

Final Submittal

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)

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



Energy to Serve Your WorldSM

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

[illegible]

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:

Determine 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)
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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)	
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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)	
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RESPONSE CUE: N/A

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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**6.	Operator determines that Operator #4 WILL NOT violate overtime restrictions.	DETERMINES that Operator #4 WILL NOT violate any overtime limits.	
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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)	
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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		
SBLC OPERABLE (ADMIN)		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITH	LR-JP-25046-00	15 Minutes
RECOMMENDED BY	APPROVED BY	DATE



**SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH**

Page 1 of 1

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: **OPERATIONS TRAINING** Media Number: **LR-JP-25046**

[illegible]

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

**5.	Determine 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.	
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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)
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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 permissible 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 permissible 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 permissible 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 permissible region A.	
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RESPONSE CUE: Plots the location in the nonpermissible region of A or B.

**5.	Determine 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.	
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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 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



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

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.

SOUTHERN NUCLEAR PLANT E.I. HATCH		PAGE 9 OF 10
DOCUMENT TITLE: PLANT STARTUP	DOCUMENT NUMBER: 34GO-OPS-001-1	REV/VER NO: 29.2
ATTACHMENT <u>10</u>		ATTACHMENT PAGE: -56 OF 1
TITLE: IRM ALTERNATE POWER CHECK		

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 <u>9</u>	READING <u>18</u>	% POWER _____
IRM C	RANGE <u>9</u>	READING <u>20</u>	% POWER _____
IRM E	RANGE <u>9</u>	READING <u>20</u>	% POWER _____
IRM G	RANGE <u>10</u>	READING <u>20</u>	% POWER _____
IRM B	RANGE <u>9</u>	READING <u>22</u>	% POWER _____
IRM D	RANGE <u>9</u>	READING <u>18</u>	% POWER _____
IRM F	RANGE <u>10</u>	READING <u>22</u>	% POWER _____
IRM H	RANGE <u>9</u>	READING <u>24</u>	% POWER _____

AVERAGE % POWER = 7.24

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.

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

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FORM TITLE: TRAINING MATERIAL REVISION SHEET		

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

[illegible]

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

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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.	
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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.	
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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.	
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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.	
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RESPONSE CUE: The average IRM % is less than the APRM readings.

(** 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.

Put prompt for initial condition of ALM reading.

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)
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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.	
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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.	
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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.

(** 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)

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DOCUMENT TITLE: PLANT STARTUP		DOCUMENT NUMBER: 34GO-OPS-001-2	REV/VER NO: 35.2
ATTACHMENT <u>10</u>			ATTACHMENT PAGE: -48 OF 1
TITLE: IRM ALTERNATE POWER CHECK			

CONTINUOUS

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

For IRM Ranges 7 AND 8:
 $\% \text{ Power} = (\text{IRM Reading}) \times (.0353)$

For IRM Ranges 9 AND 10:
 $\% \text{ Power} = (\text{IRM Reading}) \times (.353)$

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.

*****DO NOT GIVE THIS TO THE CANDIDATE*****

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

$57.9/8 = 7.24 \pm .1\%$

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

Southern Nuclear



E. I. Hatch Nuclear Plant

Operations Training JPM

TITLE PREPARE EQUIPMENT CLEARANCE AND HOLD TAGSPREPARE EQUIPMENT CLEARANCE AND HOLD TAGS		
AUTHOR R. L. SMITHR. L. SMITH	MEDIA NUMBER LR-JP-25019-03LR-JP-25019-03	TIME 20.020.0 minutes
RECOMMENDED BY t. f. phillips	APPROVED BY r. s. grantham	DATE 10/07/02



Energy to Serve Your WorldSM

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LR-JP-25019-03

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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-OS.

TASK NUMBER:

300.016300.016

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.203.20

SRO 2.742.74

K/A CATALOG NUMBER:

294001A107294001A107

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.003.00

SRO 3.703.70

OPERATOR APPLICABILITY: Reactor Operator (RO)

GENERAL REFERENCES:

Procedure: 30AC-OPS-001-OS Rev 23.1
Plant Drawing H-26007

REQUIRED MATERIALS:

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

APPROXIMATE COMPLETION TIME:

20.0 Minutes

SIMULATOR SETUP: N/A

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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.

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Page 6 of 1

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)	
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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	
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RESPONSE CUE: N/A

(** Indicates critical step)

LR-JP-25019-03

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STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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		
REVIEW OF SCRAM DISCHARGE VOLUME ISOLATION VALVE TIMING & CLOSURE TEST		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITH	LR-JP-25048-00	20 Minutes
RECOMMENDED BY	APPROVED BY	DATE



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

[illegible]

UNIT 1 () UNIT 2 (X)

TASK TITLE: **REVIEW OF SCRAM DISCHARGE VOLUME
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)
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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 7.2.7 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.	<p>The operator evaluates the closing time difference data for:</p> <p>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</p>	<p>Per steps 7.2.20 and 7.2.22 of 34SV-C11-002-2S, the operator EVALUATES the closing time difference data for:</p> <p>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</p> <p>and DETERMINES it to be SATISFACTORY.</p>	
5.	<p>The operator evaluates the opening time difference data for:</p> <p>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</p>	<p>Per steps 7.2.23 and 7.2.25 of 34SV-C11-002-2S, the operator EVALUATES the opening time difference data for:</p> <p>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</p> <p>and DETERMINES it to be SATISFACTORY.</p>	
**6.	<p>The operator determines that Tech Spec action(s) applicable for the Unsat valves.</p>	<p>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.</p> <p>3.1.8.A Restore valve to OPERABLE status within 7days.</p> <p>3.1.8.B Isolate the the associated line within 8 hours.</p>	

RESPONSE CUE: N/A

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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		
DETERMINE STAY TIMES TO TAKE A PIECE OF EQUIPMENT OOSDETERMINE STAY TIMES TO TAKE A PIECE OF EQUIPMENT OOS		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITHR. L. SMITH	LR-JP-25049-00LR-JP-25049-00	2020 Minutes
RECOMMENDED BY	APPROVED BY	DATE
t. f. phillips	r. s. grantham	10/07/02



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Program/Course Code: **OPERATIONS training** Media Number: **LR-JP-25049**

[illegible]

LR-JP-25049-00

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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:** XXX.XXX**OBJECTIVE NUMBER:** XXX.XXX.X**PLANT HATCH JTA IMPORTANCE RATING:**

RO X.XXN/A

SRO X.XXN/A

K/A CATALOG NUMBER: G2.3.2G2.3.2**K/A CATALOG JTA IMPORTANCE RATING:**

RO 2.52.5

SRO 2.92.9

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.

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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.

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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.	
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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).	
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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).	
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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)

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Page 6 of 1

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.

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Page 7 of 1

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.	
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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.	
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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	
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RESPONSE CUE: N/A

(** Indicates critical step)

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

SRO ONLY

TITLE		
EVALUATE THE NEED FOR/RECOMMEND OFFSITE PROTECTIVE ACTIONSEVALUATE THE NEED FOR/RECOMMEND OFFSITE PROTECTIVE ACTIONS		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITHR. L. SMITH	LR-JP-25205-06LR-JP-25205-06	16.016.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
t. f. phillips	r. s. grantham	10/07/02



Energy to Serve Your WorldSM

LR-JP-25205-06

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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)200.105 (EP 001.088)**OBJECTIVE NUMBER:** 200.105.A200.105.A**PLANT HATCH JTA IMPORTANCE RATING:****RO** 3.003.00**SRO** 3.003.00**K/A CATALOG NUMBER:** 295038EA201295038EA201**K/A CATALOG JTA IMPORTANCE RATING:****RO** 3.303.30**SRO** 4.304.30**OPERATOR APPLICABILITY:** Senior Reactor Operator (SRO)**GENERAL REFERENCES:** Unit 1 & 2

73EP-EIP-054-0S Rev 4 Ed 1

REQUIRED MATERIALS: Unit 1 & 273EP-EIP-054-0S (current revision)
PAR Worksheet/Approval Sheet**APPROXIMATE COMPLETION TIME:** 16.0 Minutes**SIMULATOR SETUP:** N/A

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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.

LR-JP-25205-06

Page 5 of 1

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.	<p>At panel 1H11-P690, the operator has determined wind direction to be from 225°, using one of the following recorders:</p> <p>1Y33-R601 (10 meter)</p> <p>1Y33-R602 (60 meter)</p> <p>1Y33-R603 (100 meter)</p> <p>OR</p> <p>At panel 1H11-P689, the operator has determined wind direction to be from 225°, using recorder 1Y33-R604 (23 meter).</p> <p>OR</p> <p>At Unit 1 or 2 SPDS MIDAS or MET screens the operator determines wind direction to be 225°.</p>	
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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.	
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(** Indicates critical step)

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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)

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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.	
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RESPONSE CUE: N/A

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.	
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(** Indicates critical step)

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STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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)

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****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

Southern Nuclear E. I. Hatch Nuclear Plant

Operations Training JPM

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



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

[illegible]

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)
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START
TIME: _____

1.	Operator identifies the materials that are required.	Operator has identified the required materials and where to obtain them.	
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.	<p>At Panel 1H21-P011, the following jumpers are INSTALLED for 1C41-F004A:</p> <p>Terminal point BB-1 to Squib Valve, 1C41-F004A, Junction Box terminal C1 (white wire) and terminal C (green wire).</p> <p>Terminal point BB-4 to Squib Valve, 1C41-F004A, Junction Box terminal C2 (black wire) and terminal C3 (red wire).</p> <p>At Panel 1H21-P011, the following jumpers are INSTALLED for 1C41-F004B:</p> <p>Terminal point BB-8 to Squib Valve, 1C41-F004B, Junction Box terminal C1 (white wire) and terminal C (green wire).</p> <p>Terminal point BB-11 to Squib Valve, 1C41-F004B, Junction Box terminal C2 (black wire) and terminal C3 (red wire).</p>	

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)
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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.	
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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.	
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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.	
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)
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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)

De/te

Southern Nuclear E. I. Hatch Nuclear Plant

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



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

[illegible]

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 1	Unit 2
	31RS-OPS-001-1S Rev 5 Ed 2	31RS-OPS-001-2S Rev 6 Ed 1

REQUIRED MATERIALS:	Unit 1	Unit 2
	31RS-OPS-001-1S (current revision) Key for Remote Shutdown Panel (if performed in Plant)	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 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. An event has occurred which required the Control Room to be evacuated.
2. The Unit 1 Reactor was scrammed prior to the evacuation.
3. RCIC is in standby.
4. 31RS-OPS-001-1S is in progress.
5. RWL is less than +12 inches and decreasing.

INITIATING CUES:

Start the RCIC System from the Remote Shutdown Panel and inject water into the Reactor per 31RS-OPS-001-1S, Attachment 3.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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START
TIME: _____

1.	Operator identifies the materials that are required.	Operator identifies required the materials and where to obtain them.	
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PROMPT: IF the operator addresses posting of RCIC Diagonal, as the Shift Supervisor, **INFORM** the operator that Health Physics is posting the area.

2.	Place the following Transfer Switches in EMERGENCY: 1C82-S23G 1C82-S23B 1C82-S23C 1C82-S23D 1C82-S23E 1C82-S23F	At panel 1C82-P001, the following Transfer Switches are in EMER: XFER SW 1C82-S23G XFER SW 1C82-S23B XFER SW 1C82-S23C XFER SW 1C82-S23D XFER SW 1C82-S23E XFER SW 1C82-S23F	
3.	Locally confirm the position of the following valves: 1E51-F010 1E51-F012 1E51-F029 1E51-F031	The operator has addressed contacting an SO to VERIFY the following valves are in the correct position: CONDENSATE STORAGE SUCTION VLV, 1E51-F010, is OPEN. PUMP DISCHARGE VLV, 1E51-F012, is OPEN. SUPPRESSION POOL SUCTION VLV, 1E51-F029, is CLOSED. SUPPRESSION POOL SUCTION VLV, 1E51-F031, is CLOSED.	

PROMPT: **WHEN** the operator addresses locally confirming positions of valves, as the SO, **INFORM** the operator that:
1E51-F010 and 1E51-F012 are open.
1E51-F029 and 1E51-F031 are closed.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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4.	Confirm 1E51-F045 is closed.	At panel 1C82-P001, STM TO TURB VLV, 1E51-F045, is in CLOSE, green light illuminated.	
**5.	Open 1E51-F046.	At panel 1C82-P001, TURB CLG WTR VLV, 1E51-F046, is in OPEN, red light illuminated.	

RESPONSE CUE: Valve, 1E51-F046, green light illuminated.

6.	Confirm 1E51-F013 is closed.	At panel 1C82-P001, RCIC PUMP DISCH VLV, 1E51-F013, is in CLOSE, green light illuminated.	
7.	Confirm 1E51-F007 is open.	At panel 1C82-P001, INBD ISOL VLV, 1E51-F007, is in OPEN, red light illuminated.	
8.	Confirm 1E51-F524 is open.	At panel 1C82-P001, RCIC TRIP & THRT VLV, 1E51-F524, is OPEN, red light illuminated.	
9.	Confirm 1E51-F008 is open.	At panel 1C82-P001, OUTBD ISOL VLV, 1E51-F008, is in OPEN, red light illuminated.	
10.	Start the Barometric Condenser Vacuum Pump.	At panel 1C82-P001, BAROMETRIC CNDSR VAC PUMP Switch is in START, red light illuminated.	
11.	Start the Barometric Condenser Condensate Pump.	At panel 1C82-P001, BAROMETRIC CNDSR COND PUMP Switch is in RUN, red light illuminated.	

NOTE: The operator should not address opening 1E41-F011 and 1E51-F022 since RCIC operation will NOT be for Reactor pressure control.

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 1E51-F045.	At panel 1C82-P001, STM TO TURB VLV, 1E51-F045, is OPEN, red light illuminated.	
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RESPONSE CUE: Valve, 1E51-F045, green light illuminated.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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**13.	Open valve 1E51-F013.	At panel 1C82-P001, RCIC PUMP DISCH VLV, 1E51-F013, is OPEN, red light illuminated.	
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RESPONSE CUE: Valve, 1E51-F013, green light illuminated.

PROMPT: **WHEN** the operator addresses RCIC Pump Flow, as the 1H21-P173 Panel operator, **INFORM** the operator that flow is greater than 122.5 gpm on RCIC PUMP FLOW 1E51-R070 indicator at panel 1H21-P173.

14.	Locally confirm valve 1E51-F019 closes when RCIC flow exceeds 122.5 gpm.	The operator has addressed contacting an SO to confirm MIN FLOW VLV, 1E51-F019, is CLOSED.	
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PROMPT: **WHEN** the operator addresses 1E51-F019, as the SO, **INFORM** the operator that 1E51-F019 is closed.

PROMPT: **WHEN** the operator addresses monitoring parameters at 1H21-P173, as the Shift Supervisor, **INFORM** the operator that they are being monitored by an operator at 1H21-P173.

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)

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 decreasing. ~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.	
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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:	At panel 2C82-P001, the following Transfer Switches are in EMERGENCY:	
	2C82-S7	XFER SW 2C82-S7 ✓	
	2C82-S53	XFER SW 2C82-S53 ✓	
	2C82-S52	XFER SW 2C82-S52 ✓	
	2C82-S6	XFER SW 2C82-S6 ✓	
	2C82-S4	XFER SW 2C82-S4 ✓	
	2C82-S5	XFER SW 2C82-S5 ✓	Auto means <i>Red</i>
	2C82-S3	XFER SW 2C82-S3 ✓	
	2C82-S2	XFER SW 2C82-S2 ✓	
	2C82-S8*	XFER SW 2C82-S8 ✓	
	2C82-S18	XFER SW 2C82-S18 ✓	710 th - 90

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.	
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(** 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.	✓
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RESPONSE CUE: Valve, 2E51-F013, green light illuminated. Flow indicates to 400 gpm

**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, 2C82-R002 MIN FLOW VLV, 2E51-F019, is CLOSED, green light illuminated.	Controller
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RESPONSE CUE: Valve, 2E51-F019, red light illuminated.

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

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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)

De/te

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

[illegible]

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 1	Unit 2
	34AB-P51-001-1S Rev 2 Ed 3	34AB-P51-001-2S Rev 2 Ed 1

REQUIRED MATERIALS:	Unit 1	Unit 2
	34AB-P51-001-1S (current revision)	34AB-P51-001-2S (current revision)

APPROXIMATE COMPLETION TIME: 13.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A scram has occurred on Unit 1.
2. Unit 1 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 Start-up Boiler and to the Main, Aux, and Startup Transformers.
5. 34AB-P51-001-1S, "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-P51-001-1S.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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START
TIME: _____

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

**1.	Close valve 1U43-F020D.	At location 164TCT04, valve 1U43-F020D is CLOSED.	
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RESPONSE CUE: N/A

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

**2.	Close valve 1U43-F301B.	At location 130TET04, valve 1U43-F301B is CLOSED.	
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RESPONSE CUE: N/A

NOTE: This valve isolates the Generator Hydrogen Seal Oil System area.

**3.	Close valve 1Z43-F018A.	At location 112THT10, valve 1Z43-F018A is CLOSED.	
------	-------------------------	---	--

RESPONSE CUE: N/A

NOTE: This valve isolates the Lube Oil Storage Tank 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.

END
TIME: _____

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

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

TERMINATING CUE: We will stop here.

(** Indicates critical step)

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A 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)
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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.	
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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.	
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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.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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TERMINATING CUE: We will stop here.

(** Indicates critical step)

Southern Nuclear E. I. Hatch Nuclear Plant

Operations Training JPM

TITLE		
SHIFT RECIRC CONTROL FROM INDIVIDUAL TO MASTER CONTROLSHIFT RECIRC CONTROL FROM INDIVIDUAL TO MASTER CONTROL		
AUTHOR	MEDIA NUMBER	TIME
R. A. BELCHERR. A. BELCHER	LR-JP-04.06-16LR-JP-04.06-16	11.011.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
N/R	R. A. BELCHER	02/22/2002



**SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH**

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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

LR-JP-04.06-16
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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: 004.006004.006

OBJECTIVE NUMBER: 004.006.A004.006.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.203.20

SRO 3.193.19

K/A CATALOG NUMBER: 202001A401202001A401

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.703.70

SRO 3.703.70

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

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Page 4 of 8

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**

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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.

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Page 6 of 6

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 $>2 \times 10^6$ lbm/hr.	At panel 2H11-P603, the operator verifies feedwater flow as indicated by STM FLOW/FW FLOW recorder, 2C32-R607, is $>2 \times 10^6$ 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)

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

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.

(** Indicates critical step)

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STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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



**SOUTHERN NUCLEAR OPERATING COMPANY
PLANT E. I. HATCH**

Page 1 of 1

FORM TITLE: TRAINING MATERIAL REVISION SHEET

Program/Course Code: _____

OPERATIONS TRAINING

Media Number:

LR-JP-13.53

[illegible]

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.
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)
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START TIME: _____

1.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain them.	
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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.	
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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.	
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RESPONSE CUE: SBGT A Fan, 1T46-C001B, red light illuminated.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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**6.	Place 1T46-F005, SBTG Disch Control Damper to close.	At panel 1H11-P657, the operator CLOSES 1T46-F005, DISCH CONTROL DAMPER, green light illuminated.	
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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.	
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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.	
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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.	
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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.	
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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.	
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RESPONSE CUE: Valve 1T48-F082, green light illuminated.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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 >)
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)
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START TIME: 1450

1.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain them.	
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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 SBTG Inlet Isolation Valve, 2T48-F081.	At panel 2H11-P654, the operator CLOSES 2T48-F081, SBTG INLET ISOL VLV, green light illuminated.	
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RESPONSE CUE: Valve 2T48-F081, red light illuminated.

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

RESPONSE CUE: SBTG 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.	
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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: 5:15:00

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.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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 PERFORM A MANUAL STARTUP OF HPCI AND MAINTAIN REACTOR WATER LEVEL IN BAND		
AUTHOR	MEDIA NUMBER	TIME CRITICAL
R. L. SMITH R. L. SMITH	LR-LP-25050-00 LR-LP-25050-00	3.06.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
t. f. phillips	r. s. grantham	10/07/02



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

[illegible]

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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: 005.002005.002

OBJECTIVE NUMBER: 005.002.A005.002.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.003.00

SRO 3.003.00

K/A CATALOG NUMBER: 206000G009206000G009

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.304.30

SRO 4.004.00

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

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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**

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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".

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

**5.	Open the Pump Discharge Valve, 2E41-F006.	At panel 2H11-P601, PUMP DISCHARGE VLV, 2E41-F006 is open, red light illuminated.	
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RESPONSE CUE: Valve, 2E41-F006, green light illuminated.

(** Indicates critical step)

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STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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 per the Placard, the following steps may be omitted.

(** Indicates critical step)

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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		
START A RECIRC MG SET FROM THE CONTROL ROOM START A RECIRC MG SET FROM THE CONTROL ROOM WITH FAILURE OF PUMP SEALS.		
AUTHOR	MEDIA NUMBER	TIME
Dale MoranR. L. SMITH	LR-JP-25042-00LR-JP-25042-00	38.038.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
t. f. phillips	r. s. grantham	10/07/02



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

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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:** 004.002004.002, 004.003**OBJECTIVE NUMBER:** 004.002.A004.002.A, 004.003A**PLANT HATCH JTA IMPORTANCE RATING:****RO** 3.503.50, 2.79**SRO** 3.223.22, 3.15**K/A CATALOG NUMBER:** 202001A401202001A401, 202001A210**K/A CATALOG JTA IMPORTANCE RATING:****RO** 3.303.30, 3.50**SRO** 3.103.10, 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

LR-JP-25042-00

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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**

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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.

Have Completed...

INITIATING CUES:

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

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start
time: _____

1.	Operator reviews the procedure's precautions and limitations.	Operator has reviewed the precautions and limitations. (Section 7.1.2)	
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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.	
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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)

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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% \pm 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 evaluator 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)

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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.	
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AFTER the pump is started and the Discharge valve is full open, ENTER MALFUNCTIONS 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.	
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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 isolate the Recirc pump seal leak, INFORM the operator that other operators will take scram actions.

(** Indicates critical step)

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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)

Southern Nuclear E. I. Hatch Nuclear Plant

Operations Training JPM

TITLE		
START A RECIRC MG SET FROM THE CONTROL ROOM TRANSFER THE MODE SWITCH TO STARTUP/HOT STANDBY, WITH AN APRM AT 15% POWER		
AUTHOR	MEDIA NUMBER	TIME
Dale MoranR. L. SMITH	LR-JP-10.19-00LR-JP-10.19-00	38.010.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
t. f. phillips	r. s. grantham	10/7/02



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

[illegible]

LR-JP-10.19-00

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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: 004.002010.019

OBJECTIVE NUMBER: 004.002.A010.019A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.50

SRO 3.22

K/A CATALOG NUMBER: G2.1.23202001A401**K/A CATALOG JTA IMPORTANCE RATING:**

RO 3.93.30

SRO 4.03.10

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**

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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.

LR-JP-10.19-00

Page 6 of 2

start
time: _____

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

**5.	PLACE the 2B APRM in Bypass.	At panel 2H11-P603, the operator PLACES the APRM 2B in Bypass.	
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(** Indicates critical step)

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STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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.	
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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.	
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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		
CROSSTIE RHR SERVICE WATERCROSSTIE RHR SERVICE WATER WITH A FAILURE OF THE SECOND RHRSW PUMP TO START		
AUTHOR	MEDIA NUMBER	TIME
R. L. SMITHR. A. BELCHER	LR-JP-25044-00LR-JP-25044-00	15.015.0 Minutes
RECOMMENDED BY	APPROVED BY	DATE
t. f. phipllips	r. s. grantham	10/07/02



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

2

LR-JP-25044-00

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UNIT 1 0 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: 034.008034.008

OBJECTIVE NUMBER: 034.008.O034.008.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.293.29

SRO Not AvailableNot Available

K/A CATALOG NUMBER: 219000A215219000A215

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.303.30

SRO 3.403.40

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

LR-JP-25044-00

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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)

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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.

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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).	
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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.	
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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.	
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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.	
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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.	
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RESPONSE CUE: N/A

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

(** Indicates critical step)

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STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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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.	
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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.	
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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.	
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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), <u>WHILE</u> 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.	

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.

(** Indicates critical step)

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STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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.	
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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.	
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(** Indicates critical step)

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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.	<p>At panel 2H11-P601, operator has adjusted HX B DIFF PRESS CONTROL VLV F068B controller, 2E11-R600B, to obtain desired flow rate.</p> <p>Flow rate limit is ≤ 4400 gpm for one pump.</p> <p>Pressure limit for RHR Service Water is less than 450 psi.</p>	

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

[illegible]

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 using IAW 34SO-R43-001-2S. ~~step~~ Section 7.4.4 (Transferring 4160V Bus 2F from 1B D/G to Normal or Alternate Power)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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START TIME: _____

1.	Operator reviews the procedure.	Operator has reviewed the procedure.	
2.	Confirm power is available to Startup Transformer "2D."	At panel 2H11-P651, the operator has VERIFIED that S/U AUX XFMR 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.	✓
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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)
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panel 11+11-P652

**6.	Place the Voltage Regulator Transfer switch to Manual.	At panel 2H11-P652, the VOLTAGE REG TRANSFER switch is in MANUAL, green light illuminated.	✓
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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.	✓
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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.	✓
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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."	✓
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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.	✓
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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.	✓
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(** 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)