHEN** the operator addresses temperature indications on Panels P654, P657, and P650; **INDICATE** that detector N015 is 257°F and N014 is 260°F. All other indications can be **SIMULATED** using Supplement 2.

****5.**	Determine highest temperature for RTD Group 1 and 2 (Maximum Run Temperature).	At SPDS and panel 2H11-P657, the operator has DETERMINED the Maximum Run Temperature for RTD Group 1 is 260°F. At SPDS and panel 2H11-P654, the operator has DETERMINED the Maximum Run Temperature for RTD Group 2 is 257°F.	
****6.**	Determine if the RWL instrument may be used by comparing the Minimum Indicated Level for the associated Maximum Run Temperature.	The operator has DETERMINED the following RWL instruments are **INVALID**: 2B21-R604A 2B21-R604B 2B21-R623A (Wide Range) 2B21-R623B (Wide Range)	

NOTE: The 2B21-R604A & B and 2B21-R623A & B (Wide Range) indicators are Invalid because they are below the Minimum Indicated Level per Caution 1 of Attachment 1.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**7.	Determine corrected Fuel Zone Level (2B21-R623A).	Using Attachment 3 of 34AB-B21-002-2, the operator has DETERMINED **Corrected Level** for 2B21-R623A (Fuel Zone uncompensated) is -146 inches.	

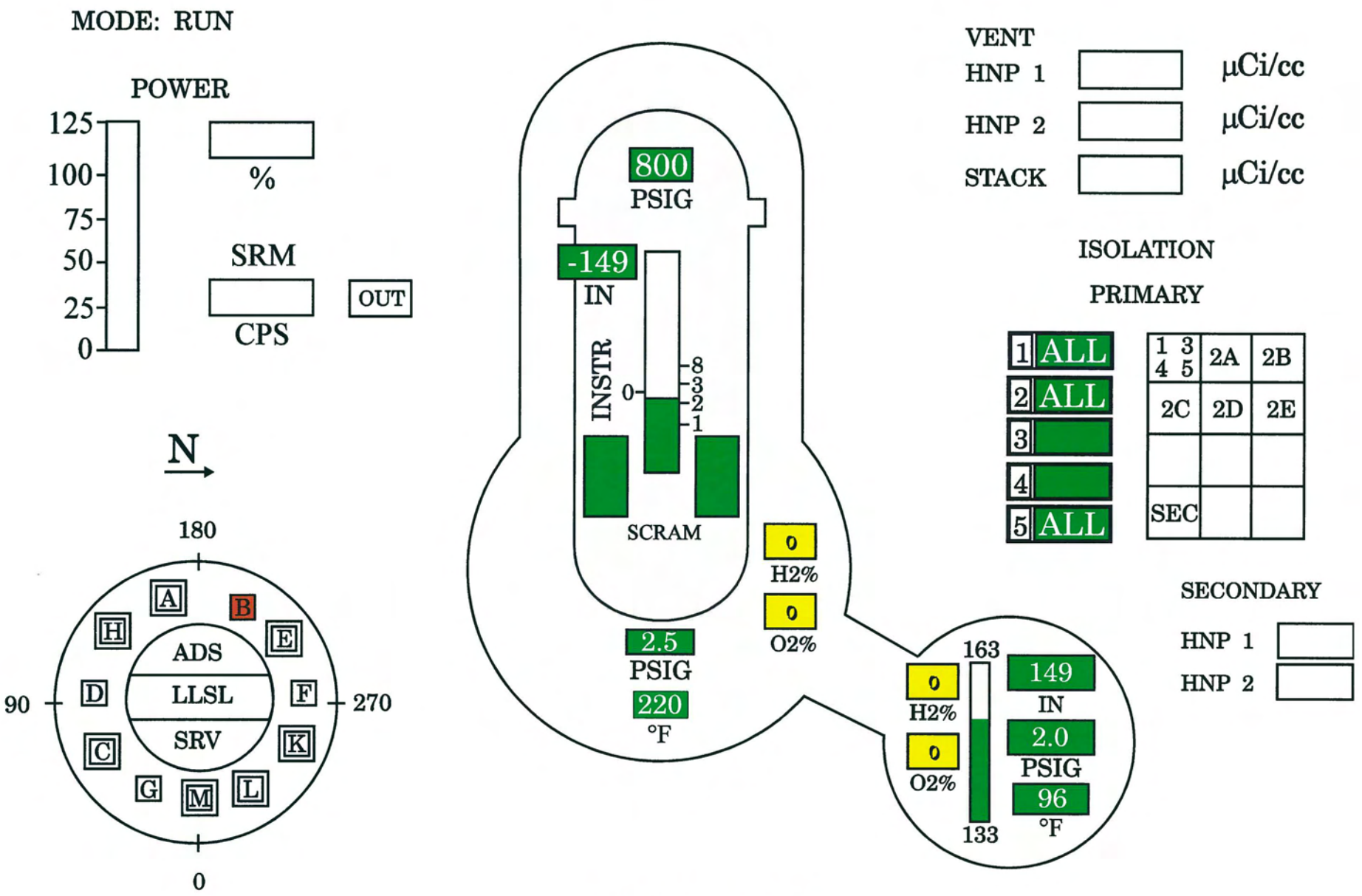
END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

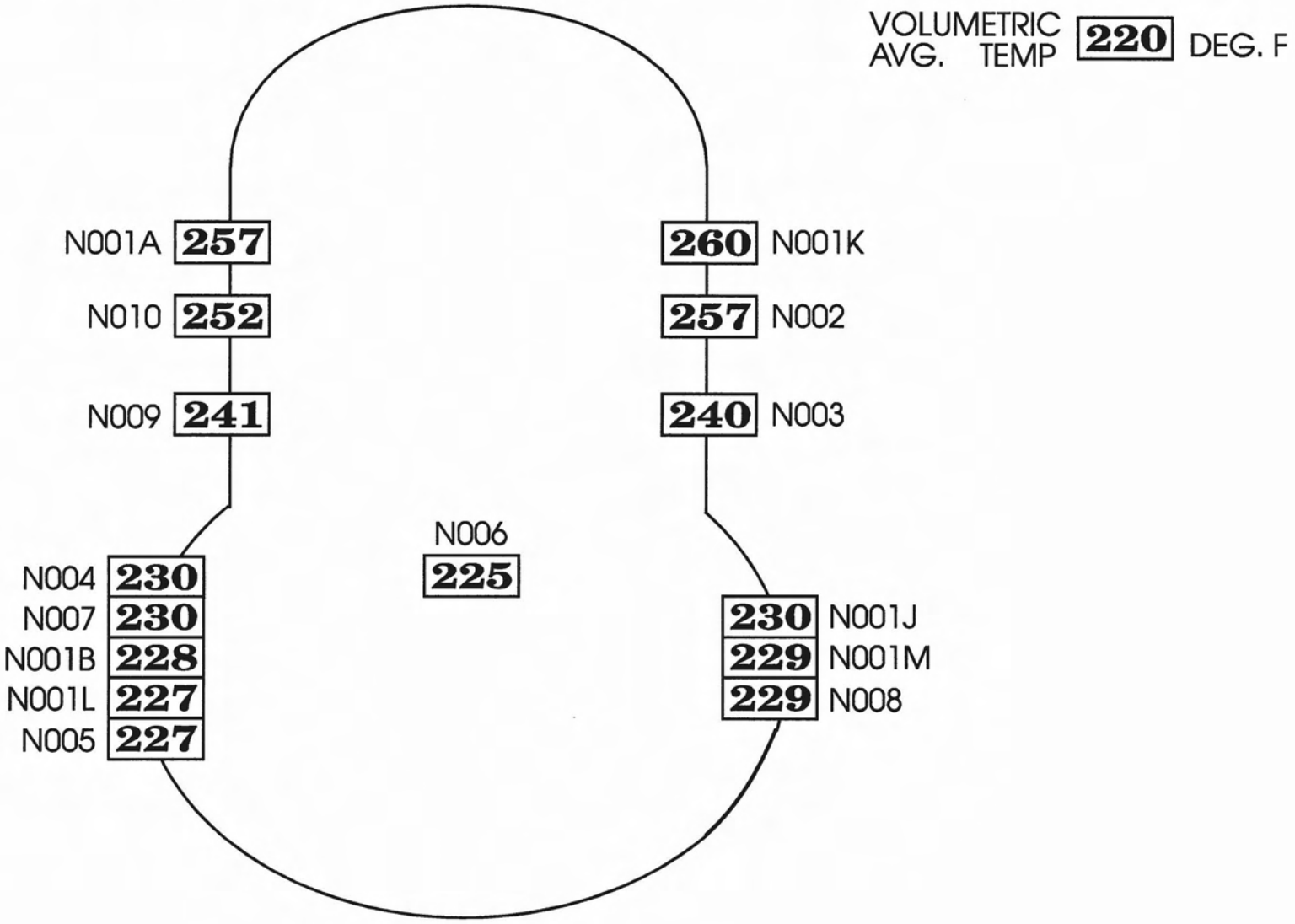
TERMINATING CUE: We will stop here.

(Indicates critical step)**



SUPPLEMENT 1

DRYWELL TEMPERATURE DIAGNOSTIC



SUPPLEMENT 2

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
EQUIPMENT CONTROL, MODE CHANGE		
AUTHOR	**MEDIA NUMBER**	**TIME**
DAVE GIDDENS	LR-JP-10021-00	15 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**

SOUTHERN COMPANY

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SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10021**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 (X) UNIT 2 ()

TASK TITLE: **EQUIPMENT CONTROL, MODE CHANGE**

JPM NUMBER: LR-JP-10021-00

TASK STANDARD: This task will be satisfactorily met when the student has evaluated the surveillance sheets and determines that the requirements to change modes has not been met and what additional requirements are needed.

TASK NUMBER:

OBJECTIVE NUMBER:

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: G 2.2.12

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.0

SRO 3.4

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	**Unit 1**
	90AC-OAM-001-0 34SV-SUV-019-1

REQUIRED MATERIALS:	**Unit 1**
	34SV-SUV-019-1

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: not applicable

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 is shutdown with the mode switch in shutdown and reactor coolant temperature is 160 degrees.
2. The current time is 0300.
3. Activities are in progress to begin plant startup with plans to transfer to startup mode at 0400 on this shift..

INITIATING CUES:

REVIEW the attached portions of 34SV-SUV-019-1, Surveillance Checks.

Considering these surveillances only, **Determine** if the proper surveillances have been completed to transfer the reactor mode switch to Startup.

Provide details for your answer.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs: **ALL PROCEDURE STEPS** must be completed for Satisfactory Performance.

PROMPT: **Give** the operator attachment 1, consisting of three sheets from 34SV-SUV-019-1,

START TIME:_____

1.	Review the three sheets of 34SV-SUV-019-1, evaluating whether all surveillances are met for transferring to mode 2.	The operator identifies the following steps must be performed **before** the plant mode is changed.
		Step 7.20.7 7.20.8 7.20.9 7.20.10
		Step 7.21.1 7.21.2 7.21.3 7.21.4 7.21.5 7.21.6
		Step 7.22.3 7.22.4 7.22.5 7.22.6 7.22.7

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

7.20	PANEL - INSTRUMENT / TECH SPEC.	NOTE	REAC MODE	FREQ	T/S OR OPER LIM	N	D
7.20.1	1H11-P925: - 1B21-N685A, Shroud RHR Wtr Lvl 0	D,X, BB	6	a	> -150 inches	-17	
	1H11-P926: - 1B21-N685B, Shroud RHR Wtr Lvl 0	D,X, BB	6	a	> -150 inches	-17	
7.20.2	Confirm Items in 7.20.1 within 30 inches (SR 3.3.3.1.1 for 3.3.3.1-1(2.a.), SR 3.3.5.1.1 for 3.3.5.1-1(2.e.))	B	6	a		√	
7.20.3	1H11-P925: - 1E11-N682A, Low Flow RHR PMP A/C	D	6	a	NA	50	
7.20.4	Confirm reading in 7.20.3 downscale IF pump OFF OR upscale IF pump running (SR 3.3.5.1.1 for 3.3.5.1-1(2.g.))	B	6	a		√	
7.20.5	1H11-P926: - 1E11-N682B, Low Flow RHR Pump B/D	D	6	a		0	
7.20.6	Confirm reading in 7.20.5 downscale IF pump OFF OR upscale IF pump running (SR 3.3.5.1.1 for 3.3.5.1-1(2.g.))	B	6	a		√	
7.20.7	*1H11-P925: - 1B21-N620C, Press Permis LLS Scram	D, BB	1,2,3	a	≤ 1060 PSIG	NA	
	*1H11-P926: - 1B21-N620D, Press Permis LLS Scram	D, BB	1,2,3	a	≤ 1060 PSIG	NA	
	1H11-P925: - 1B21-N621C, Control LLS	B,D	1,2,3	a	NA	NA	
	1H11-P926: - 1B21-N621D, Control LLS	B,D	1,2,3	a	NA	NA	
	*1H11-P925: - 1B21-N622C, Control LLS	D, BB	1,2,3	a	≤ 1060 PSIG	NA	
	*1H11-P926: - 1B21-N622D, Control LLS	D, BB	1,2,3	a	≤ 1060 PSIG	NA	
7.20.8	Confirm Items in 7.20.7 (*) within 30 PSIG (SR 3.3.6.3.1 for 3.3.6.3-1(2.))	B	1,2,3	a		NA	
7.20.9	1H11-P921: - 1B21-N686A, Hi Flow Mn Stm Ln A	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P922: - 1B21-N686B, Hi Flow Mn Stm Ln A	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P923: - 1B21-N686C, Hi Flow Mn Stm Ln A	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P924: - 1B21-N686D, Hi Flow Mn Stm Ln A	D, BB	1,2,3	a	≤ 110 PSID	NA	
7.20.10	Confirm Items in 7.20.9 within 15 PSID (SR 3.3.6.1.1 for 3.3.6.1-1(1.c.), TSR 3.3.7.1 for T3.3.7-1(3.))	B	1,2,3	a		NA	
						INITIALS	DG	
						TIME	2357	

Calculations verified _____ / _____ DATE _____

N / D

7.21	PANEL - INSTRUMENT / TECH SPEC.	NOTE	REAC MODE	FREQ	T/S OR OPER LIM	N	D
7.21.1	1H11-P921: - 1B21-N687A, Hi Flow MN STM LN B	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P922: - 1B21-N687B, Hi Flow MN STM LN B	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P923: - 1B21-N687C, Hi Flow MN STM LN B	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P924: - 1B21-N687D, Hi Flow MN STM LN B	D, BB	1,2,3	a	≤ 110 PSID	NA	
7.21.2	Confirm Items in 7.21.1 within 15 PSID (SR 3.3.6.1.1 for 3.3.6.1-1(1.c.)) (TSR 3.3.7.1 for T3.3.7-1(3))	B	1,2,3	a		NA	
7.21.3	1H11-P921: - 1B21-N688A, Hi Flow MN STM LN C	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P922: - 1B21-N688B, Hi Flow MN STM LN C	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P923: - 1B21-N688C, Hi Flow MN STM LN C	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P924: - 1B21-N688D, Hi Flow MN STM LN C	D, BB	1,2,3	a	≤ 110 PSID	NA	
7.21.4	Confirm Items in 7.21.3 within 15 PSID (SR 3.3.6.1.1 for 3.3.6.1-1(1.c.)) (TSR 3.3.7.1 for T3.3.7-1(3))	B	1,2,3	a		NA	
7.21.5	1H11-P921: - 1B21-N689A, Hi Flow MN STM LN D	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P922:: - 1B21-N689B, Hi Flow MN STM LN D	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P923: - 1B21-N689C, Hi Flow MN STM LN D	D, BB	1,2,3	a	≤ 110 PSID	NA	
	1H11-P924: - 1B21-N689D, Hi Flow MN STM LN D	D, BB	1,2,3	a	≤ 110 PSID	NA	
7.21.6	Confirm Items in 7.21.5 within 15 PSID (SR 3.3.6.1.1 for 3.3.6.1-1(1.c.)) (TSR 3.3.7.1 for T3.3.7-1(3))	B	1,2,3	a		NA	
						INITIALS	DG	
						TIME	2357	

Calculations verified _____ / _____ DATE _____

N / D

7.22	PANEL - INSTRUMENT / TECH SPEC.	NOTE	REAC MODE	FREQ	T/S OR OPER LIM	N	D
7.22.1	1H11-P921: - 1B21-N680A, RPS Wtr Lvl 3	D, BB	6	a	≥ 25"	60	
	1H11-P922: - 1B21-N680B, RPS Wtr Lvl 3	D, BB	6	a	≥ 25"	60	
	1H11-P923: - 1B21-N680C, RPS Wtr Lvl 3	D, BB	6	a	≥ 25"	60	
	1H11-P924: - 1B21-N680D, RPS Wtr Lvl 3	D, BB	6	a	≥ 25"	60	
7.22.2	Confirm Items in 7.22.1 within 6 inches (SR 3.3.6.1.1 for 3.3.6.1-1(2.a.)(6.b.), SR 3.3.1.1.1 for 3.3.1.1-1(4))	B	6	a		√	
7.22.3	1H11-P921: - 1B21-N681A, MSIV Wtr Lvl 1	D, BB	1,2,3*	a	≥ -50"	NA	
	1H11-P922: - 1B21-N681B, MSIV Wtr Lvl 1	D, BB	1,2,3*	a	≥ -50"	NA	
	1H11-P923: - 1B21-N681C, MSIV Wtr Lvl 1	D, BB	1,2,3*	a	≥ -50"	NA	
	1H11-P924: - 1B21-N681D, MSIV Wtr Lvl 1	D, BB	1,2,3*	a	≥ -50"	NA	
7.22.4	Confirm Items in 7.22.3 within 21 inches (SR 3.3.6.1.1 for 3.3.6.1-1(1.a.)(5.d.))	B	1,2,3*	a		NA	
7.22.5	1H11-P921: - 1B21-N682A, Isol Wtr Lvl 2	B,D	1,2,3*	a	NA	NA	
	1H11-P922: - 1B21-N682B, Isol Wtr Lvl 2	B,D	1,2,3*	a	NA	NA	
	1H11-P923: - 1B21-N682C, Isol Wtr Lvl 2	B,D	1,2,3*	a	NA	NA	
	1H11-P924: - 1B21-N682D, Isol Wtr Lvl 2 (SR 3.3.6.2.1 for 3.3.6.2-1(1.), (SR 3.3.6.1.1 for 3.3.6.1-1(5.d.))	B,D	1,2,3*	a	NA	NA	
7.22.6	1H11-P921: - 1B21-N678A, Hi Press Vessel	D, BB	1,2,3,	a	≤ 1060 PSIG	NA	
	1H11-P922: - 1B21-N678B, Hi Press Vessel	D, BB	1,2,3,	a	≤ 1060 PSIG	NA	
	1H11-P923: - 1B21-N678C, Hi Press Vessel	D, BB	1,2,3,	a	≤ 1060 PSIG	NA	
	1H11-P924: - 1B21-N678D, Hi Press Vessel	D, BB	1,2,3,	a	≤ 1060 PSIG	NA	
7.22.7	Confirm Items in 7.22.6 within 30 PSIG (SR 3.3.1.1.1 for 3.3.1.1-1(3.))	B	1,2	a		NA	
						INITIALS	DG	

Calculations verified _____ / _____ DATE _____ TIME 2357

N / D

(*) During OPDRV's

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM
(ADMIN- RO, SRO-I, SRO-U)

TITLE		
Radiation Exposure Calculation and Required Authorization		
AUTHOR	**MEDIA NUMBER**	**TIME**
DAVE GIDDENS	LR-JP-10020-00	15 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**

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SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10020**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**Radiation Exposure Calculation and Required Authorization.**
JPM NUMBER:	LR-JP-10020-00
TASK STANDARD:	The task shall be complete when it has been determined the job cannot be performed without exceeding annual administrative radiation exposure limits, and determining the level of approval to exceed the annual administrative radiation exposure limit.
TASK NUMBER:	N/A
OBJECTIVE NUMBER:	LT-30008.01

K/A CATALOG NUMBER: Generic 2.3.4

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.5

SRO 3.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)/ Senior Reactor Operator (SRO)

GENERAL REFERENCES:	**Unit 2**
	60AC-HPX-001-0 (current version)

REQUIRED MATERIALS:	**Unit 2**
	60AC-HPX-001-0 (current version)

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: N/A, Used for NRC Admin JPM (classroom setting)

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. You are a radiation worker at Hatch and have been assigned to perform a job in the U2 RWCU PUMP ROOM "B."
2. Your job inside the B RWCU PUMP ROOM, will take 1 hour and 20 minutes.
3. Your total exposure (TEDE) for the year so far has been confirmed to be 1850 mrem.
4. One of the radiation fields you will work in for 20 minutes is 4500 mrem/hour (gamma radiation).
5. The other radiation field that you will work in for 1 hour is 800 mrem/hour (gamma radiation).

INITIATING CUES:

Calculate the total exposure you will receive for the job.

Determine if any administrative radiation exposure limits will be exceeded.

Considering your current exposure (1850mrem) and that which will be received from this job, determine who must authorize the exposure, if anyone, IAW 60AC-HPX-001-0.

Page 3 of 5	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

START TIME:_____

PROMPT: **IF** the operator addresses other types of radiation, **STATE** that gamma radiation is the only type of radiation of concern for this particular job (no airborne, beta or alpha).

PROMPT: **IF** the operator asks whether he will receive additional exposure in transit to and from the work site, **STATE** no.

Note: If the operator addresses 8.1.2.1 which states: Prior to an individual's first work assignment in which the individual is likely to receive in excess of 2% of the limits in 8.1.1, the individual **MUST** submit a signed statement indicating the amount of occupational radiation exposure received during the current calendar year from sources of radiation possessed by other licensees. Inform the operator that this form has been signed.

****1.**	The operator calculates exposure in the 4,500 mrem/hour field.	(4,500 mrem/hr * 20 minutes)/60 min/hr = 1500 mrem.	
****2.**	The operator calculates exposure in the 800 mrem/hour field.	(800 mrem/hr * 1hr = 800 mRem.	
****3.**	The operator calculates total exposure:	1850 + 1500 mrem + 800 mrem = 4150 mRem.	
****4.**	The operator determines that the Hatch Annual Administrative Radiation Exposure limit will be exceeded while performing the work.	The Hatch Administrative limits are 2,000and 4000 mrem/year. (60AC-HPX-001-0 step 8.2.1)	

NOTE: The operator may address being on the Margin List when within 400 mRem of the administrative exposure limit. It is not necessary for the

(Indicates critical step)**

Page 4 of 5	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

operator to discuss the requirements of the margin list for this JPM.

PROMPT: **IF** the operator addresses the margin list, **STATE** that the Health Physics department is taking appropriate actions for Margin List requirements based on expected exposures for this job.

**5.	The operator determines the authorization requirements to exceed the Annual Administrative limit.	With available exposure confirmed, authorization must be written approval from Assistant General Manager or the Nuclear Plant General Manager. (Step 8.2.2)	

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training JPM

SRO ONLY

TITLE		
EMERGENCY CLASSIFICATION AND NOTIFICATION (NEW EALS)		
AUTHOR	**MEDIA NUMBER**	**TIME CRITICAL**
DAVE GIDDENS	LR-JP-25062-00	15.0/15.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25062**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials

UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **Emergency Classification and Notification (NEW EALS)**

JPM NUMBER: LR-JP-25062-00

TASK STANDARD: The task shall be completed when the event has been classified per 73EP-EIP-001-0, the ENN form (TRN-001) has been completed, and offsite notifications have been directed.

TASK NUMBER: 200.052

OBJECTIVE NUMBER: 200.052.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.67

SRO 4.04

K/A CATALOG NUMBER: Generic 2.4.41

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.30

SRO 4.0, 4.1

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	**Unit 1 & 2**
	73EP-EIP-001-0 73EP-EIP-001-0 attachment 1, 2, and 3, evaluation charts 73EP-EIP-073-0

REQUIRED MATERIALS:	**Unit 1 & 2**
	73EP-EIP-001-0 () 73EP-EIP-001-0 attachment 1, 2, and 3, evaluation charts form TRN-0001 form TRN-010

APPROXIMATE COMPLETION TIME: 15.0/15.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 is at 100% power with no problems and no inoperative equipment.
2. Unit 2 is at 100% power, the SS is addressing a fire situation.
3. As the Shift Manager you have just been notified of a fire. Operations personnel report that RHR pump, 2E11-C002B is burning with significant damage and that Core Spray pump, 2E21-C001B may also be burning.
4. The fire is believed to have started from welding in the diagonal and sabotage is NOT suspected.
5. No personnel injuries or contaminations have occurred

INITIATING CUES:

Determine the emergency classification that should be declared.

Complete the ENN form (TRN-001) for offsite notifications.

Direct the operator to make the proper offsite notifications.

Use the current time for being notified of the fire.

Current time is: _____

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

NOTE: For the completion of this JPM, there is **TWO SEPARATE CLOCKS**.

The **CLASSIFICATION** must be made within 15 minutes of the initial prompt.

When the classification is made, a second clock starts. The ENN form and direction to make the **NOTIFICATIONS MUST BE COMPLETED WITH 15 MINUTES** of that clock start.

Note: Ensure the student is given the color versions of TRN-0001 and TRN-010(ensure you **DO NOT** hand out the marked up TRN-0001 AND TRN-010 included in the back of this JPM..

1st START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 73EP-EIP-001-0.	

PROMPT: If questioned about the time the fire has been burning, REPLY that visual confirmation was received immediately preceding his/her notification. The student should not wait until the fire has lasted greater than 15 minutes as no time limit is used in this classification, but only in the NUE classification.

****2.**	Operator classified event per 73EP-EIP-001-0.	Operator has CLASSIFIED the event as an **ALERT EMERGENCY**.	

NOTE: The expected classification is an **ALERT** based on IC# HA2, FIRE OR EXPLOSION Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown. If follow-up questioning reveals that a classification was declared and based on another IC #, the classification should be evaluated for validity.

1st END TIME:_____

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: The classification **IS MADE** when the operator **STATES OR WRITES** the classification. This starts the second clock.

PROMPT: **WHEN** the operator enquires about meteorological conditions, **GIVE** the operator the MIDAS Information Sheet.

2nd START TIME:_____

**3.	Operator properly completes the ENN form per 73EP-EIP-073-0.	Operator has properly COMPLETED TRN-001, "Southern Nuclear Emergency Notification form.	

NOTE: To successfully complete the ENN form,
Steps 1 through 13 that are in red font must be properly completed.

To be properly completed, the ENN form must have all the required steps completed with correct information. Steps 4 and 13 must contain sufficient information to describe the event.

**4.	Operator directs an operator to make the ENN notifications	Operator has DIRECTED the plant operator to make the required ENN notifications.	

2nd END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

MIDAS INFORMATION

METEOROLOGICAL

10M WIND SPD	100M WIND SPD	10M WIND DIR	100M WIND DIR
1Y33-R601	1Y33-R603	1Y33-R601	1Y33-R603
5.0	5.0	130	130

AMBIENT TEMP	DELTA T	DELTA T	RAINFALL
(F) 10M	60-10	100-10	15 MIN. AVG
54	-1.6	-2.9	.000

RADIOLOGICAL

MAIN STACK		U1 RX. BLDG. VENT		U2 RX. BLDG. VENT	
NORMAL RANGE	KAMAN	NORMAL RANGE	KAMAN	NORMAL RANGE	KAMAN
1D11-K600A	1D11-R631	1D11-K619A	1D11-R631	2D11-K636A	2D11-R631
2.00E 01		5.04E 01		4.00E 01	
1D11-K600B		1D11-K619B		2D11-K636B	
2.00E 01				4.00E 01	

STABILITY CLASS
D

NOTE:	Events should be classified based on meeting the IC and a TV for an EAL considering each unit independently. If both units are in concurrent events, then the highest classification must be made and used for the offsite notifications with the other unit events noted on the emergency notification form.

1. Select the affected unit's operating mode:

   ✓ Mode 1, 2 or 3 (go to step # 2)
   ☐ Mode 4, 5 or DEFUELED (go to step # 4)

2. Evaluate the status of the fission product barriers using Attachment 1 of procedure 73EP-EIP-001-0.

   a. Select the condition for each fission product barriers:

Fuel Cladding Integrity	☐ LOSS	☐ POTENTIAL LOSS	✓ INTACT
Reactor Coolant System	☐ LOSS	☐ POTENTIAL LOSS	✓ INTACT
Containment Integrity	☐ LOSS	☐ POTENTIAL LOSS	✓ INTACT

   b. Determine the highest applicable fission product barrier Initiating Condition (IC):

   (select one) ☐ **FG1** ☐ **FS1** ☐ **FA1** ☐ **FU1** ✓ **None**

NOTE:	Determination of the initiating condition and associated threshold value is based on events which are in progress, past events, and their impact on the current plant conditions.

3. Using Attachment 2 of procedure 73EP-EIP-001-0, evaluate and determine the highest applicable "HOT" IC and associated Threshold Value (TV). **NEXT**, go to step 5.

   IC# HA2 **or** ☐ **None**

4. Using Attachment 3 of procedure 73EP-EIP-001-0, evaluate and determine the highest applicable "COLD" IC and associated TV. **NEXT**, go to step 5.

   IC# _____ **or** ✓ **None**

5. Check the **highest** emergency classification level identified from **EITHER** step 2 or 3 **OR** step 4:

(select one)	**Classification based on IC#**
☐ Notification of Unusual Event	_____
✓ Alert Emergency	HA2
☐ Site-Area Emergency	_____
☐ General Emergency	_____

6. **IC Description**: Fire affecting the operability of systems required to establish or maintain safe shutdown . The fire is affecting emergency core cooling systems in the Unit 2 Reactor Building. Or a similar description

7. **Emergency Declaration:** today (DATE) current (TIME)

   Emergency Director Signature: _____

1. ✓ DRILL [B] ACTUAL EVENT MESSAGE # _____

2. ✓ INITIAL [B] FOLLOW-UP NOTIFICATION: TIME_____ DATE____/____/____ AUTHENTICATION # N/A

3. SITE: **HATCH NUCLEAR PLANT** Confirmation Phone # CR or TSC - **(912) 366-2000 ext.** _____
EOF – **(205) 992-6586**

4. **EMERGENCY CLASSIFICATION:** [A] UNUSUAL EVENT ✓ ALERT [C] SITE AREA EMERGENCY [D] GENERAL EMERGENCY

BASED ON EAL # HA2 EAL DESCRIPTION: _____

Fire affecting the operability of systems required to establish or maintain safe shutdown . The fire is affecting emergency core cooling systems in the Unit 2 Reactor Building Or a similar description

5. **PROTECTIVE ACTION RECOMMENDATIONS:** ✓ NONE

[B] EVACUATE _____

[C] SHELTER _____

[D] Advise Remainder of EPZ to monitor local radio/TV stations/Tone Alert Radios for additional information and CONSIDER THE USE OF KI (POTASSIUM IODIDE) IN ACCORDANCE WITH STATE PLANS AND POLICY.

[E] OTHER _____

6. **EMERGENCY RELEASE:** ✓ None [B] Is Occurring [C] Has Occurred

7. RELEASE SIGNIFICANCE: ✓ Not applicable [B] Within normal operating limits [C] Above normal operating limits [D] Under evaluation

8. EVENT PROGNOSIS: [A] Improving [B] Stable ✓ Degrading

9. METEOROLOGICAL DATA: Wind Direction from 130 degrees Wind Speed 5 mph

Precipitation 0 Stability Class [A] [B] [C] ✓ [E] [F] [G]

10. ✓ DECLARATION [B] TERMINATION Time CURRENT Date ____/____/____

11. AFFECTED UNIT(S): [1] ✓ [All]

12. UNIT STATUS: (Unaffected Unit(s) Status Not Required for Initial Notifications)
[A] U1 100 % Power Shutdown at Time _____ Date ___/____/___
[B] U2 100 % Power Shutdown at Time _____ Date ___/____/___

13. REMARKS: _____

CAN VARY WITH THE STUDENT

FOLLOW-UP INFORMATION (Lines 14 through 16 Not Required for Initial Notifications)

EMERGENCY RELEASE DATA. NOT REQUIRED IF LINE 6 A IS SELECTED.

14. RELEASE CHARACTERIZATION: TYPE: [A] Elevated [B] Mixed [C] Ground UNITS: [A] Ci [B] Ci/sec [C] µCi/sec

MAGNITUDE: Noble Gases:_____ Iodines:_____ Particulates:_____ Other: _____

FORM: [A] Airborne Start Time _____ Date ___/____/____Stop Time _____ Date ___/____/____

[B] Liquid Start Time _____ Date ___/____/____Stop Time _____ Date ___/____/____

15. PROJECTION PARAMETERS: Projection period: _____Hours Estimated Release Duration _____Hours

Projection performed: Time _____ Date ___/____/____ Accident Type: _____

16. PROJECTED DOSE:

DISTANCE	TEDE (mrem)	Adult Thyroid CDE (mrem)
Site boundary		
2 Miles		
5 Miles		
10 Miles		

17. APPROVED BY: student signature Title emergency director Time _____ Date___/____/____

NOTIFIED BY: _____

RECEIVED BY: _____ Time _____ Date___/____/____
(To be completed by receiving organization)

DRAFT

Facility: Plant E. I. Hatch
Examination Level: RO/SRO
Date of Examination: 12/03/2007 – 12/07/2007
Operating Test Number: _____

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	(Based on JPM 25101) Determine the effect of the failure of a relay on system performance. G 2.1.24 (RO 2.8/ SRO 3.1) JPM 10018
Conduct of Operations **SRO only**	N, R	Given a set of conditions, Determine the current Reactor mode and if Core Alterations can be performed. (G2.1.22) (SRO 3.3) JPM 10019
Conduct of Operations **RO only**	D, S/R	JPM 25101 - Correct Reactor Water Level for high drywell temperatures. G 2.1.25 (RO 2.8/ SRO 3.1)
Equipment Control	N S/R	With the Unit preparing to change from Mode 4 to Mode 2 in 6 hours, Determine if selected sections of the Control Room Surveillance checks has been completed correctly for proceeding to Mode 2. G 2.2.12 (RO 3.0/SRO 3.4) JPM 10021
Radiation Control	M, R	Given a set of exposure conditions, determine the minimum level of authorization required to allow a worker to perform work which will exceed administrative exposure limits. G2.3.4 (RO 2.5/SRO 3.1) JPM 10020
Emergency Plan **SRO only**	M, S/R	Given Plant Conditions, Determine the Emergency Classification and complete the ENN Form (Based on NEI 99-01 EAL scheme.) G2.4.29 (SRO 4.0) JPM 25062

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.

* Type Codes & Criteria:
(C)ontrol room, (S)imulator, or Class(R)oom
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)