Draft Submittal
(Pink Paper)

E. I. HATCH NUCLEAR PLANT
EXAM 2002-301
50-321 & 50-366
OCTOBER 16 - 18, 21 - 25, &
OCTOBER 30, 2002,

1. Administrative Questions/JPMs
2. In-plant JPMs
3. Control Room JPMs (simulator JPMs)
4. Administrative Topics Outline ES-301-1
5. Control Room Systems and Facility Walk-Through Test Outline ES-301-2

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
SBLC OPERABLE (ADMIN)		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L.SMITH	LR-JP-25046-00	15 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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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-25046**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	10/07/02	Initial Development	RLS	RSG

UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **SBLC OPERABLE (ADMIN)**

JPM NUMBER: LR-JP-25046-00

TASK STANDARD: The task is complete when the RO determines that SBLC is inoperable and Tech Spec entry to 3.1.7 is required.

TASK NUMBER: XXX.XXX

OBJECTIVE NUMBER: XXX.XXX.X

PLANT HATCH JTA IMPORTANCE RATING:

RO N/A

SRO N/A

K/A CATALOG NUMBER: G2.1.25

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.8

SRO 3.1

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2
	Unit 1 Tech Specs	Unit 2 Tech Specs

REQUIRED MATERIALS:	Unit 1	Unit 2
	Unit 1 Tech Specs	Unit 1 Tech Specs

APPROXIMATE COMPLETION TIME: 15 Minutes

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Chemistry has just added Sodium Pentaborate to the Unit 1 SBLC storage tank.
2. Tank level is currently at 3000 gallons and solution temperature is at 95 degrees F.
3. Chemisrty has just reported that tank concentration level is 13.5%.

INITIATING CUES:

Determine the status of SBLC for Unit 1.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator enters Unit 1 Tech Specs section 3.1.7.	Operator enters unit 1 Tech Specs section 3.1.7	
2.	Plots location on the Unit 1 SBLC figures, 3.1.7-1 and 3.1.7-2.	Using Unit 1 Tech Specs the operator plots location on SBLC figures 3.1.7-1 and 3.1.7-2.	
**3.	Determines that Sodium Pentaborate is outside the permissable region of Figure 3.1.7-1 per Unit 1 Tech Specs.	Using Unit 1 Tech Specs figure 3.1.7-1 the operator determines that Sodium Pentaborate is outside the permissable region A and B.	

RESPONSE CUE: Plots the location in the permissible region of A or B.

4.	Determines that Sodium Pentaborate is inside the permissable region of Figure 3.1.7-2 per Unit 1 Tech Specs.	Using Unit 1 Tech Specs figure 3.1.7-2 the operator determines that Sodium Pentaborate is inside the permissable region A.	

RESPONSE CUE: Plots the location in the nonpermissible region of A or B.

**5.	Detemine a LCO entry condition into Unit 1 Tech Specs section 3.1.7.	Using Unit 1 Tech Specs the operator determines that a LCO exists for section 3.1.7.	

RESPONSE CUE: No Tech Spec entry condition exists.

NOTE: The operator may identify applicable Unit 1 Tech Spec action statement, but this is not critical or required.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Chemistry has just added Sodium Pentaborate to the Unit 2 SBLC storage tank.
2. Tank level is currently at 3000 gallons and solution temperature is at 95 degrees F.
3. Chemisrty has just reported that tank concentration level is 13.5%.

INITIATING CUES:

Determine the status of SBLC for Unit 2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator enters Unit 2 Tech Specs section 3.1.7.	Operator enters Unit 2 Tech Specs section 3.1.7	
2.	Plots location on the Unit 2 Tech Specs SBLC figures, 3.1.7-1 and 3.1.7-2.	Using Unit 2 Tech Specs the operator plots location on SBLC figures 3.1.7-1 and 3.1.7-2.	
**3.	Determines that Sodium Pentaborate is outside the permissable region of Figure 3.1.7-1 per Unit 2 TS.	Using Unit 2 Tech Specs figure 3.1.7-1 the operator determines that Sodium Pentaborate is outside the permissable region A and B.	

RESPONSE CUE: Plots the location in the permissible region of A or B.

4.	Determines that Sodium Pentaborate is inside the permissable region of Figure 3.1.7-2 per Unit 2 TS.	Using Unit 2 Tech Specs figure 3.1.7-2 the operator determines that Sodium Pentaborate is inside the permissable region A.	

RESPONSE CUE: Plots the location in the nonpermissible region of A or B.

**5.	Detemine a LCO entry condition into Unit 2 Tech Specs section 3.1.7.	Using Unit 2 Tech Specs the operator determines that a LCO exists for section 3.1.7.	

RESPONSE CUE: No Tech Spec entry condition exists.

NOTE: The operator may identify applicable Unit 2 Tech Spec action statement, but this is not critical or required.

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.

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations TrainingJPM

TITLE		
DETERMINING OVERTIME AVAILABILITY		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITH	LR-JP-25045-00	15.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: JP-25045

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	10/07/02	Initial Development.	RLS	RSG

UNIT 1 (X) **UNIT 2 (X)**

TASK TITLE:	**DETERMINING OVERTIME AVAILABILITY**
JPM NUMBER:	
TASK STANDARD:	The task shall be complete when the operator has determined which operators are available for overtime per 10AC-MGR-020-0S.
TASK NUMBER:	300.001
OBJECTIVE NUMBER:	300.001.J

PLANT HATCH JTA IMPORTANCE RATING:

RO Not Available

SRO Not Available

K/A CATALOG NUMBER: Generic K/A 2.14

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.0

SRO 3.40

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	Unit 1 & 2
	10AC-MGR-020-0S Rev 0 Unit 1 or 2 Tech Specs, Section 5.2.2.e

REQUIRED MATERIALS:	Unit 1 & 2
	10AC-MGR-020-0S (current revision) Unit 1 or 2 Tech Specs

APPROXIMATE COMPLETION TIME: 15.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is commencing a startup next shift.
2. Preparations for startup are in progress.
3. One RO must be held over two hours.
4. The following work history (excluding turnover time) of available ROs on shift (hours reflect worked PRIOR to the 2 hour holdover). A break of at least 8 hours occurred between all work periods.

INITIATING CUES:

Detemine which operator(s), if any, can be held over for two hours without overtime approval, and determine which operators CANNOT be held over for two hours without prior overtime APPROVAL. If they CANNOT be held over then indicate which guidelines would be violated.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **AT** this time, **GIVE** the operator the attached operator work history.

1.	Operator identifies the procedure needed to perform the task.	Operator has obtained procedure 10AC-MGR-020-0S, or Unit 1 or 2 Tech Specs	
**2.	Operator determines that Operator #1 WILL violate overtime restrictions.	DETERMINES that Operator #1 WILL violate the overtime limits. (24 hours in a 48 hour period and >72 hours during 7 period and would require overtime authorization)	

RESPONSE CUE: N/A

PROMPT: **IF** asked, **INFORM** the applicant that operator 1 received authorization for exceeding 24 hours in a 48 period between days 4 and 5.

3.	Operator determines that Operator #1 DID violate overtime restrictions.	DETERMINES that Operator #1 violated the overtime limits by exceeding 24 hours in a 48 hour period between days 4 & 5.	

RESPONSE CUE: N/A

**4.	Operator determines that Operator #2 WILL violate overtime restrictions.	DETERMINES that Operator #2 WILL violate the overtime limits. (>72 hours in a 7 day period and would require overtime authorization)	

RESPONSE CUE: N/A

**5.	Operator determines that Operator #3 WILL violate overtime restrictions.	DETERMINES that Operator #3 WILL violate the overtime limits. (>16 hours in a 24 hour period and >24 hours in a 48 hour period and would require overtime authorization)	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	Operator determines that Operator #4 WILL NOT violate overtime restrictions.	DETERMINES that Operator #4 WILL NOT violate any overtime limits.	

RESPONSE CUE: N/A

**7.	Operator determines that Operator #5 WILL violate overtime restrictions.	DETERMINES that Operator #5 WILL violate the overtime limits. (>72 hours in a 7 day period and would require overtime authorization)	

RESPONSE CUE: N/A

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)**

DAY	1	2	3	4	5	6	7	8 (Today)
Operator #1	0	0	13	11	14	10	14	10
Operator #2	0	3	10	12	12	12	8	14
Operator #3	0	0	12	12	12	8	8	15
Operator #4	0	8	12	10	10	8	10	12
Operator #5	0	4	12	10	10	14	10	12

Southern Nuclear

E. I. Hatch Nuclear Plant

Operations Training JPM

TITLE		
PREPARE EQUIPMENT CLEARANCE AND HOLD TAGS		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25019-03	20.0 MINUTES
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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PLANT E. I. HATCH

FORM TITLE:
TRAINING MATERIAL REVISION SHEET

Program/Course Code: **LICENSE REQUAL** Media Number: **LR-JP-25019**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	10/1/92	General revision and format change	WMM	RSG
02	07/14/94	General revision, add 2 valves to required tag out, word processor change	RAB	SMC
03	10/7/02	Format change removed Record of Completion sheet.	RLS	RSG

FACILITY: **PLANT E. I. HATCH** **UNIT 1 ( )** **UNIT 2 (X)**

TASK TITLE: **PREPARE EQUIPMENT CLEARANCE AND HOLD TAGS**

JPM NUMBER: LR-JP-25019-03

TASK STANDARD: The task shall be completed when the operator has generated a clearance for CRD Suction Filter 2A per 30AC-OPS-001-0S.

TASK NUMBER: 300.016

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.20

SRO 2.74

K/A CATALOG NUMBER: 294001A107

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.00

SRO 3.70

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Procedure: 30AC-OPS-001-0S Rev 23.1 Plant Drawing H-26007

REQUIRED MATERIALS:	Procedure: 30AC-OPS-001-0S (current revision) Equipment Clearance Sheet (current revision) Danger Tags Plant Drawing H-26007

APPROXIMATE COMPLETION TIME: 20.0 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The CRD pump, 2C11-C001A, has tripped.
2. The SO sent to investigate the tripped CRD pump has reported the supply breaker has tripped.
3. Maintenance has determined that the suction filter for the pump must be replaced.
4. The Maintenance Foreman, Ron Buckner, is writing up the MWO and estimates that the job will take about 1 day. Maintenance will require the CRD Suction Filter 2A be under clearance.
5. The Nucleis System is down and will not be restored for several days.

INITIATING CUES:

Identify all components that would be used to isolate CRD Suction Filter 2A with the CRD Pump 2A available.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

NOTE: Steps of this JPM may be completed in any order.

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 30AC-OPS-001-0S.	

2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	

3.	Operator identifies the materials which are required.	Operator has identified the required materials and where to obtain them. Plant Drawing H26007 34SO-C11-005-2S, Section 7.1.4 (Not required to use procedure)	

NOTE: The valves listed in this JPM are the minimum requirements for safe tagging. Components tagged in excess of this minimum will require case-by-case determination by the evaluator.

**4.		Determine the equipment/components which must be tagged for the clearance.		The operator has determined the following must be tagged: 2C11-F114A 2C11-F115A 2C11-F117 2C11-F142A 2C11-F143A 2C11-F144A	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses preparing a clearance to perform the maintenance, **INFORM** the operator another operator will perform the clearance.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:
- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear

E. I. Hatch Nuclear Plant

Operations Training JPM

TITLE		
PREPARE EQUIPMENT CLEARANCE AND HOLD TAGS		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25019-03	20.0 MINUTES
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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FORM TITLE:
TRAINING MATERIAL REVISION SHEET

Program/Course Code: **LICENSE REQUAL** Media Number: **LR-JP-25019**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	10/1/92	General revision and format change	WMM	RSG
02	07/14/94	General revision, add 2 valves to required tag out, word processor change	RAB	SMC
03	10/7/02	Format change removed Record of Completion sheet.	RLS	RSG

FACILITY: **PLANT E. I. HATCH** **UNIT 1 ( )** **UNIT 2 (X)**

TASK TITLE: **PREPARE EQUIPMENT CLEARANCE AND HOLD TAGS**

JPM NUMBER: LR-JP-25019-03

TASK STANDARD: The task shall be completed when the operator has generated a clearance for CRD Suction Filter 2A per 30AC-OPS-001-0S.

TASK NUMBER: 300.016

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.20

SRO 2.74

K/A CATALOG NUMBER: 294001A107

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.00

SRO 3.70

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Procedure: 30AC-OPS-001-0S Rev 23.1 Plant Drawing H-26007

REQUIRED MATERIALS:	Procedure: 30AC-OPS-001-0S (current revision) Equipment Clearance Sheet (current revision) Danger Tags Plant Drawing H-26007

APPROXIMATE COMPLETION TIME: 20.0 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The CRD pump, 2C11-C001A, has tripped.
2. The SO sent to investigate the tripped CRD pump has reported the supply breaker has tripped.
3. Maintenance has determined that the suction filter for the pump must be replaced.
4. The Maintenance Foreman, Ron Buckner, is writing up the MWO and estimates that the job will take about 1 day. Maintenance will require the CRD Suction Filter 2A be under clearance.
5. The Nucleis System is down and will not be restored for several days.

INITIATING CUES:

Identify all components that would be used to isolate CRD Suction Filter 2A with the CRD Pump 2A available.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

NOTE: Steps of this JPM may be completed in any order.

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 30AC-OPS-001-0S.	

2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	

3.	Operator identifies the materials which are required.	Operator has identified the required materials and where to obtain them. Plant Drawing H26007 34SO-C11-005-2S, Section 7.1.4 (Not required to use procedure)	

NOTE: The valves listed in this JPM are the minimum requirements for safe tagging. Components tagged in excess of this minimum will require case-by-case determination by the evaluator.

****4.**	Determine the equipment/components which must be tagged for the clearance.	The operator has determined the following must be tagged: 2C11-F114A 2C11-F115A 2C11-F117 2C11-F142A 2C11-F143A 2C11-F144A	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses preparing a clearance to perform the maintenance, **INFORM** the operator another operator will perform the clearance.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:
- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
DURING AN EMERGENCY, PERFORM A PROMPT OFFSITE DOSE ASSESSMENT CALCULATION (SROs WILL DETERMINE EMERGENCY CLASSIFICATION)		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25305-09	30.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25305**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	05/02/94	Initial development	RAB	DHG
01	09/06/96	Format change, convert to use SPDS information	RAB	DHG
02	09/12/96	Editorial, correct MIDAS result numbers for peak TEDE and site boundaries	RAB	RSG
03	10/03/97	Revised based on comments from the 1997 annual exam.	SCB	DHG
04	09/16/98	Revised due to a procedure/MIDAS program revision.	SCB	DHG
05	01/21/99	Revised per feedback from EP.	SCB	DHG
06	03/21/00	Format modification, change time allowance based on running average, change MIDAS for due to revision	RAB	DHG
07	11/06/00	Include objective number	RAB	DHG
08	03/14/02	Include initial operator statement	RAB	RAB
09	10/07/02	Added prompts for SRO candidates to determine EAL.	RLS	RSG

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**DURING AN EMERGENCY, PERFORM A PROMPT OFFSITE DOSE ASSESSMENT CALCULATION**
JPM NUMBER:	LR-JP-25305-09
TASK STANDARD:	The task shall be complete when the Total Offsite Dose Rate has been calculated per 73EP-EIP-018-0S and the SOS/ED has been informed of the correct radiological assessment, and for an SRO candidate determine EAL.
TASK NUMBER:	200.060, 200.052
OBJECTIVE NUMBER:	200.060.O, 200.052A

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.57, 4.67

SRO 3.92, 4.04

K/A CATALOG NUMBER: 295038EA203, G2.2.41

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.50, 2.30

SRO 4.30, 4.10

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1 & 2
	34AB-D11-001-2S Rev 1 Ed 2 73EP-EIP-001-0S Rev 14.1 73EP-EIP-018-0S Rev 6

REQUIRED MATERIALS:	Unit 1 & 2
	73EP-EIP-018-0S (current revision) 73EP-EIP-001-0S (current revision) Computer with the MIDAS program

APPROXIMATE COMPLETION TIME: 30.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A pipe break has occurred causing a Primary System discharge outside Primary Containment.
2. RX BLDG RADIATION HIGH is alarming on Unit 2.
3. 34AB-D11-001-2S, "Radioactivity Release Control," is in progress.
4. SPDS is available for use.
5. The SOS is acting in the Emergency Director's position.

INITIATING CUES:

DETERMINE Total Offsite Dose Rate per 73EP-EIP-018-0S, **NOTIFY** the SOS/ED if a release is progress, and **NOTIFY** the SOS/ED if emergency classification should be addressed.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:
1.	Operator locates the correct procedure.	Operator has LOCATED 73EP-EIP-018-0S at the Shift Supervisor's desk (may use the copy from SOS's office).	
2.	Operator reviews procedure's Precautions and Limitations.	Operator has REVIEWED the Precautions and Limitations section of the procedure.	

PROMPT: **IF** addressed by the operator, **INDICATE** that the following annunciators are NOT ILLUMINATED.

1H11-P650-2

MAIN STACK EFFLUENT ANY COLLECTOR RADN LEVEL MAXIMUM
MAIN STACK EFFLUENT ALL COLLECTORS RADN LEVEL MAXIMUM
RB VENT EFFL ANY COLLECTOR RADN LEVEL MAX
RB VENT EFFL ALL COLLECTORS RADN LEVEL MAX

2H11-P650-2

RB VENT EFFL ANY COLLECTOR RADN LEVEL MAX
RB VENT EFFL ALL COLLECTORS RADN LEVEL MAX

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** addressed by the operator, **INDICATE** the status of the following annunciators.

Panel Number	Annunciator Title	Alarm Status
1H11-P601-4	OFFGAS VENT RADIATION HIGH-HIGH	Not Illuminated
1H11-P601-4	OFFGAS VENT RADIATION HIGH	Not Illuminated
1H11-P601-4	OFFGAS VENT RADIATION DNSC/INOP	Not Illuminated
1H11-P601-4	OFFGAS VENT SAMPLE FLOW HIGH/LOW	Not Illuminated
1H11-P601-4	RX BLDG VENT SAMPLE FLOW HIGH/LOW	Not Illuminated
1H11-P601-4	REFUELING FLOOR VENT EXHAUST RAD HI-HI	Not Illuminated
1H11-P603-2	RX BLDG STACK RADN MON HIGH-HIGH	Not Illuminated
1H11-P603-2	RX BLDG STACK RADN MON HIGH	Not Illuminated
2H11-P601-2	RX BLDG VENT EXHAUST RADIATION HI-HI	Not Illuminated
2H11-P601-2	RX BLDG VENT EXHAUST RADIATION HIGH (223)	**Illuminated**
2H11-P601-4	RX BLDG VT MON HIGH/LOW DOWNSCALE/INOP (433)	**Illuminated**
2H11-P601-4	REFUELING FLOOR VENT EXHAUST RAD HI-HI	Not Illuminated

PROMPT: **IF** addressed by the operator, as the Shift Supervisor, **INFORM** the operator that SPDS is available.

NOTE: The operator may collect the required data from SPDS prior to starting the computer. Therefore, Step 5 may be completed prior to Step 3.

NOTE: The computer that may be used is at the STA's desk. The computer requires a Startup disk from the Emergency Director's notebook. If the Startup disk is not used, the following critical step **cannot** be completed.

**3.	Operator starts the computer.	At a computer workstation, the operator STARTS the computer, and automatically "boots" into the MIDAS subdirectory and program.	

RESPONSE CUE: N/A

4.	Operator enters the correct date and time.	When prompted by the computer, the operator ENTERS the correct date and time, OR, if the date and time are correct, PRESSES "ENTER".	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **WHEN** the operator addresses SPDS, the MIDAS Information screen, **DISPLAY** to the operator the MIDAS Information attachment.

PROMPT: **WHEN** the operator addresses the individual flow recorders, as each recorder is identified, **DISPLAY** to the operator the correct recorder attachment.

5.	Operator records the required information for the Dose Assessment.	Using the MIDAS Data Input Acquisition Form, the operator GATHERS/RECORDS the appropriate information to perform the calculation.	

RESPONSE CUE: N/A

****6.**	Operator determines the Offsite Dose Rates and Dose Projections.	Using the Midas Program, the Operator INPUTS the collected data. The operator SAVES the data and EXITS (depresses "X").	

RESPONSE CUE: N/A

PROMPT: **IF** asked, **INFORM** the operator to assume a duration of 240 minutes.

NOTE: Durations other than 240 minutes will vary the resulting projected doses and potentially affect PARs.

****7.**	Operator determines the estimated duration of the release.	Select "CONFIRM" on the Release Timing Menu screen with the default value of 240 minutes specified.	

RESPONSE CUE: N/A

****8.**	Operator determines that a release is in progress and notifies the SOS/ED.	The operator READS the TEDE Dose Rate Value and DETERMINES that it is greater than 10 times higher than the daily average. The operator NOTIFIES the SOS/ED that a release is in progress.	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **WHEN** the operator addresses informing the SOS/ED, **ACKNOWLEDGE** the operator's report and **INFORM** the operator as the SOS/ED that you understand a release is in progress.

**9.	Operator determines that the TEDE Dose Rate is greater than 0.057 mR/hr and notifies the SOS/ED.	The operator READS the TEDE Dose Rate Value and DETERMINES that it exceeds 0.057 mR/hr and occurs beyond the site boundary. The operator NOTIFIES the SOS/ED that the Emergency Classification Procedure should be addressed for releases.	

RESPONSE CUE: N/A

NOTE: Peak TEDE should calculate as **7.2E - 02 mR/hr.**

To successfully complete Step 9, the calculated values must agree with the values on the attached ENN Form.

PROMPT: **WHEN** the operator addresses informing the SOS/ED, **ACKNOWLEDGE** the operator's report and **INFORM** the operator as the SOS/ED that you will declare the Emergency. (**IF** the operator is an **SRO CANDIDATE, INFORM** the operator to determine the emergency classification.)

NOTE: **THE NEXT STEP IS N/A FOR RO CANDIDATES.**

**10.	The operator determines the Emergency Classification.	Using the Emergency Classification procedure, 73EP-EIP-001-0, the operator DETERMINES that you are in a NUE per section 2.0, >.057 mR (TEDE) beyond the site boundary.	

RESPONSE CUE: N/A

11.	Operator gives the working copy of the ENN Form to the SOS/ED.	When the printing process is complete, the operator removes the ENN Form and addresses giving the form to the SOS/ED.	

PROMPT: **WHEN** addressed by the operator, as the SOS/ED, **RECEIVE** the printed ENN Form.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **WHEN** addressed by the operator, as the SOS, **INFORM** the operator that another operator will perform additional dose projections.

END TIME:_____

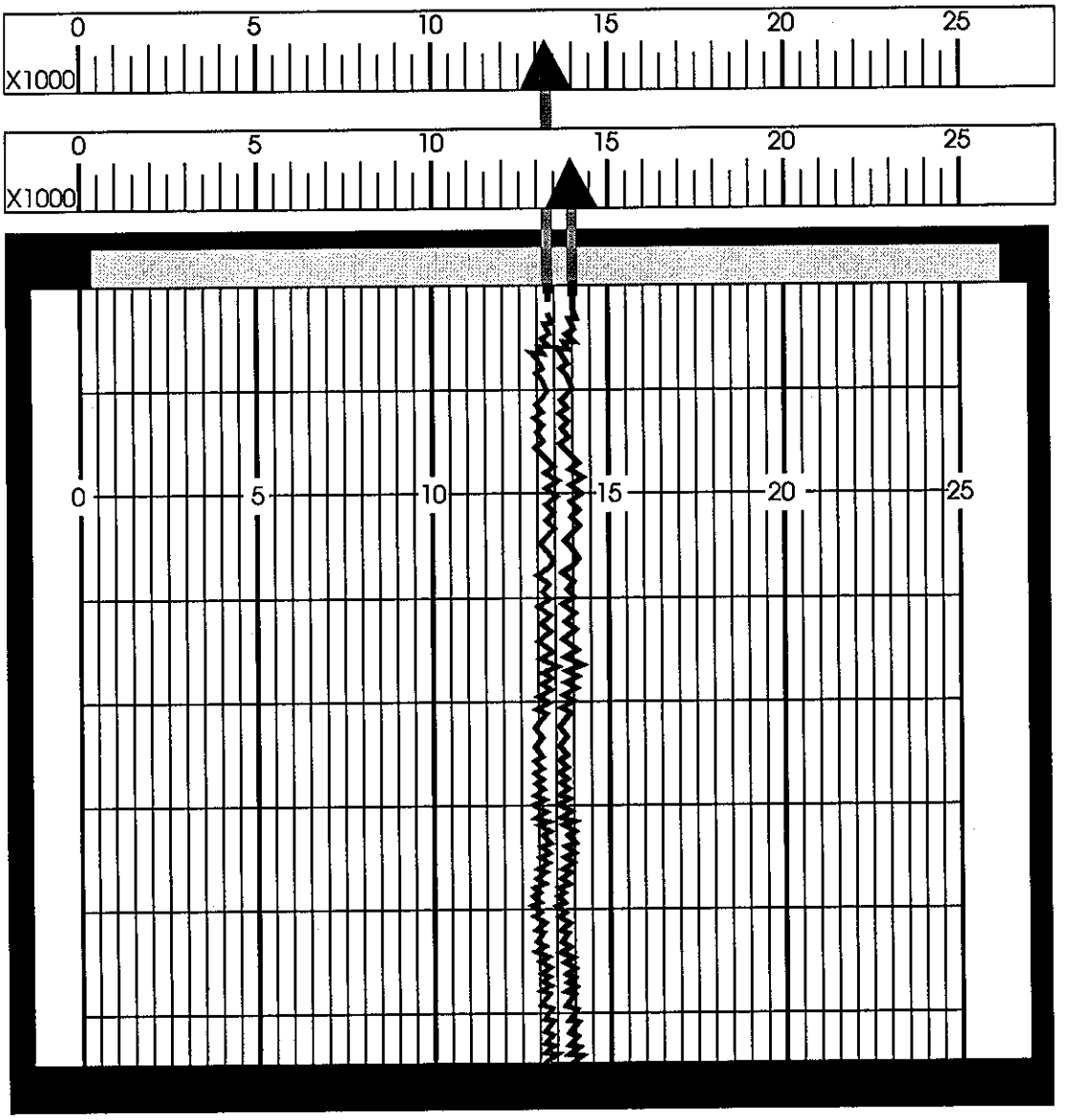
NOTE: The terminating cue shall be given to the operator when:

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

TERMINATING CUE: We will stop here.

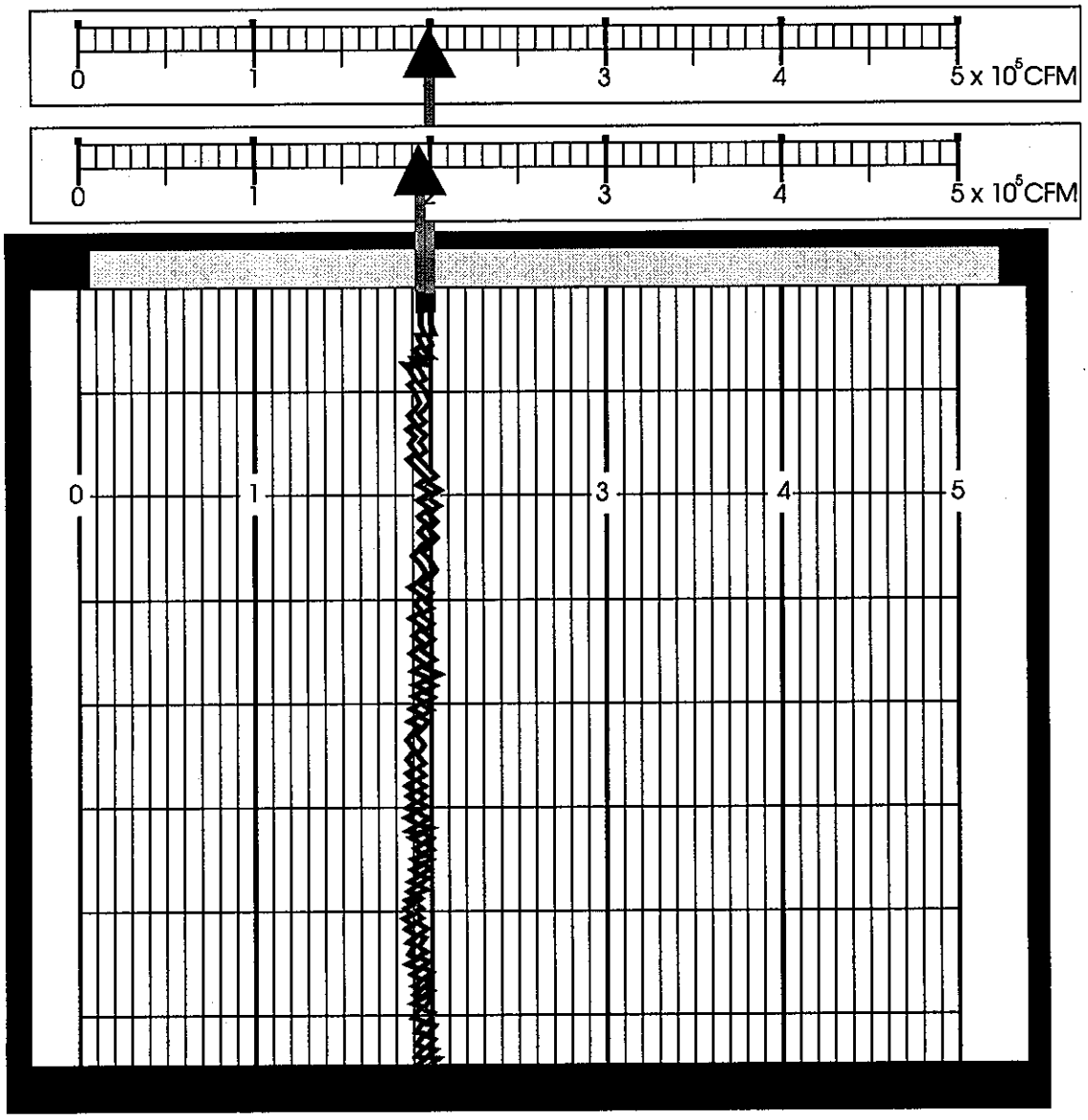
(Indicates critical step)**

MAIN STACK FLOW
1D11-R625
INST BUS 1A



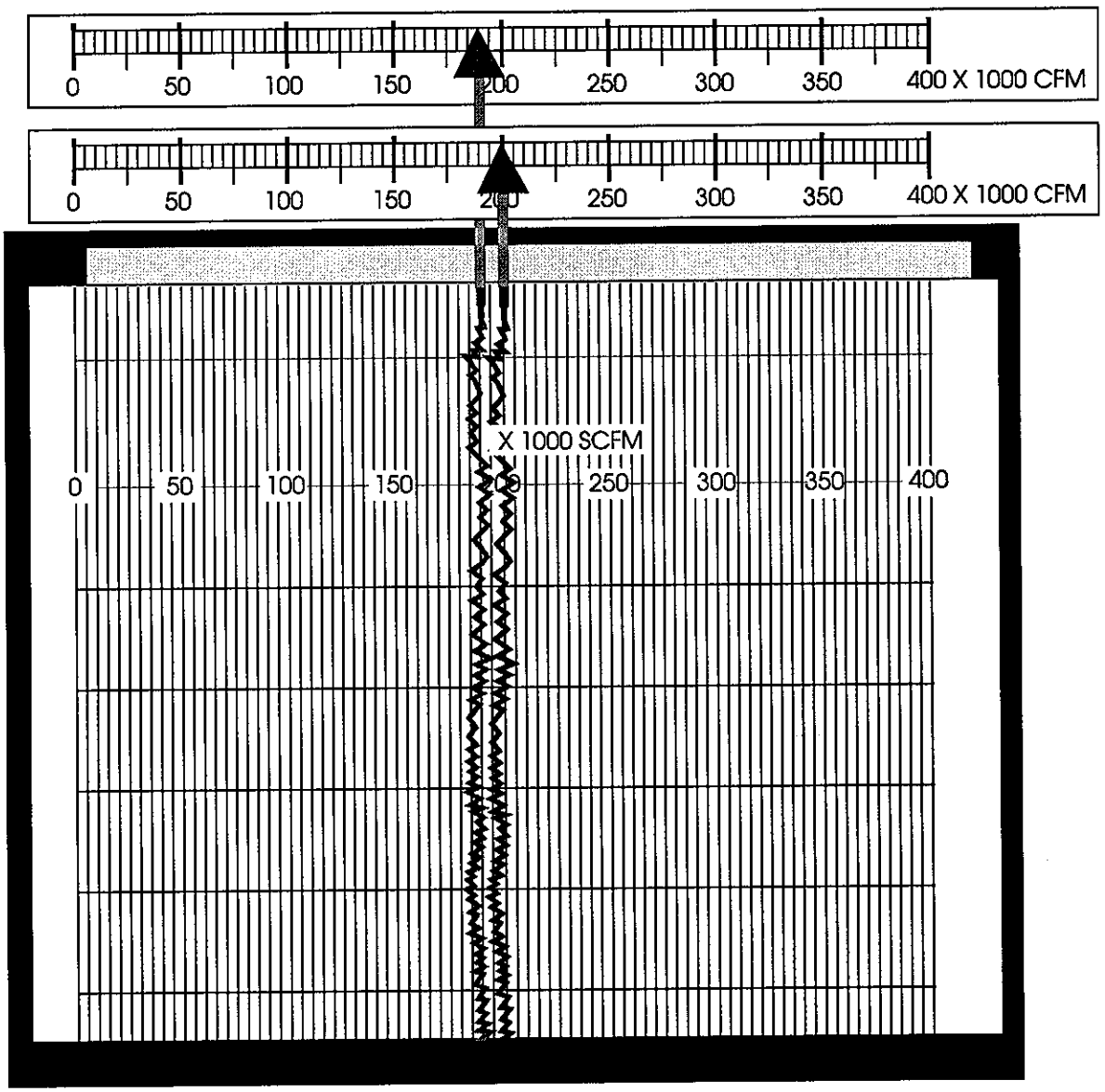
MAIN STACK FLOW
RED-(CHANNEL B) 0-25 CFM X 1000
BLK-(CHANNEL A) 0-25 CFM X 1000
1D11-R625 **6050K60-858**

STACK VENT FLOW
1T41-R621
INST BUS 1A



RX BLDG VENT FLOW
RED-(CHANNEL B) 0-5 X 10 ^{5} SCFM
BLK-(CHANNEL A) 0-5 X 10 ^{5} SCFM
1T41-R621 **CTA6445200**

STACK VENT FLOW
2T41-R621
INST BUS 2B



RB STACK MONITOR
RED-RB STACK FLOW (CH-B) 0-400,000 SCFM
BLK-RB STACK FLOW (CH-A) 0-400,000 SCFM
2T41-R621 **CTA6445100**

MIDAS INFORMATION

METEOROLOGICAL

10M WIND SPD	100M WIND SPD	10M WIND DIR	100M WIND DIR
1Y33-R601	1Y33-R603	1Y33-R601	1Y33-R603
3.0	5.0	160	165

AMBIENT TEMP (F) 10M	DELTA T 60-10	DELTA T 100-10	RAINFALL 15 MIN. AVG
54	1.1	2.4	.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
1.40E 03		4.00E 01		4.00E 01	
1D11-K600B		1D11-K619B		2D11-K636B	
1.39E 03		3.90E 01		4.00E 01	

STABILITY CLASS

E

EMERGENCY NOTIFICATION

MESSAGE NUMBER _____

1. **THIS IS:** [ ] A DRILL [ ] ACTUAL EMERGENCY [ ] INITIAL [ ] FOLLOW-UP

2. **SITE: PLANT HATCH** UNIT: _____ REPORTED BY: _____

3. **TRANSMITTAL TIME/DATE:** _____ ____/____/____ CONFIRMATION PHONE NO: 1-912-367-7781 ext. _____
(Eastern) mm dd yy

4. **AUTHENTICATION (If Required):** N/A (Number) N/A (Codeword)

5. **EMERGENCY CLASSIFICATION:**

[A] NOTIFICATION OF UNUSUAL EVENT [B] ALERT
[C] SITE AREA EMERGENCY [D] GENERAL EMERGENCY

6. [A] Emergency Declaration At: [B] Termination At: (If B, go to Item 16) TIME/DATE: _____ ____/____/____
(Eastern) mm dd yy

7. **EMERGENCY DESCRIPTION/REMARKS:** _____

8. **PLANT CONDITION:** [A] IMPROVING [B] STABLE [C] DEGRADING

9. **REACTOR STATUS:** [A] SHUTDOWN TIME/DATE: _____ _____/_____/_____ [B] _____%POWER
(Eastern) mm dd yy

10. **EMERGENCY RELEASE(S):**

[A] NONE (Go to Item 14.) [B] POTENTIAL (Go to Item 14.)
[C] IS OCCURRING [D] HAS OCCURRED

11. **TYPE OF RELEASE: [ ] ELEVATED [ ] GROUND LEVEL

[A] AIRBORNE: Started: Time/Date (Eastern) _____ _____/_____/_____ mm dd yy Stopped: Time/Date (Eastern) _____ _____/_____/_____ mm dd yy

[B] LIQUID: Started: Time/Date (Eastern) _____ _____/_____/_____ mm dd yy Stopped: Time/Date (Eastern) _____ _____/_____/_____ mm dd yy

12. **RELEASE MAGNITUDE: [X] CURIES PER SEC. [ ] CURIES

NORMAL OPERATING LIMITS: [ ] BELOW [ ] ABOVE
[A] NOBLE GASES 3.1E-02 [B] IODINES 3.8E-04
[C] PARTICULATES 0.0E+00 [D] OTHER

13. **ESTIMATE OF PROJECTED OFFSITE DOSE:
[ ] NEW [ ] UNCHANGED PROJECTION TIME: _____ (Eastern)

	TEDE (mrem)	THYROID CDE (mrem)
SITE BOUNDARY	2.9E-01	2.0E-01
2 MILES	2.8E-01	7.3E-01
5 MILES	1.8E-01	1.1E+00
10 MILES	5.8E-02	4.4E-01

ESTIMATED DURATION: _____HRS

14. **METEOROLOGICAL DATA:**
[A] WIND DIRECTION(from) 165 [B] SPEED (mph) 5.0
[C] STABILITY CLASS E [D] PRECIPITATION (type) NO RAIN

15. **RECOMMENDED PROTECTIVE ACTIONS:**
[A] NO RECOMMENDED PROTECTIVE ACTIONS
[B] EVACUATE _____
[C] SHELTER-IN-PLACE _____
[D] OTHER _____

16. **APPROVED BY:** _____ (Name) Emergency Director (Title) TIME/DATE: _____ ____/____/____
(Eastern) mm dd yy

** Information may not be available on initial notifications.

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
DETERMINE STAY TIMES TO TAKE A PIECE OF EQUIPMENT OOS		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITH	LR-JP-25049-00	20 Minutes
RECOMMENDED BY	APPROVED BY	DATE
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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-25049**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
0	10/07/02	Initial Development	RLS	RSG

UNIT 1 () UNIT 2 (X)

TASK TITLE:	**DETERMINE STAY TIMES TO TAKE A PIECE OF EQUIPMENT OOS**
JPM NUMBER:	LR-JP-25049-00
TASK STANDARD:	This task will be completed when stay times are determined by the operator, based on current accumulated dose for the year and dose that would be received while in a radiation field.
TASK NUMBER:	
OBJECTIVE NUMBER:	

PLANT HATCH JTA IMPORTANCE RATING:

RO N/A

SRO N/A

K/A CATALOG NUMBER: G2.3.2

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.5

SRO 2.9

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2

REQUIRED MATERIALS:	Unit 1	Unit 2

APPROXIMATE COMPLETION TIME: 20 Minutes

SIMULATOR SETUP: N/A

NOTE: First section is for RO Candidates and the second section is for SRO candidates.

Part 1

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The 4th Stage 'A' Feedwater heater has a leak on its shell side inlet flange.
2. You have been assigned as part of a crew that will enter the Cond Bay to isolate, and drain the '4A' Feedwater Heater.
3. The estimated time to perform this task is approx 1 hour.
4. Your dose history for the year is 380 mr.
5. Your administrative limit for the year is 1000 mr.
6. Current survey map of the area is available.

INITIATING CUES:

Determine your Maximum "Stay Time" for performing this task.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **AT** this time give the operator the copy survey map of the Unit 1 Condenser Bay.

1.	The operator examines the HP Survey map of the area.	Using the survey Map the operator DETERMINES the general radiation in the area that the tour will occur.	

RESPONSE CUE: N/A

**2.	The operator will determine the max general dose rate for the area.	Using the Survey Map the operator will DETERMINE the max general Dose Rate for the area to be 250 mr/hr.	

RESPONSE CUE: N/A

**3.	The operator determines the Dose margin he has left for the year.	Using the initial Dose information the operator calculates dose margin left for the year is 620 mr (1000 mr-380 mr = 620mr).	

RESPONSE CUE: N/A

**4.	The Operator Calculates Stay Time.	Using his remaining dose margin and highest dose rate for the area, CALCULATES his Stay Time to be 2.48 hours or 2 hours and 28.8 minutes. (620/250/hr = 2.48 hours or 2 hours and 28.8 minutes).	

RESPONSE CUE: N/A

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)**

Part 2

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The 4th Stage 'A' Feedwater heater has a leak on its shell side inlet flange.
2. Your crew has been assigned the task to enter the Cond Bay to isolate, and drain the '4A' Feedwater Heater.
3. The estimated time to perform this task is approx 1 hour, and you will need a team of 3 operators.
4. The operators chosen to perform the task have a following dose history for the year:

Operator #1	280 mr
Operator #2	370 mr
Operator #3	770 mr

5. Each operators administrative limit for the year is 1000 mr.
6. Current survey map of the area is available.

INITIATING CUES:

For each of the operators listed above, DETERMINE their Maximum "Stay Time" and whether they can perform the task.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **AT** this time give the operator the copy of the survey map of the Unit 2 Condenser Bay 164' el.

1.	The operator examines the HP Survey map of the Unit 2 164' el Condenser Bay.	Using the survey Map of Unit 2 164' el Condenser Bay, the operator DETERMINES the general radiation in the area that the work will occur.	

RESPONSE CUE: N/A

****2.**	The operator will determine the max general dose rate for the area.	Using the Survey Map the operator will DETERMINES the max general Dose Rate for the area to be 250 mr/hr.	

RESPONSE CUE: N/A

****3.**	The operator determines the Dose margin that each operator has left for the year.	Using the initial Dose information the operator calculates dose margin left for the year as follows: Operator #1: 1000 mr-280 mr = 720 mr Operator #2: 1000 mr-370 mr = 630 mr Operator #3: 1000 mr-770 mr = 230 mr	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**4.	The Operator Calculates Stay Time for each of the team members to perform the task.	Using his remaining dose margin and highest dose rate for the area, CALCULATE the Stay Times for each operator: Operator #1 720 mr/250 mr/hr = 2.88 hrs or 2 hours and 52.8 minutes. Operator #2 630 mr/250 mr/hr = 2.52 hrs or 2 hours and 31.2 minutes. Operator #3 230 mr/250 mr/hr = .92 hrs or 55.2 minutes.	

RESPONSE CUE: N/A

**5.	The Operator Determines Operator #3 is not acceptable for this task.	Using Stay Times that were just calculated by the operator, it is DETERMINE that operator #3 can not be use for this task due to the operator Dose Limit being exceeded.	

NOTE: **IF** the operator states that the operators should not exceed the RWP Dose limit of the Digital Alarming Dosimetry (DAD), this is also correct.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
REVIEW OF SCRAM DISCHARGE V0LUME ISOLATION VALVE TIMING & CLOSURE TEST		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25048-00	20 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25048**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
0	10/07/02	Initial development.	RLS	RSG

UNIT 1 () **UNIT 2** (X)

TASK TITLE:	**REVIEW OF SCRAM DISCHARGE V0LUME ISOLATION VALVE TIMING & CLOSURE TEST**
JPM NUMBER:	LR-JP-25048-00
TASK STANDARD:	The task shall be complete when the operator reviews the completed surveillance procedure, 34SV-C11-002-2, and determines if the test is satisfactory or unsatisfactory.
TASK NUMBER:	XXX.XXX
OBJECTIVE NUMBER:	XXX.XXX.X

PLANT HATCH JTA IMPORTANCE RATING:

RO X.XX

SRO X.XX

K/A CATALOG NUMBER: G2.1.33

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.4

SRO 4.0

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 2
	34SV-C11-002-2 Rev 4.2

REQUIRED MATERIALS:	Unit 2
	Completed surveillance package: 34SV-C11-002-2

APPROXIMATE COMPLETION TIME: 20 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is at 100% RTP.
2. Maintenance has been performed on the SDV vent and drain valves.
3. 34SV-C11-002-2S, "Scram Discharge Volume Isolation Valve Timing & Closure Test," has just been completed due to the maintenance.

INITIATING CUES:

Review the procedure data and determine the acceptability of the test, and determine if any required Tech Spec action(s) are necessary.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **AT** this time, **GIVE** the operator the completed copy of 34SV-C11-002-2S, "Scram Discharge Volume Isolation Valve Timing & Closure Test"

1.	The operator reviews the procedure.	The operator REVIEWS 34SV-C11-002-2S, "Scram Discharge Volume Isolation Valve Timing & Closure Test."	
2.	The operator evaluates closing stroke time data for: 2C11-F010A SDV Vent Vlv 2C11-F035A SDV Vent Vlv 2C11-F010B SDV Vent Vlv 2C11-F035B SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv	Per step 7.2.5, 7.2.7 and 7.2.8 of 34SV-C11-002-2S, the operator EVALUATES the closing stroke time data for: 2C11-F010A SDV Vent Vlv 2C11-F035A SDV Vent Vlv 2C11-F010B SDV Vent Vlv 2C11-F035B SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv	
****3.**	The operator determines the closing stroke time for: 2C11-F035A SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv Have exceeded their closing time limit per steps 7.27 and 7.2.8	Per step 7.2.7 and 7.2.8 of 34SV-C11-002-2S, the operator DETERMINES the closing stroke time data for: 2C11-F035A SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv Have exceeded their closing time limit per steps 7.2.7 and 7.2.8, and they are UNSATISFACTORY.	

RESPONSE CUE: N/A

PROMPT: **IF** the operator recommends that section 7.3 needs to be performed to adjust the timing of the UNSAT valves, **INFORM** the operator due to plant conditions that section 7.3 **CANNOT** be performed at this time.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
4.	The operator evaluates the closing time difference data for: 2C11-F010A SDV Vent Vlv 2C11-F035A SDV Vent Vlv 2C11-F010B SDV Vent Vlv 2C11-F035B SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv	Per steps 7.2.20 and 7.2.22 of 34SV-C11-002-2S, the operator EVALUATES the closing time difference data for: 2C11-F010A SDV Vent Vlv 2C11-F035A SDV Vent Vlv 2C11-F010B SDV Vent Vlv 2C11-F035B SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv and DETERMINES it to be SATISFACTORY.	
5.	The operator evaluates the opening time difference data for: 2C11-F010A SDV Vent Vlv 2C11-F035A SDV Vent Vlv 2C11-F010B SDV Vent Vlv 2C11-F035B SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv	Per steps 7.2.23 and 7.2.25 of 34SV-C11-002-2S, the operator EVALUATES the opening time difference data for: 2C11-F010A SDV Vent Vlv 2C11-F035A SDV Vent Vlv 2C11-F010B SDV Vent Vlv 2C11-F035B SDV Vent Vlv 2C11-F011 SDV Drain Vlv 2C11-F037 SDV Drain Vlv and DETERMINES it to be SATISFACTORY.	
**6.	The operator determines that Tech Spec action(s) applicable for the Unsat valves.	Per Tech Specs Section 3.1.8 condition A and B, the operator DETERMINES, that 3.1.8A applies to 2C11-F035A, 2C11-F011, & 2C11-F037 valves, and 3.1.8.B applies to 2C11-F011 and 2C11-F037 valves. 3.1.8.A Restore valve to OPERABLE status within 7days. 3.1.8.B Isolate the the associated line within 8 hours.	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: The operator may note that the Drain line valves (2C11-F011 and 2C11-F037) may be opened under administrative control to allow draining of the SDV.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
IRM ALTERNATE POWER CHECKS PRIOR TO TAKING THE MODE SWITCH TO RUN (ADMIN)		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25047-00	15 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25047**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	10/07/02	Initial Development.	RLS	RSG

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**IRM ALTERNATE POWER CHECKS PRIOR TO TAKING THE MODE SWITCH TO RUN (ADMIN)**
JPM NUMBER:	LR-JP-25047-00
TASK STANDARD:	The task is complete when the IRM alternate power checks are performed and the SRO determines that Average % power calculated is higher then current APRM power readings and a STA evaluation of power level indication is required.
TASK NUMBER:	XXX.XXX
OBJECTIVE NUMBER:	XXX.XXX.X

PLANT HATCH JTA IMPORTANCE RATING:

RO X.XX

SRO X.XX

K/A CATALOG NUMBER: G2.1.23

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.0

SRO 4.0

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2
	34GO-OPS-001-1	34GO-OPS-001-2 Rev 35.3

REQUIRED MATERIALS:	Unit 1	Unit 2
	34GO-OPS-001-1 (Attachment 10)	34GO-OPS-001-2 (Attachment 10)

APPROXIMATE COMPLETION TIME: 15 Minutes

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

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Reactor Startup is in progress, and the crew is making preparations to transfer the Reactor Mode Switch to Run.
2. The STA has adjusted all APRMs to 7% power.
3. All APRMs are currently reading 7% power.

INITIATING CUES:

Per Step 7.4.4.2 of 34GO-OPS-001-1, perform alternate power level check per Attachment 10.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	The operator locates a copy of 34GO-OPS-001-1.	Either from the LAN computer or MCR procedure books the candidate obtains a copy of 34GO-OPS-001-1.	

PROMPT: **AT** this time give the operator the attached copy of **UNIT 1 ATTACHMENT 10.**

2	The operator identifies where he will obtain IRM power and range information to record on attachment 10.	At 1H11-P603, the operator identifies, IRM recorders where power information is obtained, and locates the range switches to determine what range each IRM is on.	

PROMPT: **AT** this time give the operator a copy of the IRM power and range information.

3.	The operator copies the IRM range and power level data onto the copy of 34GO-OPS-001-1 Attachment 10.	Using the copy of 34GO-OPS-001-1 Attachment 10, the data is recorded by operator.	

RESPONSE CUE: Data is not recorded.

****4.**	The operator performs the Calculation to the IRM data.	The operator uses the recorded IRM data and MULTIPLIES it by the correct constant (.353). THEN adds them up and divides them by 8.	

RESPONSE CUE: Incorrect constant used or not added or not divided by 8.

PROMPT: **IF** the operator request that the Calculations be verified, **THEN** as another operator perform verification but **DO NOT** correct any errors.

****5.**	The operator determines that Average % power is greater than APRM power settings.	Using the Average % power, the operator DETERMINES that APRMs readings are NOT greater than the Average IRM power.	

RESPONSE CUE: The average IRM % is less than the APRM readings.

PROMPT: **IF** the operator is trying to determine current APRM power levels, **INFORM** the operator that was part of the initial conditions.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	The operator determines an evaluation of power level by the STA is required.	The operator informs the SS that the STA must perform an evaluation of power level indication.	

RESPONSE CUE: The operator does not request an STA evaluation of power level indication.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Reactor Startup is in progress, and the crew is making preparations to transfer the Reactor Mode Switch to Run.
2. The STA has adjusted all APRMs to 7% power.
3. All APRMs are currently reading 7% power.

INITIATING CUES:

Per Step 7.4.4.2 of 34GO-OPS-001-2, perform alternate power level check per Attachment 10.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	The operator locates a copy of 34GO-OPS-001-2.	Either from the LAN computer or MCR procedure books the candidate obtains a copy of 34GO-OPS-001-2.	

PROMPT: **AT** this time give the operator the attached copy of **UNIT 2 ATTACHMENT 10**.

2	The operator identifies where he will obtain IRM power and range information to record on attachment 10.	At 2H11-P603, the operator identifies, IRM recorders where power information is obtained, and locates the range switches to determine what range each IRM is on.	

PROMPT: **AT** this time give the operator a copy of the IRM power and range information.

3.	The operator copies the IRM range and power level data onto the copy of 34GO-OPS-001-2 Attachment 10.	Using the copy of 34GO-OPS-001-2 Attachment 10, the data is recorded by operator.	

RESPONSE CUE: Data is not recorded.

****4.**	The operator performs the Calculation to the IRM data.	The operator uses the recorded IRM data and MULTIPLIES it by the correct constant (.353). THEN adds them up and divides them by 8.	

RESPONSE CUE: Incorrect constant used or not added or not divided by 8.

PROMPT: **IF** the operator request that the Calculations be verified, **THEN** as another operator perform verification but **DO NOT** correct any errors.

****5.**	The operator determines that Average % power is greater than APRM power settings.	Using the Average % power, the operator DETERMINES that APRMs readings are NOT greater than the Average IRM power.	

RESPONSE CUE: The average IRM % is less than the APRM readings.

PROMPT: **IF** the operator is trying to determine current APRM power levels, **INFORM** the operator that was part of the initial conditions.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	The operator determines an evaluation of power level by the STA is required.	The operator informs the SS that the STA must perform an evaluation of power level indication.	

RESPONSE CUE: The operator does not request an STA evaluation of power level indication.

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)**

CONTINUOUS

1.0 Record the IRM readings below AND estimate reactor power using the following formulas:

For IRM Ranges 7 and 8: % Power = (IRM Reading) x (.0353)

For IRM Ranges 9 and 10: % Power = (IRM Reading) x (.353)

IRM A	RANGE _____	READING _____	% POWER _____
IRM C	RANGE _____	READING _____	% POWER _____
IRM E	RANGE _____	READING _____	% POWER _____
IRM G	RANGE _____	READING _____	% POWER _____
IRM B	RANGE _____	READING _____	% POWER _____
IRM D	RANGE _____	READING _____	% POWER _____
IRM F	RANGE _____	READING _____	% POWER _____
IRM H	RANGE _____	READING _____	% POWER _____

AVERAGE % POWER = _____

Confirm that each APRM reading is greater than the average * IRM Reactor Power Value. ____

Calculations Verified ____

* IF any APRM reading is NOT greater than the average IRM power, the STA will perform an evaluation of power level indication to ensure that the APRM readings are conservative to actual reactor power. The evaluation will be attached to this attachment.

CONTINUOUS

1.0 Record the IRM readings below AND estimate reactor power using one of the following formulas:

For IRM Ranges 7 AND 8:
% Power = (IRM Reading) x (.0353)

For IRM Ranges 9 AND 10:
% Power = (IRM Reading) x (.353)

IRM A	RANGE _____	READING _____	% POWER
IRM C	RANGE _____	READING _____	% POWER
IRM E	RANGE _____	READING _____	% POWER
IRM G	RANGE _____	READING _____	% POWER
IRM B	RANGE _____	READING _____	% POWER
IRM D	RANGE _____	READING _____	% POWER
IRM F	RANGE _____	READING _____	% POWER
IRM H	RANGE _____	READING _____	% POWER

AVERAGE % POWER = _____

Confirm that each APRM reading is greater than the average *
IRM Reactor Power Value. _____

Calculations Verified _____

*IF any APRM reading is NOT greater than the average IRM power, the STA will perform an evaluation of power level indication to ensure that the APRM readings are conservative to actual reactor power. The evaluation will be attached to this attachment.

IRM DATA

IRMS	RANGE	READING
A	9	18
C	9	20
E	9	20
G	10	20
B	9	22
D	9	18
F	10	22
H	9	24

****DO NOT GIVE THIS TO THE CANIDATE****

ANSWER

IRMS	RANGE	READING	%POWER
A	9	18	6.35
C	9	20	7.06
E	9	20	7.06
G	10	20	7.06
B	9	22	7.77
D	9	18	6.35
F	10	22	7.77
H	9	24	8.47

Total = 57.9 +/-.4

57.9/8 = 7.24 +/-.1%

Average % power = 7.24% +/-.1%

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training JPM

SRO ONLY

TITLE		
EVALUATE THE NEED FOR/RECOMMEND OFFSITE PROTECTIVE ACTIONS		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25205-06	16.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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-25205**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	08/05/94	Initial development	RAB	MMG
01	08/19/96	Format change	RAB	DHG
02	07/02/97	Changed based on instructor feedback.	SCB	DHG
03	03/21/00	Format modification, change time allowance based on running average, change MIDAS form due to revision	RAB	DHG
04	11/06/00	Include objective number	RAB	DHG
05	03/25/02	Include initial operator statement	RAB	RAB
06	10/07/02	JPM modified.	RLS	RSG

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**EVALUATE THE NEED FOR/RECOMMEND OFFSITE PROTECTIVE ACTIONS**
JPM NUMBER:	LR-JP-25205-06
TASK STANDARD:	The task shall be completed when the Protective Action Recommendation has been made per 73EP-EIP-054-0S.
TASK NUMBER:	200.105 (EP 001.088)
OBJECTIVE NUMBER:	200.105.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.00

SRO 3.00

K/A CATALOG NUMBER: 295038EA201

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.30

SRO 4.30

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	Unit 1 & 2
	73EP-EIP-054-0S Rev 4 Ed 1

REQUIRED MATERIALS:	Unit 1 & 2
	73EP-EIP-054-0S (current revision) PAR Worksheet/Approval Sheet

APPROXIMATE COMPLETION TIME: 16.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Prompt Offsite Dose Assessment has just been completed, and projected Dose information is available.
2. The Dose Assessment Staff is not available yet.
3. The SOS has declared a Site Area Emergency due to the release.
4. The SOS is performing the functions of the Emergency Director.
5. SPDS is available.

INITIATING CUES:

Determine the Protective Action Recommendations, per 73EP-EIP-054-0S.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **AT** this time, **GIVE** the operator the projected Dose information.

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 73EP-EIP-054-0S.	
2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	

PROMPT: **WHEN** the operator identifies the proper wind indication instrument, **INDICATE** that the wind direction (from) is 225°.

**3.	Obtain a 15 minute average wind direction.	At panel 1H11-P690, the operator has DETERMINED wind direction to be from 225°, using one of the following recorders: 1Y33-R601 (10 meter) 1Y33-R602 (60 meter) 1Y33-R603 (100 meter) **OR** At panel 1H11-P689, the operator has determined wind direction to be from 225°, using recorder 1Y33-R604 (23 meter). **OR** At Unit 1 or 2 SPDS MIDAS or MET screens the operator determines wind direction to be 225°.	

RESPONSE CUE: N/A

NOTE: Accept the wind direction as 216 to 250°.

4.	Record "wind direction from" on Attachment 3.	The operator has RECORDED wind direction (Wind From) on Step 1 of Attachment 3.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Determine affected zones from Attachment 3.	The operator has DETERMINED the affected zones to be: A E-5 J-10 K-10 L-10	

RESPONSE CUE: N/A

6.	Record the affected zones on Attachment 3.	The operator has RECORDED the affected zones on Step 2 of Attachment 3.	
7.	Compare plant conditions with Attachment 1 of procedure.	The operator has DETERMINED a General Emergency **DOES NOT** exist.	

PROMPT: **IF** the operator addresses status of emergency classification, as the SOS, **INFORM** the operator that a Site Area Emergency has been declared.

8.	Determine PARs required for a Site Area Emergency per Attachment 1.	The operator has DETERMINED there are **NO PARs** for Site Area Emergency per Attachment 1.	
9.	Record the plant condition PARs on Attachment 3.	The operator has RECORDED "N/A" or "NONE" for plant condition PARs on Step 3 of Attachment 3.	
10.	Determine if Off-site dose has been measured or projected.	The operator has DETERMINED that the dose rate has been projected.	
11.	Determine if the population dose is greater than 1 REM TEDE or greater than 5 REM CDE Thyroid.	Evaluating **ALL** TEDE and THYROID CDE Values the operator: DETERMINES the dose to the population is **greater than** 1 REM TEDE and **greater than** 5 REM CDE Thyroid. ANSWERS **YES** to the flowchart step.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
12.	Determine if the dose is greater than 1 REM TEDE or greater than 5 REM CDE Thyroid at 5 - 10 miles.	EVALUATING the **10 AND 5 MILE** TEDE and THYROID CDE Values the operator: DETERMINES the dose to the population is **less than** 1 REM TEDE and **less than** 5 REM CDE Thyroid at 5 - 10 miles. ANSWERS **NO** to the flowchart step.	
13.	Determine if the dose is greater than 1 REM TEDE or greater than 5 REM CDE Thyroid at 2 - 5 miles.	EVALUATING the **5 AND 2 MILE** TEDE and THYROID CDE Values the operator: DETERMINES the dose to the population is **less than** 1 REM TEDE and **less than** 5 REM CDE Thyroid at 2 - 5 miles. ANSWERS **NO** to the flowchart step.	
****14.**	Determine PARs required for a dose projections per Attachment 2.	The operator has DETERMINED PARs for dose projections per Attachment 2 are: **EVACUATE** Zone A **SHELTER** Zones E-5.	

RESPONSE CUE: N/A

PROMPT: **IF** the operator addresses actual field measurements, as the SOS, **INFORM** the operator that no actual field measurements have been obtained yet.

****15.**	Determine the most conservative PARs.	The operator has DETERMINED the PARs from dose projections are most conservative.	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
16.	Check the block to the left of the most conservative PAR of Step 3 on Attachment 3.	The operator has CHECKED the block to the left of the Dose Projections of Step 3 on Attachment 3.	
17.	Record the zones from the most conservative PAR to the Approval Section of Attachment 3.	The operator has RECORDED the following on the Approval Section on Attachment 3: **EVACUATE** Zone A **SHELTER** Zones E-5.	
18.	Obtain ED concurrence on PARs.	Emergency Director has SIGNED Attachment 3.	

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

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

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

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

13. ESTIMATE OF PROJECTED OFFSITE DOSE:

[ ] NEW [ ] UNCHANGED PROJECTION TIME: _____ (Eastern)

ESTIMATED DURATION: _____HRS

	TEDE (mrem)	THYROID CDE (mrem)
SITE BOUNDARY	1.4E+03	6.9E+03
2 MILES	7.4E+02	3.0E+03
5 MILES	2.3E+02	6.9E+02
10 MILES	5.5E+01	1.7E+02

A1.1 (RO/SRO)

TASK CONDITIONS:

A startup is planned for the following shift. One Reactor Operator must be held over two hours for startup. The following is the work history (excluding shift turnover time) of the available reactor operators on shift (hours reflect those worked PRIOR to the 2 hour holdover). A break of at least 8 hours occurred between all work periods.

DAY	1	2	3	4	5	6	7	8 (Today)
Operator #1	0	0	13	11	14	10	14	10
Operator #2	0	3	10	12	12	12	8	14
Operator #3	0	0	12	12	12	8	8	15
Operator #4	0	8	12	10	10	8	10	12
Operator #5	0	4	12	10	10	14	10	12

Evaluate the work history for <u>all</u> 5 operators. Determine which operator(s), if any, can be held over for two hours without prior overtime approval, and determine which operators CANNOT be held over for two hours without prior overtime approval. If CANNOT be held over then indicate which guidelines would be violated.

Task Standard:

GEN 2.1.3 (3.0/3.4) Knowledge of shift turnover practices CFR 41.10 RO and SRO

Step	Description	Standard	SAT/UNSAT
1	Obtain a current revision of 10-AC-MGR-020-0S.	Current Revision of 10-AC-MGR-020-0S.	
2	Evaluate Operator 1	Determine Operator #1 would exceed 24 hours in a 48 hour period and and would exceed 72 hours in a 7 day period and would require overtime authorization.	Critical
PROMPT: **If asked, inform applicant that operator 1 received authorization for exceeding 24 hours in a 48 hour period between days 5 and 6.**			
3	Evaluate Operator 1	Determine Operator exceeded 24 hours in a 48 hour period between days 5 and 6.	
4	Evaluate Operator 2	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization.	Critical
5	Evaluate Operator 3	Determine Operator #3 would exceed 16 hours in a 24 hour period and 24 hours in a 48 hour period and would require overtime authorization.	Critical
6	Evaluate Operator 4	Determine that Operator #4 would not exceed any overtime guidelines.	
7	Evaluate Operator 5	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization.	Critical

This JPM should be written so that the SRO can review the results after the operator has performed all of his steps. The operator incorrectly signed off steps 7.2.7, 7.2.8 and 7.2.26. This caused the operator to skip section 7.3. The operator also incorrectly signed step 7.5.3 as Satisfactory. I want the SRO to figure out which valves are INOPERABLE and the Tech Spec actions that apply. I believe with the times that I have filled in that valves 2C11-F035A, 2C11-F037 and 2C11-F011 are INOPERABLE and the Tech Specs that should be entered are:

1) 3.1.8 Condition A for valve 2C11-F035A since a Separate Condition entry is allowed for each SDV vent and drain line.
2) 3.1.8 Condition A for valves 2C11-F037 and 2C11-F011 since a Separate Condition entry is allowed for each SDV vent and drain line.
3) 3.1.8 Condition B for valves 2C11-F037 and 2C11-F011.

The SRO should also understand that the drain line may be unisolated periodically to drain the line as long as an operation is specifically dedicated to close the valves if the need arises.

1.0 OBJECTIVE

This procedure provides instructions for verifying that the scram discharge volume vent and drain valves close in the proper amount of time when given a simulated scram signal and that they open when that signal is removed. This procedure satisfies the requirements of Unit 2 TS SR 3.1.8.3, TS 5.5.6, and ASME OM Code Subsection ISTC.

TABLE OF CONTENTS

2.0 APPLICABILITY

2.1 This procedure applies to the Unit 2 Scram Discharge Volume Vent and Drain Vlvs, 2C11-F010A & B, 2C11-F035A & B, 2C11-F011 and 2C11-F037; their associated Solenoid Operated Pilot Valves, 2C11-F009 and 2C11-F040; and their actuating relays, 2C71-K21A-D. This procedure is required to be performed at least once per 18 months.

2.2 This procedure is performed after maintenance on the SDV Valves that could affect valve stroke times.

2.3 IF performing this procedure for setup and timing only and no maintenance was performed on the SDV Valves, the stem verification will be marked N/R.

3.0 REFERENCES

3.1 90AC-OAM-001-0S, Test and Surveillance Control

3.2 Unit 2 TS 5.5.6 and TS SR 3.1.8.3

3.3 H-26006 and H-26007, Control Rod Drive Hydraulic System P&IDs

3.4 H-27605 thru H-27619 and H-27850, Reactor Protection System Elementary Diagrams

3.5 Edwin I. Hatch Nuclear Plant Unit 2 - Valve Inservice Testing Plan

3.6 42EN-INS-001-0S, Inservice Testing Program

3.7 31GO-INS-001-0S, ISI Pump and Valve Operability Tests

4.0 REQUIREMENTS

4.1 PERSONNEL REQUIREMENTS

The number and qualification level of personnel performing this procedure will be determined by the Shift Supervisor.

4.2 MATERIAL AND EQUIPMENT

4.2.1 2 HFA Gagging devices (optional)

4.2.2 Six calibrated stopwatches - one for each valve

4.3 SPECIAL REQUIREMENTS

4.3.1 Independent verification, as described in 10AC-MGR-019-0S, Procedure Use and Adherence, will be required for portions of this procedure.

4.3.2 The VERIFIED part of any step requiring independent verification may be performed out of sequence any time after completion of the first signoff.

4.3.3 The RESTORATION section of this procedure must be performed anytime the procedure is begun, regardless of whether the results are acceptable OR unacceptable.

4.3.4 If in mode 1 or 2, this test will be immediately EXITED and the RESTORATION section will be performed if annunciator 603-238, ROD OUT BLOCK alarms due to high SDV level. This action is taken to allow the SDV to be drained prior to receipt of a SCRAM.

5.0 PRECAUTIONS/LIMITATIONS

5.1 PRECAUTIONS

5.1.1 Observe safety rules outlined in the Southern Nuclear Safety and Health Manual.

5.1.2 Observe proper radiation protection practices to maintain personnel exposure ALARA and to limit the spread of contamination. Remain alert for changes which might require additional radiation protection.

5.1.3 IF the CRD System is operating during this test, leaking scram valves will cause the scram valves discharge volume to begin filling during this test. IF the level reaches 57 gal., a reactor scram will result.

5.1.4 The following annunciators may alarm during this test:

603-119, SCRAM DISCH VOL NOT DRAINED
603-238, ROD OUT BLOCK
603-239, RMCS / RWM ROD BLOCK OR SYSTEM TROUBLE

5.2 LIMITATIONS

N/A - Not applicable to this procedure

6.0 PREREQUISITES

6.1 The scram valve pilot air header is pressurized to between 70 PSIG and 75 PSIG.

6.2 The RPS is in operation and the scram relays are reset.

6.3 The Scram Discharge Volume Vent and Drain Vlvs, 2C11-F010A & B, 2C11-F035A & B, 2C11-F011 and 2C11-F037 are OPEN.

6.4 This test may be performed with the reactor in ANY mode of operation. It is preferable that the reactor is in Modes 3, 4 or 5 with all operable control rods fully inserted, AND all other control rods tagged under clearance such that they will NOT scram in the event of a scram signal occurring.

6.5 Communications have been established between the RPS Panels, 2H11-P609, 2H11-P611, and Panel 2H11-P603.

6.6 A Radiation Work Permit may be required for entry to areas for valve stem position verification.

7.0 PROCEDURE

7.1 PRETEST

7.1.1 Confirm that all prerequisites have been met. ___JD__

7.1.2 Obtain Shift Supervisor's permission to perform this surveillance. __JD___

7.1.3 Record stopwatch numbers: ___JD__

_____#1_____ _____#4_____

_____#2_____ _____#5_____

_____#3_____ _____#6_____

7.2 TIMING AND CLOSURE TEST

CONTINUOUS

7.2.1 At Panel 2H11-P609, GAG or FINGER CLOSED relay 2C71-K21A. ___JD__

NOTES

-The valve closing time is measured from the closing of relay 2C71-K21C until the red light extinguishes. The stopwatches are to be started WHEN the relay is closed and stopped WHEN the red light extinguishes.

-Ensure that the following relay remains closed until after all closing times have been recorded.

-The following step simulates a full scram and will cause all scram discharge volume vent and drain valves to close.

7.2.2 At Panel 2H11-P609, GAG or FINGER CLOSED relay 2C71-K21C. __JD___

7.2.3 At Panel 2H11-P603, simultaneously START the stopwatches. __JD___

7.2.4 WHEN the individual scram discharge volume vent or drain valves stop closing, STOP the stopwatches. __JD___

7.2.5 Record the closing times of the scram discharge volume vent and drain valves:

Scram Discharge Volume Vent Vlv, 2C11-F010A	__53__ Sec.	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035A	__61__ Sec.	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F010B	__48__ Sec.	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035B	__54__ Sec.	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F011	__56__ Sec.	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F037	__61.5 Sec.	__JD___

7.2.6 Confirm that the SDV vent and drain valves are actually closed by observing valve stem position.

Scram Discharge Volume Vent Vlv, 2C11-F010A,	CLOSED	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035A,	CLOSED	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F010B,	CLOSED	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035B,	CLOSED	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F011,	CLOSED	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F037,	CLOSED	__JD___

7.2.7 Confirm that valves 2C11-F010A, 2C11-F010B and 2C11-F011 close in less than or equal to 55 seconds. __JD___

7.2.8 Confirm that valves 2C11-F035A, 2C11-F035B and 2C11-F037 close in less than or equal to 60 seconds. __JD___

NOTE

The valve opening time delay is measured from the release of relay 2C71-K21C until the red light illuminates. The stopwatches are to be started WHEN the relay is released and stopped WHEN the red light illuminates.

7.2.9 At Panel 2H11-P609, RELEASE relay 2C71-K21C. __JD___

7.2.10 At Panel 2H11-P603, simultaneously START the stopwatches. __JD___

7.2.11 At Panel 2H11-P609, RELEASE relay 2C71-K21A. __JD___

7.2.12 WHEN the individual scram discharge volume vent or drain valves begin to open, STOP the stopwatches. __JD___

7.2.13 Record the valve opening time delay for each of the scram discharge volume vent and drain valves.

Scram Discharge Volume Vent Vlv, 2C11-F010A	20 Sec.	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035A	14 Sec.	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F010B	22 Sec.	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035B	15 Sec.	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F011	22 Sec.	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F037	17 Sec.	__JD___

7.2.14 Confirm that the SDV vent and drain valves are actually OPEN by observing valve stem position.

Scram Discharge Volume Vent Vlv, 2C11-F010A	OPEN	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035A	OPEN	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F010B	OPEN	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035B	OPEN	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F011	OPEN	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F037	OPEN	__JD___

7.2.15 At Panel 2H11-P611, GAG or FINGER CLOSED relay 2C71-K21B. __JD___

7.2.16 At Panel 2H11-P611, GAG or FINGER CLOSED relay 2C71-K21D. __JD___

7.2.16.1 Confirm that all scram discharge volume vent and drain valves CLOSE:

Scram Discharge Volume Vent Vlv, 2C11-F010A	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035A	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F010B	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035B	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F011	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F037	__JD___

7.2.17 At Panel 2H11-P611, RELEASE relay 2C71-K21D. __JD___

7.2.18 At Panel 2H11-P611, RELEASE relay 2C71-K21B. __JD___

7.2.19 Confirm that all scram discharge volume vent and drain valves OPEN:

Scram Discharge Volume Vent Vlv, 2C11-F010A	OPENS	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035A	OPENS	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F010B	OPENS	__JD___
Scram Discharge Volume Vent Vlv, 2C11-F035B	OPENS	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F011	OPENS	__JD___
Scram Discharge Volume Drain Vlv, 2C11-F037	OPENS	__JD___

7.2.20 Using times from step 7.2.5, calculate the difference in closing time between the valves listed below:

2C11-F035A closing time __61__ Sec.

MINUS

2C11-F010A closing time __53___ Sec. = __8____ Sec. __JD___

2C11-F035B closing time __54___ Sec.

MINUS

2C11-F010B closing time __48___ Sec. = ___6___ Sec. __JD___

2C11-F037 closing time __61.5_ Sec.

MINUS

2C11-F011 closing time __56___ Sec. = ___5.5__ Sec. __JD___

7.2.21 Verify all calculations in the previous step are correct. __DJ___ LIC.OPER.

7.2.22 Confirm that the difference in closing time between valves 2C11-F035A and 2C11-F010A, 2C11-F035B and 2C11-F010B, and 2C11-F037 and 2C11-F011 is greater than or equal to 5 Seconds. __JD___

7.2.23 Using times from step 7.2.13, calculate the difference in valve opening time delay between the valves listed below:

2C11-F010A opening delay time __20___ Sec.

MINUS

2C11-F035A opening delay time ___14__ Sec. = ___6___ Sec. __JD___

2C11-F010B opening delay time __22___ Sec.

MINUS

2C11-F035B opening delay time __15___ Sec. = ___7___ Sec. __JD___

2C11-F011 opening delay time __22___ Sec.

MINUS

2C11-F037 opening delay time __17___ Sec. = __5____ Sec. __JD___

7.2.24 Verify all calculations in the previous step are correct. __DJ___
Lic. Oper.

7.2.25 Confirm that the difference in valve opening time delay between valves 2C11-F010A and 2C11-F035A, 2C11-F010B and 2C11-F035B, and 2C11-F011 and 2C11-F037 is greater than or equal to 5 Seconds. __JD___

7.2.26 IF all of the valve times recorded in this Section meet the acceptance criteria, proceed to the Restoration Section of this procedure; otherwise, continue with the Adjustment Section. __JD___

7.3 ADJUSTMENT

CONTINUOUS

NOTE

This section only needs to be done if any of the valve closing or opening delay times can NOT meet the acceptance criteria.

7.3.1 IF Scram Discharge Volume Vent and Drain Vlvs, 2C11-F035A & B and 2C11-F037, do NOT meet the acceptance criteria for valve closing time, perform the following:

7.3.1.1 On the wall between MCCs 2R24-S018 A and B (130RHR17), ADJUST Speed Control Valve, 2C11-F081, accordingly (OPEN to increase closing speed, CLOSED to decrease it). _____

7.3.1.2 At Panel 2H11-P611, GAG or FINGER CLOSED relay 2C71-K21B. _____

7.3.1.3 At Panel 2H11-P611, GAG or FINGER CLOSED relay 2C71-K21D. _____

7.3.1.3.1 Note the closing time on all scram discharge volume vent and drain valves following closure of 2C71-K21D. _____

7.3.1.4 At Panel 2H11-P611, RELEASE relay 2C71-K21D. _____

7.3.1.5 At Panel 2H11-P611, RELEASE relay 2C71-K21B. _____

7.3.1.6 Repeat steps 7.3.1.1 through 7.3.1.5 until the acceptance criteria for valve closing time (steps 7.5.2.3-7.5.2.5) can be met. Record the final closing times of the scram discharge valve vent and drain valves. _____

Scram Discharge Volume Vent Vlv, 2C11-F010A _____Sec. _____

Scram Discharge Volume Vent Vlv, 2C11-F035A _____Sec. _____

Scram Discharge Volume Vent Vlv, 2C11-F010B _____Sec. _____

Scram Discharge Volume Vent Vlv, 2C11-F035B _____Sec. _____

Scram Discharge Volume Drain Vlv, 2C11-F011 _____Sec. _____

Scram Discharge Volume Drain Vlv, 2C11-F037 _____Sec. _____

7.3.1.7 Calculate the difference in closing time between the valves listed below:

2C11-F035A closing time _____ Sec.

MINUS

2C11-F010A closing time _____ Sec. = _____ Sec. _____

2C11-F035B closing time _____ Sec.

MINUS

2C11-F010B closing time _____ Sec. = _____ Sec. _____

2C11-F037 closing time _____ Sec.

MINUS

2C11-F011 closing time _____ Sec. = _____ Sec. _____

7.3.1.8 Verify all calculations in the previous step are correct. _____

7.3.1.9 Confirm that the difference in closing time between valves 2C11-F035A and 2C11-F010A, 2C11-F035B and 2C11-F010B, and 2C11-F037 and 2C11-F011 is greater than or equal to 5 Seconds. _____

7.3.2 IF Scram Discharge Volume Vent and Drain Valves, 2C11-F010 A&B and 2C11-F011, do NOT meet the acceptance criteria for valve opening time delay, perform the following:

7.3.2.1 At the CRD Flow Control Area (130RAR21), ADJUST Speed Control Valve, 2C11-F086, accordingly (OPEN to decrease the time delay, CLOSED to increase it). _____

7.3.2.2 At Panel 2H11-P611, GAG or FINGER CLOSED relay 2C71-K21B. _____

7.3.2.3 At Panel 2H11-P611, GAG or FINGER CLOSED relay 2C71-K21D. _____

7.3.2.4 AFTER all of the scram discharge volume vent and drain valves have CLOSED, RELEASE relay 2C71-K21D. _____

7.3.2.4.1 Note the valve opening time delay on all scram discharge volume vent and drain valves. _____

7.3.2.5 At Panel 2H11-P611, RELEASE relay 2C71-K21B. _____

7.3.2.6 Repeat steps 7.3.2.1 through 7.3.2.4.1 until the acceptance criteria for valve opening time delay (step 7.5.2.6) can be met. Record the final opening time delays of the scram discharge volume vent and drain valves.

Scram Discharge Volume Vent Vlv, 2C11-F010A _____Sec. _____

Scram Discharge Volume Vent Vlv, 2C11-F035A _____Sec. _____

Scram Discharge Volume Vent Vlv, 2C11-F010B _____Sec. _____

Scram Discharge Volume Vent Vlv, 2C11-F035B _____Sec. _____

Scram Discharge Volume Drain Vlv, 2C11-F011 _____Sec. _____

Scram Discharge Volume Drain Vlv, 2C11-F037 _____Sec. _____

7.3.2.7 Calculate the difference in valve opening time delay between the valves listed below:

2C11-F010A opening delay _____ Sec.

MINUS

2C11-F035A opening delay _____ Sec. = _____ Sec. _____

2C11-F010B opening delay _____ Sec.

MINUS

2C11-F035B opening delay _____ Sec. = _____ Sec. _____

2C11-F011 opening delay _____ Sec.

MINUS

2C11-F037 opening delay _____ Sec. = _____ Sec. _____

7.3.2.8 Verify all calculations in the previous step are correct. _____
LIC. OPER.

7.3.2.9 Confirm that the difference in valve opening time delay between valves 2C11-F010A and 2C11-F035A, 2C11-F010B and 2C11-F035B, and 2C11-F011 and 2C11-F037 is greater than or equal to 5 Seconds. _____

7.4 RESTORATION

7.4.1 At Panel 2H11-P609, REPLACE all relay faceplates. _____

7.4.2 At Panel 2H11-P611, REPLACE all relay faceplates. _____

7.4.3 At Panel 2H11-P609, Confirm and VERIFY the following relays are DE-ENERGIZED:

2C71-K21A _____

VERIFIED _____

2C71-K21C _____

VERIFIED _____

7.4.4 At Panel 2H11-P611, Confirm and VERIFY the following relays are DE-ENERGIZED:

2C71-K21B _____

VERIFIED _____

2C71-K21D _____

VERIFIED _____

7.4.5 At Panel 2H11-P603, confirm AND verify that all scram discharge volume vent and drain valves are OPEN:

Scram Discharge Volume Vent Vlv, 2C11-F010A _____

VERIFIED _____

Scram Discharge Volume Vent Vlv, 2C11-F035A _____

VERIFIED _____

Scram Discharge Volume Vent Vlv, 2C11-F010B _____

VERIFIED _____

Scram Discharge Volume Vent Vlv, 2C11-F035B _____

VERIFIED _____

Scram Discharge Volume Drain Vlv, 2C11-F011 _____

VERIFIED _____

Scram Discharge Volume Drain Vlv, 2C11-F037 _____

VERIFIED __JD___

7.5 TEST RESULTS

7.5.1 Reason for test: (X) Norm. Surv. ( ) MWO #_____

( ) Other_____

7.5.2 Acceptance Criteria

7.5.2.1 ALL scram discharge volume vent and drain valves close when given a simulated scram signal.

7.5.2.2 ALL scram discharge volume vent and drain valves open when the signal is removed.

7.5.2.3 Valves 2C11-F010A, 2C11-F010B and 2C11-F011 close in less than or equal to 55 Seconds.

7.5.2.4 Valves 2C11-F035A, 2C11-F035B and 2C11-F037 close in less than or equal to 60 Seconds.

7.5.2.5 The difference in closing time between valves 2C11-F035A and 2C11-F010A, 2C11-F035B and 2C11-F010B, and 2C11-F037 and 2C11-F011 is greater than or equal to 5 Seconds.

7.5.2.6 The difference in valve opening time delay between 2C11-F010A and 2C11-F035A, 2C11-F010B and 2C11-F035B, and 2C11-F011 and 2C11-F037 is greater than or equal to 5 Seconds.

7.5.2.7 Valve stem position agrees with light indication in Control Room. (see steps 7.2.6 and 7.2.14)

7.5.3 Test Result:

(X) Satisfactory
( ) Unsatisfactory

7.5.4 Unsatisfactory Conditions:_____

_____

_____

_____

7.5.5 Comments/Corrective Actions: _____

_____

_____

_____

7.5.6 Test Completed and/or Verified by:

___John Doe_____/_____/_____
Print Name Initials Date

___Dave Jones _____/_____/_____
Print Name Initials Date

_____/_____/_____
Print Name Initials Date

_____/_____/_____
Print Name Initials Date

_____/_____/_____
Print Name Initials Date

_____/_____/_____
Print Name Initials Date

_____/_____/_____
Print Name Initials Date

_____/_____/_____
Print Name Initials Date

7.6 TEST REVIEW

7.6.1 The Shift Supervisor will review the procedure data for completeness and indicate concurrence with the test satisfactory/unsatisfactory determination by signing below.

Results Reviewed By: _____ / _____
Shift Supervisor Date

7.6.2 The Shift Supervisor will forward this procedure, with all sign offs complete through 7.7.1 to the IST Engineer for IST and ANII review

_____ / _____ _____ / _____
IST Engineer / Date ANII / Date

7.6.3 The IST Engineer will forward this procedure, with all sign offs complete, to Document Control for retention in accordance with 20AC-ADM-002-0S, Quality Assurance Records Administration.

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TITLE		
FROM OUTSIDE THE CONTROL ROOM, INJECT BORON USING THE SBLC SYSTEM WITH FAILURE OF "A" PUMP TO START		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25043-00	21.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25043**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	10/07/02	Initial Development.	RLS	RSG

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**FROM OUTSIDE THE CONTROL ROOM, INJECT BORON USING THE SBLC SYSTEM WITH FAILURE OF "A" PUMP TO START.**
JPM NUMBER:	LR-JP-25043-00
TASK STANDARD:	The task shall be completed when one Standby Liquid Control Squib Valve has been fired and "B" pump has been started locally and the Standby Liquid Control System is injecting to the Reactor, per 34SO-C41-003.
TASK NUMBER:	011.012
OBJECTIVE NUMBER:	011.012.B

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.20

SRO 4.20

K/A CATALOG NUMBER: 2110002130

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.90

SRO 3.40

OPERATOR APPLICABILITY: System Operator (SO)

GENERAL REFERENCES:	Unit 1	Unit 2
	31EO-EOP-011-1S Rev 6 34SO-C41-003-1S Rev 10 Ed 5	31EO-EOP-011-2S Rev 6 34SO-C41-003-2S Rev 10 Ed 4

REQUIRED MATERIALS:	Unit 1	Unit 2
	34SO-C41-003-1S (current revision) Four (4) SBLC Squib Valve jumper wires, from EOP file next to Remote Shutdown Panel 1H21-P173 Flathead screwdriver	34SO-C41-003-2S (current revision) Four (4) SBLC Squib Valve jumper wires, from EOP file next to Remote Shutdown Panel 2C82-P001 Flathead screwdriver

APPROXIMATE COMPLETION TIME: 21.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Reactor has failed to Scram either manually or automatically, and the Torus temperature is approaching the BIIT curve.
2. 31EO-EOP-011-1S (RCA) is in progress.
3. SBLC has failed to initiate from the Control Room.
4. RWCU is isolated.

INITIATING CUES:

Manually initiate SBLC locally per 34SO-C41-003-1S.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator identifies the materials that are required.	Operator has identified the required materials and where to obtain them. (Section 7.2.2)	
2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	
**3.	Detonate Squib Valve 1C41-F004A. AND Detonate Squib Valve 1C41-F004B.	At Panel 1H21-P011, the following jumpers are INSTALLED for 1C41-F004A: Terminal point BB-1 to Squib Valve, 1C41-F004A, Junction Box terminal C1 (white wire) and terminal C (green wire). Terminal point BB-4 to Squib Valve, 1C41-F004A, Junction Box terminal C2 (black wire) and terminal C3 (red wire). At Panel 1H21-P011, the following jumpers are INSTALLED for 1C41-F004B: Terminal point BB-8 to Squib Valve, 1C41-F004B, Junction Box terminal C1 (white wire) and terminal C (green wire). Terminal point BB-11 to Squib Valve, 1C41-F004B, Junction Box terminal C2 (black wire) and terminal C3 (red wire).	

RESPONSE CUE: Squib Valve 1C41-F004A(B), no noise is heard.

PROMPT: **WHEN** all terminals for a Squib Valve are correctly installed, **INDICATE** an explosive noise from the vicinity of that Squib Valve.

NOTE: Detonation of one Squib Valve will satisfactorily meet the standard.

NOTE: The jumpers used to fire the Squib Valves are a jumper with 3 connections to connect all three terminal points.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses isolation of RWCU, as the Control Room operator **REPORT** that RWCU is isolated.

4.	Start SBLC Pump 1C41-C001A.	At panel 1H21-P011, SBLC PUMP, 1C41-C001A, control switch is in RUN.	

PROMPT: **WHEN** operator addresses indications for pump start, **INDICATE** there is no noise from the pump, and green light is illuminated and red light is extinguished.

5.	RETURN the control switch to the STOP position	At panel 1H21-P011, SBLC PUMP, 1C41-C001A, control switch is in STOP.	
****6.**	Start SBLC 1C41-C001B	At panel 1H21-P011, SBLC PUMP, 1C41-C001B, control switch is in RUN.	

RESPONSE CUE: SBLC Pump 1C41-C001B, pump motor is quiet, and green light is illuminated.

7.	Verify the SBLC solution is being injected into the Reactor.	At panel 1H21-P011, the operator has VERIFIED SBLC Tank level is DECREASING as indicated by SBLC STORAGE TANK LEVEL INDICATOR, 1C41-R001.	

PROMPT: **WHEN** the operator addresses SBLC tank level, **INDICATE** for the operator that level is decreasing slowly, but is greater than 1300 gallons.

NOTE: It will take between 30 and 70 minutes to completely empty the SBLC Storage Tank.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Reactor has failed to Scram either manually or automatically, and the Torus temperature is approaching the BIIT curve.
2. 31EO-EOP-011-2S (RCA) is in progress.
3. SBLC has failed to initiate from the Control Room.
4. RWCU is isolated.

INITIATING CUES:

Manually initiate SBLC locally per 34SO-C41-003-2S.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator identifies the materials that are required.	Operator has identified the required materials and where to obtain them. (Section 7.2.2)	
2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	
**3.	Detonate Squib Valve 2C41-F004A. AND Detonate Squib Valve 2C41-F004B.	At Panel 2H21-P011, the following jumpers are INSTALLED for 2C41-F004A: Terminal point AA-5 to Squib Valve, 2C41-F004A, Junction Box terminal point 1 (white wire) and terminal point 3 (green wire). Terminal point AA-6 to Squib Valve, 2C41-F004A, Junction Box terminal point 4 (red wire) and terminal point 2 (black wire). At Panel 2H21-P011, the following jumpers are INSTALLED for 2C41-F004B: Terminal point AA-10 to Squib Valve, 2C41-F004B, Junction Box terminal point 1 (white wire) and terminal point 3 (green wire). Terminal point AA-11 to Squib Valve, 2C41-F004B, Junction Box terminal point 4 (red wire) and terminal point 2 (black wire).	

RESPONSE CUE: Squib Valve 2C41-F004 A(B), no noise is heard.

PROMPT: **WHEN** all terminals for a Squib Valve are correctly installed, **INDICATE** an explosive noise from the vicinity of that Squib Valve.

NOTE: Detonation of one Squib Valve will satisfactorily meet the standard.

NOTE: The jumpers used to fire the Squib Valves are a jumper with 3 connections to connect all three terminal points.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses isolation of RWCU, as the Control Room operator, **REPORT** that RWCU is isolated.

4.	Start SBLC Pump 2C41-C001A.	At panel 2H21-P011, SBLC PUMP, 2C41-C001A, control switch is in RUN.	

PROMPT: **WHEN** operator addresses indications for pump start, **INDICATE** there is no noise from the pump, and green light is illuminated and red light is extinguished.

5.	RETURN the control switch to the STOP position	At panel 2H21-P011, SBLC PUMP, 2C41-C001A, control switch is in STOP.	
****6.**	Start SBLC 2C41-C001B	At panel 2H21-P011, SBLC PUMP, 2C41-C001B, control switch is in RUN.	

RESPONSE CUE: SBLC Pump 2C41-C001B, pump motor is quiet, and green light is illuminated.

7.	Verify the SBLC solution is being injected into the Reactor.	At panel 2H21-P011, the operator has VERIFIED SBLC Tank level is DECREASING as indicated by SBLC STORAGE TANK LEVEL INDICATOR, 2C41-R001.	

PROMPT: **WHEN** the operator addresses SBLC tank level, **INDICATE** for the operator that level is decreasing slowly, but is greater than 1000 gallons.

NOTE: It will take between 30 and 70 minutes to completely empty the SBLC Storage Tank.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

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Operations Training
JPM

TITLE		
FROM THE REMOTE SHUTDOWN PANEL, START RCIC FOR INJECTION INTO THE REACTOR		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-39.16-12	24.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R	R. A. BELCHER	03/14/2002

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-39.16**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	06/30/89	General revision and format change	JEM	SMC
02	08/18/89	Add LR lesson plan references	JEM	DHG
03	09/22/89	General revision	JEM	WRB
04	02/27/90	Procedure, format, & question revision	JEM	DHG
05	04/29/91	General/procedure revision	JLA	DHG
06	08/26/92	General revision and format change	WMM	SCB
07	09/02/93	General revision, word processor change	RAB	RSG
08	08/11/94	Modify simulator setup, adjust format	RAB	SMC
09	08/05/96	Format change, procedure changes	RAB	DHG
10	03/06/00	Format modification, update, K/As, upgrade to the new simulator computer operating system, change time allowance based on running average, change title	RAB	DHG
11	11/02/00	Include objective number, change time allowance based on running average	RAB	DHG
12	03/14/02	Include initial operator statement	RAB	RAB

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**FROM THE REMOTE SHUTDOWN PANEL, START RCIC FOR INJECTION INTO THE REACTOR**
JPM NUMBER:	LR-JP-39.16-12
TASK STANDARD:	The task shall be completed when the RCIC System is started and injecting to the Reactor per 31RS-OPS-001.
TASK NUMBER:	039.016
OBJECTIVE NUMBER:	039.016.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.86

SRO 3.80

K/A CATALOG NUMBER: 2950162130

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.90

SRO 3.40

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 2
	31RS-OPS-001-2S Rev 6 Ed 1

REQUIRED MATERIALS:	Unit 2
	31RS-OPS-001-2S (current revision) Key for Remote Shutdown Panel (if performed in Plant)

APPROXIMATE COMPLETION TIME: 24.0 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #127** and leave in **FREEZE**.

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

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfB21_48A	Steam Line A Break (After Restrictor) (Var)	1.0	1000	00000
mfN21_79A	Condensate Pump 2A Trip			00000
mfN21_79B	Condensate Pump 2B Trip			00000
mfN21_79C	Condensate Pump 2C			00000
mfE41_107	HPCI Failure to Start (F001 Stuck)			00000
mfE51_109	RCIC Failure to Auto Start			00000

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

   A. Allow the simulator to run for two minutes.
   B. Secure all RHR and Core Spray pumps.
   C. Acknowledge all 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. An event has occurred which required the Control Room to be evacuated.
2. The Unit 2 Reactor was scrammed prior to the evacuation.
3. RCIC is in standby.
4. 31RS-OPS-001-2S is in progress.
5. RWL is -80" and decreasing.

INITIATING CUES:

Start the RCIC System from the Remote Shutdown Panel and inject water into the Reactor per 31RS-OPS-001-2S, Attachment 3.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain them.	

PROMPT: **IF** the operator addresses posting of RCIC Diagonal, as the Shift Supervisor, **INFORM** the operator that Health Physics is posting the area.

*NOTE: Transfer Switch 2C82-S8 is not required to complete the critical step satisfactorily.

**2.	Place the following Transfer Switches in EMERGENCY: 2C82-S7 2C82-S53 2C82-S52 2C82-S6 2C82-S4 2C82-S5 2C82-S3 2C82-S2 2C82-S8* 2C82-S18	At panel 2C82-P001, the following Transfer Switches are in EMERGENCY: XFER SW 2C82-S7 XFER SW 2C82-S53 XFER SW 2C82-S52 XFER SW 2C82-S6 XFER SW 2C82-S4 XFER SW 2C82-S5 XFER SW 2C82-S3 XFER SW 2C82-S2 XFER SW 2C82-S8 XFER SW 2C82-S18	

RESPONSE CUE: Remote Shutdown Panel indications are not available.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	Confirm the following valves are open: 2E51-F010 2E51-F012 2E51-F007 2E51-F008	At panel 2C82-P001, the operator VERIFIES the following valves are OPEN, red light illuminated: CST SUCTION VLV, 2E51-F010 DISCH VLV, 2E51-F012 STEAM SUPPLY INBD ISOL VLV, 2E51-F007 STEAM SUPPLY OUTBD ISOL VLV, 2E51-F008.	

NOTE: The operator should not perform Section 3.0 of Attachment 3 since RCIC operation will NOT be for Reactor pressure control.

4.	Confirm the RCIC Flow Controller is in AUTO and set for 400 gpm.	At panel 2C82-P001, the operator VERIFIES RCIC FLOW CONTROL, 2C82-R001: Is in AUTO. Is set for 400 gpm (accept 350 to 450 gpm).	
5.	Confirm the following valves are closed: 2E51-F029 2E51-F031 2E51-F022	At panel 2C82-P001, the operator VERIFIES the following valves are CLOSED, green light illuminated: TORUS OUTBD SUCTION VLV, 2E51-F029 TORUS INBD SUCTION VLV, 2E51-F031 TEST LINE TO CST, 2E51-F022	

NOTE: The operator should not address opening 2E51-F029 and 2E51-F031 since 2E51-F010 is open.

6.	Start the Barometric Condenser Vacuum Pump.	At panel 2C82-P001, the BAROMETRIC CNDSR VAC PUMP, 2E51-C002-2, is in START, red light illuminated.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
7.	Start the Barometric Condenser Condensate Pump.	At panel 2C82-P001, the BAROMETRIC CNDSR COND PUMP, 2E51-C002-1, is in START, red light illuminated.	
8.	Confirm the Trip and Throttle Vlv is open.	At panel 2C82-P001, the operator has verified TRIP & THROTTLE VLV, 2E51-F524, is OPEN, red light illuminated.	
**9.	Open valve 2E51-F046.	At panel 2C82-P001, TURB CLG WTR VLV, 2E51-F046, is OPEN, red light illuminated.	

RESPONSE CUE: Valve, 2E51-F046, green light illuminated.

10.	Open valve 2E51-F019.	At panel 2C82-P001, MIN FLOW VLV, 2E51-F019, is OPEN, red light illuminated.	
**11.	Open valve 2E51-F045.	At panel 2C82-P001, STM TO TURB VLV, 2E51-F045 is OPEN, red light illuminated.	

RESPONSE CUE: Valve, 2E51-F045, green light illuminated.

PROMPT: **IF** the operator addresses purpose for RCIC operation, as the Shift Supervisor, **INFORM** the operator that RCIC operation is for RWL control.

**12.	Open valve 2E51-F013.	At panel 2C82-P001, DISCH VLV, 2E51-F013, is OPEN, red light illuminated.	

RESPONSE CUE: Valve, 2E51-F013, green light illuminated.

PROMPT: **INDICATE** for the operator Flow increasing to 400gpm on the RCIC Flow Controller.

**13.	Close the Minimum Flow Valve, 2E51-F019 when flow exceeds 122.5 gpm.	At panel 2C82-P001, when flow is greater than 122.5 gpm on RCIC FLOW CONTROLLER, MIN FLOW VLV, 2E51-F019, is CLOSED, green light illuminated.	

RESPONSE CUE: Valve, 2E51-F019, red light illuminated.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses RWL band, as the Shift Supervisor, **INFORM** the operator that another operator will maintain RWL.

PROMPT: **IF** the operator addresses securing RCIC or 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

TITLE		
DURING A LOSS OF AIR, ISOLATE THE FIRE PROTECTION SPRINKLERS		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-36.13-07	13.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R	R. A. BELCHER	03/12/2002

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-36.13**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	09/04/92	General revision and format change	WMM	SMC
02	07/22/93	General revision, word processor change	RAB	RSG
03	08/19/94	Procedure change, adjust format, change initiating cue to a direct command	RAB	SMC
04	08/01/96	Format change, modify time allowance	RAB	DHG
05	02/25/00	Format modification, change time allowance based on running average, update K/As	RAB	DHG
06	11/02/00	Include objective number, change operator applicability to Systems Operator	RAB	DHG
07	03/12/02	Include initial operator statement	RAB	RAB

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**DURING A LOSS OF AIR, ISOLATE THE FIRE PROTECTION SPRINKLERS**
JPM NUMBER:	LR-JP-36.13-07
TASK STANDARD:	The task shall be completed when the Fire Protection Sprinklers have been isolated during a loss of air per 34AB-P51-001.
TASK NUMBER:	036.013
OBJECTIVE NUMBER:	036.013.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.57

SRO 3.70

K/A CATALOG NUMBER: 2860002130

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.90

SRO 3.40

OPERATOR APPLICABILITY: Systems Operator (SO)

GENERAL REFERENCES:	Unit 2
	34AB-P51-001-2S Rev 2 Ed 2

REQUIRED MATERIALS:	Unit 2
	34AB-P51-001-2S (current revision)

APPROXIMATE COMPLETION TIME: 13.0 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A scram has occurred on Unit 2.
2. Unit 2 has had a loss of control air pressure and header pressure is below 45 psig and NOT increasing.
3. No fires exist in the plant.
4. Another operator is isolating Fire Protection Sprinklers to the Startup Transformers.
5. 34AB-P51-001-2S, "Loss of Instrument and Service Air System," is in progress.

INITIATING CUES:

Isolate the Fire Protection Sprinklers inside the Power Block per Attachment 1 of 34AB-P51-001-2S.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

NOTE: The steps of this JPM may be performed in any order.

**1.	Close valve 2U43-F093.	At location 112TAT19, valve 2U43-F093 is CLOSED.	

RESPONSE CUE: N/A

NOTE: This valve isolates the Reactor Feed Pump and Oil Conditioner area.

**2.	Close valve 2U43-F214.	At location 136THT20, valve 2U43-F214 is CLOSED.	

RESPONSE CUE: N/A

NOTE: This valve isolates the Hydrogen Seal Oil System, W End Cond A & B (Below 130') and W End Cond A & B (Above 130') areas.

**3.	Close valve 2Z43-F101.	At location 112THT13, valve 2Z43-F101 is CLOSED.	

RESPONSE CUE: N/A

NOTE: This valve isolates the Main Turbine Lube Oil Reservoir area.

PROMPT: **IF** the operator addresses stationing a fire watch, as the Shift Supervisor, **INFORM** the operator that a fire watch is being posted with back-up suppression equipment.

**4.	Close valve 2U43-F090.	At location 130TAT19, valve 2U43-F090 is CLOSED.	

RESPONSE CUE: N/A

NOTE: This valve isolates the RFP Oil Conditioner area.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
INITIATE EMERGENCY TORUS VENTING USING THE EMERGENCY VENT PATH		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-13.53-10	12.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R	R. A. BELCHER	03/07/2002

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-13.53**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	08/01/90	General revision and format change	JEM	DHG
02	05/24/91	General/procedure revision	JLA	DHG
03	08/18/92	General revision and format change	WMM	SCB
04	06/23/93	Task change, rename, procedure change, word processor change	RAB	RSG
05	12/02/93	Change initiating cue to a command, change valve naming to match the plant	RAB	SMC
06	06/17/96	Format change, modify time allowance	RAB	RSG
07	02/04/00	Format modification, title change, change time allowance based on running average	RAB	DHG
08	11/02/00	Include objective number	RAB	DHG
09	01/03/02	Change Unit 2 control pressure to 56 psig.	RLS	DHG
10	03/07/02	Include initial operator statement	RAB	RAB

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**INITIATE EMERGENCY TORUS VENTING USING THE EMERGENCY VENT PATH**
JPM NUMBER:	LR-JP-13.53-10
TASK STANDARD:	This task shall be completed when the Torus is lined up to vent via the Emergency Vent per 31EO-EOP-101.
TASK NUMBER:	013.053
OBJECTIVE NUMBER:	013.053.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.14

SRO 4.50

K/A CATALOG NUMBER: 223001A207

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.20

SRO 4.30

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2
	34SO-T48-002-1S Rev 19 Ed 2 31EO-EOP-101-1S Rev 3 31EO-EOP-012-1S Rev 4	34SO-T48-002-2S Rev 19 Ed 3 31EO-EOP-101-2S Rev 4 31EO-EOP-012-2S Rev 4

REQUIRED MATERIALS:	Unit 1	Unit 2
	31EO-EOP-101-1S (current revision) Designated jumpers(2) in EOP jumper book Screwdriver or nutdriver	31EO-EOP-101-2S (current revision) Designated jumpers(2) in EOP jumper book Screwdriver or nutdriver

APPROXIMATE COMPLETION TIME: 12.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 Torus pressure is above the Pressure Suppression Pressure (Graph 7).
2. 31EO-EOP-012-1S (PC-1) is in progress.
3. Standby Gas Treatment is in operation, taking a suction from the Reactor Building.
4. Torus Venting with CAD is in progress and Torus pressure cannot be maintained below 54 psig.
5. Normal AC Power is available.

INITIATING CUES:

Perform Torus venting using the emergency vent path per 31EO-EOP-101-1S, Step 3.1.6.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain them.	

PROMPT: **IF** addressed by the operator, as the Shift Supervisor, **INFORM** the operator that another operator is monitoring the NPSH curves for RHR and Core Spray.

PROMPT: **IF** addressed by the operator, **INFORM** the operator that normal AC power and Non-interruptible air are available.

**2.	Close SBGT Inlet Isolation Valve, 1T48-F081.	At panel 1H11-P654, the operator CLOSES 1T48-F081, SBGT INLET ISOL VLV, green light illuminated.	

RESPONSE CUE: Valve 1T48-F081, red light illuminated.

3.	Close or verify closed SBGT Inlet Isolation Bypass Valve, 1T48-F083.	At panel 1H11-P654, the operator CLOSES or verifies closed 1T48-F083, SBGT INLET ISOL BYP VLV, green light illuminated.	
**4.	Place 1T46-C001A, SBGT A Fan to OFF and confirms that the fan stops.	At panel 1H11-P657, the operator PLACES 1T46-C001A, SBGT A FAN to OFF, green light illuminated and VERIFIES that fan stops.	

RESPONSE CUE: SBGT A Fan, 1T46-C001A, red light illuminated

**5.	Place 1T46-C001B, SBGT B Fan to OFF and confirms that the fan stops.	At panel 1H11-P654, the operator PLACES 1T46-C001B, SBGT B Fan to OFF, green light illuminated and VERIFIES that fan stops.	

RESPONSE CUE: SBGT A Fan, 1T46-C001B, red light illuminated.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	Place 1T46-F005, SBGT Disch Control Damper to close.	At panel 1H11-P657, the operator CLOSES 1T46-F005, DISCH CONTROL DAMPER, green light illuminated.	

RESPONSE CUE: Damper 1T46-F005, red light illuminated.

**7.	Install jumper from UU-48 to UU-61 in panel 1H11-P601D for valve 1T48-F326.	At panel 1H11-P601D, the operator INSTALLS a jumper from UU-48 to UU-61, for valve 1T48-F326.	

RESPONSE CUE: N/A

**8.	Install jumper from AA-70 to AA-81 in panel 1H11-P602A for valve 1T48-F318.	At panel 1H11-P602A, the operator INSTALLS a jumper from AA-70 to AA-81, for valve 1T48-F318.	

RESPONSE CUE: N/A

**9.	Open Torus Vent Valve, 1T48-F326.	At panel 1H11-P601, the operator OPENS 1T48-F326, TORUS VENT VLV, red light illuminated.	

RESPONSE CUE: Valve 1T48-F326, green light illuminated.

**10.	Open Torus Vent Valve, 1T48-F318.	At panel 1H11-P602, the operator OPENS 1T48-F318, TORUS VENT VLV, red light illuminated.	

RESPONSE CUE: Valve 1T48-F318, green light illuminated.

PROMPT: **IF** addressed by the operator, as the Shift Supervisor, **INFORM** the operator that the EOF Dose Assessment Staff and the TSC HP Supervision have been notified of the potential radioactivity release.

**11.	Open Torus Emergency Vent Valve, 1T48-F082.	At panel 1H11-P654, the operator OPENS 1T48-F082, SUPP CHBR EMER VENT VLV, red light illuminated.	

RESPONSE CUE: Valve 1T48-F082, green light illuminated.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses Torus pressure, **INDICATE** for the operator that Torus pressure is <54 psig and decreasing.

PROMPT: **IF** the operator addresses System Restoration, **INFORM** the operator as the Shift Supervisor 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)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 Torus pressure is above the Pressure Suppression Pressure. (Graph 7)
2. 31EO-EOP-012-2S (PC-1) is in progress.
3. Standby Gas Treatment is in operation, taking a suction from the Reactor Building.
4. Torus venting with CAD is in progress and Torus pressure cannot be maintained below 56 psig.
5. Normal AC Power is available.

INITIATING CUES:

Perform Torus venting using the emergency vent path per 31EO-EOP-101-2S, Step 3.1.6.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain them.	

PROMPT: **IF** addressed by the operator, as the Shift Supervisor, **INFORM** the operator that another operator is monitoring the NPSH curves for RHR and Core Spray.

PROMPT: **IF** addressed by the operator, **INFORM** the operator that normal AC power and Non-interruptible air are available.

**2.	Close SBGT Inlet Isolation Valve, 2T48-F081.	At panel 2H11-P654, the operator CLOSES 2T48-F081, SBGT INLET ISOL VLV, green light illuminated.	

RESPONSE CUE: Valve 2T48-F081, red light illuminated.

3.	Close or verify closed SBGT Inlet Isolation Bypass Valve, 2T48-F083.	At panel 2H11-P654, the operator CLOSES or verifies closed 2T48-F083, SBGT INLET ISOL BYP VLV, green light illuminated.	
**4.	Place 2T46-D001A, SBGT A Fan to OFF and verify that 2T46-F002A, SBGT A Filter Discharge closes.	At panel 2H11-P657, the operator PLACES 2T46-D001A, SBGT A FAN/FILTER to OFF, green light illuminated and VERIFIES that 2T46-F002A, FLTR DISCH CLOSES, green light illuminated.	

RESPONSE CUE: SBGT A Fan/Filter, 2T46-D001A, red light illuminated and/or Damper, 2T46-F002A, red light illuminated.

**5.	Install jumper from UU-45 to UU-61 in panel 2H11-P601D for valve 2T48-F326.	At panel 2H11-P601D, the operator INSTALLS a jumper from UU-45 to UU-61, for valve 2T48-F326.	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	Install jumper from AA-70 to AA-73 in panel 2H11-P602A for valve 2T48-F318.	At panel 2H11-P602A, the operator INSTALLS a jumper from AA-70 to AA-73, for valve 2T48-F318.	

RESPONSE CUE: N/A

**7.	Open Torus Vent Valve, 2T48-F326.	At panel 2H11-P601, the operator OPENS 2T48-F326, TORUS VENT VLV, red light illuminated.	

RESPONSE CUE: Valve 2T48-F326, green light illuminated.

**8.	Open Torus Vent Valve, 2T48-F318.	At panel 2H11-P602, the operator OPENS 2T48-F318, TORUS VENT VLV, red light illuminated.	

RESPONSE CUE: Valve 2T48-F318, green light illuminated.

9.	Close or confirm closed Torus Emergency Vent Drain Valve, 2T48-F085.	At panel 2H11-P654, the operator VERIFIES that 2T48-F085, SUPP CHMBR EMERG VENT DRN VLV, is CLOSED.	
**10.	Open Torus Emergency Vent Valve, 2T48-F082.	At panel 2H11-P654, the operator OPENS 2T48-F082, SUPP CHMBR EMERG VENT VLV, red light illuminated.	

RESPONSE CUE: Valve 2T48-F082, green light illuminated.

PROMPT: **IF** the operator addresses Torus pressure, **INDICATE** for the operator that Torus pressure is <56 psig and decreasing.

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)**

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Operations Training
JPM

TITLE		
TRANSFER THE MODE SWITCH TO STARTUP/HOT STANDBY, WITH AN APRM AT 15% POWER		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-10.19-00	10.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/7/02

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10.19**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	10/7/02	Initial development.	RLS	RSG

UNIT 1 () UNIT 2 (X)

TASK TITLE:	**TRANSFER THE MODE SWITCH TO STARTUP/HOT STANDBY, WITH APRM AT 15% POWER**
JPM NUMBER:	LR-JP-10.019
TASK STANDARD:	The task shall be completed when the APRM is bypassed and the Mode switch is transferred to Startup/Hot Standby.
TASK NUMBER:	010.019
OBJECTIVE NUMBER:	010.019A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: G2.1.23

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.9

SRO 4.0

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2
	N/A	34GO-OPS-013-2 Rev 26.4

REQUIRED MATERIALS:	Unit 1	Unit 2
	N/A	34GO-OPS-013-2 (current revisions)

APPROXIMATE COMPLETION TIME: 10 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #105** and leave in **FREEZE.**
2. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS:**
   A. Place the Mode Switch to RUN position
3. Insert the following Malfunctions:

MALF#	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfC51 19A	LPRM UPACALE 'B' LEVEL 20.29			0000
mf60323379	LPRM UPSCALE ALARM OFF			0000

4. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.
5. **ESTIMATED** Simulator **SETUP TIME:** **10 Minutes**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Reactor Shutdown is in progress; steps through 7.3.16 of 34GO-OPS-013-2 have been completed.
2. The refueling bridge has power to it.
3. The SOS has reviewed Attachment 3 of 34GO-OPS-013-2 with the operating crew.
4. All IRMs and SRMs are Operable.
5. All required neutron surveillances for APRMs, IRMs, and SRMs are completed SAT.

INITIATING CUES:

Transfer the Mode switch to Start & Hot Standby per 34GO-OPS-013-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	

PROMPT: **IF** addressed by the operator, **INFORM** the operator that the refueling bridge has power to it per initial conditions.

2.	Confirm that all OPERABLE IRMs channel Upscale Trip OR Inop lights are EXTINGUISHED.	At panel 2H11-P603, the operator VERIFIES that IRMs Upscale TRIP OR Inop lights are EXTINGUISHED.	

RESPONSE CUE: N/A

3.	Confirms that INOPERABLE IRMs AND/OR SRMs are bypassed.	At panel 2H11-P603, the operator VERIFIES that IRMs AND SRMs INOP lights are extinguished.	

RESPONSE CUE: N/A

****4.**	Confirm that all OPERABLE APRM channels indicate less than 11%.	At panel 2H11-P603, the operator VERIFIES that all APRMs are less than 11%, and informs the SS that the 2B APRM is indicating 15% power.	

RESPONSE CUE: N/A

NOTE: **IF evaluating an RO** and the RO identifies the 2B APRM reading > 11% power the evaluator should declare the APRM INOP at this time.

PROMPT: **IF** the operator addresses checking the APRM 2B at the back panel for any apparent problem, **THEN** as another operator INFORM the operator that APRM 2B is reading 15%, and no apparent problem is indicated.

PROMPT: **IF** the operator request I&C assistance with APRM 2B. **INFORM** the operator that several LPRMs inputting into APRM 2B appear to be out of calibration and cannot be adjusted at this time.

PROMPT: **IF** the operator addresses placing the APRM 2B in bypass. **INFORM** the operator to place the 2B APRM in bypass.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	PLACE the 2B APRM in Bypass.	At panel 2H11-P603, the operator PLACES the APRM 2B in Bypass.	

RESPONSE CUE: APRM 2B not in Bypass.

6.	Confirm all rod blocks clear.	At panel 2H11-P603, the operator VERIFIES 603-238 ROD OUT BLOCK is CLEAR, window is extinguished.	

PROMPT: **IF** the operator addresses SOS reviewing Attachment 3 of 34GO-OPS-013-2 with the operating crew. **INFORM** the operator that this has been reviewed per the initial conditions.

**7.	PLACE the Reactor Mode Switch in START & HOT STBY position.	At panel 2H11-P603, the operator places the Mode Switch into START & HOT STBY position.	

RESPONSE CUE: The MODE switch is in RUN position.

8.	Record the Time the Mode switch is placed in START & HOT STBY.	The operator records the Time the Mode switch is placed in START & HOT STBY position in 34GO-OPS-013-2.	
9.	Confirms the Annunciator "MSIV CLOSURE TRIP BYPASS" illuminates.	At panel 2H11-P603, the operator confirms 603-113 is illuminated.	

RESPONSE CUE: Annunciator 603-113 is extinguished.

PROMPT: **WHEN** the operator addresses Confirming that the MSIV Closure Trip Bypass relays are energized on Panels 2H11-P609/P611. **INFORM** the operator that another operator will complete the rest of this section of 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
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Operations Training
JPM

TITLE		
TRANSFER AN EMERGENCY 4160 VAC BUS FROM THE EMERGENCY TO THE NORMAL POWER SUPPLY		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. A. BELCHER	LR-JP-27.11-14	22.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
N/R	R. A. BELCHER	03/11/2002

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-27.11**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	06/09/89	General revision and format change	WGW	RSG
02	08/24/89	Revise questions & add LR lesson plans	JEM	DHG
03	07/01/92	General revision and format change	WMM	DHG
04	09/23/93	General revision, word processor change	RAB	RSG
05	07/18/94	Correct for D/G loading, adjust format	RAB	SMC
06	02/23/95	Correct simulator setup and prompts to include directions for the simulator operator to place speed drop and voltage regulator to the correct positions, adjust format, include phonetics in the initiating cue	RAB	DHG
07	08/17/95	Format change, incorporate student comment about Unit 1 section	RAB	SMC
08	07/05/96	Format change	RAB	SMC
09	10/01/97	Revised based on comments from the 1997 annual exam.	SCB	DHG
10	03/05/99	Revised to make steps for direction of synchscope rotation, step 8 (U1) and Step 9 (U2) noncritical. Revised for new simulator malfunction numbers.	SCB	DHG
11	02/11/00	Format modification, change time allowance based on running average, update to new simulator operating system	RAB	DHG
12	03/29/00	TLB comment; change step 10 of U2 for voltage requirement of the diesel	RAB	SMC
13	11/02/00	Include objective number, TLB comment, correct Step 9 of Unit 1 section to agree with procedure change	RAB	DHG
14	03/11/02	Incorporate instructor comment on goal for power decrease of Step 12 for Unit 2, include initial operator statement	RAB	RAB

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**TRANSFER AN EMERGENCY 4160 VAC BUS FROM THE EMERGENCY TO THE NORMAL POWER SUPPLY**
JPM NUMBER:	LR-JP-27.11-14
TASK STANDARD:	The task shall be completed when the operator has transferred the "F" 4160 VAC Emergency Bus power supply from the associated Emergency Diesel to the "D" Startup Transformer, per 34SO-R43-001, with exception of placing the selected Diesel Generator in Standby.
TASK NUMBER:	027.011
OBJECTIVE NUMBER:	027.011.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.07

SRO 3.07

K/A CATALOG NUMBER: 262001A404

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.60

SRO 3.70

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 2
	34AR-652-202-2S Rev 4 34SO-R43-001-2S Rev 23 Ed 3 30AC-OPS-003-0S Rev 21 Ed 2

REQUIRED MATERIALS:	Unit 2
	34SO-R43-001-2S 30AC-OPS-003-0S (current revisions)

APPROXIMATE COMPLETION TIME: 22.0 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #121** and leave in **FREEZE.**

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

REM #	DESCRIPTION	STATUS
rfR43241	Diesel Gen 1B Engine Control Switch	UNIT 2

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

   A. Open the Normal and Alternate supply breakers to Bus "2F."
   B. Verify the "1B" D/G output breaker closes and match flags on the breaker switch.
   C. Place Diesel Generator "B" Volt Select switch in OFF position.
   D. Ensure Diesel Generator load is greater than 500 kW. If necessary, start another PSW pump on that bus.

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. 4160 VAC Emergency Bus "2F" is being supplied from Emergency Diesel Generator "1B."
2. The condition that caused Bus "2F" to deenergize has been corrected.
3. The normal off-site power supply is available.
4. 34AR-652-202-2S, LOSS OF OFF-SITE POWER, is in progress.
5. Diesel Generator "1B" control has been transferred to Unit 2.

INITIATING CUES:

Transfer the 4160 VAC Bus "2F" to the NORMAL power supply in accordance with 34SO-R43-001-2S, per section 7.4.4, "Transfer 4160 V Bus 2F From 1B Diesel Generator to Normal OR Alternate."

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

1.	Operator reviews the procedure.	Operator has reviewed the procedure.	
2.	Confirm power is available to Startup Transformer "2C" &"2D."	At panel 2H11-P651, the operator has VERIFIED that S/U AUX XFMR 2C & 2D potential lights are illuminated.	

PROMPT: **WHEN** the operator addresses the requirements to reset the LOSP Lockout Relay, as the Shift Supervisor, **INFORM** the operator that all requirements are met per 30AC-OPS-003-0S.

**3.	Reset the Bus "2F" LOSP Lockout Relay.	At panel 2H11-P652, BUS 2F LOSP LOCKOUT RELAY switch TURNED clockwise and HELD until its white light illuminates.	

RESPONSE CUE: Bus 2F LOSP relay locked out, white light extinguished.

4.	Confirm annunciator; LOSS OF OFFSITE POWER has cleared.	At panel 2H11-P652, operator IDENTIFIES that annunciator 652-202, LOSS OF OFFSITE POWER, has cleared.	
**5.	Place Diesel "1B" Mode Select Switch in TEST.	At panel 2H11-P652, DIESEL GEN B, MODE SELECT switch is in TEST.	

RESPONSE CUE: Diesel Generator in Test annunciator is clear.

PROMPT: **IF** the operator addresses Diesel Generator "1B" keylock switch, as the SO, **INFORM** the operator the switch is in the Remote Unit 2 position.

PROMPT: **WHEN** the operator addresses adjusting speed droop, the simulator operator should **TOGGLE REMOTE FUNCTION rfR43295**, "D/G 1B Engine Remote Speed Droop (0 to 100)," to **50**. As the SO, **INFORM** the operator that speed droop has been adjusted to 50.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	Place the Voltage Regulator Transfer switches to Manual.	At panel 2H11-P652 and 1H11-P652, the VOLTAGE REG TRANSFER switches are in MANUAL, green lights illuminated.	

RESPONSE CUE: Voltage Regulator, red light illuminated.

PROMPT: **WHEN** the operator addresses the position of the Unit 1 Voltage Regulator Transfer switch, the simulator operator should **TOGGLE REMOTE FUNCTION rfR43188**, "Diesel Gen 1B Unit 1 Voltage Reg Transfer," to **MAN**. As the Unit 1 Control Room operator, **INFORM** the operator that the switch is in manual.

NOTE: Synchroscope lights and synchroscope may be cycling depending on difference between sources.

**7.	Place Synch Switch for 4160 V Bus 2F Normal Supply ACB 135574 to ON.	At panel 2H11-P652, SSW ACB 135574, is in the ON position.	

RESPONSE CUE: Synchroscope lights are extinguished or synchroscope needle not moving.

NOTE: **Diesel Generator B Volt Select switch must be turned on to check DG voltage.**

8.	Adjust the "1B" Diesel Generator output voltage to 4160 V.	At panel 2H11-P652, the "1B" Diesel output voltage is ADJUSTED by using the DIESEL GEN B VOLTAGE ADJUST switch as necessary to indicate approximately 4160 volts on VOLTMETER for 4KV BUS 2F.	

NOTE: For the purpose of this JPM, 4000 to 4300 volts is considered matched.

NOTE: For performance of this JPM, the Diesel Generator is NOT lightly loaded.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
9.	Adjust the "1B" Diesel Generator synchroscope rotation.	At panel 2H11-P652, the DIESEL GEN B, SPEED ADJUST switch MANIPULATED as needed until the Synchroscope rotation is in the clockwise direction.	

RESPONSE CUE: Synchroscope is not rotating or rotating in counterclockwise direction.

10.	Adjust Diesel Generator voltage to the highest phase of SUT "2D" voltage.	At panel 2H11-P652, Diesel output voltage is ADJUSTED using DIESEL GEN B, VOLTAGE ADJUST to match the highest phase of SUT "2D."	

NOTE: The operator should not exceed 4400 volts on any phase of the Diesel Generator (Although Step 10 is not a critical step, if operator exceeds 4400 volts, then Step 10 becomes a critical step and would constitute operator failure).

NOTE: For the purpose of this JPM, ±100 volts is considered matched.

**11.	Close the 4160 "2F" Normal Supply ACB 135574.	At panel 2H11-P652, 4160 "2F," NORMAL SUPPLY ACB 135574 control switch is taken to CLOSE, when synchroscope is 2 minutes to 12:00 position and when the synchroscope lights approach the dimmest point, then released to the midposition, red light illuminated.	

RESPONSE CUE: ACB 135574, green light illuminated.

NOTE: If the synchroscope for ACB 135574 was not energized the breaker remains OPEN, green light on.

12.	Decrease load on Diesel Generator to 400-500 kW with 400-500 kVar.	At panel 2H11-P652, DIESEL GEN B, VOLT ADJUST and SPEED ADJUST switches used as necessary to reduce load on Diesel to 400-500 kW while maintaining 400-500 kVar.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**13.	Trip the "1B" Diesel Generator output breaker.	At panel 2H11-P652, DIESEL GEN B, EMERGENCY SUPPLY ACB 135570 control switch is taken to TRIP and released to midposition, green light illuminated.	

RESPONSE CUE: ACB 135570, red light illuminated.

14.	Confirm Diesel Generator output breaker green light is illuminated.	At panel 2H11-P652, the operator IDENTIFIES that the DIESEL GEN B, EMERGENCY SUPPLY ACB 135570 green light is illuminated.	
15.	Turn off the "2F" Bus synchronizing switch.	At panel 2H11-P652, SSW ACB 135574 is in OFF.	

PROMPT: **WHEN** the operator addresses securing of the Diesel Generator, as the Shift Supervisor, **INFORM** the operator that another operator will shutdown the Diesel Generator.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

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Operations Training
JPM

TITLE		
START A RECIRC MG SET FROM THE CONTROL ROOM WITH FAILURE OF PUMP SEALS.		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25042-00	38.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25042**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	10/07/02	Initial development.	RLS	RSG

UNIT 1 ( ) **UNIT 2** (X)

TASK TITLE:	**START A RECIRC MG SET FROM THE CONTROL ROOM WITH FAILURE OF PUMP SEALS.**
JPM NUMBER:	LR-JP-25042-00
TASK STANDARD:	The task shall be completed when the Recirculation Motor-Generator set has been started and then Reactor Recirc Pump is secured and isolated, per 34AR-602-116-2.
TASK NUMBER:	004.002, 004.003
OBJECTIVE NUMBER:	004.002.A, 004.003A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.50, 2.79

SRO 3.22, 3.15

K/A CATALOG NUMBER: 202001A401, 202001A210

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.30, 3.50

SRO 3.10, 3.90

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2
	N/A	34SO-B31-001-2 Rev 31.6 34AB-B31-001-2 Rev 7.3 34AR-602-116-2 Rev 2.2 34AR-602-122-2 Rev 4.4
REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	N/A	34SO-B31-001-2S & Attachment 5 34AR-602-116-2 34AR-602-122-2 (current revisions)

APPROXIMATE COMPLETION TIME: 38.0 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #121** and leave in **FREEZE**.

2. Insert the following Malfunctions:

MALF#	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfB31 39A	RECIRC 2A INNER SEAL FAILURE			9999
mfB31 45A	RECIRC 2A OUTER SEAL FAILURE			9999

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

   A. Stop Reactor Recirc Pump 2A(B); close and then throttle the discharge valve open, and reduce 2B31-R621A speed to 30%.
   B. Reset annunciators (602-106) PUMP MOTOR A (B) OIL LEVEL HIGH and (602-112) PUMP MOTOR A (B) OIL LEVEL LOW.
   C. Lower the Operating Recirc Pump Speed to reduce Recirc Flow to <22,000gpm
   D. Backout the 2A RFPT to ~2000 rpm.
   E. Insert Rod groups 44H and 44G to "00" position.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Reactor Recirc Pump 2A(B) tripped one hour ago. The cause of the pump trip has been found and corrected. Procedure 34AB-B31-001-2S has directed that the Reactor Recirc Pump be restarted per 34SO-B31-001-2S.
2. The Generator Lockout reset switch has been reset and the Generator Field Ground Detect switch is in NORM position.
3. Circulating oil pumps A1, A2 (B1, B2) are running.
4. Reactor Recirc Pump 2B(A) is still in operation.
5. Other operators are performing ATTACHMENT 5 through step 7.1.

INITIATING CUES:

Start 2A(B) Recirc Pump, using the normal startup section 7.1.2 of 34SO-B31-001-2S.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations. (Section 7.1.2)	

PROMPT: **IF** addressed by the operator, **INFORM** the operator that PUMP MOTOR 2A(B) OIL LEVEL HIGH 602-106 (206), and PUMP MOTOR 2A(B) OIL LEVEL LOW 602-112 (212) are cleared.

PROMPT: **IF** addressed by the operator, **INFORM** the operator that the MG Set A(B) lube oil system is in operation.

PROMPT: **IF** addressed by the operator, **INFORM** the operator that the Generator Lockout Reset Switch, on panel 2B31-P003A(B), is RESET and the yellow flag is RESET.

PROMPT: **IF** addressed by the operator, **INFORM** the operator that the Generator Field Ground Detect Test Switch, at panel 2B31-P003A(B), is in the NORM position.

PROMPT: **WHEN** the operator addresses lube oil temperature, as the SO, **INFORM** the operator, that lube oil temperature is 105°F.

PROMPT: **IF** addressed by the operator, **INDICATE** to the operator that Recirc loop A is not isolated.

PROMPT: **WHEN** the operator addresses the Seal Purge Isolation valves, as the SO, **INFORM** the operator that the valves are open.

2.	Verify Reactor Recirc Pump Suction Valve, 2B31-F023A(B) is open.	At panel 2H11-P602, PUMP SUCTION VLV, 2B31-F023A(B) is OPEN, red light illuminated.	

PROMPT: **WHEN** the operator addresses the Seal Flow Regulator, if necessary **INDICATE** that the plant is at rated pressure, as the SO, then **INFORM** the operator that it is set at 2 gpm.

PROMPT: **IF** addressed by the operator, **INFORM** the operator it is not required to vent the Recirc pump seals.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	Verify Master Recirc Flow Controller, 2B31-R620, is in manual.	At panel 2H11-P603, the MASTER RECIRC FLOW CONTROLLER, 2B31-R620, is in MAN.	
4.	Confirm Reactor Recirc Pump 2A(B) Speed Control, 2B31-R621A(B), in manual.	At panel 2H11-P602, SPEED CONTROL, 2B31-R621A(B), is in MANUAL, amber manual pushbutton light illuminated.	
**5.	Adjust pump 2A(B) speed control, 2B31-R621A(B), for 44% on the speed demand indicator.	At panel 2H11-P602, the Speed Demand Indicator, 2B31-R661A(B), has been ADJUSTED to 44% ±4%.	

RESPONSE CUE: Reactor Recirc Pump 2A(B) Speed Control, 2B31-R621A(B), is not at 44%.

6.	Confirm annunciator 602-126(226) FLUID DRIVE A(B) SCOOP TUBE LOCK, clear.	At panel 2H11-P602, operator VERIFIES 602-126(226) FLUID DRIVE A(B) SCOOP TUBE LOCK is CLEAR, window is extinguished.	
7.	Verify RWL is greater than +32 inches.	At panel 2H11-P603, the operator VERIFIES that RWL is greater than +32 inches.	

NOTE: The evualtor must put current time on step 7.1 prior to giving the copy to the operator.

PROMPT: **WHEN** the operator addresses ATTACHMENT 5, **PROVIDE** the operator with the marked up copy of ATTACHMENT 5.

8.	Confirm or start Reactor Recirc 2A(B) MG Set Room Cooler 2T41-B012(B013).	At panel 2H11-P657, the RX RECIRC 2A(B) MG SET ROOM COOLER, 2T41-B012(B013), is RUNNING, red light illuminated.	
**9.	Close Reactor Recirc Pump Discharge Valve, 2B31-F031A(B).	At panel 2H11-P602, PUMP DISCH VLV 2B31-F031A(B) is CLOSED, green light illuminated.	

RESPONSE CUE: Discharge valve, 2B31-F031A(B), red light illuminated.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**10.	Start Reactor Recirc Pump MG Set 2B31-S001A(B).	At panel 2H11-P602, RX RECIRC PUMP MG SET, 2B31-S001A(B) STARTED, red light illuminated.	

RESPONSE CUE: Reactor Recirc Pump MG Set, 2B31-S001A(B), green light illuminated.

11.	Complete remainder of Attachment 5.	Attachment 5 has been completed through Step 7.4.	

AFTER the pump is started and the Discharge valve is full open, **ENTER MALFUNTIONS mfB31_39A, "RECRIC PUMP 2A INNER SEAL FAILURE" and mfB31_45A, "RECIRC PUMP 2A OUTER SEAL FAILURE"**

12.	Address ARPs 34AR-602-116-2	At panel 2H11-P602, ARPs 34AR-602-116-2 are addressed.	
13.	Confirm 2B31-R603A, Seal A No.1 pressure indicator decreases, and Seal A No. 2 pressure indicator decreases.	At Panel 2H11-P602, DETERMINE 2B31-R603A, Seal A No.1 pressure indicator decreases, and Seal A No. 2 pressure indicator decreases.	

RESPONSE CUE: N/A

PROMPT: **IF** the operator addresses having leakage checks per 34SV-SUV-019-2, Surveillance checks, to determine magnitude of the leak. **INFORM** the operator another operator will perform the leakage calculations.

14.	Confirm an increase in FPM to determine that Reactor coolant is leaking from the seals, at monitor 2D11-R630, fission Products recorder.	At panel 2H11-P645, monitor 2D11-R630, FPM recorder, to DETERMINE if primary coolant is leaking from the seals by observing an increasing trend.	

RESPONSE CUE: N/A

NOTE: While the operator is addressing his ARP steps a High Drywell Pressure scram may come in due to Recirc pump seal leak.

PROMPT: **IF** a reactor scram occurs while the operator is addressing actions to islolate the Recirc pump seal leak, **INFORM** the operator that other operators will take scram actions.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
15.	Confirm an increase in Drywell pressure on 2T48-R607A/B, Narrow Range Drywell/Torus Wtr. Lvl Recorder(s).	At panel 2H11-P602 **OR** 2H11-P654, DETERMINE an increase in Drywell pressure trend on recorder(s) 2T48-R607A/B.	

RESPONSE CUE: N/A

16.	Shutdown the 2B31-S001A, MG Set 1A.	At panel 2H11-P602, Rx Recirc MG Set 2B31-S001A is SHUT DOWN, green light illuminated.	

RESPONSE CUE: Reactor Recirc Pump MG Set, 2B31-S001A(B), red light illuminated.

****17.**	Isolate the 2B31-S001A, MG Set 1A.	At panel 2H11-P602, CLOSE Rx Recirc MG Set 2B31-S001A: Discharge Valve 2B31-F031A, and Suction Valve 2B31-F023A, green lights illuminated.	

RESPONSE CUE: Discharge Valve 2B31-F0031A or Suction Valve 2B31-F023A, red light illuminated.

PROMPT: **WHEN** addressed by the operator, to CLOSE seal purge valve 2B31-F0008A, **INFORM** the operator that another operator will be dispatched to CLOSE the seal purge valve 2B31-F008A.

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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TITLE		
SHIFT RECIRC CONTROL FROM INDIVIDUAL TO MASTER CONTROL		
AUTHOR	MEDIA NUMBER	TIME
R. A. BELCHER	LR-JP-04.06-16	11.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
N/R	R. A. BELCHER	02/22/2002

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-04.06**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	06/09/89	General revision and format change	WGW	RSG
02	08/03/89	Procedure revision	JEM	DHG
03	08/24/89	Revised initial conditions	JEM	SMC
04	09/22/89	General revision	JEM	WRB
05	08/29/90	Procedure, format, and question revision	JEM	DHG
06	05/20/91	General/procedure revision	JLA	DHG
07	08/21/92	General revision and format change	WMM	SCB
08	07/08/93	Incorporate new controllers and word processor change	MMG	DHG
09	07/24/94	Procedure changes, modify simulator setup, adjust format, change initiating cue to a direct command	RAB	SMC
10	02/20/95	Adjust time allotment, modify simulator setup to incorporate instructor feedback, adjust format, put phonetics into the initiating cues	RAB	DHG
11	05/15/96	Format change	RAB	DHG
12	05/28/97	Revised due to procedure change.	SCB	DHG
13	01/18/00	Format modification, change time allowance based on running average	RAB	DHG
14	05/19/00	Incorporate student/instructor comments	RAB	DHG
15	10/30/00	Include objective number, incorporate instructor comments, correct simulator setup	RAB	DHG
16	02/22/02	Include initial operator statement	RAB	RAB

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**SHIFT RECIRC CONTROL FROM INDIVIDUAL TO MASTER CONTROL**
JPM NUMBER:	LR-JP-04.06-16
TASK STANDARD:	The task shall be completed when Reactor Recirculation Pump "2A" and "2B" have been shifted from Individual to Master Control, per 34SO-B31-001.
TASK NUMBER:	004.006
OBJECTIVE NUMBER:	004.006.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.20

SRO 3.19

K/A CATALOG NUMBER: 202001A401

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.70

SRO 3.70

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 2
	34GO-OPS-001-2S Rev 34 Ed 6 34SO-B31-001-2S Rev 29

REQUIRED MATERIALS:	Unit 2
	34SO-B31-001-2S (current revision)

APPROXIMATE COMPLETION TIME: 11.0 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #128** and leave in **FREEZE.**

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

   A. Ensure pump speeds are >45%. Place Recirc Pumps A and B in Individual Manual Mode.
   B. Using Individual Pump Controllers, ensure there is approximately a 5% mismatch in individual pump speeds, but both are >45%.
   C. Reduce Master Controller to <45% output.
   D. Ensure the plant has stabilized.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Recirc Pumps "2A" and "2B" are in Individual Manual Control mode. Both individual controllers are in MANUAL.
2. Recirc Pumps "2A" and "2B" are greater than 45% speed.

INITIATING CUES:

Place Recirc Pump "2A" and "2B" in Master Manual Control.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34SO-B31-001-2S. (Section 7.1.4)	
2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	
3.	Confirm that Master Recirc Flow Controller is in Manual.	At panel 2H11-P603, the operator VERIFIES that the MASTER RECIRC FLOW CONTROL, 2B31-R620, is in MANUAL, amber "M" pushbutton illuminated.	
4.	Confirm feedwater flow is >2 X 10^6 lbm/hr.	At panel 2H11-P603, the operator VERIFIES feedwater flow as indicated by STM FLOW/FW FLOW recorder, 2C32-R607, is >2 X 10^6 lbm/hr.	
**5.	Match the Input and the Output of Pump A speed controller.	At panel 2H11-P603, the operator ADJUSTS the MASTER RECIRC FLOW CONTROL's manual output lever to match the input and output signal on Recirc Pump A SPEED CONTROL, 2B31-R621A. The individual controller input and output signals are compared by depressing the PF key and reading the controller output (PF lamp lit), then depressing the PF key so that the input to the controller is displayed (PF lamp is off) (+/- .1%).	

RESPONSE CUE: N/A

NOTE: When the PF lamp is lit, the vertical barograph and the digital display both indicate the controller output. Depressing the PF key will switch off the PF lamp and the controller input will then be displayed on both the vertical barograph and digital display.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	Place Recirc Pump 2A Speed Controller, 2B31-R621A, in Auto.	At panel 2H11-P602, the operator PLACES Recirc Pump A SPEED CONTROL, 2B31-R621A, in AUTO, the "A" green pushbutton illuminated.	

RESPONSE CUE: Speed Controller, 2B31-R621A, Manual "M" amber light illuminated.

PROMPT: **IF** the operator asks permission to reduce power to perform the next step, **INFORM** the operator as the Shift Supervisor that power reduction is permitted.

**7.	Match the Input and the Output of Pump B speed controller.	At panel 2H11-P603, the operator ADJUSTS the MASTER RECIRC FLOW CONTROL's manual output lever to match the input and output signals on the Recirc Pump B SPEED CONTROL, 2B31-R621B. The individual controller input and output signals are compared by depressing the PF key and reading the controller output (PF lamp lit), then depressing the PF key so that the input to the controller is displayed (PF lamp is off). (+/- .1%)	

RESPONSE CUE: N/A

**8.	Place Recirc Pump 2B Speed Controller, 2B31-R621B, in Auto.	At panel 2H11-P602, the operator PLACES Recirc Pump 2B SPEED CONTROL, 2B31-R621B, in AUTO, the "A" green pushbutton illuminated.	

RESPONSE CUE: Speed Controller, 2B31-R621B, Manual "M" amber light illuminated.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses changing Reactor power in Master Manual Control, as the Shift Supervisor, **INFORM** the operator that you want to maintain the present Reactor power level.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

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JPM

TITLE		
TRANSFER THE MODE SWITCH TO STARTUP/HOT STANDBY, WITH AN APRM AT 15% POWER		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-10.19-00	10.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/7/02

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-10.19**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	10/7/02	Initial development.	RLS	RSG

UNIT 1 () UNIT 2 (X)

TASK TITLE:	**TRANSFER THE MODE SWITCH TO STARTUP/HOT STANDBY, WITH APRM AT 15% POWER**
JPM NUMBER:	LR-JP-10.019
TASK STANDARD:	The task shall be completed when the APRM is bypassed and the Mode switch is transferred to Startup/Hot Standby.
TASK NUMBER:	010.019
OBJECTIVE NUMBER:	010.019A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: G2.1.23

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.9

SRO 4.0

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2
	N/A	34GO-OPS-013-2 Rev 26.4

REQUIRED MATERIALS:	Unit 1	Unit 2
	N/A	34GO-OPS-013-2 (current revisions)

APPROXIMATE COMPLETION TIME: 10 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #105** and leave in **FREEZE.**

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

   A. Place the Mode Switch to RUN position

3. Insert the following Malfunctions:

MALF#	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfC51 19A	LPRM UPACALE 'B' LEVEL 20.29			0000
mf60323379	LPRM UPSCALE ALARM OFF			0000

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Reactor Shutdown is in progress; steps through 7.3.16 of 34GO-OPS-013-2 have been completed.
2. The refueling bridge has power to it.
3. The SOS has reviewed Attachment 3 of 34GO-OPS-013-2 with the operating crew.
4. All IRMs and SRMs are Operable.
5. All required neutron surveillances for APRMs, IRMs, and SRMs are completed SAT.

INITIATING CUES:

Transfer the Mode switch to Start & Hot Standby per 34GO-OPS-013-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	

PROMPT: **IF** addressed by the operator, **INFORM** the operator that the refueling bridge has power to it per initial conditions.

2.	Confirm that all OPERABLE IRMs channel Upscale Trip OR Inop lights are EXTINGUISHED.	At panel 2H11-P603, the operator VERIFIES that IRMs Upscale TRIP OR Inop lights are EXTINGUISHED.	

RESPONSE CUE: N/A

3.	Confirms that INOPERABLE IRMs AND/OR SRMs are bypassed.	At panel 2H11-P603, the operator VERIFIES that IRMs AND SRMs INOP lights are extinguished.	

RESPONSE CUE: N/A

**4.	Confirm that all OPERABLE APRM channels indicate less than 11%.	At panel 2H11-P603, the operator VERIFIES that all APRMs are less than 11%, and informs the SS that the 2B APRM is indicating 15% power.	

RESPONSE CUE: N/A

NOTE: **IF evaluating an RO** and the RO identifies the 2B APRM reading > 11% power the evaluator should declare the APRM INOP at this time.

PROMPT: **IF** the operator addresses checking the APRM 2B at the back panel for any apparent problem, **THEN** as another operator INFORM the operator that APRM 2B is reading 15%, and no apparent problem is indicated.

PROMPT: **IF** the operator request I&C assistance with APRM 2B. **INFORM** the operator that several LPRMs inputting into APRM 2B appear to be out of calibration and cannot be adjusted at this time.

PROMPT: **IF** the operator addresses placing the APRM 2B in bypass. **INFORM** the operator to place the 2B APRM in bypass.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	PLACE the 2B APRM in Bypass.	At panel 2H11-P603, the operator PLACES the APRM 2B in Bypass.	

RESPONSE CUE: APRM 2B not in Bypass.

6.	Confirm all rod blocks clear.	At panel 2H11-P603, the operator VERIFIES 603-238 ROD OUT BLOCK is CLEAR, window is extinguished.	

PROMPT: **IF** the operator addresses SOS reviewing Attachment 3 of 34GO-OPS-013-2 with the operating crew. **INFORM** the operator that this has been reviewed per the initial conditions.

**7.	PLACE the Reactor Mode Switch in START & HOT STBY position.	At panel 2H11-P603, the operator places the Mode Switch into START & HOT STBY position.	

RESPONSE CUE: The MODE switch is in RUN position.

8.	Record the Time the Mode switch is placed in START & HOT STBY.	The operator records the Time the Mode switch is placed in START & HOT STBY position in 34GO-OPS-013-2.	
9.	Confirms the Annunciator "MSIV CLOSURE TRIP BYPASS" illuminates.	At panel 2H11-P603, the operator confirms 603-113 is illuminated.	

RESPONSE CUE: Annunciator 603-113 is extinguished.

PROMPT: **WHEN** the operator addresses Confirming that the MSIV Closure Trip Bypass relays are energized on Panels 2H11-P609/P611. **INFORM** the operator that another operator will complete the rest of this section of 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

TITLE		
PREPARE EQUIPMENT CLEARANCE AND HOLD TAGS		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25019-03	20.0 MINUTES
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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PLANT E. I. HATCH

FORM TITLE:
TRAINING MATERIAL REVISION SHEET

Program/Course Code: **LICENSE REQUAL** Media Number: **LR-JP-25019**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
01	10/1/92	General revision and format change	WMM	RSG
02	07/14/94	General revision, add 2 valves to required tag out, word processor change	RAB	SMC
03	10/7/02	Format change removed Record of Completion sheet.	RLS	RSG

FACILITY: **PLANT E. I. HATCH** **UNIT 1 ( )** **UNIT 2 (X)**

TASK TITLE:	**PREPARE EQUIPMENT CLEARANCE AND HOLD TAGS**
JPM NUMBER:	LR-JP-25019-03
TASK STANDARD:	The task shall be completed when the operator has generated a clearance for CRD Suction Filter 2A per 30AC-OPS-001-0S.
TASK NUMBER:	300.016

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.20

SRO 2.74

K/A CATALOG NUMBER: 294001A107

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.00

SRO 3.70

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Procedure: 30AC-OPS-001-0S Rev 23.1 Plant Drawing H-26007

REQUIRED MATERIALS:	Procedure: 30AC-OPS-001-0S (current revision) Equipment Clearance Sheet (current revision) Danger Tags Plant Drawing H-26007

APPROXIMATE COMPLETION TIME: 20.0 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The CRD pump, 2C11-C001A, has tripped.
2. The SO sent to investigate the tripped CRD pump has reported the supply breaker has tripped.
3. Maintenance has determined that the suction filter for the pump must be replaced.
4. The Maintenance Foreman, Ron Buckner, is writing up the MWO and estimates that the job will take about 1 day. Maintenance will require the CRD Suction Filter 2A be under clearance.
5. The Nucleis System is down and will not be restored for several days.

INITIATING CUES:

Identify all components that would be used to isolate CRD Suction Filter 2A with the CRD Pump 2A available.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

NOTE: Steps of this JPM may be completed in any order.

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 30AC-OPS-001-0S.	

2.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations.	

3.	Operator identifies the materials which are required.	Operator has identified the required materials and where to obtain them. Plant Drawing H26007 34SO-C11-005-2S, Section 7.1.4 (Not required to use procedure)	

NOTE: The valves listed in this JPM are the minimum requirements for safe tagging. Components tagged in excess of this minimum will require case-by-case determination by the evaluator.

****4.**	Determine the equipment/components which must be tagged for the clearance.	The operator has determined the following must be tagged: 2C11-F114A 2C11-F115A 2C11-F117 2C11-F142A 2C11-F143A 2C11-F144A	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator addresses preparing a clearance to perform the maintenance, **INFORM** the operator another operator will perform the clearance.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:
- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
PERFORM A MANUAL STARTUP OF HPCI AND MAINTAIN REACTOR WATER LEVEL IN BAND		
AUTHOR	**MEDIA NUMBER**	**TIME CRITICAL**
R. L. SMITH	LR-LP-25050-00	6.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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PLANT E. I. HATCH

FORM TITLE: TRAINING MATERIAL REVISION SHEET

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

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
0	10/07/02	Initial development	RLS	RSG

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**PERFORM A MANUAL STARTUP OF HPCI AND MAINTAIN REACTOR WATER LEVEL IN BAND**
JPM NUMBER:	LR-LP-25050-00
TASK STANDARD:	The task shall be completed when the HPCI System is injecting to the Reactor with turbine speed greater than 2000 rpm per 34SO-E41-001-2S, and RWL is controlled in band.
TASK NUMBER:	005.002
OBJECTIVE NUMBER:	005.002.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.00

SRO 3.00

K/A CATALOG NUMBER: 206000G009

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.30

SRO 4.00

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	**Unit 2**
	34SO-E41-001-2S Rev 20 Ed 3 31EO-EOP-010-2S Rev 6

REQUIRED MATERIALS:	**Unit 2**
	34SO-E41-001-2S (current revision) **OR** HPCI Placard

APPROXIMATE COMPLETION TIME: 3.0 Minutes

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

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #121** and leave in **FREEZE.**

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

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfE51_109	RCIC Failure to Auto Start			00000
mfR22_180	4KV Bus 2C Fault			00000
mfR22_181	4KV Bus 2D Fault			00000
mfE41_235A	HPCI Fails to Auto Start on Low Level			00000
mfE41_235B	HPCI Fails to Auto Start on Hi Drywell Pressure			00000
mfN21_87A	Feedwater Pump A Trip			00000
mfN21_87B	Feedwater Pump B Trip			00000

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

   A. Perform RC-1 and RC-2.
   B. Allow simulator to run until RWL as indicated on 2B21-R623A and B is <-80 inches.
   C. Acknowledge annunciators.

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

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

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The HPCI System is in Standby.
2. A loss of the Feedwater pumps has occurred.
3. 31EO-EOP-010-2S (RC) is in progress.
4. RWL is < -80 inches and decreasing.
5. HPCI failed to autostart.
6. HPCI is required to maintain RWL.

INITIATING CUES:

Start HPCI manually and inject into the Reactor and maintain Reactor Water Level +3" to +50".

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **IF** the operator addresses HPCI suction transfer logic, as the Shift Supervisor, **INFORM** the operator that the HPCI high Torus level suction transfer logic has been overridden.

**1.	Open Lube Oil Cooling Water Valve, 2E41-F059.	At panel 2H11-P601, LUBE OIL CLG WTR VLV, 2E41-F059 is OPEN, red light illuminated.	

RESPONSE CUE: Valve, 2E41-F059, green light illuminated.

2.	Start HPCI Barometric Condenser Vacuum Pump, 2E41-C002-2.	At panel 2H11-P601, HPCI BAROM CNDSR VACUUM PUMP, 2E41-C002-2 is OPERATING, red light illuminated.	

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

**3.	Open the HPCI Turbine Steam Supply Valve, 2E41-F001.	At panel 2H11-P601, the TURB STEAM SUPPLY VLV, 2E41-F001 control switch is in the OPEN position, red light illuminated.	

RESPONSE CUE: Valve, 2E41-F001, green light illuminated.

NOTE: Valve 2E41-F001 is not required to be full open prior to proceeding to following steps.

**4.	Start the Auxiliary Oil Pump.	At panel 2H11-P601, the AUX OIL PUMP, 2E41-C002-3, is OPERATING, red light illuminated.	

RESPONSE CUE: HPCI Auxiliary Oil Pump, green light illuminated.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Open the Pump Discharge Valve, 2E41-F006.	At panel 2H11-P601, PUMP DISCHARGE VLV, 2E41-F006 is OPEN, red light illuminated.	

RESPONSE CUE: Valve, 2E41-F006, green light illuminated.

6.	Confirm the following valves are open: Turbine Control Valve Turbine Stop Valve	At panel 2H11-P601, the following valves are OPEN, red light illuminated: TURBINE CONTROL VLV TURBINE STOP VLV	
7.	Confirm HPCI Turbine comes up to speed as directed by the Turbine Flow Controller, 2E41-R612.	At panel 2H11-P601, operator VERIFIES HPCI turbine speed is controlled by FLOW CONTROL, 2E41-R612.	
8.	Verify the Minimum Flow Valve, 2E41-F012, closes when flow is greater than 790 gpm.	At panel 2H11-P601, the operator VERIFIES MIN FLOW VLV, 2E41-F012 is CLOSED when HPCI pump flow is greater than 790 gpm, green light illuminated.	
**9.	The Operator takes action to maintain reactor water level in +3" to +50" band.	At panel 2H11-P601, the operator MAINTAINS reactor water level in band by one of the following methods: Decreases the set point of the HPCI Flow controller 2E41-R612, or Takes manual control of the HPCI Flow controller 2E41-R612 and decreases flow, or Shuts down HPCI by decreasing Speed to ~2000 RPM with the Flow Controller 2E41-R612, and then Trips HPCI with manual trip PB, and then shuts the HPCI steam supply valve 2E41-F001.	

NOTE: If HPCI is started <u>PER THE PLACARD</u>, the following steps may be omitted.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
10.	Confirm the following valves are closed: 2E41-F028 2E41-F025 2E41-F029 2E41-F026	At panel 2H11-P602, the operator has CONFIRMED the following valves are CLOSED, green light illuminated: 2E41-F028, STEAM LINE DRAIN VLV 2E41-F025, BAROM CNDSR DISCH TO CRW 2E41-F029, STEAM LINE DRAIN VLV 2E41-F026, BAROM CNDSR DISCH TO CRW	
11.	Confirm Barometric Condenser Condensate Pump, 2E41-C002-1 cycles automatically to maintain barometric condenser water level.	At panel 2H11-P601, the operator has VERIFIED HPCI BAROM CNDSR LEVEL HIGH annunciator (601-129) is CLEAR.	

PROMPT: **IF** the operator addresses HPCI BAROM CNDSR LEVEL HIGH, **INDICATE** for the operator that it is extinguished.

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

PROMPT: **IF** the operator addresses shutting down HPCI, as Shift Supervisor, **INFORM** the operator that shutdown is not desired at this time.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
CROSSTIE RHR SERVICE WATER WITH A FAILURE OF THE SECOND RHRSW PUMP TO START		
AUTHOR	**MEDIA NUMBER**	**TIME**
R. L. SMITH	LR-JP-25044-00	15.0 Minutes
RECOMMENDED BY	**APPROVED BY**	**DATE**
T. F. PHIPLLIPS	R. S. GRANTHAM	10/07/02

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FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25044**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
00	10/07/02	Initial Development	RLS	RSG

UNIT 1 () **UNIT 2** (X)

TASK TITLE:	**CROSSTIE RHR SERVICE WATER WITH A FAILURE OF THE SECOND RHRSW PUMP TO START**
JPM NUMBER:	LR-JP-25044-00
TASK STANDARD:	The task will be completed when RHRSW Loop "A "has been cross-tied to RHRSW Loop "B" and discharge flow is reduced to below 4400 gpm due to trip of the one of the RHRSW pump, per 34SO-E11-010.
TASK NUMBER:	034.008
OBJECTIVE NUMBER:	034.008.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.29

SRO Not Available

K/A CATALOG NUMBER: 219000A215

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.30

SRO 3.40

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2
	N/A	34SO-E11-010-2S Rev 29

REQUIRED MATERIALS:	Unit 1	Unit 2
	N/A	34SO-E11-010-2S (current revision)

APPROXIMATE COMPLETION TIME: 15.0 Minutes

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

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #128** and leave in **FREEZE**.

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

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfE11_120B	RHRSW 2B Pump Trip			00000
mfE11_120D	RHRSW 2D Pump Trip			00000
mfE11_120A	RHRSW 2A Pump Trip			99999
mfE11_120C	RHRSW 2C Pump Trip			99999

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

TAG #	P/L	DESCRIPTION	STATUS	ACT. TIME
E11-C001B_A		RHR Service Water Pmp 1B	OFF	00000
E11-C001B_B		RHR Service Water Pmp 1B	OFF	00000
E11-C001D_A		RHR Service Water Pmp 1D	OFF	00000
E11-C001D_B		RHR Service Water Pmp 1D	OFF	00000
E11-F028ADI	P	RHR A Torus Spray/Test Vlv	CLOSE	00000
E11-F028A_A	L	RHR A Torus Spray/Test Vlv	OFF	00000
E11-F028A_B	L	RHR A Torus Spray/Test Vlv	OFF	00000

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

MPL #	COMPONENT	TAGGED POSITION
2E11-F028A	Torus Spray Or Test Vlv 2E11-F028A	CLOSE
2E11-C001B	Service Water Pump 2E11-C001B	OFF
2E11-C001D	Service Water Pump 2E11-C001D	OFF

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

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is at 75% power and Torus Cooling is desired.
2. RHR Service Water Pumps 2B and 2D have been removed from service.
3. 2E11-F028A is tagged closed for corrective maintenance.

INITIATING CUES:

Crosstie the "A" loop of RHR Service Water to the "B" loop of RHR Service Water.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
			START TIME:_____
1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34SO-E11-010-2S (Section 7.2.6).	

NOTE: It will not be necessary to override the RHRSW pump LOCA signal in this condition, but to do so will not prevent system operation.

2.	Depress the RHR Service Water Lube Valves push-button on 2H11-P601.	At panel 2H11-P601, operator has depressed the RHR SERVICE WATER LUBE VALVES push-button.	

PROMPT: **IF** the operator addresses waiting for one minute, **INFORM** the operator that one-minute has elapsed.

PROMPT: **IF** the operator addresses obtaining Shift Supervisor's permission to crosstie RHRSW loops, **INFORM** the operator that the Shift Supervisor has given permission to crosstie RHRSW loops.

****3.**	Open 2E11-F119A.	At panel 2H11-P601, operator opens SERV WTR CROSSTIE VLV 2E11-F119A, red light illuminated.	

RESPONSE CUE: Valve 2E11-F119A, green light illuminated, red light extinguished.

****4.**	Open 2E11-F119B.	At panel 2H11-P601, operator opens SERV WTR CROSSTIE VLV 2E11-F119B, red light illuminated.	

RESPONSE CUE: Valve 2E11-F119B, green light illuminated, red light extinguished.

5.	Operator places the Interlock Override valve 2E11-F068B Keylock Switch in the Override position.	At panel 2H11-P601, the Operator PLACES the Interlock Override Valve 2E11-F068B Keylock Switch in the OVERRIDE position.	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

NOTE: Using the Override Switch for 2E11-F068A is not required, but if performed, should be noted. Overriding 2E11-F068A will not affect the performance of the JPM.

6.	Set the Heat Exchanger B Differential Pressure Control Valve Controller, 2E11-R600B to 40% OPEN.	At panel 2H11-P601, the operator sets HX B DIFF PRESS CONTROL VLV F068B controller, 2E11-R600B to 40% OPEN.	

7.	Confirm the following: 2E11-F068A(B) OPENS (RED light ILLUMINATES) RHR HX A(B) DIFF PRESS LOW annunciator ILLUMINATES	At panel 2H11-P601, the operator CONFIRMS that 2E11-F068B Opens red light illuminates, and RHR HX A(B) DIFF PRESS LOW Annunciator illuminates.	

NOTE: RHRSW Pump A or C may be started first. Therefore Steps 8 and 12 may be interchanged.

****8.**	Start RHRSW Pump 2A.	At panel 2H11-P601, operator starts SERVICE WATER PUMP 2E11-C001A.	

RESPONSE CUE: SERVICE WATER PUMP 1A, green light illuminated, red light extinguished.

8.	Operator places the Interlock Override valve 2E11-F068B Keylock Switch in the Normal position.	At panel 2H11-P601, the Operator PLACES the INTERLOCK OVERRIDE VLV 2E11-F068B Keylock Switch in the NORMAL position.	
****9.**	THROTTLE 2E11-F068A(B), Hx A(B) Disch Vlv to obtain the desired 2E11-R602A(B) RHR Service Water flow (4400 GPM maximum), WHILE maintaining RHRSW System pressure less than 450 PSIG	At panel 2H11-P601, operator has adjusted HX B DIFF PRESS CONTROL VLV F068B controller, 2E11-R600B, to obtain desired flow rate, of about 4400gpm. Pressure limit for RHR Service Water is less than 450 psi.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **IF** the operator asks the Shift Supervisor if another RHRSW pump should be started at this time, **INFORM** the operator that another RHRSW pump is required to be started at this time.

10.	Depress the RHR Service Water Lube Valves push-button on 2H11-P601.	At panel 2H11-P601, operator has depressed the RHR SERVICE WATER LUBE VALVES push-button.	
11.	Adjust Diff Press Control Vlv 2E11-F068B to obtain desired RHRSW flow rate, then open 2E11-F068B an additional 5%.	At panel 2H11-P601, operator has adjusted HX B DIFF PRESS CONTROL VLV F068B controller, 2E11-R600B, to obtain desired flow rate, and then an additional 5% is added. Flow rate limit, prior to adding 5%, is 4400 gpm (+0, -200 gpm). Pressure limit for RHR Service Water is less than 450 psi.	

NOTE: Flow rate will be monitored on PUMP TEST FLOW indicator 2E11-R619A and/or SERV WATER FLOW indicator 2E11-R602A. Pump discharge pressure will be monitored on DIV I PRESSURE indicator 2E11-R650A.

****12.**	Start RHRSW Pump 2C.	At panel 2H11-P601, operator starts SERVICE WATER PUMP 2E11-C001C.	

RESPONSE CUE: N/A

AFTER the second RHRSW pump is started and Flow is increased to ~7000 gpm enter, **MALFUNCTION mfE11_120C, RHRSW 2C Pump Trip, to trip the RHRSW pump.**

13.	Enter ARP 34AR-601-325-2S, RHRSW PUMP 2C TRIP.	At panel 2H11-P601, the operator enters the ARP for RHRSW PUMP 2C TRIP, NO actions apply.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**14.	Adjust Diff Press Control Vlv 2E11-F068B to reduce flow back to less then or equal to 4400 gpm flow rate.	At panel 2H11-P601, operator has adjusted HX B DIFF PRESS CONTROL VLV F068B controller, 2E11-R600B, to obtain desired flow rate. Flow rate limit is ≤4400 gpm for one pump. Pressure limit for RHR Service Water is less than 450 psi.	

PROMPT: **WHEN** the operator informs the SS of the Trip of 2C RHRSW pump, **INFORM** the operator that you will contact Maintenance to investigate the pump Trip.

PROMPT: **WHEN** the operator addresses starting RHR, **INFORM** the operator that another operator will start that system.

PROMPT: **IF** the operator addresses the in-service RHR Service Water strainer differential pressure, **INFORM** the operator that another operator is monitoring this differential pressure and it is below 6 psid.

END TIME:_____

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

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

TERMINATING CUE: We will stop here.

(Indicates critical step)**

Southern Nuclear
E. I. Hatch Nuclear Plant

Operations Training
JPM

TITLE		
DETERMINE STAY TIMES TO TAKE A PIECE OF EQUIPMENT OOS		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITH	LR-JP-25049-00	20 Minutes
RECOMMENDED BY	APPROVED BY	DATE
T. F. PHILLIPS	R. S. GRANTHAM	10/07/02

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-25049**

Rev. No.	Date	Reason for Revision	Author's Initials	Supv's Initials
0	10/07/02	Initial Development	RLS	RSG

UNIT 1 () UNIT 2 (X)

TASK TITLE:	**DETERMINE STAY TIMES TO TAKE A PIECE OF EQUIPMENT OOS**
JPM NUMBER:	LR-JP-25049-00
TASK STANDARD:	This task will be completed when stay times are determined by the operator, based on current accumulated dose for the year and dose that would be received while in a radiation field.
TASK NUMBER:	
OBJECTIVE NUMBER:	

PLANT HATCH JTA IMPORTANCE RATING:

RO N/A

SRO N/A

K/A CATALOG NUMBER: G2.3.2

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.5

SRO 2.9

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:	Unit 1	Unit 2

REQUIRED MATERIALS:	Unit 1	Unit 2

APPROXIMATE COMPLETION TIME: 20 Minutes

SIMULATOR SETUP: N/A

NOTE: First section is for RO Candidates and the second section is for SRO candidates.

Part 1

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The 4th Stage 'A' Feedwater heater has a leak on its shell side inlet flange.
2. You have been assigned as part of a crew that will enter the Cond Bay to isolate, and drain the '4A' Feedwater Heater.
3. The estimated time to perform this task is approx 1 hour.
4. Your dose history for the year is 380 mr.
5. Your administrative limit for the year is 1000 mr.
6. Current survey map of the area is available.

INITIATING CUES:

Determine your Maximum "Stay Time" for performing this task.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **AT** this time give the operator the copy survey map of the Unit 1 Condenser Bay.

1.	The operator examines the HP Survey map of the area.	Using the survey Map the operator DETERMINES the general radiation in the area that the tour will occur.	

RESPONSE CUE: N/A

**2.	The operator will determine the max general dose rate for the area.	Using the Survey Map the operator will DETERMINE the max general Dose Rate for the area to be 250 mr/hr.	

RESPONSE CUE: N/A

**3.	The operator determines the Dose margin he has left for the year.	Using the initial Dose information the operator calculates dose margin left for the year is 620 mr (1000 mr-380 mr = 620mr).	

RESPONSE CUE: N/A

**4.	The Operator Calculates Stay Time.	Using his remaining dose margin and highest dose rate for the area, CALCULATES his Stay Time to be 2.48 hours or 2 hours and 28.8 minutes. (620/250/hr = 2.48 hours or 2 hours and 28.8 minutes).	

RESPONSE CUE: N/A

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)**

Part 2

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The 4th Stage 'A' Feedwater heater has a leak on its shell side inlet flange.
2. Your crew has been assigned the task to enter the Cond Bay to isolate, and drain the '4A' Feedwater Heater.
3. The estimated time to perform this task is approx 1 hour, and you will need a team of 3 operators.
4. The operators chosen to perform the task have a following dose history for the year:

   Operator #1 280 mr

   Operator #2 370 mr

   Operator #3 770 mr
5. Each operators administrative limit for the year is 1000 mr.
6. Current survey map of the area is available.

INITIATING CUES:

For each of the operators listed above, DETERMINE their Maximum "Stay Time" and whether they can perform the task.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

START TIME:_____

PROMPT: **AT** this time give the operator the copy of the survey map of the Unit 2 Condenser Bay 164' el.

1.	The operator examines the HP Survey map of the Unit 2 164' el Condenser Bay.	Using the survey Map of Unit 2 164' el Condenser Bay, the operator DETERMINES the general radiation in the area that the work will occur.	

RESPONSE CUE: N/A

****2.**	The operator will determine the max general dose rate for the area.	Using the Survey Map the operator will DETERMINES the max general Dose Rate for the area to be 250 mr/hr.	

RESPONSE CUE: N/A

****3.**	The operator determines the Dose margin that each operator has left for the year.	Using the initial Dose information the operator calculates dose margin left for the year as follows: Operator #1: 1000 mr-280 mr = 720 mr Operator #2: 1000 mr-370 mr = 630 mr Operator #3: 1000 mr-770 mr = 230 mr	

RESPONSE CUE: N/A

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**4.	The Operator Calculates Stay Time for each of the team members to perform the task.	Using his remaining dose margin and highest dose rate for the area, CALCULATE the Stay Times for each operator: Operator #1 720 mr/250 mr/hr = 2.88 hrs or 2 hours and 52.8 minutes. Operator #2 630 mr/250 mr/hr = 2.52 hrs or 2 hours and 31.2 minutes. Operator #3 230 mr/250 mr/hr = .92 hrs or 55.2 minutes.	

RESPONSE CUE: N/A

**5.	The Operator Determines Operator #3 is not acceptable for this task.	Using Stay Times that were just calculated by the operator, it is DETERMINE that operator #3 can not be use for this task due to the operator Dose Limit being exceeded.	

NOTE: **IF** the operator states that the operators should not exceed the RWP Dose limit of the Digital Alarming Dosimetry (DAD), this is also correct.

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)**

Facility: Hatch
Date of Examination: 10/21-25/02
Examination Level (circle one): **RO** / SRO
Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations	Use of Overtime Guidelines. K/A 2.1.3 3.0/3.4 (NEW)
	Conduct of Operations	Determine if SBLC tank meets requirements of Tech Specs per table 3.1.7-1 and Table 3.1.7-2. K/A 2.1.25 2.8/3.1 (NEW)
A.2	Equipment Control	Prepare Equipment Clearance and Hold Tags. JPM 25019 K/A 2.2.13, 3.6/3.8.
A.3	Radiation Control	Determine exposure limits for equipment OOS. K/A 2.3.2 2.5/2.9 (NEW)
A.4	Emergency Procedures/Plan	During an Emergency, Perform a Prompt Offsite Dose Assessment Calculation (JPM 25305) K/A 2.4.39 3.3/3.1

Facility: Hatch
Date of Examination: 10/21-25/02
Examination Level (circle one): RO / **SRO**
Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations	Use of Overtime Guidelines. K/A 2.1.3 3.0/3.4 (NEW)
	Conduct of Operations	APRM Adjustment to Core Thermal Power. K/A 2.1.19 3. 0/3.0 (NEW)
A.2	Equipment Control	Review 34SV-C11-002-2S, Scram Discharge Volume Isolation Valve Timing and Closure Test K/A 2.1.33 3.4/4.0 (NEW)
A.3	Radiation Control	Determine exposure limits for equipment OOS. K/A 2.3.2 2.5/2.9 (NEW)
A.4	Emergency Procedures/Plan	During an Emergency, Perform a Prompt Offsite Dose Assessment Calculation and Perform EAL Classification. (JPM 25305) K/A 2.4.39 3.3/3.1

Facility: Hatch Date of Examination: 10/16-24/02

Examination Level (circle one): **RO** / SRO Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations	Use of Overtime Guidelines. K/A 2.1.3 3.0/3.4 (NEW)
	Conduct of Operations	Determine if SBLC tank meets requirements of Tech Specs per table 3.1.7-1 and Table 3.1.7-2. K/A 2.1.25 2.8/3.1 (NEW)
A.2	Equipment Control	Prepare Equipment Clearance and Hold Tags. JPM 25019 K/A 2.2.13, 3.6/3.8.
A.3	Radiation Control	Determine exposure limits for equipment OOS. K/A 2.3.2 2.5/2.9 (NEW)
A.4	Emergency Procedures/Plan	During an Emergency, Perform a Prompt Offsite Dose Assessment Calculation (JPM 25305) K/A 2.4.39 3.3/3.1

Facility: Hatch Date of Examination: 10/16-24/02

Examination Level (circle one): RO / **SRO** Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations	Use of Overtime Guidelines. K/A 2.1.3 3.0/3.4 (NEW)
	Conduct of Operations	IRM Alternate Power Checks prior to taking the Mode Switch to Run. K/A 2.1.23 3. 9/4.0 (NEW)
A.2	Equipment Control	Review 34SV-C11-002-2S, Scram Discharge Volume Isolation Valve Timing and Closure Test K/A 2.1.33 3.4/4.0 (NEW)
A.3	Radiation Control	Determine exposure limits for equipment OOS. K/A 2.3.2 2.5/2.9 (NEW)
A.4	Emergency Procedures/Plan	During an Emergency, with information provided, Perform a PAR. (JPM 25205) K/A 2.4.44 2.4/4.0

Facility: HATCH
Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: October 2002
Operating Test No.: _____

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. Recirculation System / Shift Recirc Control from Individual to Master Control. (4.06)	D,S	7[u]
b. Containment / Initiate Evergency Torus Venting using the Emergency Vent Path. (13.53)	D,S	5
c. HPCI / Shutdown HPCI (Normal) (5.03)	D,S	2
d. Recirculation System / Start a Recirc MG Set from the Control Room with Failure of Pump Seal. (4.02)	M,A,S	4
e. Reactor Protection / Transfer the Mode Switch to S/U with one APRM reading high.	N,L,A,S	1[u]
f. RHRSW / Crosstie the RHR Service Water with a failure of the second RHRSW pump to start. (34.08)	M,S,A	8[u]
g. 4160 VAC / Transfer An Emergency 4160 VAC Bus From the Emergency to Normal Power Supply. (27.11)	D,S	6

B.2 Facility Walk-Through

a. RCIC / From the Remote Shutdown Panel, Start RCIC for Injection into the Reactor. (39.16)	D,R	2[u]
b. SBLC / From Outside the Control Room, Inject Boron Using the SBLC System with Failure of "A" Pump to start. (11.12)	M,A,R	1
c. Fire Protection / During a Loss of Air, Isolate the Fire Protection Sprinklers. (36.13)	D	8[u]

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