Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

SIM 1 DRAFT RO & SRO-I

TITLE		
INJECT SBLC (WITH A PUMP TRIP & VALVE FAILURE)		
AUTHOR	**MEDIA NUMBER**	**TIME CRITICAL**
Anthony Ball	2011-301 SIM-1	Before Exceeding the HCTL
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

SOUTHERN COMPANY

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FORM TITLE: TRAINING MATERIAL REVISION SHEET	

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 SIM-1**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Reworded Initating Cue and added 2B SBLC pump malfunction and Event Trigger to Simulator Setup. This JPM originated from LR-JP-25011.	ARB	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**INJECT SBLC (WITH A PUMP TRIP & VALVE FAILURE)**
JPM NUMBER:	2011-301 SIM-1
TASK STANDARD:	The task shall be completed when the SBLC System is injecting to the Reactor, and Reactor power is decreasing per 34SO-C41-003-2.
TASK NUMBER:	011.002
OBJECTIVE NUMBER:	011.002.C

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 211000A201

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.50

SRO 3.80

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	31EO-EOP-011-2 34SO-C41-003-2 (current versions)

REQUIRED MATERIALS:	**Unit 2**
	34SO-C41-003-2 (current version) Key for Standby Liquid Control Key switch (located in panel)

APPROXIMATE COMPLETION TIME: Before Exceeding the HCTL

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #113 or SNAP 611** and leave in **FREEZE**.

2. **INSERT** the following **MALFUNCTIONS/EVENT TRIGGERS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfC11_211	Scram Discharge Volume ATWS	60	10000	00000
mfB21_247A	Spurious Group I Isolation A Side			3
mfB21_247B	Spurious Group I Isolation B Side			00000
mfC41_240A	SBLC Pump 2A Failure to Start			00000
mfC41_240B	SBLC Pump 2B Failure to Start			00000
mfG31_207B	2G31-F004 Fails to Isolate on Group 5			00000

Trigger #	Description	Conditions	Expert Command
C41-1	Prevents 1st pump (if "A") attempted; deletes 2nd pump malfunction (Simulate pump trip)		
C41-2	Prevents 1st pump (if "B") attempted; deletes 2nd pump malfunction (Simulate pump trip)		

3. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS OR RUN SCENARIO FILE** and **EVENT TRIGGER** (current rev) **JPM CR-SIM 1 2011-301.**

   A. Place the MSIV control switches in CLOSE.
   B. Allow the simulator to run until Torus temperature reaches approximately 106°F.
   C. Acknowledge annunciators.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Unit 2 Reactor scram has occurred and control rods cannot be inserted. Reactor power is greater than 10%.
2. All MSIVs are closed.
3. Torus water temperature is approaching 110°F.
4. 31EO-EOP-011-2 (RCA) is in progress.

INITIATING CUES:

Inject boron into the Reactor with the SBLC System per 34SO-C41-003-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator identifies the materials that are required.	Operator has identified the required materials and where to obtain them.	SAT / UNSAT / NA
2.	Place SBLC Pump Select Switch to start system A (B) position.	At panel 2H11-P603, SBLC PUMP SELECT SWITCH (keylock) is in START SYS A (B) position.	SAT / UNSAT / NA

NOTE: The 1st Standby Liquid Control System pump switch selected is failed and the SBLC System will remain in the Standby lineup.
Event Trigger **C41-1 & C41-2** will remove the 2nd pump failure.

3.	Confirm/verify Squib Valve Ready indicating lights are extinguished and SBLC Loss of Continuity to Squib Valve annunciator is alarmed.	At panel 2H11-P603, the operator has VERIFIED the following: SQUIB VLV READY amber indicating lights are EXTINGUISHED. SBLC LOSS OF CONTINUITY TO SQUIB VALVE (603-152) annunciator has ALARMED.	SAT / UNSAT / NA
4.	Confirm SBLC pump has started.	At panel 2H11-P603, the operator has DETERMINED the selected SBLC PUMP has NOT started, green light illuminated.	SAT / UNSAT / NA

NOTE: If the operator does not recognize the selected SBLC Pump did not start the operator may try to complete the JPM at Step 9.

PROMPT: **IF** the operator notifies the Shift Supervisor of SBLC pump failure, as the Shift Supervisor, **DIRECT** the operator to respond to the failure using procedure 34SO-C41-003-2.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Place SBLC Pump Select Switch to start system B (A) position.	At panel 2H11-P603, SBLC PUMP SELECT SWITCH (keylock) is in START SYS B (A) position.	SAT / UNSAT / NA
6.	Confirm/verify Squib Valve Ready indicating lights are extinguished and SBLC Loss of Continuity to Squib Valve annunciator is alarmed.	At panel 2H11-P603, the operator has VERIFIED the following: SQUIB VLV READY amber indicating lights are EXTINGUISHED. SBLC LOSS OF CONTINUITY TO SQUIB VALVE (603-152) annunciator has ALARMED.	SAT / UNSAT / NA
7.	Confirm SBLC pump has started.	At panel 2H11-P603, the operator VERIFIES the STANDBY LIQUID CNTL PUMP 1-2 RUNNING, red light illuminated.	SAT / UNSAT / NA
8.	Confirm RWCU valve 2G31-F004, closes.	At panel 2H11-P601, the operator VERIFIES RX WATER CLEANUP VLV, 2G31-F004, has NOT CLOSED, red light illuminated.	SAT / UNSAT / NA
9.	Place RWCU valve 2G31-F004, switch to close.	At panel 2H11-P601, 2G31-F004 switch, placed to the CLOSE position.	SAT / UNSAT / NA
10.	Confirm RWCU valve 2G31-F004, is close.	At panel 2H11-P601, the operator VERIFIES RX WATER CLEANUP VLV, 2G31-F004, has CLOSED, green light illuminated.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
11.	Confirm that SBLC solution is being injected into the reactor vessel by observing the following: SBLC tank level is decreasing. SBLC pressure is greater than Reactor pressure. Reactor power is decreasing.	At panel 2H11-P603, the operator has VERIFIED SBLC solution is being injected into the reactor vessel by identifying the following: SBLC tank level is DECREASING as indicated by meter 2C41-R601, TANK LEVEL. SBLC pressure is GREATER than Reactor pressure as indicated by meter 2C41-R600, DISCH PRESS. Reactor power is DECREASING as indicated on neutron monitoring instrumentation.	SAT / UNSAT / NA

PROMPT: **WHEN** the operator addresses SBLC tank level, **INDICATE** for the operator that level is decreasing slowly, but is greater than 20%.

PROMPT: **WHEN** the operator addresses SBLC pressure, **INDICATE** for the operator that SBLC pressure is greater than Reactor pressure.

NOTE: APRM recorders at panel 2H11-P603 or SPDS can be used to verify Reactor power is decreasing.

PROMPT: **WHEN** the operator addresses neutron monitors for power trend, **INDICATE** for the operator that Reactor power is decreasing.

END TIME:_____

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

- The operator exceeds the Heat Capacity Temperature Limit.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

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Operations Training
JPM

SIM 2 DRAFT RO & SRO-I

TITLE		
WITH AN EMERGENCY DEPRESS REQUIRED, TERMINATE AND PREVENT CONDENSATE/FEEDWATER		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 SIM-2	8.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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FORM TITLE: TRAINING MATERIAL REVISION SHEET	

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 SIM-2**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Modified from LR-JP-20102 for NRC Exam 2011-301.	ARB	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**WITH AN EMERGENCY DEPRESS REQUIRED, TERMINATE AND PREVENT CONDENSATE/FEEDWATER**
JPM NUMBER:	2011-301 SIM-2
TASK STANDARD:	The task shall be complete when the operator has terminated and prevented the Condensate and Feedwater injection systems per 31EO-EOP-113-2.
TASK NUMBER:	201.101
OBJECTIVE NUMBER:	201.101.A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 295037EA202

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.10

SRO 4.20

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	31EO-EOP-017-2 (current version) 31EO-EOP-113-2 (current version)

REQUIRED MATERIALS:	**Unit 2**
	31EO-EOP-113-2 (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 (75%) **IC #111 or SNAP 612** and leave in **FREEZE**.

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

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfC11_211	Scram Discharge Volume ATWS (Var)	55	1000	00000
mfN37_134	All Bypass Valves Fail Closed			00000
mfN30_122	Main Turbine Trip			5

3. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS OR RUN SCENARIO FILE** and **EVENT TRIGGER** (current rev) **JPM CR-SIM 2 2011-301**

   A. Ensure Malfunction mfC11_211 is active.
   B. Activate Malfunction mfN30_122.
   C. Inhibit ADS.
   D. Inject SBLC.
   E. Continue to run the simulator until Torus temperature reaches 110°F.
   F. Ensure HPCI is NOT running and Aux Oil Pump is in PULL TO LOCK OFF.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. An ATWS condition exists and Reactor power is greater than 5%.
2. Torus temperature has increased and the plant is in the UNSAFE region of the Boron Injection Initiation Temperature Curve.
3. RWL is above TAF.
4. SRVs are open and controlling pressure with Low-Low Set.
5. EMERGENCY DEPRESS IS REQUIRED
6. 31EO-EOP-017-2 (CP-3) is in progress.

INITIATING CUES:

Terminate and prevent Condensate and Feedwater injection per 31EO-EOP-113-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **IF** the operator addresses RHR and Core Spray Systems, as the Shift Supervisor, **INFORM** the operator that another operator will terminate and prevent those systems.

1.	Operator obtains the procedure needed to perform the task.	Operator has obtained 31EO-EOP-113-2.	SAT / UNSAT / NA
****2.**	Operator trips Feedwater Pump 2B.	At panel 2H11-P650, the operator PLACES 2B RESET-TRIP 2N21-C005B, to TRIP, red permissive light extinguished while in TRIP and RFPT 2B TRIP annunciator illuminated.	SAT / UNSAT / NA

NOTE: For Steps 3, 4 & 5, it is permissible for the operator to place the pumps in PULL-TO-LOCK STOP after tripping them.

****3.**	Operator trips 2A Condensate Booster Pump.	At panel 2H11-P650, the operator PLACES 2N21-C002A, CONDENSATE BOOSTER PUMP, to TRIP, green light illuminated.	SAT / UNSAT / NA
****4.**	Operator trips 2B Condensate Booster Pump.	At panel 2H11-P650, the operator PLACES 2N21-C002B, CONDENSATE BOOSTER PUMP, to TRIP, green light illuminated.	SAT / UNSAT / NA
****5.**	Operator trips 2C Condensate Booster Pump.	At panel 2H11-P650, the operator PLACES 2N21-C002C, CONDENSATE BOOSTER PUMP, to TRIP, green light illuminated.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: For Steps 6, 7 & 8, it is permissible for the operator to place the pumps in PULL-TO-LOCK STOP after tripping them.

NOTE: For Steps 6, 7 & 8, it is permissible for the operator to chose which Condensate Pump will be left in service, and therefore, will ONLY perform TWO (2) of the THREE (3) CRITICAL steps below.

****6.**	Operator trips 2A Condensate Pump.	At panel 2H11-P650, the operator PLACES 2N21-C001A, CONDENSATE PUMP, to TRIP, green light illuminated.	SAT / UNSAT / NA
****7.**	Operator trips 2B Condensate Pump.	At panel 2H11-P650, the operator PLACES 2N21-C001B, CONDENSATE PUMP, to TRIP, green light illuminated.	SAT / UNSAT / NA
****8.**	Operator trips 2C Condensate Pump.	At panel 2H11-P650, the operator PLACES 2N21-C001C, CONDENSATE PUMP, to TRIP, green light illuminated.	SAT / UNSAT / NA

9.	Confirms 2N21-F110, S/U LEVEL CONTROL BYPASS, is closed.	At panel 2H11-P650, the operator CONFIRMS 2N21-F110, S/U LEVEL CONTROL BYPASS, green light ONLY illuminated.	SAT / UNSAT / NA
****10.**	Closes 2N21-F125, S/U LEVEL CONTROL ISOL.	At panel 2H11-P650, the operator places the control switch for 2N21-F125, S/U LEVEL CONTROL ISOL, to CLOSE.	SAT / UNSAT / NA

PROMPT: **IF** the operator addresses System realignment, 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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Operations Training
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SIM 3 DRAFT RO & SRO-I

TITLE		
REACTOR PRESSURE CONTROL WITHIN BAND WITH BPVs & SRVs		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 SIM-3	20 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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FORM TITLE: TRAINING MATERIAL REVISION SHEET	

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 SIM-3**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Initial development for use on 2011-301 NRC Exam.	ARB	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**REACTOR PRESSURE CONTROL WITHIN BAND WITH BPVs & SRVs**
JPM NUMBER:	2011-301 SIM-3
TASK STANDARD:	The task will be completed when the operator is controlling Reactor pressure in a band using SRVs per 34SO-B21-001-2.
TASK NUMBER:	200.034
OBJECTIVE NUMBER:	200.034.C

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 239002A4.01

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.10

SRO 3.20

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	34SO-N30-001-2 (current version) 34SO-B21-001-2 (current version)

REQUIRED MATERIALS:	**Unit 2**
	34SO-N30-001-2 (current version) 34SO-B21-001-2 (current version)

APPROXIMATE COMPLETION TIME: 20 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #113 or Snap 613** and leave in **FREEZE**.

2. **INSERT** the following **MALFUNCTIONS and EVENT TRIGGERS:**

KEY	MALF #	DESCRIPTION	FINAL	RAMP	DELAY
RB-1	mfN37_134	ALL Bypass Valves Fail CLOSED			9999
	mfB21_129M	Steam Relief Valve 2M Fails CLOSED			0000
	mfE41_104	HPCI Turbine Trip			0000
	mfE51_110	RCIC Turbine Trip			0000
	mfN21_87A	Feedwater Pump A Trip			0000
	svoB21053	PT-N127A SRV Electrical open	1250	1000	0000
	svoB21054	PT-N127B SRV Electrical open	1250	1000	0000
	svoB21055	PT-N127C SRV Electrical open	1250	1000	0000
	svoB21056	PT-N127D SRV Electrical open	1250	1000	0000
	mfB21_129A	SRV A Fails Stuck			0000
	mfB21_129B	SRV B Fails Stuck			0000
	mfB21_129C	SRV C Fails Stuck			0000
	mfB21_129D	SRV D Fails Stuck			0000
	mfB21_129E	SRV E Fails Stuck			0000
	mfB21_129F	SRV F Fails Stuck			0000
	mfB21_129G	SRV G Fails Stuck			0000
	mfB21_129H	SRV H Fails Stuck			0000
	mfB21_129K	SRV K Fails Stuck			0000
	mfB21_129L	SRV L Fails Stuck			0000
	mfB21_129M	SRV M Fails Stuck			0000

3. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS OR RUN SCENARIO FILE** and **EVENT TRIGGER** (current rev) **JPM CR-SIM 3 2011-301:**

A. Insert a manual scram and ONCE RWL increases to normal insert mfN21_87A
B. Insert Malfunction mfB21_129M.
C. Perform RC-1 and RC-2 actions such that the 2N21-F110 is closed and the SULCV is in auto and set at +20".
D. Perform TC-1; ensuring 2N11-F004A and B are closed.
E. Lower Pressure Set to 825 psig.
F. Ensure Reactor pressure stabilizes at ~825 psig.
G. Ensure Bypass Valve screen is called up.

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

5. **ESTIMATED** Simulator **SETUP TIME**: **15 minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 Reactor has been scrammed.
2. Other operators are performing scram actions.
3. A Reactor pressure reduction is required due to an unisolable steam leak in the Reactor Building.
4. You are assigned Reactor Pressure control.

INITIATING CUES:

LOWER AND THEN MAINTAIN Reactor pressure between 700 and 800 psig using the Bypass Valves as the preferred method.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator identifies the procedure needed to perform the task.	Operator has obtained procedure 34GO-OPS-013-2, step 7.5.5 or uses Placard at Turbine Panel.	SAT / UNSAT / NA

NOTE: For Steps 2 through 8 all indication will be on panel 2H11-P650 using HMI Screens 2N32-K4001A or B.

2.	**Selects** ***Control*** / ***psi-load*** screen	"*psi-load" displayed on 2N32-K4001A or B.	SAT / UNSAT / NA
3.	**Selects** ***Ramp Rate*** button	"*Ramp Rate" displayed on 2N32-K4001A or B.	SAT / UNSAT / NA

NOTE: An acceptable Ramp Rate results in a cooldown rate NOT exceeding 100ºF/hr OR RWL exceeding 100 inches.

****4.**	**Enters** a ramp rate	A ramp rate >0 and <100 displayed on 2N32-K4001A or B.	SAT / UNSAT / NA
****5.**	**Selects** ***Pressure*** button	"*Pressure" displayed on 2N32-K4001A or B.	SAT / UNSAT / NA
****6.**	**Enters** desired target pressure	A target pressure between 700 and 800 psig displayed on 2N32-K4001A or B.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**7.	**Adjusts *Ramp Rate* AND/OR the *Pressure* setpoints as necessary to maintain a cooldown rate ≤100° F/Hr OR RWL exceeding 100 inches.	Ramp rate/pressure changed on 2N32-K4001A or B.	SAT / UNSAT / NA

NOTE: **ALTERNATE PATH** starts here.

NOTE: **SIMULATOR OPERATOR**, **WHEN** the operator has successfully opened Bypass Valves (BPVs) and reactor pressure is being reduced AND with the Chief Examiners approval, **ENTER RB-1** malfunction which FULLY CLOSES ALL Bypass Valves.

8.	The failure of ALL BPVs is recognized.	Operator identifies all BPVs closed on 2N32-K4001A or B.	SAT / UNSAT / NA

PROMPT: **IF** the operator reports the failure of the BPVs, **INFORM** the operator that you will get Maintenance to investigate, and to continue control Reactor pressure in the band.

PROMPT: **IF** alarm 650-124, Max Combined Flow Limit Limiting, is received, **INFORM** the operator that another operator will address the ARP.

PROMPT: **IF** the operator addresses using other systems to control Reactor pressure, **INFORM** the operator to use SRVs.

NOTE: The operator can use any of the following procedures to control reactor pressure:

- Placard on 2H11-P602 panel
- 34SO-B21-001-2, Automatic Depressurization (ADS) And Low-Low Set (LLS) Systems
- 31EO-EOP-107, Alternate RPV Pressure Control

9.	Operator identifies applicable procedures to perform the task.	Operator has IDENTIFIED the correct procedure as: Placard on 2H11-P602 panel 34SO-B21-001-2, or 31EO-EOP-107.	SAT / UNSAT / NA

PROMPT: **IF** the operator addresses using the Placard sequence for opening the SRVs, **DIRECT** the operator to follow the procedure.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: The 2B21-F013M fails to open with the switch.

10.	Attempts to OPEN SRV 2B21-F013M.	At Panel 2H11-P602, the operator attempts to OPEN 2B21-F013M.	SAT / UNSAT / NA
****11.**	The failure of the 2B21-F013M to open is recognized.	At 2H11-P602, the operator RECOGNIZES the failure of the 2B31-F013M to open.	SAT / UNSAT / NA

PROMPT: **IF** the operator reports the failure of the 2B21-F013M to open, **INFORM** the operator that you will get Maintenance to investigate, and to continue control Reactor pressure in the band.

NOTE: LLS may arm if Reactor pressure is >1074 psig.

****12.**	OPEN SRV 2B21-F013B prior to 1250 psig.	At Panel 2H11-P602, the operator OPENS 2B21-F013B.	SAT / UNSAT / NA

PROMPT: **IF** the operator addresses checking SRV tailpipe temperature on recorder 2B21-R614, at Panel 2H11-P614, **INFORM** the operator that another operator will check the recorder for proper SRV operation.

****13.**	Reactor pressure in band: 700 to 800 psig	The operator CONTROLS pressure in band: 700 to 800 psig (±50 psig)	SAT / UNSAT / NA
****14.**	Before Reactor decreases below 700 psig, CLOSE SRV 2B21-F013B	At panel 2H11-P602 the operator CLOSES 2B21-F013B by taking the switch to the CLOSE position prior to Reactor pressure lowering below its band (-50 psig).	SAT / UNSAT / NA

NOTE: **AFTER** the operator has demonstrated proper control of Reactor pressure, **INFORM** the operator that another operator will continue maintaining Reactor pressure in band.

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

SIM 4 DRAFT RO ONLY

TITLE		
PLACE RCIC IN PRESSURE CONTROL MODE		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 SIM-4	10 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**

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FORM TITLE: TRAINING MATERIAL REVISION SHEET	

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 SIM-4**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Initial development for use on 2011-301 NRC Exam.	ARB	

UNIT 1 () UNIT 2 (X)

TASK TITLE:	**PLACE RCIC IN PRESSURE CONTROL MODE**
JPM NUMBER:	2011-301 SIM-4
TASK STANDARD:	The task will be met when RCIC has been placed in pressure control mode.
TASK NUMBER:	005.015
OBJECTIVE NUMBER:	005.015.A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 206000A4.06

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.9

SRO 3.8

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 **IC #107 or Snap 614** 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
rfE51_155		RCIC TORUS SUCTION BYPASS	OVRD	0000

6. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS OR RUN SCENARIO FILE** and **EVENT TRIGGER** (current rev) **JPM CR-SIM 4 2011-301:**

   A. 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 RCIC 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 RCIC High Torus Level Suction Swap has been over-ridden per 31EO-EOP-100-2.

INITIATING CUES:

Place RCIC in Pressure Control Mode per 31EO-EOP-107-2, "ALTERNATE RPV PRESSURE CONTROL" and control reactor pressure between 500 and 800 psig.

START TIME:_____

1.	Resets the RCIC initiation signal, IF the RCIC initiation cannot be reset, THEN do NOT perform this section.	Confirm a RCIC initiation signal does not exist by verifying the RCIC auto initiation light is not illuminated On 2H11-P602.	SAT / UNSAT / NA
2.	IF RCIC system isolation has occurred and the isolation signal has cleared, THEN take RCIC Auto Isolation Signal A and B switches to RESET. OR IF RCIC system isolation has occurred and CANNOT be reset, DO NOT continue with this subsection.	Confirm a RCIC isolation does not exist by verifying the RCIC isolation alarms are not illuminated and that 2E51-F007 and 2E51-F008 are open, red lights illuminated On 2H11-P602	SAT / UNSAT / NA
3.	To maintian RCIC suction source aligned to the CST, override the RCIC high torus level suction swap per 31EO-EOP-100-2, section 3.3.	Operator is informed in the turnover that this function has been overridden.	SAT / UNSAT / NA
4.	Confirm OPEN 2E51-F025, Steam Line Drain 2E51-F008, Steam Supply Line Isol 2E51-F026 Steam Line Drain	Verify the red light is illuminated for the following valves; 2E51-F025, panel 2H11-P602 2E51-F008, panel 2H11-P602 2E51-F026, panel 2H11-P601.	SAT / UNSAT / NA
5.	Confirm OPEN 2E51-F007, Steam Supply Line Isol Valve.	On 2H11-P602, verify 2E51-F007 is open, red light illuminated.	SAT / UNSAT / NA
6.	Confirm CLOSE 2E51-F013, Pump Discharge Valve.	On 2H11-P602, verify 2E51-F013 is close, green light illuminated.	SAT / UNSAT / NA
****7.**	OPEN 2E51-F046, Lube Oil Cooling Wtr Valve.	On 2H11-P602, the operator places the switch 2E51-F046 to open, red light illuminates.	SAT / UNSAT / NA
8.	START RCIC Vacuum Pump.	On 2H11-P602, the operator places the switch for the RCIC vacuum pump to start, red light illuminates.	SAT / UNSAT / NA
9.	Confirm OPEN 2E51-F010, CST Suction Valve.	On 2H11-P602, the operator verifies 2E51-F010 is open, red light illuminated.	SAT / UNSAT / NA

**10.	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.	SAT / UNSAT / NA
**11.	OPEN 2E51-F022, Test Line to CST, Valve.	On 2H11-P602, the operator places the switch 2E51-F022 to open, red light illuminates.	SAT / UNSAT / NA
**12.	TAKE the RCIC TEST Switch to START.	On 2H11-P602, the operator places the switch to start.	SAT / UNSAT / NA
**13.	Confirm OPEN 2E51-F045, Steam to Turbine, Valve.	On 2H11-P602, the operator verifies 2E51-F045 is open, red light illuminated.	SAT / UNSAT / NA
**14.	Control RCIC turbine speed/system flow, and IF necessary throttle 2E51-F022, Test to CST Vlv, to control Reactor pressure.	On 2H11-P602, the operator adjust RCIC flow controller 2E51-R612 and/or throttles 2E51-F022 to control reactor pressure.	SAT / UNSAT / NA

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

PROMPT: **IF** the operator addresses system restoration, 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: That Completes this JPM

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JPM

SIM 5 DRAFT ALL

TITLE		
PERFORM A MANUAL INITIATION OF TORUS SPRAY (VALVE FAILURE)		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 SIM-5	10 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 SIM-5**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Initial development for use on 2011-301 NRC Exam.	ARB	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**PERFORM A MANUAL INITIATION OF TORUS SPRAY (VALVE FAILURE)**
JPM NUMBER:	2011-301 SIM-5
TASK STANDARD:	The task shall be completed when the RHR System has been initiated in the Torus Spray Mode, per 34SO-E11-010-2.
TASK NUMBER:	007.001
OBJECTIVE NUMBER:	007.001.O

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 230000A402

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.80

SRO 3.60

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-F028 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 **IC #113 or Snap 615** and leave in **FREEZE**.

2. **INSERT** the following **MALFUNCTIONS/EVENT TRIGGERS:**

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfB21_48A	Steam Line A Break (After Restrictor) (Var)	0.02	1000	00000
mfE41_235B	HPCI Fails to Start on High DW Pressure			00000
mfE51_110	RCIC Turbine Trip			00000

Trigger #	Description	Conditions	Expert Command
E11-1	Prevents first 2E11-F027 valve attempted to fail; deletes other 2E11-F027 malfunction		
E11-2	Prevents first 2E11-F027 valve attempted to fail; deletes other 2E11-F027 malfunction		

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-F027A	P	Torus Spray	CLOSE	00000
diE11-F027B	P	Torus Spray	CLOSE	00000

5. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS OR RUN SCENARIO FILE** and **EVENT TRIGGER** (current rev) **JPM CR-SIM 5 2011-301:**

   A. Take the simulator out of FREEZE.
   B. Allow Torus pressure to increase to ~5 psig.

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 ~5 psig and going up at ~1.5 psig/min.
2. Torus level is <215 inches.
3. 31EO-EOP-012-2, "PC Primary Containment Control" is in progress.
4. The links to override the 5 MINUTE LOCA OPEN interlock for RHR OUTBD INJ VLVs has been OPENED.

INITIATING CUES:

Initiate Torus sprays using the "A" Loop of RHR per 34SO-E11-010-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **IF** addressed, **INDICATE** that RHR is operating in the LPCI Injection Mode, with the exception that the 2E11-F015A is closed due to high Reactor pressure, and RWL is greater than +37 inches.

1.	Identifies the procedure for the task.	Operator EITHER utilizes 34SO-E11-010-2 attachment 5 OR section 7.4.6.	SAT / UNSAT / NA

NOTE: It is acceptable for the operator to place the 2/3 core height switch to override even though not required.

2.	IF reactor water level is < 2/3 core height, (-193 inches indicated on 2B21-R623A or B, Rx Level, at 2H11-P601), PLACE 2E11-S18A, Cnmt Spray Vlv Cntl 2/3 Core Ht Permis switch, in the MANUAL OVERRD position.	Operator observes current RPV water level is above -193 inches indicated on 2B21-R623A or B, Rx Level, at 2H11-P601 and that overriding the 2/3 interlock is not required.	SAT / UNSAT / NA
3.	Place the Containment Spray Valve control switch 2E11-S17A to the Manual position.	At panel 2H11-P601, the Operator PLACES the CONTAINMENT SPRAY VALVE CONTROL switch to MANUAL, white light illuminated.	SAT / UNSAT / NA

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

4.	Confirm or start RHR pumps in Loop "A."	At panel 2H11-P601, the Operator CONFIRMS the "A" Loop RHR pumps are RUNNING, red lights illuminated.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: The first 2E11-F028 A or B switch selected is failed. Event Trigger **E11-2** will remove the other 2E11-F027 A or B switch failure.

5.	Open Torus Spray/Test Vlv 2E11-F028A.	At panel 2H11-P601, the Operator PLACES the TORUS SPRAY/TEST VLV 2E11-F028A to OPEN, red light illuminated.	SAT / UNSAT / NA
6.	Attempts to throttle open the-Torus Spray Vlv. 2E11-F027A to start flow.	At panel 2H11-P601, the Operator RECOGNIZES that TORUS SPRAY VLV, 2E11-F027A failed to OPEN, green light illuminated.	SAT / UNSAT / NA

NOTE: Do not order "B" loop to be placed in Torus spray since this is an Alternate Path JPM, the operators must determine this is the correct action on their own.

PROMPT: **WHEN** the Operator reports that 2E11-F027A will not open **ACKNOWLEDGE** the failure and **INFORM** the operator that conditions are still met to spray the Torus, **ORDER** the Operator to "Spray the Torus."

NOTE: It is acceptable for the operator to place the 2/3 core height switch to override even though not required.

7.	IF reactor water level is < 2/3 core height, (-193 inches indicated on 2B21-R623A or B, Rx Level, at 2H11-P601), PLACE 2E11-S18B, Cnmt Spray Vlv Cntl 2/3 Core Ht Permis switch, in the MANUAL OVERRD position.	Operator observes current RPV water level is above -193 inches indicated on 2B21-R623A or B, Rx Level, at 2H11-P601 and that overriding the 2/3 interlock is not required.	SAT / UNSAT / NA

****8.**	Verify the Containment Spray Valve control switch 2E11-S17B is in the Manual position.	At panel 2H11-P601, the Operator VERIFIES the CONTAINMENT SPRAY VALVE CONTROL is in MANUAL, white light illuminated.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

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

9.	Confirm or start RHR pumps in Loop "B."	At panel 2H11-P601, the Operator CONFIRMS the "B" Loop RHR pumps are RUNNING, red lights illuminated.	SAT / UNSAT / NA
****10.**	Open Torus Spray/Test Vlv 2E11-F028B.	At panel 2H11-P601, the Operator PLACES the TORUS SPRAY/TEST VLV 2E11-F028B to OPEN, red light illuminated.	SAT / UNSAT / NA
****11.**	Slowly opens the Torus Spray Vlv. 2E11-F027B to start flow.	At panel 2H11-P601, the Operator THROTTLES the TORUS SPRAY VLV, 2E11-F027B, to OPEN, red light illuminated.	SAT / UNSAT / NA

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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SIM 6 DRAFT ALL

TITLE		
TRANSFER A STATION SERVICE 4160 VAC BUS FROM STARTUP SUPPLY TO THE AUXILIARY TRANSFORMER		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 SIM-6	8.0 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: **2011-301 SIM-6**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		General revision for 2011-301 NRC Exam. This JPM originated from LR-JP-27.40.	ARB	

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**TRANSFER A STATION SERVICE 4160 VAC BUS FROM STARTUP SUPPLY TO THE AUXILIARY TRANSFORMER**
JPM NUMBER:	2011-301 SIM-6
TASK STANDARD:	The task shall be completed when the operator has transferred one station service bus from its Alternate to Normal source per 34SO-R22-001.
TASK NUMBER:	027.040
OBJECTIVE NUMBER:	027.040.A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 262001A4.04

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.60

SRO 3.70

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 1**	**Unit 2**
	34SO-R22-001-1 (current version)	34SO-R22-001-2 (current version)

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	34SO-R22-001-1 (current version)	34SO-R22-001-2 (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 **IC #112 or SNAP 616** and leave in **FREEZE**.

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

   A. Place 4160 VAC Bus "2A" on SUT "2C."
   B. Reduce Reactor power to 90% as indicated on the APRMs.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Reactor is at 90% power.
2. All systems are in their normal full power configuration with the exception of 4160 VAC Station Service Bus "2A." It is being powered by its Alternate Supply.

INITIATING CUES:

Hot Transfer 4160 VAC Station Service Bus "2A" to its Normal Supply per 34SO-R22-001-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34SO-R22-001-2.	SAT / UNSAT / NA
2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	SAT / UNSAT / NA
****3.**	Place the Interlock Cutout switch for Bus "2A" to OFF.	At panel 2H11-P651, ACB 135434-135454 STATION SVC INTERLOCK CUTOUT Switch is in OFF (down).	SAT / UNSAT / NA
****4.**	Place ACB 135434 Sync Switch in ON.	At panel 2H11-P651, SSW ACB 135434 is in ON.	SAT / UNSAT / NA

NOTE: Step 5 requires the operator to place the VOLT SELECT UNIT AUX XFMR 2B voltmeter switch to ON position.

5.	Confirm that both 4160 VAC Bus "2A" supply sources are synchronized and voltage is normal on UAT "2B."	At panel 2H11-P651, the operator VERIFIES: The SYNCHSCOPE indicates 12 o'clock. SYNCHSCOPE lights are extinguished. VOLT SELECT UNIT AUX XFMR 2B voltmeter switch is in ON position. 4160V VOLTMETER indicates about 4160 VAC (accept 4100 to 4400 VAC).	SAT / UNSAT / NA
****6.**	Close ACB 135434, the Normal Supply breaker for 4160 VAC Bus "2A."	At panel 2H11-P651, NORMAL SUPPLY ACB 135434 is CLOSED, red light illuminated.	SAT / UNSAT / NA

NOTE: The next step requires 2R22-S001(BUS 2A) XFMR 2B AMPS SELECT switch to be in position 1, 2, or 3.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
7.	Confirm that current increases from UAT "2B."	At panel 2H11-P651, the operator VERIFIES ACB 135434 AC AMPS meter indicates an increase in amperage.	SAT / UNSAT / NA

PROMPT: **WHEN** the operator addresses amperage, **INDICATE** for the operator that there has been an increase in amperage.

****8.**	Trip ACB 135454, the Alternate Supply breaker for 4160 VAC Bus "2A."	At panel 2H11-P651, ALTERNATE SUPPLY ACB 135454 is OPEN, green light illuminated.	SAT / UNSAT / NA
10.	Place ACB 135434 Sync Switch in OFF.	At panel 2H11-P651, SSW ACB 135434 is in OFF.	SAT / UNSAT / NA
11.	Place the Interlock Cutout switch for 4160 VAC Bus "2A" in NORMAL position.	At panel 2H11-P651, ACB 135434-135454 STATION SVC INTERLOCK CUTOUT Switch is in the NORMAL (up) position.	SAT / UNSAT / NA

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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SIM 7 DRAFT RO & SRO-I

TITLE		
Respond to the trip of a Reactor Recirc Pump while the Recirc pumps are running at less than 35% speed, and plot plant operation on the Power/Flow Map.		
AUTHOR	**MEDIA NUMBER**	**TIME**
Ed Jones	2011-301 SIM-7	20 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: **2011-301 SIM-7**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Initial development for NRC Exam 2011-301.	ELJ	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**Respond to the trip of a Reactor Recirc Pump while the Recirc pumps are running at less than 35% speed, and plot plant operation on the Power/Flow Map.**
JPM NUMBER:	2011-301 SIM-7
TASK STANDARD:	The task shall be completed when the tripped Recirc Pump Discharge valve has been closed and then re-opened AND the candidate plots where the plant is operating on the Power/Flow map.
TASK NUMBER:	200.037
OBJECTIVE NUMBER:	200.037.A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 216000A3.01

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.4

SRO 3.4

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 2**
	34AB-B31-001-2 (current version) 34GO-OPS-005-2(current version) 34SO-B31-001-2 (current version)

REQUIRED MATERIALS:	**Unit 2**
	34AB-B31-001-2 (current version) 34GO-OPS-005-2(current version) 34SO-B31-001-2 (current version)

APPROXIMATE COMPLETION TIME: 20 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #110 or SNAP 617** and leave in **FREEZE**.

2. **INSERT the following MALFUNCTIONS:**

RB#	MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
RB-1	mfB31_38B	Recirc Pump B Motor Protection Trip	N/A	N/A	9999

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

   A. REDUCE Reactor Recirc Pumps to MINIMUM speed.
   B. INSERT control rods to reduce power to **approx. 36%,** with the goal of remaining below the 78% load line.
   C. PRESS RB-1 to activate Recirc Pump B Motor Protection Trip.
   D. Allow plant conditions to STABILIZE.
   E. Acknowledge/reset alarms.
   F. TURN OFF the Process Computer monitor.

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

5. **ESTIMATED** Simulator **SETUP TIME**: **25 Minutes**

UNIT 2

READ TO THE CANDIDATE

INITIAL CONDITIONS:

1. Unit 2 was operating approximately 36% power.
2. Both Reactor Recirc Pumps were running at minimum speed.
3. All OPRMs are operable.
4. The Process Computer monitor is NOT functional.
5. The "2B" Reactor Recirc pump has just tripped.
6. Personnel have been directed to investigate the cause of the pump trip.

INITIATING CUES:

RESPOND to the trip of the "2B" Reactor Recirc Pump AND
PLOT the plant operating point on the Unit 2 Power/Flow map.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	The candidate identifies the PROCEDURE needed to perform the task.	The candidate has identified the correct procedure as 34AB-B31-001-2.	SAT / UNSAT / NA
2.	The candidate identifies correct procedure SECTION to use.	The candidate has identified the correct section: LOSS OF A SINGLE REACTOR RECIRCULATION PUMP A OR B.	SAT / UNSAT / NA
3.	Verify whether the OPRM System is INOPERABLE.	The candidate determines the OPRMs are OPERABLE, (information provided in JPM Initial Conditions) and that it is NOT necessary to enter 34AB-C51-001-2	SAT / UNSAT / NA

NOTE: It is expected that the candidate will read the NOTE, located just before step 4.2. The note describes how to determine core flow with one Recirc Pump out of service when the Running pump is operating below 35% pump speed.

4.	Verify the Running Recirc. Pump is operating below rated flow for one pump.	The candidate verifies that the "2A" Recirc pump is operating below rated flow using 2B31-R617, "Drive Flow" indicator (P602).	SAT / UNSAT / NA

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: The candidate may choose to plot position on the Power/Flow map at this time. These steps are NOT required to be done in order.

** **5.**	Verfy whether the plant is operating inside the Immediate Exit Region of the Power/Flow Map.	The candidate calculates core flow and plots Power/Flow map operating point: **1st step:** Add Jet Pump Total Flow indications (2B21-R611A/R611B (P602)). The values total approx 23 MLB/hr for these plant conditions. (Accept 22 -26 MLB/hr) **2nd step:** This number is divided by 77 MLB/hr (rated core flow). The result is ACTUAL CORE FLOW, approx. 30% (Accept 28.5% - 33.7%); then, **3rd step:** The candidate uses 2C51-K620A&B, "APRM Display" (P603) to determine that Rx power is approx. 36% (Accept ± 3%); **4th step:** The candidate then plots the operating point on the Power/Flow map (P603) and DETERMINES the plant is operating in the ACCEPTABLE region.	SAT / UNSAT / NA

NOTE: If the candidate uses the 2B31-R613, "Core Plate dp/Rx Core Flow" recorder (P603), the plotted point will erroneously indicate the plant is operating in the Sately Limit region of the Power/Flow map, approx. 7% core flow with 36% power. See attached **Evaluator Answer Key**.

(** **Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the candidate reports that the plant is in the Safety Limit area of the Power/Flow Map, **DIRECT** the candidate to continue responding to the tripped Recirc Pump (unless all required actions have previously been taken).

** **6.**	Close Reactor Recirc Pump Discharge Valve, 2B31-F031B and record the time.	The candidate CLOSES PUMP DISCH VLV, 2B31-F031B, green light ILLUMINATED (P602), and RECORDS the time the valve is fully CLOSED.	SAT / UNSAT / NA

PROMPT: **IF** addressed, **INFORM** the Candidate it is desired to maintain Recirc loop temperature.

** **7.**	Within 5 mintues, throttle open Reactor Recirc Pump Discharge Valve, 2B31-F031B.	The candidate throttles PUMP DISCH VLV, 2B31-F031B OPEN (P602), red and green lights illuminated.	SAT / UNSAT / NA

PROMPT: **WHEN** the candidate addresses subsequent steps in the procedure as the SS, **INFORM** the candidate that another operator will complete the rest of the procedure steps.

END TIME:_____

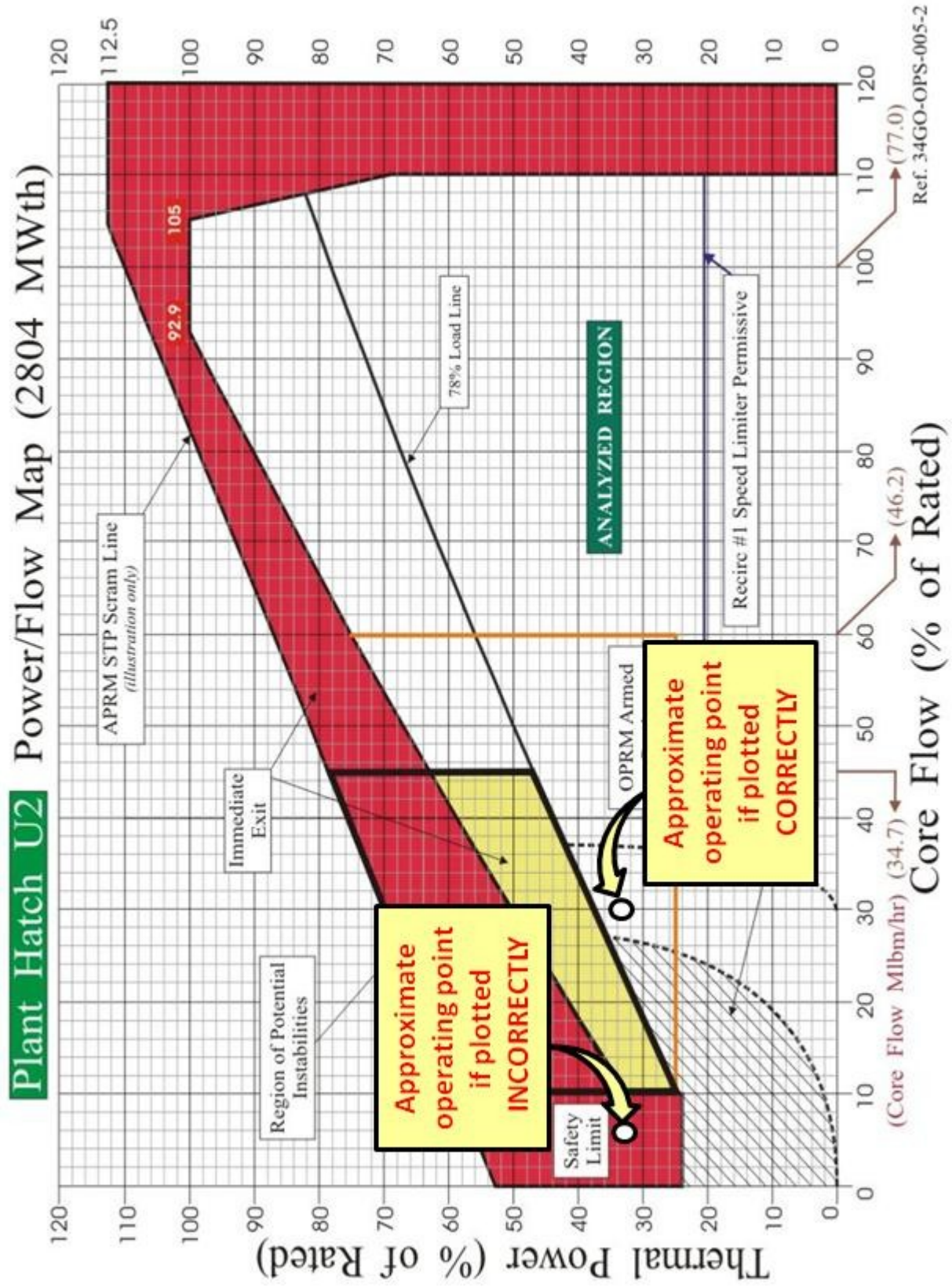
NOTE: The terminating cue shall be given to the Candidate when:

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Evaluator Answer Key



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JPM

CR 8 DRAFT ALL

TITLE		
PLACE THE CONTROL ROOM HVAC SYSTEM IN THE PRESSURIZATION MODE WITH SYSTEM FAILURE		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 SIM-8	21.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

SOUTHERN COMPANY

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: **2011-301 SIM-8**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		First Recirc Fan started fails. This JPM was modified from LR-JP-25017.	ARB	

UNIT 1 (X) UNIT 2 ( )

TASK TITLE:	**PLACE THE CONTROL ROOM HVAC SYSTEM IN THE PRESSURIZATION MODE WITH SYSTEM FAILURE**
JPM NUMBER:	2011-301 SIM-8
TASK STANDARD:	The task shall be completed when the Control Room Ventilation System has been placed in the Pressurization Mode per 34SO-Z41-001-1.
TASK NUMBER:	037.008
OBJECTIVE NUMBER:	037.008.A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 2930003A4.01

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.20

SRO 3.20

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 1**
	34SO-Z41-001-1 34AR-603-214-2 34AR-603-215-2 (current versions)

REQUIRED MATERIALS:	**Unit 1**
	34SO-Z41-001-1 (current version)

APPROXIMATE COMPLETION TIME: 21.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 and Unit 2 have been operating at 100% power with ALL systems operating in their NORMAL mode.
2. Subsequently, Unit 2 received a Group I isolation on a Main Steam Line High Flow signal.
3. The Unit 2 operators are addressing the 603-214, MAIN STEAM LINE FLOW A HIGH AND 603-215, MAIN STEAM LINE FLOW B HIGH, Annunciator Response Procedures.
4. The Unit 1 Shift Supervisor has been notified of the Unit 2 transient.

INITIATING CUES:

IAW 34AR-603-214-2 & 215-2, CONFIRM Control Room Ventilation is shifted to Pressurization Mode per 34SO-Z41-001-1, Control Room Ventilation System.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34SO-Z41-001-1.	SAT / UNSAT / NA
2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	SAT / UNSAT / NA

PROMPT: **WHEN** the operator states confirming Pressurization Mode Trip Ch A & B lights illuminated, **INFORM** the operator the lights are **NOT** illuminated.

3.	Confirms Pressurization Mode Trip Ch A & B lights on 1H11-P657/P654.	At panel 1H11-P657 (P654), red lights are **NOT** illuminated.	SAT / UNSAT / NA
****4.**	Open Roll Filter Bypass, 1Z41-F015.	At MCR Door C70, Roll Filter Bypass, 1Z41-F015 control switch is in OPEN, red light illuminated.	SAT / UNSAT / NA
****5.**	Open Filter Inlet, 1Z41-F013A.	At panel 1H11-P657, Filter Inlet control switch, 1Z41-F013A, is in OPEN position, red light illuminated.	SAT / UNSAT / NA
****6.**	Open Filter Inlet, 1Z41-F013B.	At panel 1H11-P654, Filter Inlet control switch, 1Z41-F013B, is in OPEN position, red light illuminated.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: The operator can start either Recirc Fan (1Z41-C012A or C012B).

PROMPT: **WHEN** the operator states placing 1Z41-C012A or B to RUN, **INFORM** the operator the selected Recirc Fan green light remains illuminated.

NOTE: The following steps (**7 through 12**) are written for the operator starting Recirc Fan, 1Z41-C012A, FIRST.

If the operator starts Recirc Fan, 1Z41-C012B, FIRST, THEN substitute the information in the parenthesis.

7.	Places Recirc Fan, 1Z41-C012A (C012B) to RUN.	At panel 1H11-P657 (P654), Recirc Fan, 1Z41-C012A (C012B), control switch is in RUN, green light ONLY IS illuminated.	SAT / UNSAT / NA
8.	Confirms 1Z41-F007A (F008A), Inlet to Unit 1Z41-B003A, OPEN	At panel 1H11-P657 (P654), 1Z41-F007A (F008A), green light ONLY IS illuminated.	SAT / UNSAT / NA
9.	Confirms 1Z41-F007B (F008B), Inlet to Unit 1Z41-B003B, OPEN.	At panel 1H11-P657 (P654), 1Z41-F007B (F008B), green light ONLY IS illuminated.	SAT / UNSAT / NA
10.	Confirms 1Z41-F007C (F008C), Inlet to Unit 1Z41-B003C, OPEN.	At panel 1H11-P657 (P654), 1Z41-F007C (F008C), green light ONLY IS illuminated.	SAT / UNSAT / NA

PROMPT: **IF** the operator notifies the Shift Supervisor of 1Z41-C012A (C012B) failure, as the Shift Supervisor, **DIRECT** the operator to continue to place the MCREC System in the proper operational configuration for the present conditions IAW 34SO-Z41-001-1.

****11.**	Starts Recirc Fan, 1Z41-C012B (C012A).	At panel 1H11-P654 (P657), Recirc Fan, 1Z41-C012B (C012A) control switch is in RUN, red light illuminated.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
12.	Confirms the following dampers are open: 1Z41-F008A (F007A) 1Z41-F008B (F007B) 1Z41-F008C (F007C) 1Z41-F014B (F014A)	At panel 1H11-P654 (P657), the following dampers are OPEN for Fan 1Z41-C012B (C012A), red lights illuminated: 1Z41-F008A (F007A), to B003A 1Z41-F008B (F007B), to B003B 1Z41-F008C (F007C), to B003C 1Z41-F014B (F014A), Recirc Inlet	SAT / UNSAT / NA
13.	Closes the following dampers: 1Z41-F012 1Z41-F019 1Z41-F020	At panel 1H11-P654, the following dampers are CLOSED, green lights illuminated: 1Z41-F012, Filter Bypass 1Z41-F019, Men's Restroom Vent Isol Dmpr 1Z41-F020, Women's Restroom Vent Isol Dmpr	SAT / UNSAT / NA
**14.	Close Filter Bypass, 1Z41-F011.	At panel 1H11-P657, Filter Bypass damper 1Z41-F011 is CLOSED, green light illuminated.	SAT / UNSAT / NA
15.	Confirm Men's Restroom Door is closed.	In the Control Room, the Men's Restroom Door is CLOSED.	SAT / UNSAT / NA
16.	Places/Confirms control switch for Recirc Fan 1Z41-C012A (C012B) in Standby.	At panel 1H11-P657 (P654), Recirc Fan 1Z41-C012A (C012B) control switch is in STANDBY, green light illuminated.	SAT / UNSAT / NA
17.	Confirm the following dampers are closed: 1Z41-F007A (F008A) 1Z41-F007B (F008B) 1Z41-F007C (F008C) 1Z41-F014A (F014B)	At panel 1H11-P657 (P654), the following dampers are CLOSED for Fan 1Z41-C012A (C012B), green lights illuminated: 1Z41-F007A (F008A), to B003A 1Z41-F007B (F008B), to B003B 1Z41-F007C (F008C), to B003C 1Z41-F014A (F014B), Recirc Inlet	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**18.	Secures Cable Spreading Room Supply Fan 1Z41-C009.	At panel 1H11-P654, Cable Spreading Room Supply Fan, 1Z41-C009, control switch is in OFF, green light illuminated.	SAT / UNSAT / NA
**19.	Secure Cable Spreading Room Exhaust Fan 1Z41-C010.	At panel 1H11-P654, Cable Spreading Room Exhaust Fan 1Z41-C010 control switch is in OFF, green light illuminated.	SAT / UNSAT / NA

PROMPT: **IF** the Operator addresses compensatory actions: **INFORM** the operator someone else is taking care of the compensatory action & any necessary Engineering Evaluations.

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

PLANT 1 DRAFT ALL

TITLE		
CROSSTIE REACTOR BUILDING PLANT SERVICE WATER, ALTERNATE PATH		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 PLANT-1	12.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

SOUTHERN COMPANY

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 PLANT-1**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Initial development to be used on Unit 2 ONLY for HLT-06 NRC Exam 2011-301. This JPM originated from LR-JP-25029A.	ARB	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**CROSSTIE REACTOR BUILDING PLANT SERVICE WATER, ALTERNATE PATH**
JPM NUMBER:	2011-301 PLANT-1
TASK STANDARD:	The task shall be complete when the operator has crosstied Reactor Building Plant Service Water divisions per 34AB-P41-001-2, Alternate Path
TASK NUMBER:	200.013
OBJECTIVE NUMBER:	200.013.E

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 295018AA101

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.30

SRO 3.40

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 1**	**Unit 2**
	N/A	34AB-P41-001-2 (current version)

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	N/A	34AB-P41-001-2 (current version)

APPROXIMATE COMPLETION TIME: 12.0 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Unit 2 Reactor has been scrammed due to a loss of Plant Service Water.
2. 2P41-F316A, B, C, and D are closed. This isolated the PSW break.
3. Both the "A" and "C" PSW pumps will not operate.

INITIATING CUES:

Crosstie Reactor Building Plant Service Water divisions per 34AB-P41-001-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **IF** requested, **INFORM** the Operator that 2P41-F316A, B, C, & D are closed and the PSW break is isolated.

NOTE: The procedure allows the Operator to **open either set of valves** to crosstie Divisions.

The **CRITICAL STEPS are satisfied when **either set** are opened. (2P41-F070A and 2P41-F070B) **or** (2P41-F052A and 2P41-F052B)

1.	Confirm the 2P41-F316A, B, C, & D are closed.	The Control Room is CONTACTED to VERIFY the 2P41-F316A, B, C, & D are closed.	SAT / UNSAT / NA
**2	Open 2P41-F070A.	At 135RLR19, the operator TURNS 2P41-F070A handwheel, fully counter-clockwise.	SAT / UNSAT / NA

PROMPT: **IF** this is the first set opened, **WHEN** the Operator asked for response of valve stem moving, **INFORM** the Operator 1P41-F070B valve stem is **NOT moving**.

**3.	Open 2P41-F070B.	At 135RLR19, the Operator turns 2P41-F070B handwheel, fully counter-clockwise. (**IF** F070A & F070B are the first set of valves opened, this valve stem does **NOT** move, **OTHERWISE** it will open).	SAT / UNSAT / NA
**4	Open 2P41-F052A.	At 135RLR19, the Operator TURNS 2P41-F052A handwheel, fully counter-clockwise.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** this is the first set opened, **WHEN** the Operator asked for response of valve stem moving, **INFORM** the Operator 2P41-F052B valve stem is **NOT moving**.

**5.	Open 2P41-F052B.	At 135RLR19, the Operator turns 2P41-F052B handwheel, fully counter-clockwise. (**IF** F052A & F052B are the first set of valves opened, this valve stem does **NOT** move, **OTHERWISE** it will open).	SAT / UNSAT / NA

NOTE: The **CRITICAL STEPS are satisfied when **both valves in either set** are opened. (2P41-F070A and 2P41-F070B) **or** (2P41-F052A and 2P41-F052B)

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

PLANT 2 DRAFT ALL

TITLE		
FROM OUTSIDE THE CONTROL ROOM, INSERT A MANUAL REACTOR SCRAM BY DE-ENERGIZING RPS ON UNIT 2		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 PLANT-2	8.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 PLANT-2**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Initial development to be used on Unit 2 ONLY for HLT-06 NRC Exam 2011-301. This JPM originated from LR-JP-10.17.	ARB	

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**FROM OUTSIDE THE CONTROL ROOM, INSERT A MANUAL REACTOR SCRAM BY DE-ENERGIZING RPS ON UNIT 2**
JPM NUMBER:	2011-301 PLANT-2
TASK STANDARD:	The task shall be completed when the operator has successfully opened both RPS Trip Channel breakers to de-energize RPS per 31RS-OPS-001-2.
TASK NUMBER:	010.017
OBJECTIVE NUMBER:	010.017.O

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 295016AA101

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.80

SRO 3.90

OPERATOR APPLICABILITY: Systems Operator (SO)

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

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	N/A	31RS-OPS-001-2 (current version) Screwdriver to open panel

APPROXIMATE COMPLETION TIME: 8.0 Minutes

SIMULATOR SETUP: N/A

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 is in progress.

INITIATING CUES:

Insert a scram by de-energizing RPS on Unit 2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 31RS-OPS-001-2.	SAT / UNSAT / NA
2.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain them.	SAT / UNSAT / NA
****3.**	Open breaker, 2C71-CB3A.	At panel 2C71-P001, breaker 2C71-CB3A, is in the OFF position.	SAT / UNSAT / NA
****4.**	Open breaker, 2C71-CB3B.	At panel 2C71-P001, breaker 2C71-CB3B, is in the OFF position.	SAT / UNSAT / NA
5.	Close the following breakers: 2C71-CB3A 2C71-CB3B	At panel 2C71-P001, the following breakers are in the ON position: 2C71-CB3A 2C71-CB3B	SAT / UNSAT / NA

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

PLANT 3 DRAFT RO & SRO-I

TITLE		
TRANSFER THE VITAL AC SYSTEM FROM ALTERNATE POWER TO THE INVERTER		
AUTHOR	**MEDIA NUMBER**	**TIME**
Anthony Ball	2011-301 PLANT-3	12.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R		

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FORM TITLE: TRAINING MATERIAL REVISION SHEET	

Program/Course Code: **OPERATIONS TRAINING** Media Number: **2011-301 PLANT-3**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00		Initial development to be used on Unit 1 ONLY for HLT-06 NRC Exam 2011-301. This JPM originated from LR-JP-02731.	ARB	

UNIT 1 (X) UNIT 2 ( )

TASK TITLE:	**TRANSFER THE VITAL AC SYSTEM FROM ALTERNATE POWER TO THE INVERTER**
JPM NUMBER:	2011-301 PLANT-3
TASK STANDARD:	The task shall be completed when Vital AC Power has been transferred from the alternate source to the inverter per 34SO-R25-002-1.
TASK NUMBER:	027.031
OBJECTIVE NUMBER:	027.031.O

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 262002A4.01

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.80

SRO 3.10

OPERATOR APPLICABILITY: System Operator (SO)

GENERAL REFERENCES:	**Unit 1**	**Unit 2**
	34SO-R25-002-1 (current version)	N/A

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	34SO-R25-002-1 (current version)	N/A

APPROXIMATE COMPLETION TIME: 12.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Vital AC room cooler is in operation.
2. The Vital AC rectifier and inverter have been started.

INITIATING CUES:

Transfer Unit 1 Vital AC from the Alternate Source to the Vital AC Inverter per 34SO-R25-002-1.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator identifies the procedure needed to perform task.	Operator has identified the correct procedure as 34SO-R25-002-1.	SAT / UNSAT / NA
2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	SAT / UNSAT / NA
3.	Confirm the SYNC - Monitor light is illuminated.	At the Vital AC Panel, location 112TET12, SYNC - MONITOR clear light is illuminated.	SAT / UNSAT / NA
4.	Confirm the Return Mode Switch is in AUTO.	At Vital AC Panel, 112TET12, the RETURN MODE switch is in AUTO.	SAT / UNSAT / NA
****5.**	Place the Manual Bypass Switch in BYP-SYNC.	At Vital AC Panel, 112TET12, the MANUAL BYPASS switch is in BYP-SYNC position.	SAT / UNSAT / NA
6.	Confirm the SYNC-MONITOR light is extinguished.	At Vital AC Panel, 112TET12, the clear SYNC-MONITOR light is extinguished.	SAT / UNSAT / NA
****7.**	Place the Manual Bypass Switch in BYP-TEST.	At Vital AC Panel, 112TET12, MANUAL BYPASS switch is in BYP-TEST.	SAT / UNSAT / NA
8.	Confirm the following indicators: Inverter light illuminated. Alt Line light extinguished. Sync Monitor light extinguished.	At Vital AC Panel, 112TET12, the operator has IDENTIFIED the following indications: INVERTER red light illuminated. ALT LINE white light extinguished. SYNC MONITOR clear light extinguished.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**9.	Place the TEST toggle switch in Alt Line position.	At Vital AC Panel, 112TET12, the TEST toggle switch is in ALT LINE (down) position.	SAT / UNSAT / NA
10.	Confirm the following indications: Alt line light illuminated. Inverter light extinguished. Sync Monitor light extinguished.	At Vital AC Panel, 112TET12, the operator has IDENTIFIED the following indications: ALT LINE white light illuminated. INVERTER red light extinguished. SYNC MONITOR clear light extinguished.	SAT / UNSAT / NA
**11.	Place the MANUAL BYPASS Switch in Normal.	At Vital AC Panel, 112TET12, the MANUAL BYPASS Switch is in NORMAL.	SAT / UNSAT / NA
**12.	Place the TEST toggle switch in Center position.	At Vital AC Panel, 112TET12, the TEST toggle switch is in center position.	SAT / UNSAT / NA
13.	Confirm the following indications: Inverter light illuminated. Alt Line light extinguished. Sync Monitor light extinguished.	At Vital AC Panel, 112TET12, the operator has IDENTIFIED the following indications: INVERTER red light illuminated. ALT LINE White light extinguished. SYNC MONITOR clear light extinguished.	SAT / UNSAT / NA

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **WHEN** addressed by the operator, as the Shift Supervisor, **INFORM** the operator that it is desired to place the Return Mode Switch to Manual.

14.	Place the RETURN MODE switch in manual.	At Vital AC Panel, 112TET12, the RETURN MODE switch is in MAN.	SAT / UNSAT / NA

NOTE: The procedure gives the operator the option of placing the RETURN MODE SWITCH to manual. While simulating the JPM, the student may notice that the switch is in the AUTO position. This is NOT a problem.

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.