Final Submittal

(Blue Paper)

HATCH OCTOBER/NOVEMBER 2005 EXAM

05000321/2005301 & 05000366/2005301

OCTOBER 28, 2005, (WRITTEN) AND
OCTOBER 31 - NOVEMBER 4, 2005

FINAL JPMS

1. ADMINISTRATIVE JPMs
2. IN-PLANT JPMs
3. SIMULATOR JPMs (CONTROL ROOM)

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM
(ADMIN – SRO Only, SRO-I, SRO-U)

DETERMINE IF THE REACTOR MODE SWITCH CAN BE TRANSFERRED FROM STARTUP/HOT STANDBY TO RUN

E. L. Jones	LR-JP-25025-03	15 Minutes

J. M. Edmund R. Kramer 10/21/05

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-25025**

00	04/08/97	Initial development	RAB	RSG
01	03/20/00	Format modification, change time allowance based on running average, correct simulator setup due to new simulator operating system	RAB	DHG
02	11/03/00	Include objective number	RAB	DHG
03	10/21/05	Modify which equipment is inop for a NRC Initial License exam.	ELJ	RK

UNIT 1 ( ) UNIT 2 (X)

[redacted]

DETERMINE IF THE REACTOR MODE SWITCH CAN BE TRANSFERRED FROM STARTUP/HOT STANDBY TO RUN

[redacted] LR-JP-25025-03

[redacted] The task shall be complete when it has been determined that the requirements of 34GO-OPS-001-2S, "Plant Startup" and Technical Specifications have NOT been met and the Reactor Mode Switch CANNOT be placed in RUN.

[redacted] 010.019

[redacted] 010.019.J

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.62

SRO 3.42

K/A CATALOG NUMBER: Generic 2.1.12

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.9

SRO 4.0

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

[redacted]

34GO-OPS-001-2 (current revision)
Unit 2 Technical Specifications

[redacted]

34GO-OPS-001-2 (current revision)
Unit 2 Technical Specifications

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A plant startup is in progress. Operators have completed up to step 7.4.14.3 in section 7.4 of 34GO-OPS-001-2, "Plant Startup".

2. RCIC is out of service and under clearance. A RAS has been written.

3. Main Control Room Air Conditioning units 1Z41-B003A and 1Z41-B003B are in service. 1Z41-B003C is in standby.

4. It has been reported that one of the Main Control Room Air Conditioning units (1Z41-B003A) has a significant refrigerant leak with very little refrigerant remaining in the unit.
   - 1R24-S029 is aligned to 1R24-S002.

5. Main control air temperature is currently at 79°F and slowly increasing.

6. Outside air temperature is 80° F.

7. No other Required Action Statements (RAS's) are in effect.

8. Precautions and Limitations have been satisfied.

INITIATING CUES:

Evaluate plant and equipment status to determine if both procedural and Technical Specification requirements are met for placing the Reactor Mode Switch in "RUN."

[redacted]

START TIME:_____

NOTE: Provide the student with a copy of Attachment 2, 34GO-OPS-001-2, "Plant Startup" section 7.4.

NOTE: If the operator reviews Technical Specifications (TS) for RCIC first, progression of the JPM will be JPM steps 1, 2, 3, 4, 5, 6, 7.

If the operator reviews Technical Specifications (TS) for MCREC first, progression of the JPM will be JPM steps 1, 2, 5, 6, 7, 3, 4.

PROMPT: The candidate should determine that "A" MCREC Air Handling Unit is Inoperable. **IF** the candidate addresses writing a RAS, **INFORM** the operator that another SRO will write the RAS.

1.	Operator reviews paperwork completed by the Nuclear Plant Operator.	Section 7.4 of 34GO-OPS-001-2 has been completed and all required steps have been correctly initialed by the Nuclear Plant Operator.	

PROMPT: **IF** the candidate requests specific information about plant parameters/status, **REFER** to attachment 1 (Plant Data) and **PROVIDE** the requested information.

2.	Operator addresses Technical Specifications for RCIC.	The operator REVIEWS Tech Spec 3.5.3 due to RCIC being inoperable.	
3.	Operator determines that RCIC being inoperable **will not prohibit** placing the Reactor Mode Switch in RUN (TS 3.0.4 does not apply)..	The operator DETERMINES that the Reactor Mode Switch CAN be placed in RUN, because LCO 3.0.4 is not applicable.	

Note: If the operator addresses TS for MCREC, before addressing TS for RCIC, and determines that the reactor mode switch cannot be transferred to Run, it is acceptable for the operator to end the task at that time without referring to the RCIC RAS.

[redacted]	The operator determines 1Z41-B003A Inoperable.	

(Indicates critical step)**

[redacted]	The operator REVIEWS Tech Spec 3.7.5 for the inoperable MCREC Air Handling Unit.	

[redacted]	The operator DETERMINES that the Reactor Mode Switch CANNOT be placed in RUN, referring to Tech Spec 3.0.4.	

7.	Operator informs the Shift Supervisor that the Mode Switch CANNOT be placed in RUN.	Operator informs the Shift Supervisor that the Mode Switch CANNOT be placed in RUN.	

PROMPT: **IF** the condition of MCREC is addressed by the operator, **INFORM** the operator that the time for repairs on the AHU is unknown 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)**

Attachment 1

Unit 2 Plant Data

- Reactor pressure: 924 psi
- The #1 Main Turbine Bypass Valve is 75% open, the other 2 valves are closed.
- The STA has performed 34SV-SUV-021-0, APRM Adjustment To Core Thermal Power.
- APRM A: 9%
  APRM B: 8%
  APRM C: 9%
  APRM D: 9%
- All APRM Downscales lights are extinguished.
- IRM A: 20/40 Range 9
  IRM B: 19/40 Range 9
  IRM C: 19/40 Range 9
  IRM D: 21/40 Range 9
  IRM E: 22/40 Range 9
  IRM F: 20/40 Range 9
  IRM G: 21/40 Range 9
  IRM H: 20/40 Range 9
- The following have been verified to be current:
  - 57SV-C51-001-0, APRM Functional Test.
  - 57SV-C51-005-0, APRM Calibration.
  - 57SV-C51-003-0, APRM Two Out of Four Logic Module FT, is current.
- 603-232, "Main Steam Line Press A Low," and
  603-233, "Main Steam Line Press B Low," are CLEAR.
- The on-shift Lab Foreman reports that Reactor Water, Condensate and Feedwater are acceptable for power operation based on samples taken per 64CH-SAM-023-0.
- ALL relays have been verified to be in their NORMAL state,"
- No unexpected TRIP condition exists on any RPS relay.
- There are NO abnormal conditions on any relay.

7.4 TRANSFER OF REACTOR MODE SWITCH TO THE RUN POSITION

CONTINUOUS

7.4.1 Confirm that the pressure setpoint is set to maintain 920 PSIG. ELJ

7.4.2 Notify the lab Foreman to begin taking required samples for reactor water, condensate, and feedwater for power operation per the Sampling and Analysis During Power Operation, subsection of 64CH-SAM-023-0. ELJ

7.4.3 Continue pulling rods in sequence provided by Shift Technical Advisor UNTIL the highest APRM reading is between 6% and 7% with pressure > 920 PSIG. ELJ

7.4.4 Have STA perform the following:

7.4.4.1 Adjust all of the APRMS for a desired reading of 7% per 34SV-SUV-021-0, APRM Adjustment To Core Thermal Power. ELJ

CAUTION: IF THE BYPASS VALVES INDICATE OUTSIDE THE SPECIFIED RANGE IN THE FOLLOWING STEP, THE STARTUP WILL BE HALTED UNTIL AN EVALUATION CAN BE MADE BY THE REACTOR ENGINEER AND THE SHIFT MANAGER. DO NOT REDUCE THE APRM SETTINGS BELOW THAT REQUIRED IN THE PREVIOUS STEP.

7.4.4.2 Perform alternate power level check by confirming that one main turbine bypass valve is between 50% and 100% OPEN. ELJ

7.4.5 Confirm operable APRMs indicate between 7% and 10%. ELJ

7.4.6 Confirm operable APRM DOWNSCALE trips are clear by performing the following at the APRM ODAs:

7.4.6.1 DEPRESS the "ETC" key UNTIL "TRIP STATUS" option ILLUMINATES. ELJ

7.4.6.2 DEPRESS "TRIP STATUS" key, THEN confirm "APRM FLUX DOWNSCALE ALARM" is not active. ELJ

7.4.7 Confirm no operable IRMs are UPSCALE. ELJ

7.4.8 Confirm the following:

- at least three APRM channels per RPS Trip System are OPERABLE ELJ

AND

- at least 2 "APRM TWO-OUT-OF-FOUR-VOTER-CHANNELS" per RPS Trip System are OPERABLE. ELJ

AND

- at least 3 OPRM channels per RPS Trip System are OPERABLE ELJ

7.4.9 Confirm 57SV-C51-001-0, APRM Functional Test, 57SV-C51-005-0, APRM Calibration and 57SV-C51-003-0, APRM Two Out of Four Logic Module FT, are current. ELJ

7.4.10 Confirm that the following annunciators are CLEAR:

- 603-232, MAIN STEAM LINE PRESS A LOW ELJ
- 603-233, MAIN STEAM LINE PRESS B LOW ELJ

7.4.11 Obtain confirmation from the on-shift Lab Foreman that reactor water, condensate and feedwater are acceptable for power operation as per the Sampling and Analysis During Power Operation, subsection of 64CH-SAM-023-0. ELJ

CAUTIONS:	1. THE PROCESS COMPUTER REACTOR HEAT BALANCE WILL NOT INITIALIZE IF KEY PROCESS POINTS ARE EITHER OUT OF RANGE OR NOT INSERTED TO SCAN. 2. THE PROCESS COMPUTER REACTOR HEAT BALANCE INDICATION MAY DIFFER FROM ACTUAL REACTOR POWER IF CERTAIN PROCESS POINTS ARE NOT INSERTED TO SCAN. 3. VALID FINAL FEEDWATER TEMPERATURES MUST BE MANUALLY INSERTED TO THE PROCESS COMPUTER UNTIL AUTOMATIC SCANNING OF THE VALUE(S) COMMENCES AT APPROXIMATELY 140° F.

7.4.12 At approximately 10% RTP, notify the STA to start the CTP program per DI-ENG-51-1197, CTP User's Guide. ELJ

7.4.13 PRIOR to starting the CTP program, the STA must ensure that Process Computer process points affecting the reactor heat balance calculation have been inserted to scan where possible. The STA shall consult with Reactor Engineering as necessary. ELJ

7.4.14 Have STA perform the following as soon as possible just PRIOR to placing the mode switch to RUN.

7.4.14.1 Select miscellaneous Relay status on SPDS and ensure that ALL relays are in their NORMAL state. ELJ

7.4.14.2 Select Group Point Display List on PCRS Main Menu. THEN select GROUP 10, RPS Relay Status, and ENSURE that no unexpected TRIP condition exists on ANY RPS relay. ELJ

7.4.14.3 IF any abnormal conditions are noted on ANY relays, notify the Shift Supervisor IMMEDIATELY. N/A

7.4.15 PLACE the Reactor Mode switch in RUN. Record Time: _____ _____

7.4.16 PLACE all Recorder Select switches (APRM/IRM) in the APRM, RBM or "0" position. _____

7.4.17 Confirm 2C51-K620A & B, APRM ODAs, switch to "RUN MODE". _____

7.4.18 Visually confirm that the following MSIV Closure Trip Bypass relays are deenergized:

7.4.18.1 On panel 2H11-P609:

- 2C71-K11A _____
- 2C71-K11C _____

7.4.18.2 On panel 2H11-P611:

- 2C71-K11B _____
- 2C71-K11D _____

NOTE:	WHEN withdrawing IRM detectors, detector motion can be confirmed by momentarily switching the Recorder Select switches to monitor IRM channels and noting a power decrease as detectors are withdrawn.

7.4.19 Fully WITHDRAW all operable IRM detectors. _____

FINAL

Facility: Plant E. I. Hatch Date of Examination: 10/31/2005 – 11/11/2005
Examination Level: RO/SRO

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N, C/R	Determine if plant conditions allow a "Quick Restart" of a Recirculation Pump(15 min). G2.1.20 (4.3/4.2), G2.1.32 (3.4/3.8)
Conduct of Operations **SRO only**	D, M, C/R, P	(JPM 25025) Determine if the reactor mode switch can be transferred from Startup/Hot Standby to Run (15 min). G2.1.12 (2.9/4.0)
Equipment Control	N, C/R	Review Of Core Spray Pump Operability Surveillance (25 min) G2.2.12 (2.9/4.0)
Radiation Control	N, C/R	Radiation Exposure Calculation and Required Authorization (15 min). G2.3.4 (2.5/3.1)
Emergency Plan **RO only**	N, C/R	Make an emergency announcement after filling out EP form TRN-0144 (15 minutes – Time Critical) G2.4.39 (3.3)
Emergency Plan **SRO only**	M, C/R	Classify an event per the Hatch Emergency Plan and determine PARs (30 Min – Time Critical x 2). G2.4.29 (4.0)

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)

Southern Nuclear
E. I. Hatch Nuclear Plant

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

Determine if plant conditions allow a "Quick Restart" of a Recirculation Pump.		
E. L. Jones	LR-JP-25050-00	15 Minutes
C.M. Edmund	R Smith	10/21/05

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25050**

00	6/21/05	Initial development	ELJ	RKb

UNIT 1 (X) UNIT 2 ( )

[redacted] **Determine if plant conditions allow a "Quick Restart" of a Recirculation Pump.**

[redacted] LR-JP-25050-00

[redacted] The task shall be complete when it has been determined that the requirements of 34SO-B31-001-1, "Reactor Recirculation System " have NOT been met to start a Reactor Recirculation pump.

[redacted] 004.002

[redacted] 004.002.A

K/A CATALOG NUMBER: Generic 2.1.20/Generic 2.1.32

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.3/3.4

SRO 4.2/3.8

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

[redacted] 34SO-B31-OPS-001-1 (current version)

[redacted] 34GO-OPS-001-1 (current revision)

APPROXIMATE COMPLETION TIME: 15 Minutes

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

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. 10 minutes ago, the Unit 1 reactor scrammed from 100% power.
2. Both Reactor Recirculation pumps tripped during the scram transient.
3. Reactor water level went as low as –10 inches and has been restored to +37 inches using Reactor Feedwater Pumps.
4. HPCI and RCIC were not required during the transient and have remained in standby.
5. RWCU is in service.
6. The Shift Supervisor has given direction to perform a Quick Restart of the **"1B"** Reactor Recirculation pump to prevent thermal stratification.
7. An operator has entered 34SO-B31-001-1, "Reactor Recirculation System" and completed steps 7.1.3.1 through 7.1.3.9 ("Recirc Pump A(B) Quick Restart").
8. Data collection began 4 minutes ago and the operator has completed gathering plant data for use with step 7.1.3.10 of 34SO-B31-001-1.

INITIATING CUES:

Determine if plant conditions meet the procedural requirements for starting the **"1B"** Reactor Recirculation pump per step 7.1.3.10 of 34SO-B31-001-1, "Reactor Recirculation System".

[redacted]

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:_____

NOTE: Attachment 1 serves as an answer key for this JPM. It **is not** to be provided to the student.

NOTE: **At this time**, provide the operator with **Attachment 2** (Plant Data page) and a copy of 34SO-B31-001-1.

PROMPT: If addressed by the operator, inform the operator that the Scoop Tube positioner is not in local manual control.

1.	Operator refers to step 7.1.3.10 and is directed to Attachment 6 of 34SO-B31-001-1	Step 7.1.3.10	
2.	Operator selects "B" Recirc Pump.	Places a check mark next to "B" Recirc. Att. 6 Step 1.0	
3.	The operator enters the current time.	Records current time. Att. 6 Step 1.1	
[redacted]		T_{sat} = 521° F (±2° F) Att. 6 Step 1.1 (A)	

NOTE: Data is not required to be filled in for the "1A" Recirc Pump in the following step.

5.	The Operator enters suction temperature for Recirculation Pumps.	Recirc "1A": 470° F Recirc "1B": 475° F (Att. 6 Step 1.1 (A) & (B))	
6.	The operator enters the bottom head temperature.	Bottom head temperature: 365° F (Att. 6 Step 1.1 (D))	
7.	The operator calculates the Δt between the "1B" loop and the RPV.	Δt = (521° F - 475° F) = 46° F (±2° F) (Att. 6 Step 1.2.1)	

(Indicates critical step)**

		Δt of 46° F (±2° F) is < 50° F (Att. 6 Step 1.2.1)	

NOTE: The student should not use step 1.3.2 to perform the following confirmation of plant conditions due to the note that precedes step 1.3 (RWCU is in service). If the operator does refer to step 1.3.2, the check will not be acceptable due to Feedwater temperature < 300° F.

		Δt = (521° F - 365° F) = 156° F (±2° F) (Att. 6 Step 1.3.1)	
		Δt of 156° F (±2° F) is > 145° F (Att. 6 Step 1.3.1)	
11	The operator reports to the Shift Supervisor.	Plant conditions are not acceptable for starting the "1B" Reactor Recirculation pump.	

Note: Step 1.3.2 is not required to be performed (it is an alternate method). If the student chooses to perform step 1.3.2, the conditions will not allow the start of the Recirc Pump (FW temp <300 F). The following information is expected to be determined by the student (see **attachment 1** for details):

(a) is met (>40% of rated flow prior to the RPT).
(b) is met (HPCI and RCIC have not inhected since the RPT)
(c) is NOT met (FW temp is not >300 F since the RPT)
is met (<30 minutes since trip) and start time (calculated time to start is required to be 30 minutes from the RPT time)

PROMPT: **IF** addressed by the operator, as the STA, **INFORM** the operator that power/flow map conditions are acceptable for starting the Recirc Pump.

PROMPT: **IF** addressed by the operator, as the Shift Supervisor, **INFORM** the operator that another operator will verify his calculations.

END
TIME:_____

(Indicates critical step)**

[redacted]

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)**

EVALUATOR USE ONLY (KEY)
DO NOT give to candidate

NOTE:	This attachment may be performed in Modes 1,2, and 3.

1.0 Recirc Loop and RPV Limit Checks:

Pre-startup checks for (√): _____ "A" recirc
✓ "B" recirc

1.1 Record the following data: Time **Current Time** Initials

	Parameter	Location	Value	
(A)	RPV Saturation Temp.	SPDS MISC RPV Heatup/ Cooldown OR Steam Tables	**521° F (±2° F)**	(A)
(B)	"A" Recirc Suction Temp	1B31-R650 OR Equivalent	**470° F**	(B)
(C)	"B" Recirc Suction Temp	1B31-R650 OR Equivalent	**475° F**	(C)
(D)	*Vessel Bottom Head Drain	*1B21-R606 Pt 3 OR 1G31-N601 Pt 5	***365° F**	(D)

* The Bottom Head Drain temperature (D) may still be used even if RWCU is not in service. (See Limitation 5.2.12). IF Bottom Head Drain temperature is NOT available, (i.e., inoperable), THEN use the alternate method of confirming the Bottom Head to Coolant ΔT in step 1.3.

1.2 FOR the Recirc loop to be started, CONFIRM the ΔT between the reactor coolant temperature in the loop and the RPV coolant temperature is ≤ 50°F by performing step 1.2.1 or 1.2.2 below:

1.2.1 Loop "A" ΔT = |(A) - (B)| = ____ (acceptable ≤ 50°F) N/A
OR
Loop "B" ΔT = |(A) - (C)| = **46° F (±2° F)** (acceptable ≤ 50°F) Initials

•••••••••••••••••••••••••••••••••••• **OR** ••

1.2.2 IF only one recirc loop is idle,
THEN loop ΔT = |(B) - (C)| = _____ (acceptable ≤ 50°F) N/A

EVALUATOR USE ONLY (KEY)
DO NOT give to candidate

NOTE:	IF a direct indication is NOT available for Vessel B THEN within 30 minutes of an RPT, the bottom head to coolant ΔT (≤ 145° F) may be confirmed per the alternate method in step 1.3.2.

1.3 CONFIRM the ΔT between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is ≤ 145°F by performing step 1.3.1 or 1.3.2 below:

1.3.1 ΔT = |(A) - (D)| = **156° F (±2° F) (acceptable ≤ 145°F)** _____

•••••••••••••••••••••••••••••••••••• **OR** ••

1.3.2 Per Tech Spec BASES B.3.4.9, CONFIRM ALL of the following:

(a) One or more loop drive flows were > 40% (18,000 gpm) of rated flow prior to the RPT, AND N/A **True**

(b) HPCI and RCIC Systems have not injected since the RPT, AND N/A **True**

(c) Feedwater temperature has remained > 300°F since the RPT, AND N/A **Not correct**

(d) Time between the RPT and restart is < 30 minutes.
These are calculated by the student, based on JPM start time the time will vary.

Record Recirc RPT trip time: _____(T1)

Recirc start is required prior to:
(T1) + 30 minutes = _____ N/A

1.4 IF only ONE Recirc pump is idle,
THEN CONFIRM the operating pump loop flow is < 22,500 GPM. N/A

1.5 CONFIRM that:

(1) Power/flow condition is acceptable for restart per the STA/Rx Engineering. _____

OR

(2) IF the OPRM System is inoperable, the reactor is 10% below the 61% Load Line of Attachment 1, OPRM System Inop Power vs. Flow map in 34AB-C51-001-1, in order to avoid inadvertent entry into the RPI.

-

1.6 INDEPENDENTLY VERIFY that the data recorded in section 1.0 above is ACCEPTABLE prior to proceeding with the recirc pump start. (VERIFIED) _____

2.0 CONFIRM data taken per Section 1.0, was performed within the last 15 minutes.

3.0 Record Recirc pump start time: _____ _____

Attachment 2

Provide to Candidate

Plant Data

- **Reactor pressure:** 805 psig
- **"A" Recirc Suction Temp** (1B31-R650): 470° F
- **"B" Recirc Suction Temp** (1B31-R650): 475° F
- **Vessel Bottom Head Drain** (1B21-R606 Pt 3): 365° F
- **Reactor Feedwater temperature:** 295° F

Southern Nuclear
E. I. Hatch Nuclear Plant

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

REVIEW OF CORE SPRAY PUMP OPERABILITY SURVEILLANCE		
E. L. Jones	LR-JP-25051-0	25 Minutes
C. M. Edmunds	R S Smith	9/21/05

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25051**

00	10/4/05	Initial development	ELJ	RK

UNIT 1 ( ) UNIT 2 (X)

[redacted]

REVIEW OF CORE SPRAY PUMP OPERABILITY SURVEILLANCE

[redacted] LR-JP-25051-0

[redacted] The task shall be complete when the operator reviews the completed surveillance procedure, 34SV-E21-001-2, and determines the results are in the Alert area and the surveillance frequency is required to be doubled.

[redacted] 300.011

[redacted] 300.011.O

K/A CATALOG NUMBER: Generic 2.2.12

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.9

SRO 4.0

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

[redacted]

34SV-E21-001-2 (current version)

[redacted]

Completed surveillance package: 34SV-E21-001-2.

APPROXIMATE COMPLETION TIME: 25 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is at 100% power.
2. An In-Service Test (IST) has just been completed for the "2A" Core Spray pump IAW 34SV-E21-001-2, "Core Spray Pump Operability".

INITIATING CUES:

Review Attachment 1 of 34SV-E21-001-2, "Core Spray Pump Operability".

Complete any calculations required by the surveillance data sheets.

Inform the Shift Supervisor of your results and any recommendations or procedural requirements based on the results.

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: **AT** this time, **GIVE** the operator a complete copy of 34SV-E21-001-2, "Core Spray Pump Operability."

PROMPT: **AT** this time, **GIVE** the operator Attachment 1 of this JPM (Data has been filled in for this JPM).

PROMPT: **IF** the operator addresses the IST Book, **INFORM** the operator that a supervisor has verified the reference data.

1.	The operator refers to the correct procedure.	The operator REFERS to 34SV-E21-001-2, "Core Spray Pump Operability."	
2.	The operator evaluates parameters on Attachment 1 and finds Outlet Pressure (pump running) P_o acceptable.	On Attach. 1 of 34SV-E21-002-1, the operator EVALUATES outlet pressure (pump running) P_o data is **SATISFACTORY.** **290 psig (spec > 261 psig)**	
3.	The operator evaluates parameters on Attachment 1 and finds Differential Pressure (3) dPr acceptable.	On Attach. 1 of 34SV-E21-001-2, the operator EVALUATES Differential Pressure (3) dPr data is **SATISFACTORY.** **0.98** (Accept 0.98±.005) **(spec is 0.95 to 1.10 dPr)**	

(Indicates critical step)**

4.	The operator evaluates parameters on Attachment 1 and finds Flowrate (7) Qr acceptable.	On Attach. 1 of 34SV-E21-001-2, the operator EVALUATES finds Flowrate (7) Qr data is **SATISFACTORY. 4160 gpm (spec = ref data, ratio 1.0)**	
		On Attach. 1 of 34SV-E21-001-2, the operator EVALUATES Vibration Point 1, (V01) Vr data is in the **Alert Range.** **Vibration of .32 is ACCEPTABLE (spec < 0.325in/sec)** **Ratio of 3.2 is in the ALERT range (spec = ≤ 2.5 Vr)**	

NOTE: The operator may elect to inform the SS at this time that there is an out of spec. item on the form. This action is acceptable.

It is also acceptable for the operator to complete the review before bringing this to the supervisors attention.

PROMPT: **IF** the operator addresses the out of spec. item(s), **DIRECT** the operator to finish the data package review.

(Indicates critical step)**

		On Attach. 1 of 34SV-E21-001-2, the operator EVALUATES Vibration Point 2, (V01) Vr data is in the **Alert Range.** **Vibration of .275 is ACCEPTABLE (spec < 0.275 in/sec)** **Ratio of 3.44 is in the ALERT range (spec = ≤ 2.5 Vr)**	
7.	The operator evaluates parameters on Attachment 1 and finds Vibration Point 3 (Axial), (A01) Vr acceptable.	On Attach. 1 of 34SV-E21-001-1, the operator EVALUATES finds Point 3 (Axial), (A01) Vr data is **SATISFACTORY.** **0.280 (spec ≤ 0.275 in/sec)** **Ratio 2.33 (spec ≤ 2.5 Vr)**	

8.	The operator evaluates the stroke time data for the cooling water valve 2P41-F036A.	On Attach. 1 of 34SV-E21-001-2, the operator evaluates the stroke time data for 2P41-F036A and determines that the valve data is **Satisfactory.**	
9.	The operator evaluates the stroke time data for the cooling water vavles 2P41-F036B.	On Attach. 1 of 34SV-E21-001-2, the operator evaluates the stroke time data for 2P41-F036B and determines that the valve data is **Satisfactory.**	
10.	The operator evaluates the stroke time data for the cooling water vavles2P41-F039A.	On Attach. 1 of 34SV-E21-001-2, the operator evaluates the stroke time data for 2P41-F039A and determines that the valve data is **Satisfactory.**	

(Indicates critical step)**

11.	The operator evaluates the stroke time data for the cooling water vavles 2P41-F039A.	On Attach. 1 of 34SV-E21-001-2, the operator evaluates the stroke time data for 2P41-F039B and determines that the valve data is **Satisfactory.**	
		The Operator informs the SS that Vibration Point 1, (V01) Vr dVibration Point 2, (H01) Vr are in the **Alert range.**	

PROMPT: **WHEN** the operator addresses the readings in the ALERT range, **TELL** the operator to make recommendations based on the findings.

	The operator determines that the Core Spray pump is operable, however; **the surveillance frequency is required to be doubled due to the readings in the ALERT range.** (Step 4.3.5 and Note (1) of Attachment 1).	

NOTE: If the operator addresses writing a Condition Report (CR) based on this surveillance, inform the operator that another operator will write the CR.

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)**

Test Date: _____

Core Spray Test Loop (**X**) A ( ) B

Reference Data Changes:

Is reference data being changed? ( ) Yes (**X**) No

If YES, list justification for so doing: _____

(2E21-C001A and B)

PARAMETER	INSTRU MPL NO.	REFERENCE VALUE	DATE REF VALUE TAKEN	TEST VALUE	ACCEPT. RANGE	ALERT RANGE (1)	REQ'D ACTION RANGE (2)	TECH. SPEC.	RATIO (6)
Inlet Pressure (Pump Running)	[illegible]	N/A	N/A	5 PSIG	N/A	N/A	N/A	N/A	N/A
Outlet Pressure (Pump Running) P_o	2E21-R600A(B)	*295*	*09/03/2005*	*290*	N/A	N/A	N/A	> 261 PSIG	N/A
Differential Pressure (3) dPr	[illegible]	*290*	*09/03/2005*	*285*	0.95 to 1.10 dPr	≥.93 and <.95 dPr	<0.93 dPr or >1.10 dPr	N/A	____
Flowrate (7) Qr	2E21-R601A(B)	*4260*	*09/03/2005*	*4260*	N/A	N/A	N/A	At least 4250 GPM	1.0
Vibration Point 1 (V01) V_r	(5)	*0.100*	*09/03/2005*	*0.320*	(4)	(4)	(4)	N/A	____
Point 2 (H01) V_r	(5)	*0.080*	*09/03/2005*	*0.275*				N/A	____
Point 3 (Axial) (A01) V_r	(5)	*0.120*	*09/03/2005*	*0.280*	(4)	(4)	(4)	N/A	____

(1) Test Frequency to be doubled according to 31GO-INS-001-0.

(2) Pump declared inoperable according to 31GO-INS-001-0.

(3) Differential pressure must be calculated as: dP = Outlet pressure (pump running) - 5 psig.

(4)

Vref.	ACCEPTABLE V	ALERT V	ACTION V
ALL	≤ 2.5 Vr AND ≤ .325 IN/SEC	> 2.5 Vr to 6 Vr AND >.325 IN/SEC to .70 IN/SEC	> 6 Vr AND > .70 IN/SEC

(5) Use Portable Instrument

(6) Ratio = Test Value divided by Reference Value

(7) Test value must equal reference value. Ratio for flowrate must equal 1.0.

NOTE:	WHEN calculating OR recording valve stroke times, round off to the nearest tenth second.

	COLUMN 2 REFERENCE TIME (SEC)		COLUMN 3 CALCULATED ALLOWABLE TIME (SEC)				COLUMN 4 OPERATING TIME (SEC)		COLUMN 5 MAXIMUM TIME LIMIT (SEC)		TIMED BY: INIT
	OPEN	CLOSE	OPEN MIN/MAX		CLOSE MIN/MAX		OPEN	CLOSE	OPEN	CLOSE	
2P41-F036A AOV	*8.8*	N/A	*4.4*	*13.2*	N/A	N/A	*8.9*	N/A	≤15	N/A	*JGK*
2P41-F036B AOV	*8.4*	N/A	*4.2*	*12.6*	N/A	N/A	*8.2*	N/A	≤15	N/A	*JGK*
2P41-F039A AOV	*7.2*	N/A	*3.6*	*10.8*	N/A	N/A	*7.1*	N/A	≤15	N/A	*JGK*
2P41-F039B AOV	*8.0*	N/A	*4.0*	*12.0*	N/A	N/A	*8.0*	N/A	≤15	N/A	*JGK*

VERIFY STROKE
TIMES ACCEPTABLE: _____ DATE:_____

(Indicates critical step)**

Test Date: _____

Core Spray Test Loop (**X**) A ( ) B

Reference Data Changes:

Is reference data being changed? ( ) Yes (**X**) No

If YES, list justification for so doing: _____

Attachment 2
**** KEY ****
DO NOT give this to candidate

(2E21-C001A and B)

PARAMETER	INSTRU MPL NO.	REFERENCE VALUE	DATE REF VALUE TAKEN	TEST VALUE	ACCEPT. RANGE	ALERT RANGE (1)	REQ'D ACTION RANGE (2)	TECH. SPEC.	RATIO (6)
Inlet Pressure (Pump Running)	N/A	N/A	N/A	5 PSIG	N/A	N/A	N/A	N/A	N/A
Outlet Pressure (Pump Running) P_o	2E21-R600A(B)	*295*	*09/03/2005*	*290*	N/A	N/A	N/A	> 261 PSIG	N/A
Differential Pressure (3) dPr	[illegible]	*290*	*09/03/2005*	*285*	0.95 to 1.10 dPr	≥.93 and <.95 dPr	<0.93 dPr or >1.10 dPr	N/A	0.98
Flowrate (7) Qr	2E21-R601A(B)	*4260*	*09/03/2005*	*4260*	N/A	N/A	N/A	At least 4250 GPM	1.0
Vibration Point 1 (V01) V_r	(5)	*0.100*	*09/03/2005*	*0.320*	(4)	(4)	(4)	N/A	3.2
Point 2 (H01) V_r	(5)	*0.080*	*09/03/2005*	*0.275*				N/A	3.44
Point 3 (Axial) (A01) V_r	(5)	*0.120*	*09/03/2005*	*0.280*	(4)	(4)	(4)	N/A	2.33

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

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

Radiation Exposure Calculation and Required Authorization		
E. L. Jones	LR-JP-25052-00	15 Minutes
C. M. Edmund	R Hamm	10/24/05

SOUTHERN COMPANY

Energy to Serve Your World℠

SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25052**

00	10/24/05	Initial development	ELJ	DK

UNIT 1 ( ) UNIT 2 (X)

[redacted] **Radiation Exposure Calculation and Required Authorization.**

[redacted] LR-JP-25052-00

[redacted] 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.

[redacted] N/A

[redacted] 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)

[redacted] 60AC-HPX-001-0 (current version)

[redacted] 60AC-HPX-001-0 (current version)

APPROXIMATE COMPLETION TIME: 15 Minutes

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

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. You are a radiation worker at Hatch and have been assigned to perform a job in the U1 Drywell.
2. Your jobs inside the Drywell, not including transit time, will take 26 minutes.
3. Your total exposure (TEDE) for the year so far has been confirmed to be 1400 mrem.
4. One of the radiation fields you will work in for 6 minutes is 2,700 mrem/hour (gamma radiation).
5. The other radiation field that you will work in for 20 minutes is 900 mrem/hour (gamma radiation).
6. The average radiation field during transit is 360 mrem/hr. The transit time is 3 minutes to get to the work location.

INITIATING CUES:

Calculate the total exposure you will receive for the job, including transit dose.

Determine if any administrative radiation exposure limits will be exceeded.

Considering your current exposure (1400mrem) and that which will be received from this job, determine who must authorize the exposure, if anyone, IAW 60AC-HPX-001-0.

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** that the fields and times given include travel time (there is no additional exposure).

PROMPT: **AT THIS TIME, PROVIDE** the operator with a copy of 60AC-HPX-001-0 and the attached map which shows the job locations and transit path inside the Drywell.

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 2,700 mrem/hour field.	(2,700 mrem/hr * 6 minutes)/60 min/hr = 270 mrem.	
2.	The operator calculates exposure in the 900 mrem/hour field.	(900 mrem/hr * 20 minutes)/60 min/hr = 300 mRem.	
3.	The operator calculates exposure in the 360 mrem/hour field.	(360 mrem/hr * 3 minutes)/60 min/hr = 18 mRem.	
4.	The operator takes into account transit exposure to and from the job site. (18 mRem each way).	18 mrem + 18 mrem = 36 mRem.	

(Indicates critical step)**

NOTE: The operator must consider the exposure to and from the job site for the total exposure to exceed the 2,000 mRem limit. If only the exposure going to the job is included in the calculation, the exposure will be 1988 mRem total.

	1,400 mrem + 270 mrem + 300 mRem + 36 mRem= 2,006 mRem.	
	The Hatch Administrative limit is 2,000 mrem/year. (60AC-HPX-001-0 step 8.2.1)	

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

7.	The operator determines the authorization requirements to exceed the Annual Administrative limit.	With available exposure confirmed, authrization must be written approval from an HP Supervisor. (Step 8.2.2)	

NOTE: In consultation with Chief Examiner (10/24/2005) this step was changed from critical to a non-critical step. The change was based on misleading procedure wording. A Condition Report will be written to initiate a procedure change upon exam completion.

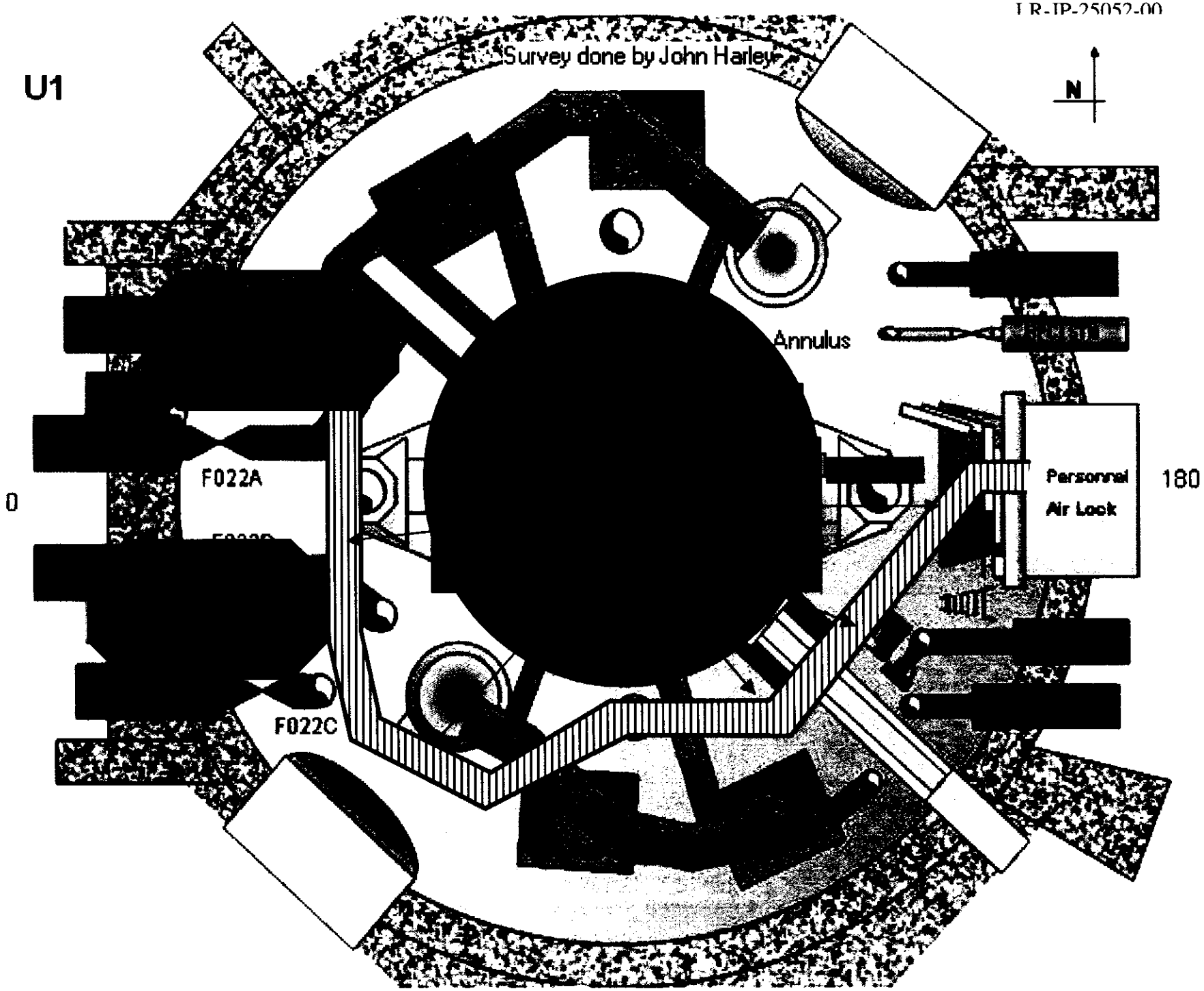
END TIME:_____

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)**


U1
Survey done by John Harley
N
Annulus
F022A
F022C
Personnel
Air Lock
0
180

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM
(ADMIN - RO Only)

MAKE AN EMERGENCY ANNOUNCEMENT AFTER FILLING OUT EP FORM TRN-0144

TIME CRITICAL

E. L JONES	LR-JP-25053-0	15 Minutes

C. M. Edmund R Rowe 9/21/05

SOUTHERN COMPANY

Energy to Serve Your World℠

SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-250053**

00	10/4/05	Initial development	ELJ	RK

UNIT 1 (X) UNIT 2 (X)

[redacted]

MAKE AN EMERGENCY ANNOUNCEMENT AFTER FILLING OUT EP FORM TRN-0144

[redacted] LR-JP-25053-0

[redacted] The task shall be completed when form TRN-0144 has been filled out and an emergency announcement has been make per 73EP-EIP-005-0 & TRN-0144.

[redacted] 200.059

[redacted] 200.059.A

K/A CATALOG NUMBER: Generic 2.4.39

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.3

SRO 3.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]

73EP-EIP-001-0 (current version)
73EP-EIP-005-0 (current version)
TRN-0144 (current version)

[redacted]

73EP-EIP-005-0 (current version)
TRN-0144 (current version)

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Reactor scram has occurred on Unit 2.
2. Due to a steam leak into the Reactor Building that cannot be isolated, a Site Area Emergency has been declared per 73EP-EIP-001-0.
3. The Shift Manager has given orders for the evacuation of all non-essential personnel.
4. 73EP-EIP-005-0 is in progress and Section 7.4.1 through 7.4.5 have been completed.
5. Security has been directed to activate the Simulator and Skills Buildings' Public Address system.
6. A Radiation Release is in progress. The Shift Manager and the Shift Supervisor have been notified of the release.

INITIATING CUES:

The Shift Manager has directed you to continue performance of 73EP-EIP-005-0 at Step 7.4.6 and make an emergency announcement using section III of TRN-0144, "Standard Announcement".

[redacted]

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:_____

NOTE: Attachment 2 is to be used as a key for this JPM (this is how the student is expected to fill out TRN-0144) and **IS NOT** to be handed out to the student.

PROMPT: **AT THIS TIME** provide the operator with:
- a copy of Attachment 1 of this JPM (Southern Nuclear ENN form).
- a copy of 73EP-EIP-005-0 (Emergency Announcement Guide procedure).
- a blank form TRN-0144 (Emergency Announcement Guide attachment).

1.	The operator addresses 73EP-EIP-005-0, Step 7.4.6 .	The operator addresses 73EP-EIP-005-0 at Step 7.4.6 which provides guidance to complete TRN-0144.	
[redacted]		**The operator selects "Site-Area Emergency"** on TRN-0144.	
3.	Using the ENN form, the operator fills in step 1 of TRN-0144.	The operator selects either **This "Is" or "Is Not" a Drill"** and writes that the emergency was due to an **unisolable steam line break in Sec. Cont.**	

NOTE: During training, students are directed to state that "This is a Drill" when making page announcements due to the potential for pages being merged (this condition could result in the plant being inadvertently notified of a training emergency). For the purposes of this JPM, accept either "Is" or "Is Not" a drill as an acceptable selection.

(Indicates critical step)**

4.	Using the ENN form, the operator fills in step 2 of TRN-0144.	The operator checks off that a **radiological release "is"in progress.**	
		The operator has determined that the Rally Point is at **the PESB** based on wind direction of 83°.	
		The operator has determined that the other personnel will evacuate the plant site using **Gate 10** based on wind direction of direction of 83°.	
		The operator checks off that a **radiological release is in progress** and that the evacuation is to be: **South on U.S. Highway 1. Personnel will report to the State Reception Center at Appling Co. High School/Baxley.**	

NOTE: If this JPM is performed in the simulator, the announcement may be completed using the simulator page system, otherwise refer to the prompt below this note.

PROMPT: **INFORM** the operator that the announcement may be simulated using a regular telephone handset (if the JPM is not performed in the simulator). If the JPM is performed in the classroom, the operator should state that he would sound the tone for an emergency.

(Indicates critical step)**

		The operator **sounds the applicable tone** (if the JPM is being performed in the simulator) and **makes an emergency announcement** based on the information contained on TRN-0144.	
9.	The announcement is repeated.	The operator **repeats the announcement** immediately following the first announcement.	
10.	The operator fills in the date and time of the Initial Announcement.	The operator **fills in the date and time** of the Initial Announcement on form TRN-0144.	

PROMPT: **IF** the operator addresses subsequent announcements, **INFORM** the operator that another operator will be taking over the responsibility of making the futher emergency announcements.

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)**

JPM 25053 Attachment 1

Provide to candidate

SOUTHERN NOTIFICATION

MESSAGE # CR 01

1. [A] DRILL [B] ACTUAL EVENT
2. [A] INITIAL [B] FOLLOW-UP NOTIFICATION: TIME_____ DATE____/____/____ AUTHENTICATION # __N/A_
3. SITE: **HATCH NUCLEAR PLANT** Confirmation Phone # **(912) 366-2000 ext.** ____

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

BASED ON EAL # 4.0 EAL DESCRIPTION: Steam line break in Secondary Containment which cannot be isolated.

5. **PROTECTIVE ACTION RECOMMENDATIONS:** [A] NONE

[B] EVACUATE _____

[C] SHELTER _____

[D] Consider the use of KI (potassium iodide) in accordance with State plans and policy.

[E] OTHER _____

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

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

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

9. METEOROLOGICAL DATA: Wind Direction from 83 degrees Wind Speed 5 mph

Precipitation No rain Stability Class [A] [B] [C] [D] [E] [F] [G]

10. [A] DECLARATION [B] TERMINATION Time 10:12 Date 11 / 01 / 2005

11. AFFECTED UNIT(S): [1] [2] [All]

12. UNIT STATUS: (Unaffected Unit(s) Status Not Required for Initial Notifications)

[A] U1 100 % Power Shutdown at Time _____ Date __/____/____

[B] U2 ____% Power Shutdown at Time 10:00 Date 11 / 01 / 2005

13. REMARKS: _____

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: 1.0E-01 Iodines: 1.3E-03 Particulates: 0.0E+00 Other: _____

FORM: [A] Airborne Start Time 10:00 Date 11 / 01 / 2005 Stop Time _____ Date __/____/____

[B] Liquid Start Time _____ Date __/____/____ Stop Time _____ Date __/____/____

15. PROJECTION PARAMETERS: Projection period: _____ Hours Estimated Release Duration 4.0 Hours

Projection performed: Time 10:07 Date 11 / 01 / 2005 Accident Type: _____

16. PROJECTED DOSE:

DISTANCE	TEDE (mrem)	Adult Thyroid CDE (mrem)
Site boundary	9.5E-01	5.2E-02
2 Miles	7.9E-01	9.9E-01
5 Miles	3.9E-01	1.7E+00
10 Miles	1.2E-01	7.7E-01

Training Use Only

17. APPROVED BY: *Ed Jones* Title Shift Manager/Emergency Director Time 10:15 Date 11 / 01 / 2005

NOTIFIED BY: _____

RECEIVED BY: _____ Time _____ Date __/____/____

(To be completed by receiving organization)

FORM TITLE:
EMERGENCY PAGE ANNOUNCEMENT GUIDE

EVALUATOR USE ONLY
**** KEY ****
DO NOT give to candidate

STANDARD ANNOUNCEMENT

INSTRUCTIONS:

a. Record below the information needed to make this announcement.

b. Verify Security has been directed to activate the Simulator and Skills Buildings' Public Address system.

c. Sound the applicable tone, THEN make the following announcement using the applicable sections below.

d. **The appropriate announcement/tone must be made as soon as practicable but must not exceed 15 minutes after the initial emergency declaration. Immediately repeat the announcement.**

e. **During the first (2) hours of the declared emergency, repeat the announcement/tone every thirty (30) minutes.** After the first two (2) hours, repeat the announcement/ tone as directed by the Shift Manager or SS.

Emergency Classification (SELECT ONE):

☐ **Notification of Unusual Event** (use .1. only) ☐ **Alert Emergency** (use . 1. through 3. only)

☑ **Site-Area Emergency** or ☐ **General Emergency** (use . 1. through 6.)

1. ATTENTION ALL PERSONNEL. THIS (☑ **IS** / ☐ **IS NOT**) A DRILL. A/AN Site Area Emergency HAS BEEN DECLARED BASED ON: Steam line break in Secondary Containment which cannot be isolated.

2. (SELECT ONE): ☐ A radiological release **IS NOT** in progress. ☑ A radiological release **IS** in progress.

NOTE:	**Announcement of items 3 thru 6 may be discontinued upon verification of completion of personnel accountability.**

3. All emergency response personnel will report to your emergency response facility and initiate emergency implementing procedures.

4. (SELECT ONE) All other personnel inside the protected area will report to the rally point at:
   ☑ the PESB ☐ Gate 17 ☐ Other (specify location) _____.

5. (SELECT ONE) All other personnel will exit the plant site using:
   ☐ the main access road ☑ Gate 10 ☐ Other (specify other exit route) _____.

6. (SELECT ONE):
   ☐ (Use if a radiological release **is not** in progress)
   The evacuation route is either direction on U. S. Highway 1.
   ☑ (Use if a radiological release **is** in progress)
   (SELECT ONE): The evacuation route is:
   ☐ Either direction on U.S. Highway 1. Report to the State Reception Center at either Toombs Co. High School/Lyons or Appling Co. High School/Baxley.
   ☑ South on U.S. Highway 1. Report to the State Reception Center at Appling Co. High School/Baxley.
   ☐ North on U.S. Highway 1. Report to the State Reception Center at Toombs Co. High School/Lyons.

Record the date and time of announcements:

Initial announcement: _____/_____

Follow-up announcements: _____/_____ _____/_____

_____/_____ _____/_____

Southern Nuclear
E. I. Hatch Nuclear Plant

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

CLASSIFY AN EVENT PER THE HATCH EMERGENCY PLAN AND DETERMINE PARS

TIME CRITICAL

E. L. JONES	LR-JP-25054-0	15 Min (Class) 15 Min (PARs)

C. M. Edmund R Kyma 10/21/03

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-25054**

00	10/21/05	Initial Development	ELJ	RR

UNIT 1 (X) UNIT 2 (X)

[redacted]

CLASSIFY AN EVENT PER THE HATCH EMERGENCY PLAN AND DETERMINE PARS

[redacted] LR-JP-25054-0

[redacted] The task shall be completed when the event has been classified per 73EP-EIP-001-0 and PARs have been determined per 73EP-EIP-054-0.

[redacted] 200.052

[redacted] 200.052.A

K/A CATALOG NUMBER: Generic 2.4.29

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.1

SRO 4.0

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

[redacted]

73EP-EIP-001-0 (current version)
73EP-EIP-054-0 (current version)

[redacted]

73EP-EIP-001-0 (current version)
73EP-EIP-054-0 (current version)
TRN-0123 (current version)

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: N/A

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A confirmed report from the Nuclear Security Shift Supervisor has just been received in the Main Control. Armed gunmen have entered the protected area by parachute and have taken control of the Diesel Building.
2. A firefight is occurring between Hatch Security officers and the gunmen.
3. Hatch Security is confident that all intruders were contained inside the Diesel Building within seconds of their arrival inside the Protected Area,
4. Hatch Security personnel are unable to enter the Diesel Building at this time.
5. There are no known casualties.
6. Both units are currently in Mode 1 with preparations being made to scram the units.
7. Security states that no personnel will be allowed outside of substantial structures at this time.
8. Radioactive release rates are normal for power operation.
9. Drywell Wide Range Radiation monitors are reading 2 R/hour.

INITIATING CUES:

Determine if an emergency classification should be declared.
If there is a classification, state which one.

And

Determine if Protective Action Recommendations (PARs) should be issued.

If PARs should be issued, complete a PARs worksheet.

[redacted]

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: Attachment 1 is to be used as a key for this JPM and **is not to be handed out to the student.**

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 73EP-EIP-001-0.	
[redacted]		Operator has CLASSIFIED the event as a **GENERAL EMERGENCY**. (Section 9.0, Security Event)	

NOTE: There is a **GENERAL EMERGENCY** classification based on Section 9.0, which states A loss of physical control of the plant is imminent as indicated by: Loss of physical barrier capabilities of any vital building **OR** Loss of control of any vital area including: Diesel Generator Bldg **AND** SOS/ED judgment based on Nuclear Security Shift Supervisor advice. If follow-up questioning reveals that a classification was declared and based on another section of the procedure, the classification should be evaluated for validity.

PROMPT: **IF** the operator addresses the recommendations from the Nuclear Security Shift Supervisor, **INFORM** the operator that security is unable to gain control of the Diesel Building, no further information is available at this time.

1ST END TIME:

_____

[redacted]

2ND START TIME: _____

3.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 73EP-EIP-054-0 and TRN-0123 .	
[redacted]		The operator selects that a **General Emergency has been declared.**	

PROMPT: **WHEN** the operator addresses Wide Range Drywell radiation monitor indicate that K621A is reading 2 R/hr.

[redacted]	The operator determines that DWWRM levels are < 4.8E5R/HR; however, **a loss of a vital area to an intruder has occurred.**	
	The operator determines that a **radiation release is not underway and that containment failure is not imminent.**	

PROMPT: The operator may be uncertain about whether containment failure is imminent or projected, **IF** the operator asks for clarifying information, **INFORM** the operator as security that intruders have not, nor are they expected to, entered the Reactor Building.

[redacted]	The operator has DETERMINED the PAR for this Emergency is **PAR 2.**	

PROMPT: **IF** the operator addresses actual field measurements, as the Shift Manager, **INFORM** the operator that neither actual field measurements nor dose projections have been obtained yet.

8.	The operaor reviews the flowchart for PARs based on Dose Projections.	The operator determines that since neither dose projections nor field measurements have been performed, **there are no PAR requirements based on Dose Projections.**	

9.	RECORD the PAR based on **plant conditions** and dose projections Section II of TRN-0123 AND check the applicable box indicating the most conservative PAR.	The Operator has DETERMINED that **PARs should be based on Plant Conditions.**	
10.	Check the block to the left of the most conservative PAR.	**Check PAR 2.**	

PROMPT: **WHEN** the operator addresses wind direction/meterological data, **PROVIDE** attachment 2, SPDS Meterological Data.

	At panel 1H11-P690, the operator has DETERMINED wind direction to be from 270°, using the SPDS Meterological Data Screen.	

12. Record "wind direction from" on Section II of TRN-0123.	The operator has RECORDED wind direction (Wind From) on Section II of TRN-0123.	
	The operator has determined the zones required to be evacuated are: **B-5, E-5**	

	The operator has RECORDED **B-5, E-5** in the Evacuate row on Section II of TRN-0123.	

	The operator has DETERMINED the zones required to be sheltered are: **C-5, D-5, B-10, K-10, L-10**	
	The operator has RECORDED **C-5, D-5, B-10, K-10, L-10** in the Shelter-In-Place row Section II of TRN-0123.	
	The Operator has DETERMINED that PARs should be based on Plant Conditions.	

18.	Obtain ED concurrence on PARs.	Emergency Director has SIGNED Section II.	

NOTE: The evaluator may sign as the ED or tell the operator that it has been signed.

NOTE: It is not necessary for the student to verbally state the PARs.

PROMPT: **IF** the operator addresses notifications, as the Shift Manager, **INFORM** the operator that another operator will make the State and Local notifications.

PROMPT: **IF** the operator addresses continuing assessment, as the Shift Manager, **INFORM** the operator that another operator will continue the assessment of the emergency conditions.

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.

EVALUATOR USE ONLY (KEY)
DO NOT give to candidate

SECTION II

INSTRUCTIONS:

1. Check the box of the most conservative PAR (1, 2, or 3).
2. Indicate the basis for the PAR.

NOTE:	The "wind direction" to be used should be based on the meteorological instrumentation which corresponds to the elevation of the primary release point.

3. Record the 15 minute average "wind direction from" for the selected PAR.
4. Use the applicable PAR table (Table 1, 2 or 3) to determine the affected "evacuate zones" and "shelter zones"
5. Record the "evacuate zones" and "shelter zones" for the selected PAR.

☐ **"PAR 1"** Based on: Plant conditions ☐ Dose Projections ☐

Wind direction from	
Evacuate	**A only**
Shelter-In-Place	

☑ **"PAR 2"** Based on: Plant conditions ☑ Dose Projections ☐

Wind direction from	**270°**
Evacuate	**A + B-5, E-5**
Shelter-In-Place	**C-5, D-5, B-10, K-10, L-10**

☐ **"PAR 3"** Based on: Plant conditions ☐ Dose Projections ☐

Wind direction from	
Evacuate	**A, B-5, C-5, D-5, E-5, +**
Shelter-In-Place	
Other	

CAUTION:	PAR Revisions must include previous PARs.

Approval: _____ _____/_____
Emergency Director **Date/Time**

Attachment 2 (JPM 25054)

Provide to Candidate

MIDAS INFORMATION

METEROLOGICAL

10M WIND SPD	100M WIND SPD	10M WIND DIR	100M WIND DIR
1Y33-R601	1Y33-R603	1Y33-R601	1Y33-R603
5	7	270	270
AMBIENT TEMP (F)	**DELTA T**	**DELTA T**	**RAINFALL**
10M	60-10	100-10	15 MIN AVG
89	-0.983	-1.985	.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
7.7E+00		7.59E+01		2.98E+01	
1D11-K600B		1D11-K619B		2D11-K636B	
7.38E+00		2.65E+01		2.91E+01	

STABILITY CLASS
D

FLOW

MAIN STACK EXHAUST FLOW A	MAIN STACK EXHAUST FLOW B	U1 RX BLDG VENT STACK FLOW A	U1 RX BLDG VENT STACK FLOW B	U2 RX BLDG VENT STACK FLOW A	U2 RX BLDG VENT STACK FLOW B
18972	17823	231170	240783	215287	229814

FINAL

Facility: **Plant E.I Hatch** Date of Examination: **10/31/2005 – 11/11/2005**

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
Inject SBLC (With a Pump Trip and Failure of 2G31-F004)	A, S, D, E	3.1 Reactivity, JPM 25011 (Time Critical - Before HCTL, 8 min) KA 211000A201 (RO 3.5/SRO 3.8)
Prevent Injection From RHR And Core Spray (Alternate Path)	S, M, A, E	3.2 Reactor Water Level Control, JPM 20103 Based on JPM 20103 (20 min) (ESF) KA 295037EA202 (RO 4.1/SRO 4.2)
Emergency Depress The Reactor With The Main Steam Line Drains	S, N, A, E	3.3 Reactor Pressure Control (25 min) KA 239001A402 (RO 3.2/SRO 3.2)
Perform A Manual Initiation Of LPCI (If In Shutdown Cooling)	S, D	3.4 Heat Removal from core JPM 06.08 (15 min) KA 203000A405 (RO 4.3/SRO 4.1)
Verify An Automatic Isolation Of PCIS Group II	S, A, M, E	3.5 Containment Integrity Based on JPM 13.46 (20 min) (ESF) KA 223002A302 (RO 3.5/SRO 3.5)
EDG "1B" Fail to Auto Start & Fail to Auto Tie.	A, S, D	3.6 Electrical - JPM 25060 (8 min) KA 264000A404 (RO 3.7/SRO 3.7)
Perform A Rod Worth Minimizer (RWM) Functional Test (Failure)	S, D, L	3.7 Instrumentation - JPM 25032 (10 min) KA 201006A302 (RO 3.4/SRO 3.5)
Place Control Room HVAC Systems in the Purge Mode (RO only)	C, D, E	3.9 Radiation Release - JPM 25026 (15 min) KA 290003A401 (RO 3.9/SRO 4.0)

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

Crosstie Reactor Building Plant Service Water	M, R, E, A	3.8 Plant Service - JPM 25029 (10 min) KA 295018AA101 (RO 3.3/SRO 3.4)
Vent the Scram Air Header	D, R, E	3.1 Reactivity Control - JPM 10.15 (10 min) KA 212000A417 (RO 4.1/SRO 4.1)
Crosstie Instrument Bus "B" to Instrument Bus "A"	D	3.6 Electrical - JPM 20019 (15 min) KA 262001A207 (RO 3.0/RO 3.2)

@ All control room (and in-plant) systems must be different and 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	≤ 9 / ≤ 8 / ≤ 4
(D)irect from bank	≥ 1 / ≥ 1 / ≥ 1
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power / Shutdown	≥ 2 / ≥ 2 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(P)revious 2 exams	≥ 1 / ≥ 1 / ≥ 1
(R)CA	
(S)imulator	

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM
(Simulator – RO, SRO-I, SRO-U)

INJECT SBLC (With a Pump Trip and Failure of 2G31-F004)

TIME CRITICAL

E. L. JONES

LR-JP-25011

Before Exceeding the HCTL

C. M. Edmund R Gunter 10/21/05

SOUTHERN COMPANY

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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-25011**

[redacted]				
00	10/21/05	Initial Development	ELJ	[signature]

UNIT 1 ( ) UNIT 2 (X)

[redacted] **INJECT SBLC (With a Pump Trip and Failure of 2G31-F004)**

[redacted] LR-JP-25011

[redacted] The task shall be completed when the SBLC System is injecting to the Reactor, Reactor power is decreasing and RWCU has been isolated IAW 34SO-C41-003-2.

[redacted] 011.002

[redacted] 011.002.C

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.43

SRO 4.20

K/A CATALOG NUMBER: 211000A201

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.50

SRO 3.80

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

[redacted]

31EO-EOP-011-2
34SO-C41-003-2
(current versions)

[redacted]

34SO-C41-003-2 (current version)
Key for Standby Liquid Control Key switch

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 a 100% power **IC** and leave in **FREEZE.**

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

mfC11_211	Scram Discharge Volume ATWS	74	1000	00000
mfB21_247A	Spurious Group I Isolation A Side			99999
mfB21_247B	Spurious Group I Isolation B Side			99999
mfC41_240A	SBLC Pump "2A" Failure to Start			00000
MfG31-207A	G31-F001 Fails to isolate on Group 5			00000
MfG31-207B	G31-F004 Fails to isolate on Group 5			00000

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

   A. After **mfC11_211** final value has reached 74, perform the following steps:
   B. Insert **mfB21_247A** and **mfB21_247B.**
   C. Place the MSIV control switches in CLOSE.
   D. Allow the simulator to run until Torus temperature reaches approximately 106°F.
   E. 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 "A" SBLC System per 34SO-C41-003-2.

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

NOTE: The System "A" position of the Standby Liquid Control key switch has been failed and the SBLC System will remain in the Standby lineup.

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.	
4.	Confirm SBLC pump has started.	At panel 2H11-P603, the operator has DETERMINED SBLC PUMP "2A" has NOT started, green light illuminated.	

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)**

[redacted]	At panel 2H11-P603, SBLC PUMP SELECT SWITCH (keylock) is in START SYS B position.	

Note: At this time the time critical aspect of this JPM is complete.

End "Time Critical" Time:_____

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.	
7.	Confirm SBLC pump has started.	At panel 2H11-P603, the operator VERIFIES the STANDBY LIQUID CNTL PUMP 1-2 RUNNING, red light illuminated.	
8.	Determine that RWCU valve 2G31-F004 failed to close.	At panel 2H11-P601, the operator VERIFIES RX WATER CLEANUP VLV, 2G31-F004, is CLOSED, red light illuminated.	
[redacted]		The operator closes 2G31-F004 by placing the control switch in the close position, Green Light illuminates.	

(Indicates critical step)**

10.	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.	

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)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM
(Simulator– RO, SRO-I, SRO-U)

PREVENT INJECTION FROM RHR AND CORE SPRAY (Alternate Path)
E. L. JONES LR-JP-20103-00 20 Minutes
C. M. Edmund R Nmd 10/21/05

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-20103**

00	10/21/05	Initial Development (Alternate Path JPM)	ELJ	RK

UNIT 1 ( ) UNIT 2 (X)

[redacted] **PREVENT INJECTION FROM RHR AND CORE SPRAY (Alternate Path)**

[redacted] LR-JP-20103-00

[redacted] The task shall be complete when the operator has prevented injection from RHR and Core Spray Systems per 31EO-EOP-114-2.

[redacted] 201.101

[redacted] 201.101.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.71

SRO Not Available

K/A CATALOG NUMBER: 295037EA202

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.10

SRO 4.20

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]

31EO-EOP-017-2 (current version)
31EO-EOP-114-2 (current version)

[redacted]

31EO-EOP-114-2 (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 **100% Power** and leave in **FREEZE.**

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

mfB21_128B	Main Steam Relief B leak	100	1000	99999
mfN30_122	Main Turbine Trip			99999
diE11-F017A	RHR Outboard Inj. Sys 1	OPEN		00000
diE11-F017B	RHR Outboard Inj. Sys 2	OPEN		00000
RfE11_22	2E11-F015A & B Override Jumpers and Links	ORIDE		99999
MfG31_242	RWCU Non-Isol Leak (0-10000 gpm)	1	1	99999
RfB21_301	SRV B Fuse	ORIDE		00000

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

   A. Place the HPCI Aux Oil Pump in Pull to Lock
   B. Override the 2P41-F316s (Keylock switch to Override)
   C. Activate Malfunction mfN30_122.
   D. Activate Malfunction mfB21_130B.
   E. Activate Malfunction MfG31_242.
   F. Perform RC-1, RC-2 and TC-1.
   G. When reactor pressure is between 400 psig and 425 psig modify the final value of mfB21_128B to 55%.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. SRV 2B21-F013B has failed open, its fuses have been pulled and it is still open.
2. The reactor has been scrammed due to the stuck open SRV.
3. Drywell pressure is above 1.85 psig.
4. Reactor pressure is slowly lowering, currently near 400 psig.
5. The RC and PC EOP flowcharts are in progress.
6. RPV water level is being controlled using the Condensate and Feedwater system.
7. RHR Pumps are required for spraying the Drywell and Torus.

INITIATING CUES:

Prevent RHR and Core Spray injection per 31EO-EOP-114-2.

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:_____

NOTE: The Core Spray System OR the RHR System may be addressed first.

PROMPT: **IF** the operator addresses IMMEDIATE Terminating and Preventing, as the Shift Supervisor, **INFORM** the operator that "immediate" Terminating and Preventing is not required at this time.

PROMPT: **IF** the operator trips the RHR pumps to immediately prevent injection, **the action is considered to be satisfactory** based on procedure guidance (though not expected in this case). If this happens, **DIRECT** the operator to complete the actions of section 3.2 to prevent injection since the RHR pumps are required for Primary Containment parameter control.

1.	Operator obtains the procedure needed to perform the task.	Operator has obtained 31EO-EOP-114-2.	
2.	Operator closes the Core Spray "A" Inboard Discharge Valve.	At panel 2H11-P601, the operator PLACES 2E21-F005A, Core Spray INBD DISCHARGE VLV, to CLOSE, green light illuminated.	
3.	Operator closes the Core Spray "B" Inboard Discharge Valve.	At panel 2H11-P601, the operator PLACES 2E21-F005B, Core Spray INBD DISCHARGE VLV, to CLOSE, green light illuminated.	
4.	Operator trips Core Spray Pump "A".	At panel 2H11-P601, the operator verifies that CORE SPRAY PUMP "A" is TRIPPED, green light illuminated.	

(Indicates critical step)**

5.	Operator trips Core Spray Pump "B".	At panel 2H11-P601, the operator verifies that CORE SPRAY PUMP "B" is TRIPPED, green light illuminated.	
6.	Operator attempts to close the RHR "A" Outboard Injection Valve.	At panel 2H11-P601, the operator PLACES 2E11-F017A, RHR OUTBD INJ VLV, to CLOSE, red light illuminated.	
7.	Operator attempts to close the RHR "B" Outboard Injection Valve.	At panel 2H11-P601, the operator PLACES 2E11-F017B, RHR OUTBD INJ VLV, to CLOSE, red light illuminated.	

	The operator has contacted the Shift Support Supervisor to have the following links OPENED: Panel 2H11-P617B: FF-38. Panel 2H11-P618B: FF-36.	
	The operator has CONTACTED the Shift Support Supervisor to have the following jumpers INSTALLED: Panel 2H11-P617B: Jumper from FF-39 to FF-40. Panel 2H11-P618B: Jumper from FF-37 to FF-38.	

10.	Operator attempts to close the RHR "A" Outboard Injection Valve.	At panel 2H11-P601, the operator PLACES 2E11-F017A, RHR OUTBD INJ VLV, to CLOSE, red light illuminated.	

Note: F017A will not close and the Red Light will remain energized.

11.	Operator determines that 2E11-F017A has failed to close.	The operator determines that 2E11-F017A has failed to close and informs the SS.	

(Indicates critical step)**

12.	Operator attempts to close the RHR "B" Outboard Injection Valve.	At panel 2H11-P601, the operator PLACES 2E11-F017B, RHR OUTBD INJ VLV, to CLOSE, red light illuminated.	

Note: F017A will not close and the Red Light will remain energized.

13.	Operator determines that 2E11-F017B has failed to close.	The operator determines that 2E11-F017B has failed to close and informs the SS.	

PROMPT: **IF** pumps have been tripped to prevent injection, the task of preventing will have been satisfactorily completed; however, due to the need of RHR pumps to control Primary Containment parameters, **DIRECT** the operator to complete the actions of **Section 3.2** to prevent injection

	The operator has contacted the Shift Support Supervisor to have the following links OPENED: Panel 2H11-P617B: FF-32. Panel 2H11-P618B: FF-30.	
	The operator has CONTACTED the Shift Support Supervisor to have the following jumpers INSTALLED: Panel 2H11-P617B: Jumper from FF-33 to FF-34. Panel 2H11-P618B: Jumper from FF-31 to FF-32.	

SIMULATOR OPERATOR – If the operator has asked for the jumpers and links per procedure, then insert Remote Function rfE11_22.

(Indicates critical step)**

		At panel 2H11-P601, the operator PLACES 2E11-F015A, RHR INBD INJ VLV, to CLOSE, green light illuminated.	
		At panel 2H11-P601, the operator PLACES 2E11-F015B, RHR INBD INJ VLV, to CLOSE, green light illuminated.	
18.	Operator confirms that the RHR Inboard Injection valves are closed.	At panel 2H11-P601, the operator CONFIRMS 2E11-F015A & B, RHR INBD INJ VLVs, are CLOSED, green light illuminated.	

	The Operator places the control switch for each RHR pump in the "start" position, Red light illuminates for each RHR pump.	

NOTE: The above step is only critical if the RHR pumps had been manually tripped to prevent injection.

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: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM
(Simulator– RO, SRO-I)

EMERGENCY DEPRESS THE REACTOR WITH THE MAIN STEAM LINE DRAINS		
E. L. JONES	LR-JP-14.12-0	25 Minutes
C. M. Edmund	R Nyder	10/21/05

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PLANT E. I. HATCH

Page 1 of 1

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-14.12**

0	10/21/05	Initial development	ELJ	RK

UNIT 1 ( ) UNIT 2 (X)

[redacted] **EMERGENCY DEPRESS THE REACTOR WITH THE MAIN STEAM LINE DRAINS**

[redacted] LR-JP-14.12-0

[redacted] The task shall be completed when the Main Steam Line drains have been manually opened to emergency depress the Reactor per 31EO-EOP-108-2.

[redacted] 014.012

[redacted] 014.012.B

K/A CATALOG NUMBER: 239001A402

K/A CATALOG JTA IMPORTANCE RATING:

NPO 3.2

SRO 3.2

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]

31EO-EOP-108-2 (current version)
31EO-EOP-012-2 (current version)
31EO-EOP-015-2 (current version)

[redacted]

31EO-EOP-108-2 (current version)

APPROXIMATE COMPLETION TIME: 25 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, SVOs and OVERRIDES:**

aoP11-R601	CST Level	16	.3	00000
diE41A-S20	HPCI Auxilliary Oil Pump C002-3	LOCK		00000
diN32-C001A	EHC Pmp 2A 600V Bus 2A	TRIP		99999
diN32-C001A	EHC Pmp 2B 600V Bus 2B	TRIP		99999
loE41-F002_MG1	HPCI Steam Isolation Vlv	OFF		00000
loE41-F002_MR2	HPCI Steam Isolation Valve	OFF		00000
loE41-F002G1	HPCI Steam Isolation Vlv	OFF		00000
loE41-F002R2	HPCI Steam Isolation Vlv	OFF		00000
loE41-F003_MG1	HPCI Steam Isolation Vlv	OFF		00000
loE41-F003_MR2	HPCI Steam Isolation Valve	OFF		00000
loE41-F003G1	HPCI Steam Isolation Vlv	OFF		00000
loE41-F003R2	HPCI Steam Isolation Vlv	OFF		00000
loE41A-S20G1	HPCI Auxilliary Oil Pump	OFF		00000
loE41A-S20R2	HPCI Auxilliary Oil Pump	OFF		00000
mfB21_129A	Main Steam Relief Valve A Fails Stuck			00000
mfB21_129B	Main Steam Relief Valve B Fails Stuck			00000
mfB21_129C	Main Steam Relief Valve C Fails Stuck			00000
mfB21_129D	Main Steam Relief Valve D Fails Stuck			00000
mfB21_129E	Main Steam Relief Valve E Fails Stuck			00000
mfB21_129G	Main Steam Relief Valve G Fails Stuck			00000
mfB21_129K	Main Steam Relief Valve K Fails Stuck			00000
mfB21_129L	Main Steam Relief Valve L Fails Stuck			00000
mfB21_129M	Main Steam Relief Valve M Fails Stuck			00000

svoT48140	Water Level in Torus	220	3	00000
mfN21_87A	Feedwater Pump A Trip	TRIP		99999
mfN21_87B	Feedwater Pump B Trip	TRIP		99999

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

   A. Close 2E41-F002 and 2E41-F003 (Place danger tags on the valves).
   B. Place the HPCI Aux Oil Pump in Pull-to-Lock (place a danger tag on the c/s)
   C. Perform RC-1, RC-2 (ensure all actions of RC-2 are complete), and TC-1
   D. Insert malfunction mfN21_87A and mfN21_87B
   E. Start RCIC and inject to the RPV
   F. Acknowledge annunciators
   G. Allow CST level to increase to 180 inches.
   H. Place the SULCV controller in manual at approximately 15% output.

4. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.
5. **ESTIMATED** Simulator **SETUP TIME:** **30 Minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A series of events have resulted in an uncontrolled Suppression Pool level increase.
2. Suppression Pool level is approaching 193".
3. Unit 2 reactor is shutdown with all rods fully inserted.
4. HPCI is tagged out (isolated) for maintenance.
5. RCIC is being used for RPV reactor water level control.
6. The "2A" and "2B" RFPTs have tripped and cannot be reset. Maintenance is investigating.

INITIATING CUES:

Emergency Depress the Reactor by opening 7 ADS valves.

[redacted]

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:_____

[redacted]		At panel 2H11-P602, the following ADS RELIEF VLV control switches are in the OPEN position, red light illuminated: 2B21-F013A 2B21-F013C 2B21-F013E **2B21-F013H 2B21-F013K 2B21-F013L 2B21-F013M	

2.	Confirm red and amber indicator lights for ADS Relief Valves are illuminated.	At panel 2H11-P602, the operator VERIFIES red and amber lights are illuminated for the following ADS RELIEF VLV: 2B21-F013A (red light only) 2B21-F013C(red light only) 2B21-F013E(red light only) 2B21-F013H 2B21-F013K (red light only) 2B21-F013L (red light only) 2B21-F013M (red light only)	

(Indicates critical step)**

NOTE: The operator should detect that SRVs A, C, E, K, L, & M have failed to open, amber light extinguished. The operator may use SPDS to confirm SRV position.

PROMPT: **IF** the operator addresses the stuck closed SRVs, as the Shift Supervisor, **DIRECT** the operator to meet the requirements for an emergency depressurization.

NOTE: Switches for all 4 of the LLS valves should be taken to the open position.

		At panel 2H11-P602, the following LLS/MANUAL RELIEF VLV control switches are in the OPEN position, red light illuminated: 2B21-F013B 2B21-F013D **2B21-F013F 2B21-F013G.	

4.	Confirm red and amber indicator light is illuminated for LLS/Manual Relief Valve opened in previous step.	At panel 2H11-P602, the operator VERIFIES red light and amber light illuminated for LLS/MANUAL RELIEF VLV: 2B21-F013F	

NOTE: The operator should detect that SRVs B, D & G has failed to open, amber light extinguished. The operator may use SPDS to confirm SRV position.

5.	The operator reports SRV status to the SS.	The operator reports to the SS that only 2 SRVs are open.	

PROMPT: **AFTER** the operator reports that only 2 SRVs are open, **DIRECT** the operator to perform Alternate RPV Depressurization per 31EO-EOP-108-2.

6.	The operator enters 31EO-EOP-108-2.	The operator reviews the systems that are available for alternate depressurizaion	

(** **Indicates critical step)**

NOTE: 31EO-EOP-108-2 has several parallel paths available. The operator is expected to use plant conditions determine the most effective methods. The goal of this JPM is for the operator to perform the section associated with using Main Steam Line Drains to depressurize the reactor vessel.

NOTE: During the performance of this JPM, the operator should eliminate following sections of 31EO-EOP-108-2 for reason as indicated:

3.2 HPCI Turbine: System tagged out (piping disconnected).
3.3 HPCI steam line drains: System is tagged out
3.4 RCIC Turbine: Initiation signal present/used for level control
3.5 RCIC Drains: RCIC turbine available
3.6 RFPTs: RFPTs cannot be reset.
3.8 Main Turbine Chest Warming: EHC not available
3.9 Head Vents/DW Coolers: Cannot vent containment (Gr II isol.)
3.11 RWCU Blowdown Mode: RWCU is not in operation

PROMPT: **IF** the operator addresses **Section 3.9,** Head Vents/DW Coolers, **INFORM** the operator that another operator will address that section (this should only be an issue if RPV level has been restored above +3 inches (the Gr II setpoint).

PROMPT: **IF** the operator addresses **Section 3.10** RWCU Recirculation mode **INFORM** the operator that System Operations are out locally performing actions to line up the system, **DIRECT** the operator to progress on to other sections of the 108 procedure.

PROMPT: **IF** the operator addresses **Section 3.12** Steam Jet Air Ejectors, **INFORM** the operator that System Operations are out locally performing actions to line up the system, **DIRECT** the operator to progress on to other sections of the 108 procedure.

PROMPT: **IF** the operator addresses **Section 3.8** Main Turbine Chest Warming before **Section 3.1** Main Turbine Bypass Valves, **DIRECT** the operator to first attempt using **Section 3.1** (more effective).

7.	Note at step 3.1 of 31EO-EOP-108-2	The operator verifies that condenser vacuum is at least 10" Hg.	
8.	Step 3.1.1	Verify that EHC Hydraulic Power Unit is in service.	

(Indicates critical step)**

9.	Step 3.1.2 directs the operator to step 3.1.15	Slowly open all 3 Main Turbine Bypass Valves using the the Hydraulic Jack while maintaining RPV level below +100 inches.	

PROMPT: **WHILE** the operator is opening the Bypass Valves, **THE SIMULATOR OPERATOR WILL** trip the EHC pumps, this causes the Bypass Valves to go closed.

10.	The operator identifies the loss of the EHC pump.	The operator identifies the loss of the EHC pump and reports the loss to the SS.	

NOTE: The operator may anticipate the closure of the Bypass Valves and inform the SS at this point, if this happens, the following critical task is considered complete/SAT.

11.	The operator identifies the Bypass Valves have gone closed.	The operator identifies the Bypass Valves have gone closed and reports the closure to the SS.	

PROMPT: **WHEN** the operator identifies the Bypass Valves have gone closed, **DIRECT** the operator to proceed to another section of the 108 procedure.

12.	The operator determines which system(s) is(are) available to depressurize the RPV.	The operator determines that Main Steam Line Drains may be used to depressurize the RPV.	

PROMPT: **IF** the operator addresses section 3.10 or 3.12, **INFORM** the operator that another operator is addressing those sections and SO's are performing local operations to support those sections. **DIRECT** the operator to progress to other sections of the 108 procedure.

13.	The operator performs Step 3.7.1	The operator verifies the Circ. Water system and Condensate System are in operation. The operator verifies that Main Condenser Vacuum is > 10" Hg.	

(Indicates critical step)**

PROMPT: **IF** the operator requests jumpers to be installed per step 3.7.3, **INFORM** the operator that an operator has been dispatched to install the jumpers. *This action is not necessary since an isolation signal is not present which would close the valves of concern.*

14.	The operator performs Step 3.7.4	The operator confirms the following valves are closed: 2B21-F038 MSL Drain, green light illuminated. 2B21-F020 Drain, green light illuminated. 2B21-F021 Drain, green light illuminated.	
		The operator confirms open/opens the following valves: 2B21-F016 MSL Drain, red light illuminated. 2B21-F019 MSL Drain, red light illuminated.	
		The operator confirms open/opens 2B21-F021 Drain, red light illuminated.	

Note: The operator may look to verify RPV pressure is decreasing.

PROMPT: **IF** the operator addresses further sections of 31EO-EOP-108, **INFORM** the operator that another operator will take actions to complete the procedure.

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
(Simulator– RO, SRO-I)

PERFORM A MANUAL INITIATION OF LPCI (IF IN SHUTDOWN COOLING)		
E. L. Jones	LR-JP-06.08-14	15 Minutes
C. M. Edmund	R Kynell	10/21/05

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-06.08**

01	07/03/89	General revision and format change	JEM	SMC
02	09/08/89	Revise questions	JEM	SMC
03	07/23/90	Procedure and format revision	JEM	DHG
04	05/30/91	Procedure revision	JEM	DHG
05	08/26/92	General revision and format change	WMM	SCB
06	09/02/93	General revision, word processor change	RAB	RSG
07	08/03/94	Procedure change, modify simulator setup, adjust format, incorporate phonetic alphabet into cue	RAB	RSG
08	06/05/96	Format change, plant changes	RAB	RSG
09	08/27/96	Incorporate student comments, general revision, add step and notes required to refill RHR system	RAB	DHG
10	03/02/99	Revised due to new simulator computer.	SCB	DHG
11	02/03/00	Format modification, change time allowance based on running average	RAB	DHG
12	02/26/02	Include objective number, correct simulator setup, and procedure changes, include initial operator statement	RAB	RAB
13	02/24/05	Deleted "S" from procedure numbers, changed Revision and Rev. numbers to "Current Version," changed "Reactor Operator" to "Nuclear Plant Operator," changed IC #131 for Simulator Setup.	BEB	DHG
14	5/31/05	Revised Initial License statement for successful completion	RAB	RAB
15	10/20/05	Revised Cues for NRC Exam.	ELJ	

UNIT 1 (X) UNIT 2 (X)

[redacted] **PERFORM A MANUAL INITIATION OF LPCI (IF IN SHUTDOWN COOLING)**

[redacted] LR-JP-06.08-14

[redacted] The task shall be completed when the RHR loop previously in the shutdown cooling mode is aligned for LPCI, with both pumps running and injecting to the Reactor at approximately 17,000 gpm, as indicated on 2E11-R603A, per 34SO-E11-010.

[redacted] 006.008

[redacted] 006.008.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.33

SRO 3.76

K/A CATALOG NUMBER: 203000A405

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.30

SRO 4.10

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

[redacted]

34SO-E11-010-2
(current version)

[redacted]

34SO-E11-010-2
(current version)
Keys for 2E11-F004A and C

APPROXIMATE COMPLETION TIME: 15 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #102** and leave in **FREEZE**.

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

mfG31_242	RWCU Non-Isol Leak	50	100	99999
mfE11_115B	RHR Pump B Trip			00000
mfE11_115D	RHR Pump D Trip			00000
mfE21_202A	Core Spray LOCA Signal Failure			00000

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

diE21-C001A	P	Core Spray Pmp 1A	STOP	00000
diE21-C001B	P	Core Spray Pmp B	STOP	00000
diE11-F007A	P	Min Flow Bypass Valve	CLOSE	00000
diE11-F028A	P	RHR A Torus Spray/Test Vlv	CLOSE	00000
diE11-F016A	P	Contmt Spray Outboard Drywell	CLOSE	00000
loE11-F007AG1	L	Min Flow Bypass Valve	OFF	00000
loE11-F007AR2	L	Min Flow Bypass Valve	OFF	00000
loE11-F028AG1	L	RHR A Torus Spray/Test Vlv	OFF	00000
loE11-F028AR2	L	RHR A Torus Spray/Test Vlv	OFF	00000
loE11-F016AG1	L	Contmt Spray Outboard Drywell	OFF	00000
loE11-F016AR2	L	Contmt Spray Outboard Drywell	OFF	00000

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

   A. Place RHR Loop A into Shutdown Cooling.
   B. Activate malfunction mfG31_242 and allow to run until LOCA Signal is received.
   C. Acknowledge annunciators.

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

(Indicates critical step)**

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

2E11-F007A	Min Flow Bypass Valve	CLOSED
2E11-F028A	Torus Spray Or Test Vlv	CLOSED
2E11-F016A	Cmt Spray Outboard Vlv	CLOSED

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

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is shutdown.
2. RHR loop "2A" was in the Shutdown Cooling mode with RHR Pump "2A" in service.
3. Both Core Spray System Pumps are inoperable.
4. HPCI and RCIC are isolated on low steam supply pressure.
5. A LOCA has occurred and 31EO-EOP-010-2 (RC) is in progress.
6. RHR Pumps "2B" and "2D" are inoperable.
7. Precautions and Limitations are satisfied.

INITIATING CUES:

Place RHR Loop "A" in the LPCI Mode and inject to the Reactor.

[redacted]

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 34SO-E11-010-2.	
2.	Confirm RHRSW pumps are tripped.	At panel 2H11-P601, SERVICE WATER PUMPS, 2E11-C001A/B/C/D are TRIPPED, green lights illuminated.	
3.	Confirm RHR pumps are tripped.	At panel 2H11-P601, the following pumps are TRIPPED, green light illuminated: RHR PUMPS, 2E11-C002A/B/C/D	
4.	Confirm/close Shutdown Cooling Suction Valve, 2E11-F008.	At panel 2H11-P601, SDC SUCTION VLV, 2E11-F008, is CLOSED, green light illuminated.	
5.	Confirm/close Shutdown Cooling Suction Valve, 2E11-F009.	At panel 2H11-P602, SDC SUCTION VLV, 2E11-F009, is CLOSED, green light illuminated.	
6.	Close Shutdown Cooling Suction Valves, 2E11-F006B and 2E11-F006D.	At panel 2H11-P601, the following valves are CLOSED, green light illuminated: SHUTDOWN COOLING VLV, 2E11-F006B SHUTDOWN COOLING VLV, 2E11-F006D	

(Indicates critical step)**

		At panel 2H11-P601, the following valves are CLOSED, green light illuminated: SHUTDOWN COOLING VLV, 2E11-F006A SHUTDOWN COOLING VLV, 2E11-F006C	

NOTE: Valves in Step 7 must be closed before valves in Step 8 will open.

		At panel 2H11-P601, the following valves are OPEN, red light illuminated: TORUS SUCTION VLV, 2E11-F004A TORUS SUCTION VLV, 2E11-F004C	

NOTE: The control switch for each pump must be taken to STOP before the RHR pump will start on the loop that was in Shutdown Cooling.

		At panel 2H11-P601, control switch for ONE the following pumps have been taken to STOP and then to START, red light illuminated: RHR PUMP, 2E11-C002A AND RHR PUMP, 2E11-C002C	

NOTE: At least one RHR pump must be started to satisfy this critical step in step 9.

10.	Open 2E11-F015A.	At panel 2H11-P601, RHR INBD INJ VLV, 2E11-F015A, is OPEN, red light illuminated.	

NOTE: 2E11-F015A will close on a Group II Signal level signal if 2E11-F008 and 2E11-F009 are open and Reactor pressure is less than 138 psig.

(Indicates critical step)**

11.	Confirm Open/Open Heat Exchanger Bypass Valve, 2E11-F048A.	At panel 2H11-P601, HX BYPASS VLV, 2E11-F048A, is OPEN, red light illuminated.	
12.	Throttle the RHR Outboard Injection Vlv, 2E11-F017A, to obtain 17,000 gpm.	At panel 2H11-P601, the following has been performed: RHR OUTBD INJ VLV, 2E11-F017A, has been THROTTLED, red and green lights illuminated. Operator has OBTAINED approximately 17,000 gpm as indicated on RHR FLOW, 2E11-R603A (accept ±2,000 gpm).	

NOTE: If a LOCA signal is present, the 2E11-F017A is interlocked open and the operator will be unable to throttle flow for five minutes.

PROMPT: **IF** the operator addresses additional steps in the procedure, **INFORM** the operator that another operator will complete the remainder of the procedure.

PROMPT: **IF** the operator addresses shutting down LPCI, as the Shift Supervisor, **INFORM** the operator that shutdown of RHR is not required 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
(Simulator– RO, SRO-I)

VERIFY AN AUTOMATIC ISOLATION OF PCIS GROUP II		
E. L. JONES	LR-JP-13.46-0	20 Minutes
C. M. Edmund	R Hawk	10/12/05

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-01346**

00	10/27/05	Modified for NRC exam 2 valves do not isolate.	ELJ	RK

UNIT 1 ( ) UNIT 2 (X)

[redacted] **VERIFY AN AUTOMATIC ISOLATION OF PCIS GROUP II**

[redacted] LR-JP-13.46-0

[redacted] The task shall be completed when the operator has verified Group II isolation per 34AB-C71-001-2 and isolated those valves that have failed to close.

[redacted] 013.046

[redacted] 013.046.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.57

SRO Not Available

K/A CATALOG NUMBER: 223002A302

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.50

SRO 3.50

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted] 34AB-C71-001-2

[redacted] 34AB-C71-001-2 (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 a 100% power **IC** and leave in **FREEZE**.

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

mfD11_192A	2D11-F071 fails to isolate	N/A	N/A	0
mf65704241	Window 62: PCIS RPV Level Low Signal In OVRD (Annunciator Off)	N/A	N/A	0
mfP64_193A	Drywell Chiller compressor A failure	N/A	N/A	0

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

	None	

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

diT48-334A-2	P	Override for 2T48-F334A	Override	
diT48-335A-2	P	Override for 2T48-F335A	Override	

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

   A. Perform RC-1, RC-2, and TC-1. Ensure that RWL drops below +3 inches before recovering.
   B. Place DW venting in service using the "2A" CAD valves.
   C. Restore RWL to the normal level band and stabilize the plant.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The "2A" Drywell Chiller has tripped.
2. The team has taken actions based on 34AR-603-115-2, "PRIMARY CNMT PRESSURE HIGH".
3. The Reactor has been manually scrammed due to increasing DW pressure.
4. The "2B" Drywell Chiller has subsequently started.
5. RWL dropped to approximately -10 inches before the operators restored it to the normal level band.
6. SPDS is available

INITIATING CUES:

Verify Group II isolations.

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-C71-001-2.	

NOTE: It is the intent of the JPM that the operator verify Group II isolations and determine which valves have failed to isolate. The action to close the unisolated valves is necessary to complete the critical portion of the step. **Steps 2 through 13 may be performed in any order.**

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

2.	Operator confirms or performs the following automatic actions: 2G11-F003, CLOSED, 2G11-F019, CLOSED, 2E11-F040, CLOSED, 2T48-F118B, CLOSED, 2T48-F309, CLOSED, and 2T48-F307, CLOSED.	At panel 2H11-P602, the operator has CONFIRMED OR PERFORMED the following: 2G11-F003, FLOOR DRAIN VLV, CLOSED, green light illuminated. 2G11-F019, EQUIP DRAIN VLV, green light illuminated. 2E11-F040, RHR TO RADWASTE VLV, CLOSED, green light illuminated. 2T48-F118B, N_2 MAKEUP TO TORUS VLV, CLOSED, green light illuminated. 2T48-F309, TORUS AIR PURGE VLV, CLOSED, green light illuminated. 2T48-F307, DRWL AIR PURGE VLV, CLOSED, green light illuminated.	

(Indicates critical step)**

3.	Operator confirms the following automatic actions: 2T48-F341, CLOSED, 2T48-F339, CLOSED, 2T48-F118A, CLOSED, 2T48-F318, CLOSED, and 2T48-F319, CLOSED.	At panel 2H11-P602, the operator has CONFIRMED the following: 2T48-F341, DRWL VENT & RELIEF VLV, CLOSED, green light illuminated. 2T48-F339, TORUS VENT & RELIEF VLV, CLOSED, green light illuminated. 2T48-F118A, N_2 MAKEUP TO DRWL VLV, CLOSED, green light illuminated. 2T48-F318, TORUS VENT VLV, CLOSED, green light illuminated. 2T48-F319, DRWL VENT VLV, CLOSED, green light illuminated.	
4.	Operator confirms or performs the following automatic actions: 2G11-F004, CLOSED, 2G11-F020, CLOSED, 2E11-F049, CLOSED, and 2T48-F324, CLOSED.	At panel 2H11-P601, the operator has CONFIRMED OR PERFORMED the following: 2G11-F004, FLOOR DRAIN VLV, CLOSED, green light illuminated. 2G11-F020, EQUIP DRAIN VLV, green light illuminated. 2E11-F049, RHR TO RADWASTE VLV, CLOSED, green light illuminated. 2T48-F324, TORUS AIR PURGE VLV, CLOSED, green light illuminated.	

5.	Operator confirms the following automatic actions: 2T48-F308, CLOSED, 2T48-F340, CLOSED, 2T48-F338, CLOSED, 2T48-F104, CLOSED, 2T48-F103, CLOSED, 2T48-F326, CLOSED, 2T48-F320, CLOSED, 2E11-F122B, CLOSED, and 2E11-F122A, CLOSED.	At panel 2H11-P601, the operator has CONFIRMED the following: 2T48-F308, DRYWELL AIR PURGE VLV, CLOSED, green light illuminated. 2T48-F340, DRWL VENT & RELIEF VLV, CLOSED, green light illuminated. 2T48-F338, TORUS VENT & RELIEF VLV, CLOSED, green light illuminated. 2T48-F104, NITROGEN MAKEUP VLV, CLOSED, green light illuminated. 2T48-F103, NITROGEN PURGE VLV, CLOSED, green light illuminated. 2T48-F326, TORUS VENT VLV, CLOSED, green light illuminated. 2T48-F320, DRYWELL VENT VLV, CLOSED, green light illuminated. 2E11-F122B, TESTABLE CHECK F050B BYPASS VLV, CLOSED, green light illuminated. 2E11-F122A, TESTABLE CHECK F050A BYPASS VLV, CLOSED, green light illuminated.	

PROMPT: **IF** 2E11-F015A & B are checked, **INFORM** the operator that the GREEN light is illuminated.

6.	Operator confirms or performs the following automatic actions: 2D11-F051, CLOSED, 2D11-F050, CLOSED, 2E41-F122, CLOSED, 2B21-F111, CLOSED, 2P70-F002, CLOSED, 2P33-F002, CLOSED, 2P33-F007, CLOSED, 2P33-F004, CLOSED, 2P33-F003, CLOSED, and 2P33-F005, CLOSED	At panel 2H11-P700, the operator has CONFIRMED the following: 2D11-F051, PRI CNMT FIS PROD MON INBD ISOL, CLOSED, green light illuminated. 2D11-F050, PRI CNMT FIS PROD MON INBD ISOL, CLOSED, green light illuminated. 2E41-F122, POST ACC RX COOL/CNMT ATMOS SMPLG INBD ISOL, CLOSED, green light illuminated. 2B21-F111, POST ACC RX COOL/CNMT ATMOS SMPLG INBD ISOL, CLOSED, green light illuminated. 2P70-F002, DRWL PNEU INBD SUCTION ISOL, CLOSED, green light illuminated. 2P33-F002, PRI CNMT ATMOS H2O2 ANLY INBD ISOL CH B, CLOSED, green light illuminated. 2P33-F007, PRI CNMT ATMOS H2O2 ANLY INBD ISOL CH A, CLOSED green light illuminated. 2P33-F004, PRI CNMT ATMOS H2O2 ANLY A RTN LINE INBD ISOL, CLOSED green light illuminated. 2P33-F003, PRI CNMT ATMOS H2O2 ANLY INBD ISOL CH A, CLOSED, green light illuminated. 2P33-F005, PRI CNMT ATMOS H2O2 ANLY INBD ISOL CH B RETURN LINE, CLOSED, green light illuminated.	

(Indicates critical step)**

7.	Operator confirms or performs the following automatic actions: 2D11-F071, CLOSED, 2P33-F006, CLOSED, 2G51-F011, CLOSED, 2G51-F017, CLOSED, 2D11-F052, CLOSED, 2D11-F053, CLOSED, 2B21-F112, CLOSED, and 2E41-F121, CLOSED.	At panel 2H11-P700, the operator has CONFIRMED OR PERFORMED the following: 2D11-F071, PRI CNMT ATMOS FIS PROD MON SAMPLE LINE ISOL, switch taken to CLOSE, green light illuminated. 2P33-F006, PRI CNMT ATMOS H2O2 ANLY INBD ISOL CH B, CLOSED, green light illuminated. 2G51-F011, TORUS WATER CLEANUP INBD ISOL, CLOSED, green light illuminated. 2G51-F017, TORUS WATER MAKEUP OUTBD ISOL, CLOSED, green light illuminated. 2D11-F052, PRI CNMT FIS PROD MON OUTBD ISOL, CLOSED, green light illuminated. 2D11-F053, PRI CNMT FIS PROD MON OUTBD ISOL, CLOSED, green light illuminated. 2B21-F112, POST ACC RX COOL/CNMT ATMOS SMPLG OUTBD ISOL, CLOSED, green light illuminated. 2E41-F121, POST ACC RX COOL/CNMT ATMOS SMPLG OUTBD ISOL, CLOSED, green light illuminated.	

(Indicates critical step)**

8.	Operator confirms or performs the following automatic actions: 2P33-F015, CLOSED, 2P33-F010, CLOSED, 2P70-F003, CLOSED, 2P33-F013, CLOSED, 2P33-F011, CLOSED, 2P33-F012, CLOSED 2P33-F605, CLOSED, and 2D11-F072, CLOSED.	At panel 2H11-P700, the operator has CONFIRMED OR PERFORMED the following: 2P33-F015, PRI CNMT ATMOS H2O2 ANLY OUTBD ISOL CH A, CLOSED, green light illuminated. 2P33-F010, PRI CNMT ATMOS H2O2 ANLY OUTBD ISOL CH B, CLOSED, green light illuminated. 2P70-F003, DRWL PNEU OUTBD SUCTION ISOL, CLOSED, green light illuminated. 2P33-F013, PRI CNMT ATMOS H2O2 ANLY OUTBD ISOL CH B RETURN LINE, CLOSED, green light illuminated. 2P33-F011, PRI CNMT ATMOS H2O2 ANLY OUTBD ISOL CH A, CLOSED, green light illuminated. 2P33-F012, H2O2 ANLY CH A RTN LN OUTBD ISOL, CLOSED, green light illuminated. 2P33-F605, O_2 Analyzer Isol Valve, green light illuminated 2D11-F072, PRI CNMT ATMOS H2O2 ANLY FIS PROD MON RTN LN ISOL, green light illuminated.	

(Indicates critical step)**

9.	Operator confirms the following automatic actions: 2P33-F014, CLOSED, 2G51-F013, CLOSED, and 2G51-F012, CLOSED.	At panel 2H11-P700, the operator has CONFIRMED the following: 2P33-F014, PRI CNMT ATMOS H2O2 ANLY OUTBD ISOL CH B, CLOSED, green light illuminated. 2G51-F013, TORUS WATER MAKEUP INBD ISOL, CLOSED, green light illuminated. 2G51-F012, TORUS DRN/PURIF TORUS WATER CLEANUP OUTBD ISOL, CLOSED, green light illuminated.	
10.	Operator confirms that 2C51-J004A-D are CLOSED	At panel 2H11-P607, the operator has CONFIRMED that 2C51-J004A-D, TIP BALL VLVS, CLOSED, green light illuminated.	

	At panel 2H11-P657, the operator has CONFIRMED the following: **2T48-F334A, CAD A DRYWELL VENT ISOL VLV, CLOSED, switch taken to CLOSE, green light illuminated.** **2T48-F335A, CAD A DRYWELL VENT ISOL VLV, CLOSED, switch taken to CLOSE, green light illuminated.** 2T48-F332A, CAD A TORUS VENT ISOL VLV, CLOSED, green light illuminated. 2T48-F333A, CAD A TORUS VENT ISOL VLV, CLOSED, green light illuminated.	

PROMPT: The student may inform the SS of the failed valves prior to placing the switches in the close position. **IF** the student asks for guidance, **DIRECT** the student to take action IAW procedure guidance.

12.	Operator confirms the following automatic actions: 2T48-F209, CLOSED, and 2T48-F211, CLOSED.	At panel 2H11-P657, the operator has CONFIRMED the following: 2T48-F209, DRWL TO TORUS DP SYS INBD ISOL, CLOSED, green light illuminated. 2T48-F211, DRWL TO TORUS DP SYS INBD ISOL, CLOSED, green light illuminated.	

13.	Operator confirms the following automatic actions: 2T48-F334B, CLOSED, 2T48-F335B, CLOSED, 2T48-F332B, CLOSED, 2T48-F333B, CLOSED, 2T48-F210, CLOSED, and 2T48-F212, CLOSED.	At panel 2H11-P657, the operator has CONFIRMED the following: 2T48-F334B, CAD B DRYWELL VENT ISOL VLV, CLOSED, green light illuminated. 2T48-F335B, CAD B DRYWELL VENT ISOL VLV, CLOSED, green light illuminated. 2T48-F332B, CAD B TORUS VENT ISOL VLV, CLOSED, green light illuminated. 2T48-F333B, CAD B TORUS VENT ISOL VLV, CLOSED, green light illuminated. 2T48-F210, DRWL TO TORUS DP SYS OUTBD ISOL, CLOSED, green light illuminated. 2T48-F212, DRWL TO TORUS DP SYS OUTBD ISOL, CLOSED, green light illuminated.	

PROMPT: **WHEN** the operator addresses 2E11-F079A/B and 2E11-F080A/B on panels 2H21-P018 and 2H21-P021, **INFORM** the operator that another operator has verified these valves are closed.

PROMPT: **IF** the operator addresses resetting the Group Isolation, **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
(Simulator– RO, SRO-I)

EDG "1B" Fail to Auto Start & Fail to Auto Tie.		
E. L. JONES	LR-JP-25060-00	15 Minutes
C.M. Edmunds	R Kuda	10/11/05

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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-25060**

00	10/21/05	Initial Development	ELJ	LK

UNIT 1 (X) UNIT 2 (X)

[redacted] **EDG "1B" Fail to Auto Start & Fail to Auto Tie.**

[redacted] LR-JP-25060-00

[redacted] The task shall be completed when the Diesel Generator has been started and is providing power to 4160V "2F" per 34AB-R43-001.

[redacted] 028.023

[redacted] 028.023.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.14

SRO Not Available

K/A CATALOG NUMBER: 264000A404

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.70

SRO 3.70

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]		
	34AB-R43-001-1 34AR-652-102-1 (current versions)	34AB-R43-001-2 34AR-652-102-2 (current versions)

[redacted]		
	34AB-R43-001-1 (current version)	34AB-R43-001-2 (current version)

APPROXIMATE COMPLETION TIME: **Error! Reference source not found.** 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. **INSERT** the following **MALFUNCTIONS:**

mfR43_62B	Diesel Gen Fail to Auto Start 1B			00000
mfR43_168B	Diesel Generator B Output BKR One Shot Fail to Auto Tie			00000

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

RfR43_241	Diesel Gen 1B Engine Control Switch	U_II

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

   A. Open the Normal and Alternate power supply breakers to 4160 VAC Bus 2F.
   B. Transfer control of the "1B" EDG to U2.

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. Unit 2 4160 VAC Bus "2F" is de-energized and the Diesel Generator has not auto started.
2. A SO is in the D/G "1B" room and communications are established with the operator.
3. 34AR-652-202-2, LOSS OF OFFSITE POWER, is in progress.

INITIATING CUES:

Energize the "2F" 4160 VAC bus with the "1B" Diesel Generator per Attachment 2 of 34AB-R43-001-2, "Diesel Generator Recovery".

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: **AT THIS TIME, PROVIDE** the operator Attachment 1

1.	The operator refers to Attachment 2 of 34AB-R43-001-2, "Diesel Generator Recovery".		
2.	"1B" EDG is not running unloaded.	At the decision step that asks, "Is the EDG running unloaded?" the operator selects **"No".**	

NOTE: The operator may use one or more of the following to determine that the EDG is not running: Potential Lights (2 white lights) are not illuminated, frequency indicator not at 60 hz (failed upscale), volt meter downscale.

3.	The operator determines confirms that the "Auto Start Operative Light" is illuminated.	At the decision step that asks, "Is the Auto Start Operative Light Lit?" the operator selects **"Yes".**	

4.	The operator confirms that control of the Unit 1 EDG has been transferred to Unit 2.	The Operator checks the step "For EDG "1B", take the local switch to Unit 2" as complete (provided in the initial conditions).	

NOTE: The operator was provided this information in the Initial Conditions, but may verify that U2 has control of the "1B" EDG by verifying that the Manual Start Permissive light is illuminated (2H11-P652 panel).

(** **Indicates critical step)**

[redacted]		At the step "Place the EDG start/stop switch to start" the operator has taken the Diesel Gen "1B" START switch has been taken to START position and the red light is illuminated. (At panel 2H11-P652)	

6.	The operator confirms the EDG started.	At the decision step that asks, "Did the EDG start", the operator selects **"Yes".**	

NOTE: The operator may use one or more of the following to detemine that the "1B" EDG **did start**: Potential Lights (2 white lights) are illuminated, frequency indicator approximately 60 hz, volt meter indication of approximately 4160 VAC.

7.	The operator determines the "2F" Emergency Bus remains de-energized.	At the decision step that asks, "Did the Emerg Bus Energize", the operator selects **"No".**	

NOTE: The operator may use one or more of the following to determine that 4160 VAC Bus "2F" **is not energized**: Potential Lights (2 blue lights) are not illuminated, volt meter downscale, supply breakers are open.

[redacted]		At the step to "Lower EDG Frequency to 57 hz, then raise to 60 hz" the operator has taken the Diesel Gen "1B" speed adjust switch **to lower until frequency is 57 Hz,** then takes the speed adjust switch **to raise until frequency is 60 Hz.** (at panel 2H11-P652).	

Note: The EDG output breaker will close prior to frequency reaching 60 hz. When the EDG output breaker closes, the critical task is met (satisfied). The standard in the procedure requires that speed be increased until frequency = 60hz.

(Indicates critical step)**

9.	The operator determines that the 2F emergency bus is energized.	At the decision step that asks, "Did the Emerg Bus Energize?" the operator selects **"Yes".**	

NOTE: The operator may use one or more of the following to determine that 4160 VAC Bus "2F" **is energized**: Potential Lights (2 blue lights) are illuminated, voltmeter indicates 4160 VAC, ACB 135912 is closed.

10.	The operator is directed back to the body of 34AB-R43-001-2, "Diesel Generator Recovery".	The operator checks the step that says, "Refer to 34AB-R43-001-2."	

PROMPT: **IF** the operator addresses local readings, as the SO, **INFORM** the operator an SO reports that all local gage readings are within their limits.

PROMPT: **IF THE EDG HAS BEEN STARTED AND TIED TO THE BUS, THEN WHEN** the operator addresses the body of "Refer to 34AB-R43-001-2" state that another operator will address the procedure.

END TIME:_____

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

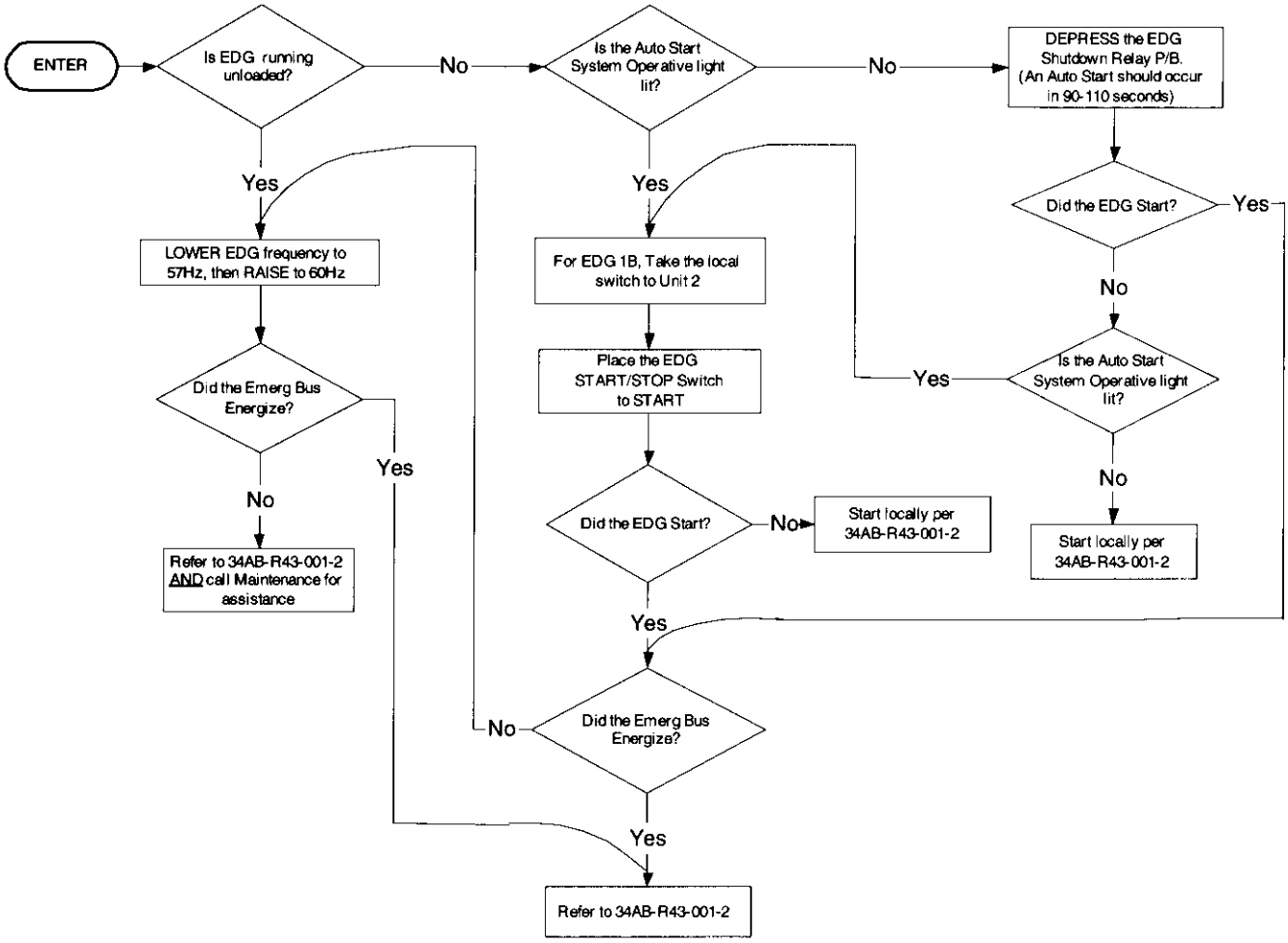
- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Attachment 1
Provide to the candidate

[redacted]



Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM
(Simulator– RO, SRO-I)

PERFORM A ROD WORTH MINIMIZER (RWM) FUNCTIONAL TEST (FAILURE)
E. L. JONES — LR-JP-25032-05 — 10.0 Minutes
C.M. Edmund — [signature] — 10/4/05

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25032**

00	11/15/99	Initial development	RAB	DHG
01	11/06/00	Include objective number	RAB	DHG
02	03/19/02	Include initial operator statement	RAB	RAB
03	03/17/05	Deleted "S" from procedure numbers, changed Revision and Rev. numbers to "Current Version". Changed to Nuclear Plant Operator. Updated Simulator IC# and added "Prompt" for sequence control mode.	ARB	DHG
04	06/27/05	Revised Initial License statement for successful completion	RAB	RAB
05	10/21/05	Modified for use with the 2005 Initial License NRC Exam. Deleted reference to Unit 1 RWM.	ELJ	DK

UNIT 1 (X) UNIT 2 (X)

[redacted] **PERFORM A ROD WORTH MINIMIZER (RWM) FUNCTIONAL TEST (FAILURE)**

[redacted] LR-JP-25032-05

[redacted] The task shall be completed when the operator has conducted a Rod Worth Minimizer Functional Test per 34GO-OPS-001.

[redacted] 001.014

[redacted] 001.014.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.40

SRO 2.85

K/A CATALOG NUMBER: 201006A302

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.40

SRO 3.50

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]

34GO-OPS-001-2
34GO-OPS-065-0
34AB-C11-004-2
Control Rod Movement Sequence
(current versions)

[redacted]

34GO-OPS-001-2 Att 5 (current version)
Control Rod Movement Sequence

APPROXIMATE COMPLETION TIME: 10.0 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #102** and leave in **FREEZE.**

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

C91_J001DI	P	RWM Mode Switch	BYPASS	99999

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

A. Reset all annunciators.
B. Verify that CRD drive pressure = 260 psid.
C. Select a control rod from Step 1 and initialize the RWM by pushing the ETC button on the operator display.
D. Verify that all RWM rod blocks are clear and the Rod Sequence Selector Switch is in A12 (B12).
E. Remove the key from the RWM.

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

5 **ESTIMATED** Simulator **SETUP TIME:** **10 Minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Reactor is shutdown; the manual scram has been reset.
2. The Reactor Mode Switch is in START & HOT STBY.
3. All systems required for plant startup are in service.
4. 34GO-OPS-001-2, "Plant Startup," is in progress.
5. Permission for Reactor startup has been received.

INITIATING CUES:

Perform the Rod Worth Minimizer Functional Test using Attachment 5 of 34GO-OPS-001-2.

[redacted]

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 confirms that power is turned on to the Refueling Bridge.	Operator has VERIFIED power is turned on to the Refueling Bridge.	

PROMPT: **WHEN** the operator addresses confirming power on the Refueling Bridge, as the SO, **INFORM** the operator that the Refueling Bridge has power.

2.	Confirm RMCS/RWM ROD BLOCK OR SYS TROUBLE annunciator is clear.	At panel 2H11-P603, the operator VERIFIES that annunciator 603-239, RMCS/RWM ROD BLOCK OR SYS TROUBLE, is **clear.**	

PROMPT: **WHEN** the operator addresses the Select Sequence, **INFORM** the operator that the currently selected sequence in the RWM is identical to the Control Rod Movement Sheets and conforms to BPWS.

PROMPT: **IF** the operator addresses bypassed rods and the Change Log of the Control Rod Movement Sequence, **INFORM** the operator there are no bypassed rods listed.

PROMPT: **IF** the operator addresses RWM's Full Range Sequence Control mode, **INFORM** the operator that RWM is in Sequence Control mode.

3.	Confirm RWM keylock switches are in OPERATE with keys removed.	At panel 2H11-P603, the Operator's Display keylock switch is in OPERATE. Operator IDENTIFIES that the keylock switch at panel 2H11-P616 must also be in OPERATE.	

(Indicates critical step)**

PROMPT: **WHEN** the operator addresses the Instrument Console keylock switch on panel 2H11-P616, **INFORM** the operator it is in the OPERATE position and the key is removed (this panel is not in the simulator).

4.	Confirm Step 01 is displayed on RWM Operator's Display.	At panel 2H11-P603, the operator has VERIFIED that 01 is displayed on the RWM Operator's Display.	
5.	Confirm the Reactor Mode switch is in START & HOT STBY.	At panel 2H11-P603, the operator places or CONFIRMS the Reactor Mode switch is in START & HOT STBY.	

NOTE: This step should only require the operator to confirm the mode switch position. This is one of the initial conditions given to the operator at the beginning of the task.

6.	Select a rod from Step 2 of the Rod Worth Minimizer Sequence and verify system response.	At panel 2H11-P603, using the CONTROL ROD SELECT matrix pushbuttons, a rod is SELECTED from Step 2 of the RWM Sequence AND At the RWM operator's display, the operator has CONFIRMED the following messages are displayed: -"SE" "WB" -"BLOCK: WITHDRAW".	

NOTE: If the operator selects any rod not in Step 1 of the RWM Sequence, he will still receive the same indications as a Step 2 rod.

7.	Attempt to withdraw the selected rod.	At panel 2H11-P603, the operator VERIFIES no rod motion occurred.	

(Indicates critical step)**

8.	Select a rod from Step 6 of the Rod Worth Minimizer Sequence and verify system response.	At panel 2H11-P603, using the CONTROL ROD SELECT matrix pushbuttons, a rod is SELECTED from Step 6 of the RWM Sequence AND At the RWM operator's display, the operator has CONFIRMED the following messages are displayed: -"SE" "WB" -"BLOCK: WITHDRAW".	

9.	Attempt to withdraw the selected rod.	At panel 2H11-P603, the operator VERIFIES no rod motion occurred.	

SIMULATOR OPERATOR: **BEFORE** the operator selects this control rod, **ACTIVATE OVERRIDE C91_J001DI to BYPASS.**

PROMPT: The override just entered will result in a "Withdraw Permissive" light illuminating (2H11-P603). This light is an indication that a rod will move. **IF** the operator identifies the light, **DIRECT** the operator to continue performing the RWM Functional Test.

	At panel 2H11-P603, using the CONTROL ROD SELECT matrix pushbuttons, a rod is SELECTED from Step 10 of the RWM Sequence AND At the RWM operator's display, the operator has CONFIRMED the following messages are displayed: -"SE" "WB" -"BLOCK: WITHDRAW".	

(Indicates critical step)**

[redacted]

[redacted]	At panel 2H11-P603, the operator RECOGNIZES that the control rod moved.	

PROMPT: **IF** operator asks the SS for direction following rod movement, **DIRECT** the operator to insert the control rod to position 00.

[redacted]	At panel 2H11-P603, the operator INSERTS the control rod and informs the SS that the RWM is INOP.	

PROMPT: **IF** addressed by the operator, **INFORM** the operator that the STA has confirmed the RWM Scram Buffers are clear and ready to accept data.

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
(Control Room- RO Only)

PLACE THE CONTROL ROOM HVAC SYSTEM IN THE PURGE MODE		
E. L. JONES	LR-JP-25026-05	15.0 Minutes
C. M. Edmund		10/21/05

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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-25026**

00	11/20/97	Initial Development based on needs indicated from the PRA analysis.	SCB	DHG
01	03/20/00	Format modification, change time allowance based on running average, update K/As, correct typos	RAB	DHG
02	11/03/00	Include objective number	RAB	DHG
03	03/19/02	Include initial operator statement	RAB	RAB
04	06/25/05	Revised Initial License statement for successful completion	RAB	RAB
05	10/21/05	Modified last step to allow for starting 1Z41-C011A	ELJ	[illegible]

UNIT 1 (X) UNIT 2 ( )

[redacted] **PLACE THE CONTROL ROOM HVAC SYSTEM IN THE PURGE MODE**

[redacted] LR-JP-25026-05

[redacted] The task shall be completed when the Control Room Ventilation System has been placed in the Purge Mode per 34SO-Z41-001-1.

[redacted] 037.010

[redacted] 037.010.O

x

K/A CATALOG NUMBER: 290003A401

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.2

SRO 3.2

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

[redacted]

34SO-Z41-001-1 (current version)
34AR-603-214-2 (current version)
34AR-603-215-2 (current version)

[redacted]

34SO-Z41-001-1 (current version)

APPROXIMATE COMPLETION TIME: 15.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 and Unit 2 have both been scrammed due to a loss of Plant Service Water.
2. The Main Control Room Ventilation System has been operating in a Normal Ventilation configuration for several days.
3. No cooling water is available for the Main Control Room Air Handling Units.
4. 34AB-T41-001-1, "Loss of Area Ventilation", is in progress.
5. The procedure's precautions and limitations have satisfied.

INITIATING CUES:

Purge the **Unit 1** Main Control Room with the Main Control Room Ventilation System per 34SO-Z41-001-1.

[redacted]

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 34SO-Z41-001-1.	

PROMPT: **IF** the operator asks the status of Main Control Room Ventilation, per the initial conditions, **INFORM** the operator that it is operating in the normal configuration.

2.	Confirm STOPPED or STOP the following HVAC units: 1Z41-B003B 1Z41-B003A	On 1H11-P654, CONFIRM 1Z41-B003A, B, control switch in STOP (OFF), GREEN light illuminated.	

If the above step is performed **correctly**, then provide this cue: 1Z41-B003A & B green lights are illuminated

If the above step performed **incorrectly**, then provide this cue: 1Z41-B003A & B red lights are illuminated

NOTE: The 1Z41-B003C should remain running when purging Unit 1. If the operator stops B003C, flow will still exist if the exhaust fan is started. It is not critical to have 1Z41-B003C running; but if it is secured the operator will have committed a procedure violation.

(** **Indicates critical step)**

[redacted]

3.	Confirm CLOSED the following dampers: 1Z41-F009A 1Z41-F030A	On 1H11-P657, CONFIRM 1Z41-F009A & 1Z41-F030A, green light illuminated.	

If the above step is performed **correctly**, then provide this cue: 1Z41-F009A & 1Z41-F030A, green light illuminated.

If the above step performed **incorrectly**, then provide this cue: 1Z41-F009A & 1Z41-F030A, red light illuminated.

NOTE: 1Z41-F009A & 1Z41-F030A will close when AHU 1Z41-B003A is stopped.

[redacted]	On 1H11-P654, PLACE control switch for 1Z41-F028A & 1Z41-F028B in CLOSE, green light illuminated.	

If the above step is performed **correctly**, then provide this cue: 1Z41-F028A & B, green lights are illuminated.

If the above step performed **incorrectly**, then provide this cue: 1Z41-F028A & B, red lights are illuminated.

NOTE: It is only critical to close ONE of the two valves.

[redacted]	On 1H11-P654, PLACE control switch for 1Z41-F010A & 1Z41-F010B in CLOSE, green light illuminated.	

If the above step is performed **correctly**, then provide this cue: 1Z41-F010A & B, green lights illuminated.

If the above step performed **incorrectly**, then provide this cue: 1Z41-F010A & B, red lights illuminated.

NOTE: It is only critical to close ONE of the two valves.

[redacted]

6.	Open Roll Filter Bypass, 1Z41-F015.	At MCR Door C70, ROLL FILTER BYPASS, 1Z41-F015 control switch is in OPEN, red light illuminated.	

If the above step is performed **correctly**, then provide this cue: 1Z41-F015 red light is illuminated

If the above step performed **incorrectly**, then provide this cue: 1Z41-F015 green light is illuminated

7.	Confirm Open Outside Air Intake Damper, 1Z41-F016.	At panel 1H11-P657, FILTER INLET control switch, 1Z41-F016, is in OPEN position, red light illuminated.	

If the above step is performed **correctly**, then provide this cue: 1Z41-F016 red light is illuminated

If the above step performed **incorrectly**, then provide this cue: 1Z41-F016 green light is illuminated

[redacted]	Have SSS send a SO to the 180' elevation of the control building to OPEN inlet control damper 1Z41-F017A.	

PROMPT: **WHEN** asked to send someone to open 1Z41-F017A, **INFORM** the operator that 1Z41-F017A is open.

(Indicates critical step)**

[redacted]

[redacted]	At panel 1H11-P657, PLACE the control switch for 1Z41-C011A in RUN(ON), RED light illuminated and confirm 1Z41-F018A OPENS, RED light illuminated.	

If the above step is performed **correctly**, then provide this cue: Fan 1Z41-C011A, red light illuminated. Damper, 1Z41-F018A, red light illuminated.

If the above step performed **incorrectly**, then provide this cue: Fan 1Z41-C011A, green light illuminated. Damper, 1Z41-F018A, green light illuminated.

NOTE: It is only critical to start exhaust fan 1Z41-C011A because damper 1Z41-F018A automatically opens when the fan is started.

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
(In-Plant - RO, SRO-I, SRO-U)

CROSSTIE REACTOR BUILDING PLANT SERVICE WATER		
E. L. Jones	LR-JP-25029-06	10 Minutes

10/21/05

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25029**

00	11/20/97	Initial development based on PRA analysis.	SCB	RSG
01	03/20/00	Format modification, change time allowance based on running average, CBS comment to correct the initiating cue, rewrote task standard	RAB	DHG
02	06/01/00	SDH comment, correct MPL in Step 3 of Unit 2 section.	RAB	DHG
03	11/03/00	Include objective number	RAB	DHG
04	03/19/02	Include initial operator statement	RAB	RAB
05	05/27/05	Revised Initial License statement for successful completion	RAB	RAB
06	10/21/05	Cause one valve to fail in the closed position and create an alternate success path.	ELJ	[illegible]

UNIT 1 (X) UNIT 2 (X)

[redacted] **CROSSTIE REACTOR BUILDING PLANT SERVICE WATER**

[redacted] LR-JP-25029-06

[redacted] The task shall be complete when the operator has crosstied Reactor Building Plant Service Water divisions per 34AB-P41-001-1/2.

[redacted] 200.013

[redacted] 200.013.E

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.00

SRO 4.00

K/A CATALOG NUMBER: 295018AA101

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.30

SRO 3.40

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]

34AB-P41-001-1
(current version)

[redacted]

34AB-P41-001-1
(current version)

APPROXIMATE COMPLETION TIME: 10 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Unit 1 Reactor has been scrammed due to a loss of Plant Service Water.
2. 1P41-F310A, 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-P41-001-1.

[redacted]

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** requested, **INFORM** the operator that 1P41-F310A, B, C, & D are closed and the PSW break is isolated.

NOTE: The operator may decide to open 1P41-F052A & F052B first. If this happens, the critical steps will be completed satisfactorily **only if** 1P41-F070A and F070B are opened on steps 3 and 4.

NOTE: The operator may decide to open 1P41-F070A & F070B first. If this happens, the critical steps will be completed satisfactorily **only if** 1P41-F052A and F052B are opened on steps 3 and 4.

1.	Open 1P41-F070A (or 1P41-F052A).	At 135RHR09, the operator TURNS 1P41-F070A (or 1P41-F052A) handwheel, fully counter-clockwise.	

CUE: Inform the operator that1P41-F070A (or 1P41-F052A) is fully counter-clockwise.

2.	Attempt to open 1P41-F070B (or 1P41-F052B).	At 135RHR09, the operator attempts to turn 1P41-F070B (or 1P41-F052B) handwheel but it does not move.	

CUE: Regardless of which valve the candidate opens first (F070 or F052), **WHEN** the candidate attempts to open the second valve in series, **INFORM** the operator that the handwheel did not turn at all, indicate that the stem of the valve is still inside the valve.

NOTE: **IF** the operator notifies the SS of the failed valve at this time and asks for direction, **INFORM** the operator that it is still desired to crosstie the PSW divisions and the SS will take care of writing the Condition Report.

	At 135RHR09, the operator TURNS 1P41-F052A (or 1P41-F070A) handwheel, fully counter-clockwise.	

CUE: 1P41-F052A (or 1P41-F070A) is fully counter-clockwise.

	At 135RHR09, the operator TURNS 1P41-F052B (or 1P41-F070B) handwheel, fully counter-clockwise.	

CUE: 1P41-F052B (or 1P41-F070B) is fully counter-clockwise.

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

(In-Plant – RO, SRO-I, SRO-U)

VENT THE SCRAM AIR HEADER
E. L. Jones — LR-JP-10.15-14 — 10 Minutes
C.M. Edmund — [signature] — 10/24/05

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10.15**

01	06/09/89	General revision and format change	WGW	RSG
02	08/07/89	Add LR lesson plan references	JEM	DHG
03	08/23/89	Add supplement 3	JEM	SMC
04	09/22/89	General revision	JEM	WRB
05	12/19/90	Procedure revision	JEM	DHG
06	08/17/92	General revision and format change	WMM	RSG
07	08/16/93	General revision, word processor change	RAB	RSG
08	06/10/96	Format change, change time allowance	RAB	DHG
09	04/10/97	Revised based on feedback from the 1996 Requal annual exam.	SCB	RSG
10	02/03/00	Format modification, change time allowance based on running average	RAB	DHG
11	11/01/00	Include objective number	RAB	DHG
12	02/27/02	Include initial opertor statement	RAB	RAB
13	6/1/05	Deleted "S" from procedure numbers, changed Revision and Rev. numbers to "Current Version," revised Initial License statement for successful completion	BEB RAB	RAB
14	10/24/05	Modify Cues for NRC Exam	ELJ	RVG

UNIT 1 (X) UNIT 2 (X)

[redacted] **VENT THE SCRAM AIR HEADER**

[redacted] LR-JP-10.15-14

[redacted] The task shall be completed when the operator has successfully vented the scram air header per 31EO-EOP-103.

[redacted] 010.015

[redacted] 010.015.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.50

SRO 3.65

K/A CATALOG NUMBER: 212000A417

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.10

SRO 4.10

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]

31EO-EOP-103-2
(current version)
31EO-EOP-011-2
(current version)

[redacted]

31EO-EOP-103-2
(current revision)
Adjustable Wrench or Pliers

APPROXIMATE COMPLETION TIME: 10 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Reactor scram signal has been received and all the control rods did not insert to Position 02 and Reactor power is greater than 10%.
2. The blue scram inlet and outlet valve lights are extinguished.
3. 31EO-EOP-011-2 (RCA) is in progress.

INITIATING CUES:

Vent the scram air header per 31EO-EOP-103-2.

[redacted]

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:_____

CUE: When the operator addresses 31EO-EOP-103-1, provide the operator with a copy of 31EO-EOP-103-1.

1.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain. The EOP gang box, located on the Reactor Building 130' elevation, contains pliers to remove the pipe-cap downstream of 2C11-R013-TV1. As an alternate location, pliers or a wrench may be obtained from the Maintenance Tool Room.	

CUE: Pliers have been obtained.

[redacted]	At location 130RAR22, 2C11-F095, SCRAM AIR HEADER ISOLATION VALVE is CLOSED.	

CUE: 2C11-F095 handwheel has been turned in the clockwise direction and will not turn further.

[redacted]	At location 130RAR22, cap is REMOVED from end of piping downstream of 2C11-R013-TV1.	

CUE: The cap has been removed from end of piping downstream of 2C11-R013-TV1.

(Indicates critical step)**

4.	Open or verify open 2C11-R013-IV1.	At location 130RAR22, 2C11-R013-IV1, PRESSURE INSTRUMENTATION ISOLATION VALVE is OPEN.	

CUE: 2C11-R013-IV1 is OPEN (handwheel will not turn further in the counter-clockwise direction).

	At location 130RAR22, 2C11-R013-TV1, PRESSURE INSTRUMENTATION VENT VALVE, is OPEN, Scram Air Header pressure decreasing on 2C11-PI-R013.	

CUE: 2C11-R013-TV1 is OPEN (handwheel has been turned in the counter-clockwise direction and will not turn further in the counter-clockwise direction),
- If the operator addresses the indication on 2C11-PI-R013, indicate Scram Air Header pressure is decreasing.
- If the operator asks if the sound of escaping air can be heard, state that the sound of escaping air can be heard and the sound is diminishing over 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
JPM
(In-Plant – RO, SRO-I)

CROSSTIE INSTRUMENT BUS "B" TO INSTRUMENT BUS "A"		
E. L. Jones	LR-JP-20019-07	15.0 Minutes
C.M. Edmund	R Smith	10/24/05

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-20019**

01	08/16/93	General revision	RAB	RSG
02	08/05/96	Format change	RAB	DHG
03	03/09/00	Format modification, change title, change time allowance based on running average, remove prompt dealing with LPCI load center	RAB	DHG
04	11/03/00	Include objective number	RAB	DHG
05	03/19/02	Include initial operator statement	RAB	RAB
06	6/21/05	Revised Initial License statement for successful completion	RAB	RAB
07	10/24/05	Modify Cues for NRC exam	ELJ	RSG

UNIT 1 (X) UNIT 2 (X)

[redacted] **CROSSTIE INSTRUMENT BUS "B" TO INSTRUMENT BUS "A"**

[redacted] LR-JP-20019-07

[redacted] The task shall be completed when Instrument Bus "B" is crosstied to Instrument Bus "A" per 34AB-R25-002.

[redacted] 200.019

[redacted] 200.019.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.00

SRO 3.64

K/A CATALOG NUMBER: 262001A207

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.00

SRO 3.20

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

[redacted]
34AB-R25-002-2 (current version)

[redacted]
34AB-R25-002-2 (current version) Key to Unit 2 RPS MG Set Room CAT 60 key

APPROXIMATE COMPLETION TIME: 15.0 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is operating at 60% power.
2. Essential Cabinet "2B," 2R25-S037, is de-energized.
3. Instrument Bus "2B," 2R25-S065, is de-energized due to the loss of Essential Cabinet "2B," 2R25-S037.
4. 34AB-R24-001-2, "Loss of Essential AC Distribution Buses," is in progress.
5. Essential Cabinet "2B," 2R25-S037, cannot be energized due to a faulted Feeder Breaker from 600 VAC Bus "2D," 2R23-S004.
6. 34AB-R25-002-2, "Loss of Instrument Buses," is in progress.

INITIATING CUES:

Energize Instrument Bus "2B," 2R25-S065, from Instrument Bus "2A," 2R25-S064, per 34AB-R25-002-2.

[redacted]

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-R25-002-2.	

Prompt: When the operator addresses 34AB-R25-002-2, provide the operator with a copy of 34AB-R25-002-2.

[redacted]	At Essential Cabinet "2B," 2R25-S037, breaker 28, 120/208V CAB 2C INSTR BUS 2B, is OPEN. Breaker switch is in the OFF position.	

CUE: Cabinet 2R25-S037, Breaker 28 is in the OFF position.

[redacted]	At Instrument Bus "2B," 2R25-S065, Breaker 40, CROSSTIE TO INSTR BUS 2A, is CLOSED. Breaker switch is in the ON position.	

CUE: Bus 2R25-S065, Breaker 40 is in the ON position.

[redacted]	At Instrument Bus "2A," 2R25-S064, Breaker 39, CROSSTIE TO INSTR BUS 2B, is CLOSED. Breaker is in the ON position.	

CUE: Bus 2R25-S064, Breaker 39 is in the ON position.

[redacted]	At Essential Cabinet "2B," switch 2R26-M004 is OPEN and both keys are removed.	

CUE: 2R26-M004 is OPEN and both keys are INSTALLED.

(Indicates critical step)**

[redacted]

[redacted]	In the Unit 2 RPS MG Set Room, 2R26-M003 is CLOSED.	

CUE: 2R26-M003 is CLOSED.

[redacted]	In the Unit 2 RPS MG Set Room, 2R26-M005 is CLOSED.	

CUE: 2R26-M005 is CLOSED.

PROMPT: **IF** the operator addresses restoring any of the loads of the Instrument Bus, as the Shift Supervisor, **INFORM** the operator that another operator will perform the load restoration.

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)**