

Final Submittal

**FARLEY JAN. 2005 EXAM
50-348 & 50-364/2005301**

**JANUARY 10 - 14, 2005
JANUARY 18, 2005 (written)**

1. Administrative Questions/JPMs
2. In-plant JPMs
3. Control Room JPMs (simulator JPMs)

Facility: Farley Nuclear Plant Date of Examination: January 10, 2005
 Examination Level (circle one): RO / SRO Operating Test Number: NRC 2005

Administrative Topic (see Note)	Type Code *	Describe activity to be performed
Conduct of Operations	G, M	Plant parameter verification : JPM CRO-410A, Monitor a CSF Status Tree – 2.1.19 (3.0/3.0)
Conduct of Operations	G, N	Shift manning. G2.1.4 (2.3/3.4)
Equipment Control	G, N	Demonstrate ability to review a tagging order written for a leak with with multiple mistakes in the tagging order. P&IDs (mechanical drawings and electrical drawings G2.1.24 (2.8/3.1)
Radiation Control	G, M	Radiation control problem G2.3.9 (2.5/3.4)
Emergency Plan	S, N	Determine the EAL for a given plant condition. G2.4.41 (2.3/4.1)

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

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

Facility: Farley Nuclear Plant Date of Examination: January 10, 2005
 Examination Level (circle one): RO / SRO Operating Test Number: NRC 2005

Administrative Topic (see Note)	Type Code *	Describe activity to be performed
Conduct of Operations	G, M	Plant parameter verification : JPM CRO-410A, Monitor a CSF Status Tree – 2.1.19 (3.0/3.0)
Conduct of Operations	NA	NA
Equipment Control	G, D	CRO-35 Perform RCS Water Inventory Balance STP-9.0. G2.2.12 (3.0,3.4)
Radiation Control	G, M	Radiation control problem G2.3.9 (2.5/3.4)
Emergency Plan	S, M	JPM SS-059 – Operate the NRC ENN Modify this JPM to current procedures and use NOUE classification for a N7.4, threatening hurricane. There will be a no response from the ARC. G2.4.43 (2.8/3.5) G2.4.39 (3.3/3.1)

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

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

CONDUCT OF OPERATIONS 1 - SRO & RO

TITLE: Monitor A Critical Safety Function Status Tree

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT _____

ACCEPTABLE EVALUATION METHOD: ___ PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 5 MIN SIMULATOR IC NUMBER: N/A

ALTERNATE PATH ___ TIME CRITICAL ___ PRA

Trainer/Date:		Trainee:	
Evaluator/Date:			
Overall JPM Performance:		Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)			

EXAMINER : _____

CONDITIONS

When I tell you to begin, you are to MONITOR A CRITICAL SAFETY FUNCTION STATUS TREE. The conditions under which this task is to be performed are:

- a. A reactor trip and SI has occurred on Unit 1 30 minutes ago.
- b. The team has transitioned to EEP-2, FAULTED STEAM GENERATOR ISOLATION.
- c. The STA is monitoring the Critical Safety Function Status Trees (CSFST) and the Integrity CSFST is INDETERMINATE.
- d. You have been directed to manually monitor the Integrity CSFST using CSF-0.4.
- e. RCS Cold Leg Temperatures as read from the MCB are:
A-254°F B-250°F C-245°F
- f. RCS WR Pressure is 400 psig.

TRACE the appropriate flowpath on FNP-1-CSF-0.4, INTEGRITY procedure provided and circle all YES/NO decisions.

Then **CIRCLE** the endpoint from the choices below:

FRP-P.1 RED FRP-P.1 ORANGE FRP-P.2 YELLOW CSF SAT

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Enters CSFST at correct CSFST point.	Enters CSFST at "TEMP DECR IN ALL CL IN LAST 60 MIN LESS THAN 100°F" decision box. (CUE: None.)	S / U
*2. Determines if TEMP DECR IN ALL CL IN LAST 60 MIN LESS THAN 100°F and follows appropriate branch line based on given parameters.	Since the temperatures are all at 254°F and less and within the last 30 min the reactor was at >547°F, the decision is NO .	S / U
*3. Determines if ALL RCS PRESS CL TEMP (IN LAST 60 MIN) POINTS TO RIGHT OF LIMIT A and follows appropriate branch line based on actual plant conditions.	Since the lowest temperature given is 245°F, ALL temperatures are to the right of Limit A, the decision is YES .	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*4. Determines if ALL RCS CL TEMPS IN LAST 60 MIN GRTR THAN 250°F and follows appropriate branch line based on actual plant conditions.	Since one temperature is at 245°F and one at 250°F, the decision is NO .	S / U
*5. Determines an Orange path is in effect.	Determines FRP-P.1 must be entered on an Orange Path . (CUE: IF ASKED: No other red or orange paths exist.)	S / U
6. Informs shift supervisor that an Orange path exists on the Integrity CSFST.	FRP-P.1 ORANGE is circled.	S / U

STOP TIME

Terminate when all elements of the task have been completed.
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CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-CSF-0.0, Revision 13.0
2. K/A: G2.1.19 RO 3.0 SRO 3.0

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

References provided: FNP-1-CSF-0.0, Revision 13.0. Provide entire procedure.

CONDITIONS

When I tell you to begin, you are to MONITOR A CRITICAL SAFETY FUNCTION STATUS TREE. The conditions under which this task is to be performed are:

- a. A reactor trip and SI has occurred on Unit 1 30 minutes ago.
- b. The team has transitioned to EEP-2, FAULTED STEAM GENERATOR ISOLATION.
- c. The STA is monitoring the Critical Safety Function Status Trees (CSFST) and the Integrity CSFST is INDETERMINATE.
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- e. RCS Cold Leg Temperatures as read from the MCB are:
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- f. RCS WR Pressure is 400 psig.

TRACE the appropriate flowpath on FNP-1-CSF-0.4, INTEGRITY procedure provided and circle all YES/NO decisions.

Then **CIRCLE** the endpoint from the choices below:

FRP-P.1 RED

FRP-P.1 ORANGE

FRP-P.2 YELLOW

CSF SAT

CONDITIONS

KEY

When I tell you to begin, you are to MONITOR A CRITICAL SAFETY FUNCTION STATUS TREE. The conditions under which this task is to be performed are:

- a. A reactor trip and SI has occurred on Unit 1 30 minutes ago.
- b. The team has transitioned to EEP-2, FAULTED STEAM GENERATOR ISOLATION.
- c. The STA is monitoring the Critical Safety Function Status Trees (CSFST) and the Integrity CSFST is INDETERMINATE.
- d. You have been directed to manually monitor the Integrity CSFST using CSF-0.4.
- e. RCS Cold Leg Temperatures are:
 A-254°F B-250°F C-245°F
- f. RCS WR Pressure is 400 psig.

TRACE the appropriate flowpath on FNP-1-CSF-0.4, INTEGRITY procedure provided and circle all YES/NO decisions.

Then CIRCLE the endpoint from the choices below:

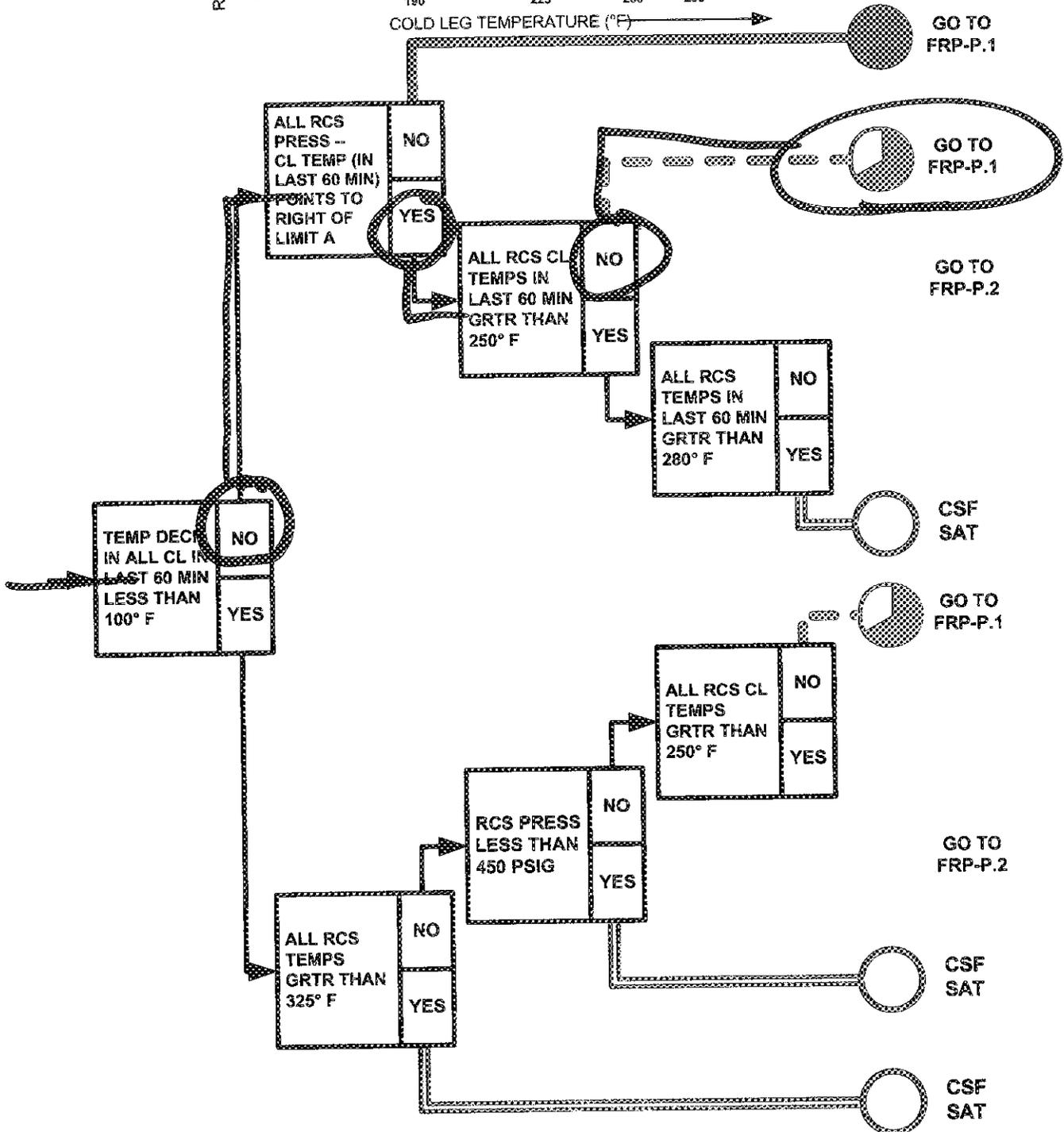
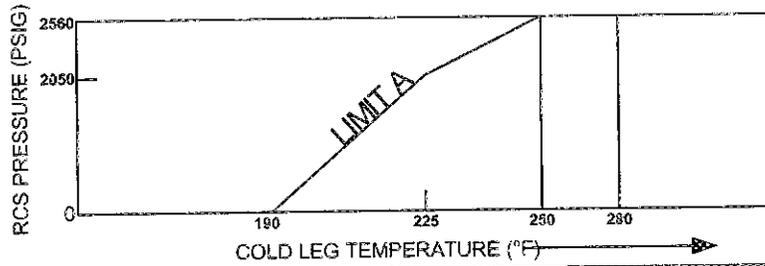
FRP-P.1 RED

FRP-P.1 ORANGE

FRP-P.2 YELLOW

CSF SAT

KEY



CONDITIONS

When I tell you to begin, you are to MONITOR A CRITICAL SAFETY FUNCTION STATUS TREE. The conditions under which this task is to be performed are:

- a. A reactor trip and SI has occurred on Unit 1 30 minutes ago.
- b. The team has transitioned to EEP-2, FAULTED STEAM GENERATOR ISOLATION.
- c. The STA is monitoring the Critical Safety Function Status Trees (CSFST) and the Integrity CSFST is INDETERMINATE.
- d. You have been directed to manually monitor the Integrity CSFST using CSF-0.4.
- e. RCS Cold Leg Temperatures as read from the MCB are:
A-254°F B-250°F C-245°F
- f. RCS WR Pressure is 400 psig.

TRACE the appropriate flowpath on FNP-1-CSF-0.4, INTEGRITY procedure provided and circle all YES/NO decisions.

Then **CIRCLE** the endpoint from the choices below:

FRP-P.1 RED

FRP-P.1 ORANGE

FRP-P.2 YELLOW

CSF SAT

FARLEY NUCLEAR PLANT
CRITICAL SAFETY FUNCTION PROCEDURE
FNP-1-CSF-0
CRITICAL SAFETY FUNCTION STATUS TREES

PROCEDURE USAGE REQUIREMENTS-per FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

S
A
F
E
T
Y

R
E
L
A
T
E
D

Approved:

D. J. WHITE
Operations Manager

Date Issued: 3-27-01

LIST OF EFFECTIVE PAGES

REVISION NO.											
PAGE NO.	REV	11	12	13	14	15	16	17	18	19	20
1	10	X	X	X							
2	10	X	X	X							
3	10	X	X	X							
FNP-1-CSF-0.1											
1	10	X	X	X							
FNP-1-CSF-0.2											
1	10	X	X	X							
FNP-1-CSF-0.3											
1	10	X	X	X							
FNP-1-CSF-0.4											
1	10	X	X	X							
2	10	X	X	X							
FNP-1-CSF-0.5											
1	10	X	X	X							
FNP-1-CSF-0.6											
1	10	X	X	X							

ENP-1-CSF-0	CRITICAL SAFETY FUNCTION STATUS TREES	Revision 13
<p>A. <u>Purpose</u></p> <p>This procedure provides actions required to evaluate the status of the Critical Safety Functions.</p> <p>B. <u>Symptoms or Entry Conditions</u></p> <p>I. This procedure is entered when monitoring of the Critical Safety Functions is required from ENP-1-EEP-0, REACTOR TRIP OR SAFETY INJECTION, step 30.</p> <p>II. This procedure is entered when the operator transfers from the guidance of ENP-1-EEP-0, REACTOR TRIP OR SAFETY INJECTION to any other recovery guideline.</p>		

FNP-1-CSF-0	CRITICAL SAFETY FUNCTION STATUS TREES	Revision 13
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Step	Action/Expected Response	Response NOT Obtained
1	<p>Check at least one control room SPDS console - Operable.</p> <p>1.1 Depress ESCAPE key.</p> <p>1.2 Depress SPDS key.</p> <p>1.3 Depress HOME key.</p> <p>1.4 Depress COMP SERV key.</p> <p>1.5 Depress SELECT key.</p> <p>1.6 Depress PAGE FWD key.</p> <p>1.7 Verify I/C STATUS page displayed.</p>	

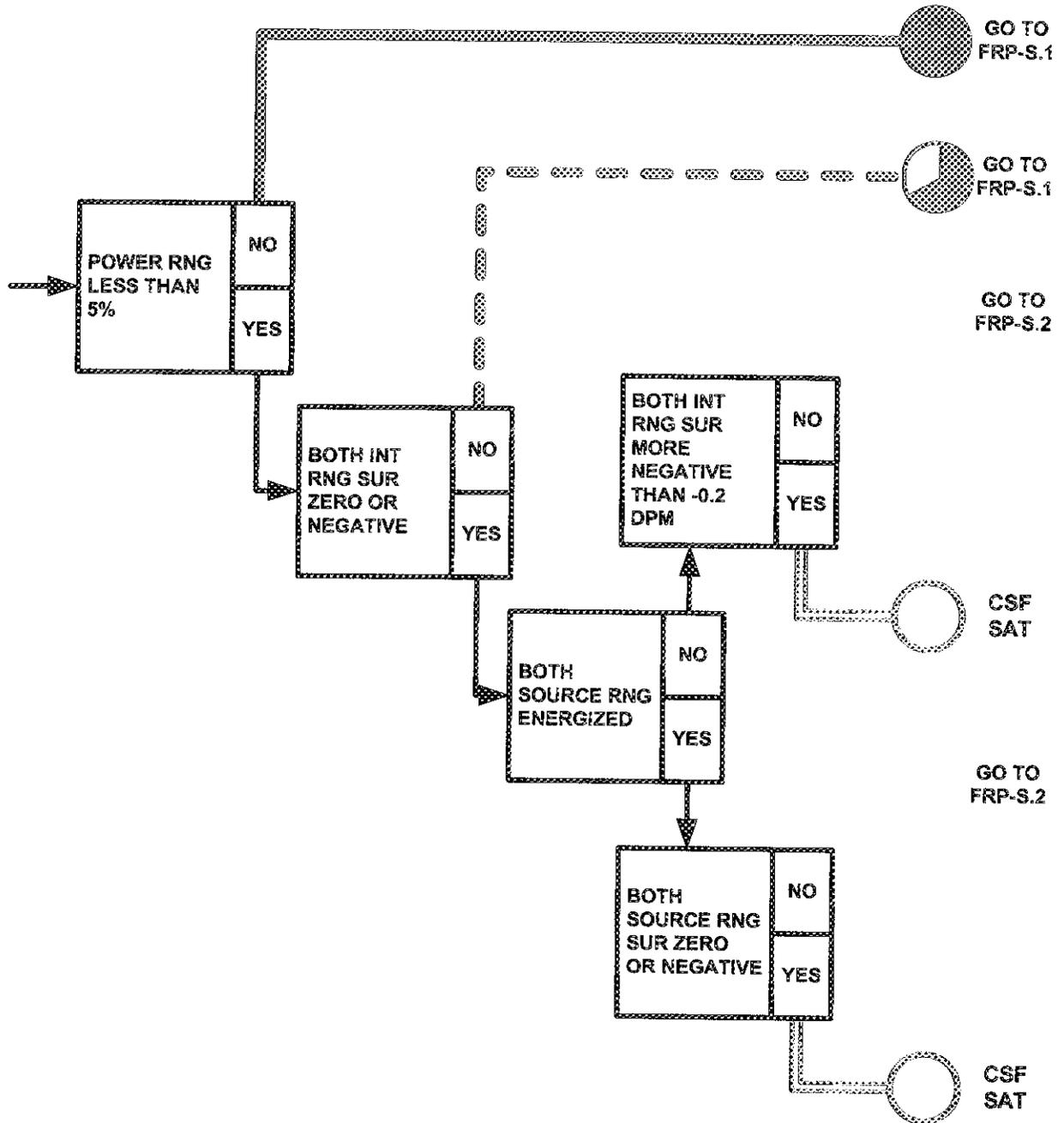
NOTE: The current state of computer equipment is indicated by the word FAIL or RESTORE being displayed in a cyan color.

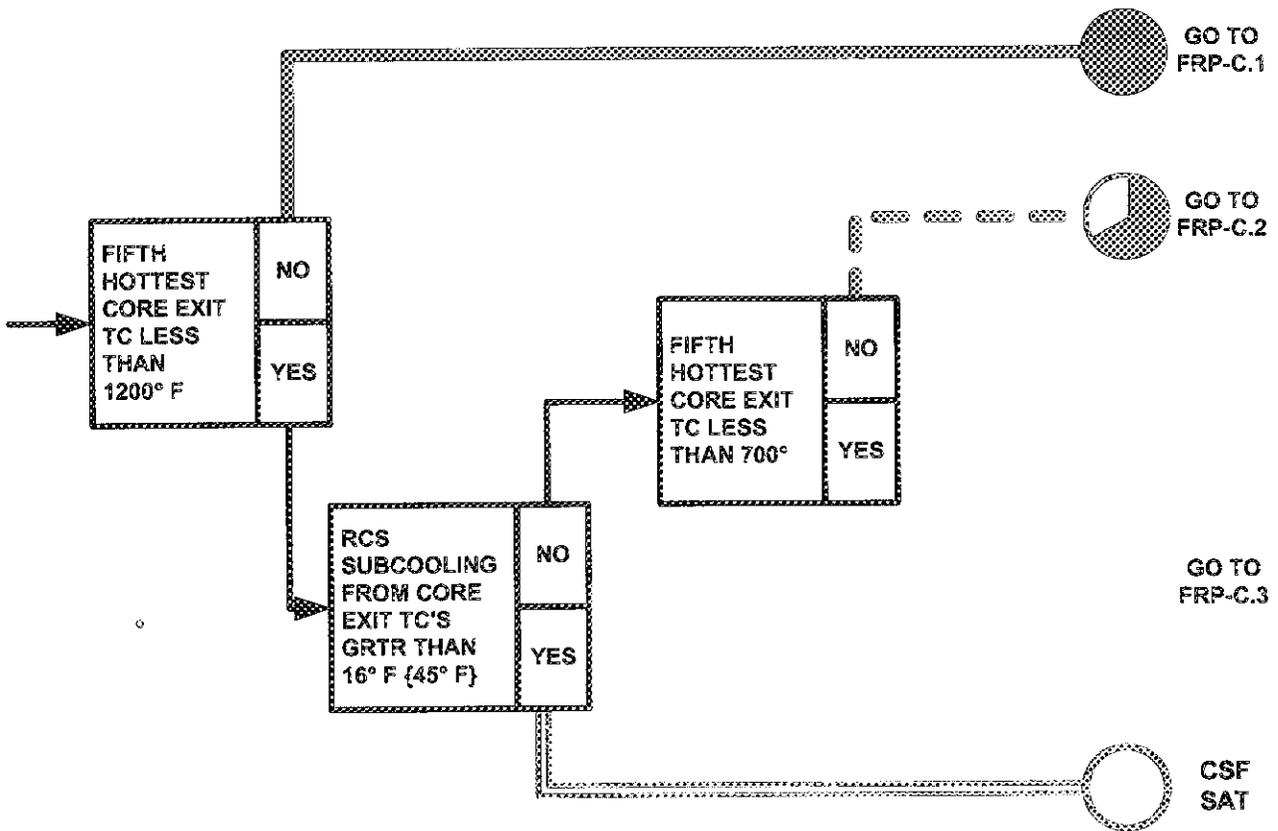
1.8 Check all listed equipment - IN THE RESTORE STATE.	1.8 Proceed to step 3.2.
1.9 Verify time displayed on the CRT is being updated at 2 second intervals.	1.9 Proceed to step 3.2.

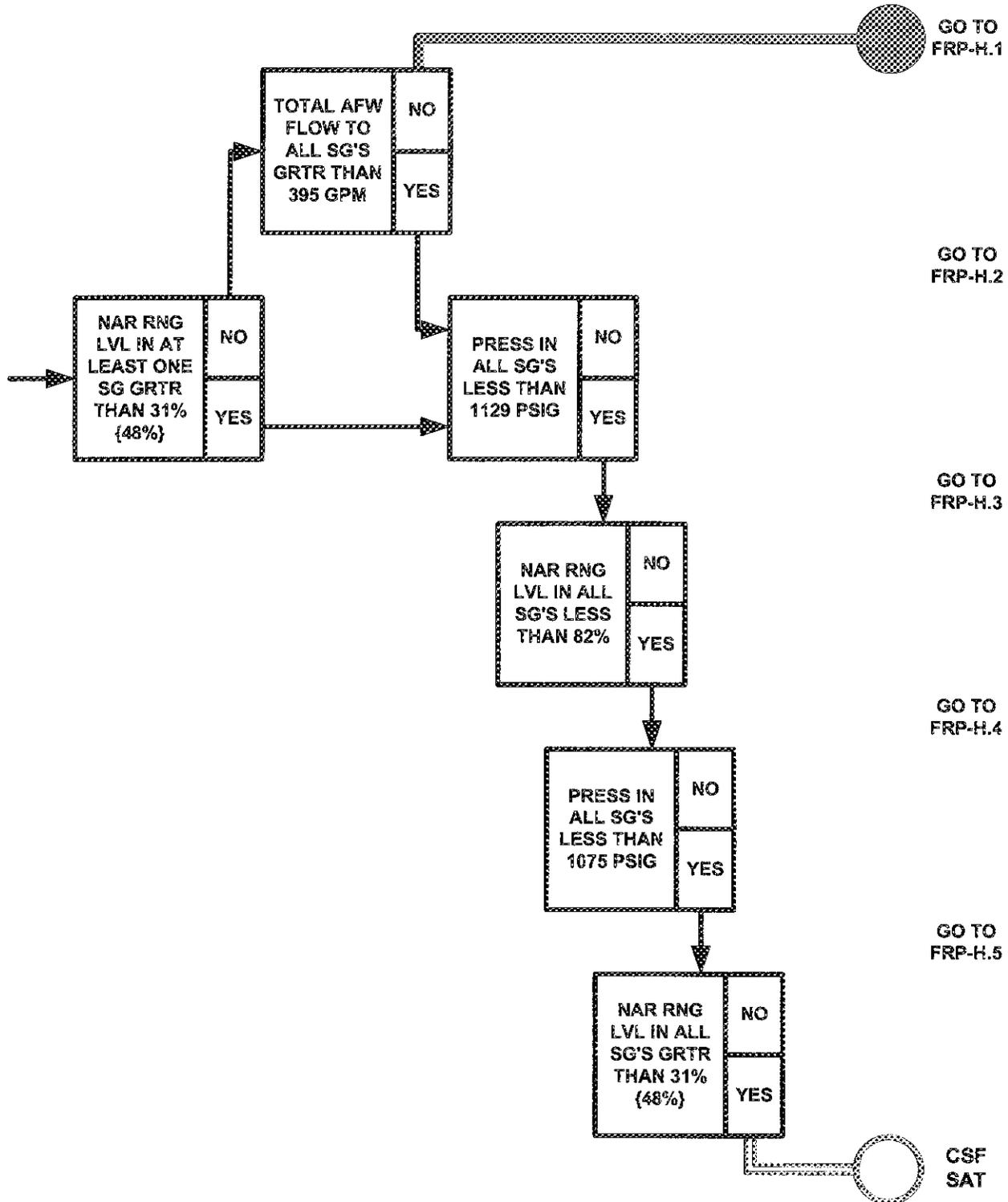
Page Completed

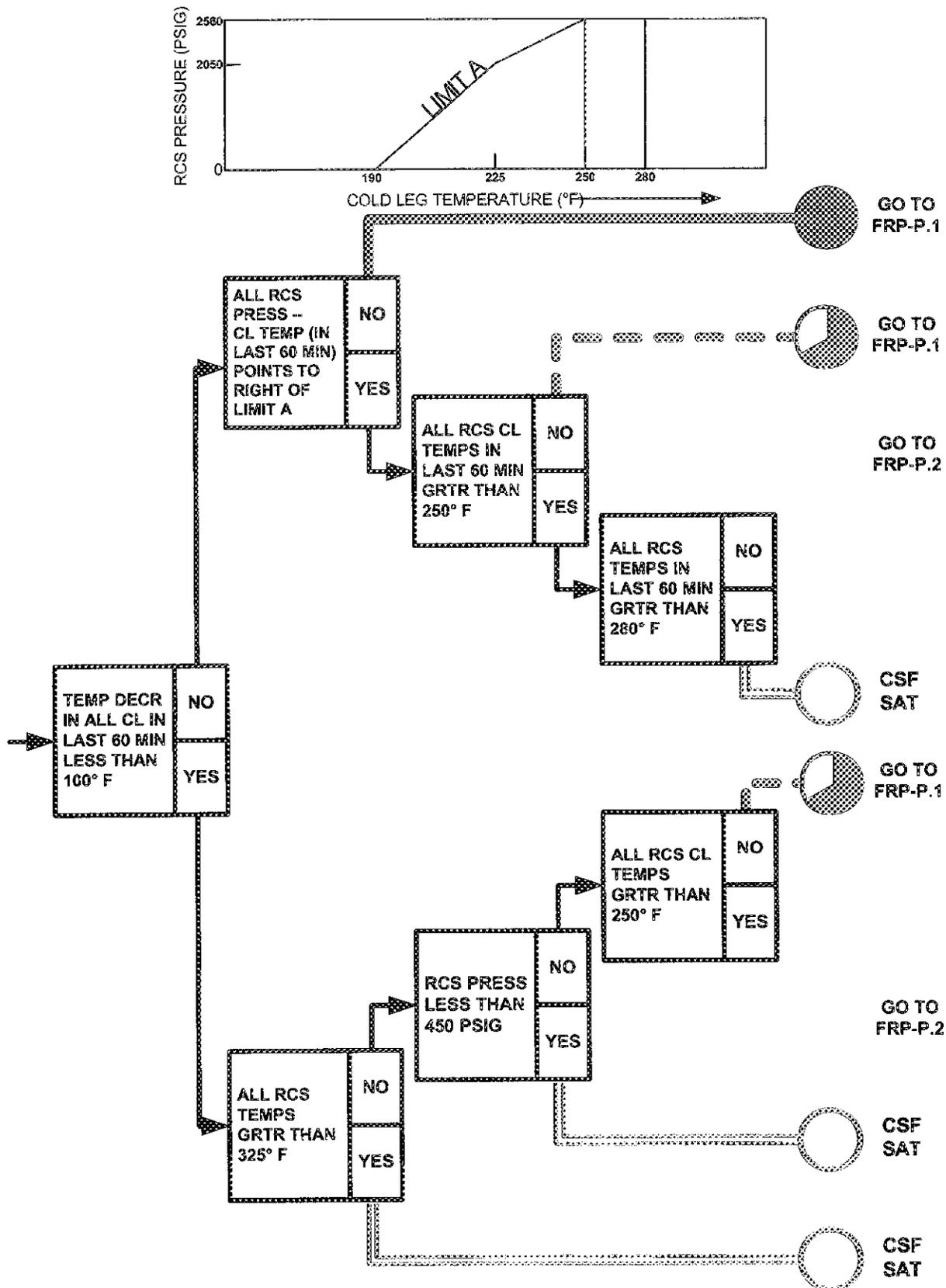
FNP-1-CSF-0	CRITICAL SAFETY FUNCTION STATUS TREES	Revision 13
Step	Action/Expected Response	Response NOT Obtained
<p>2</p>	<p>Check CSF SUMMARY page.</p> <p>2.1 Depress ESCAPE key.</p> <p>2.2 Depress SPDS key.</p>	
<p>NOTE: Indeterminate critical safety functions are indicated by the word INDETERMINATE being displayed in a magenta color.</p>		
	<p>2.3 Verify no Critical Safety Functions - INDETERMINATE.</p> <p><input type="checkbox"/> Subcriticality</p> <p><input type="checkbox"/> Core Cooling</p> <p><input type="checkbox"/> Heat Sink</p> <p><input type="checkbox"/> Integrity</p> <p><input type="checkbox"/> Containment</p> <p><input type="checkbox"/> Inventory</p>	<p>2.3 Monitor Critical Safety Function which is INDETERMINATE using FNP-1-CSF-0.1 through FNP-1-CSF-0.6 as appropriate.</p>
<p>3</p>	<p>Monitor Critical Safety Functions.</p> <p>3.1 Monitor Critical Safety Functions with SPDS computer system.</p> <p style="text-align: center;"><u>OR</u></p> <p>3.2 Monitor Critical Safety Functions using FNP-1-CSF-0.1 through FNP-1-CSF-0.6.</p>	

-END-



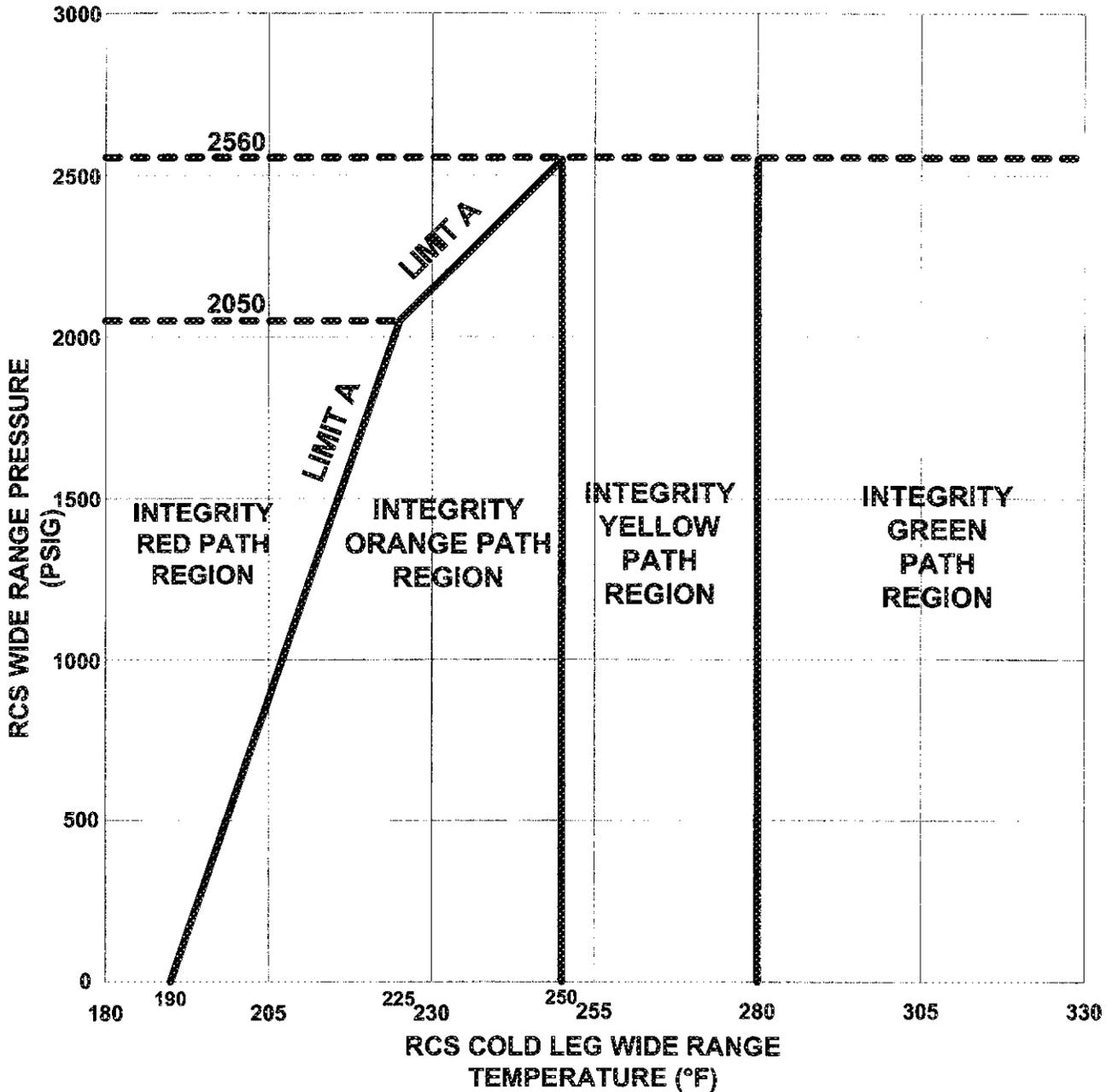


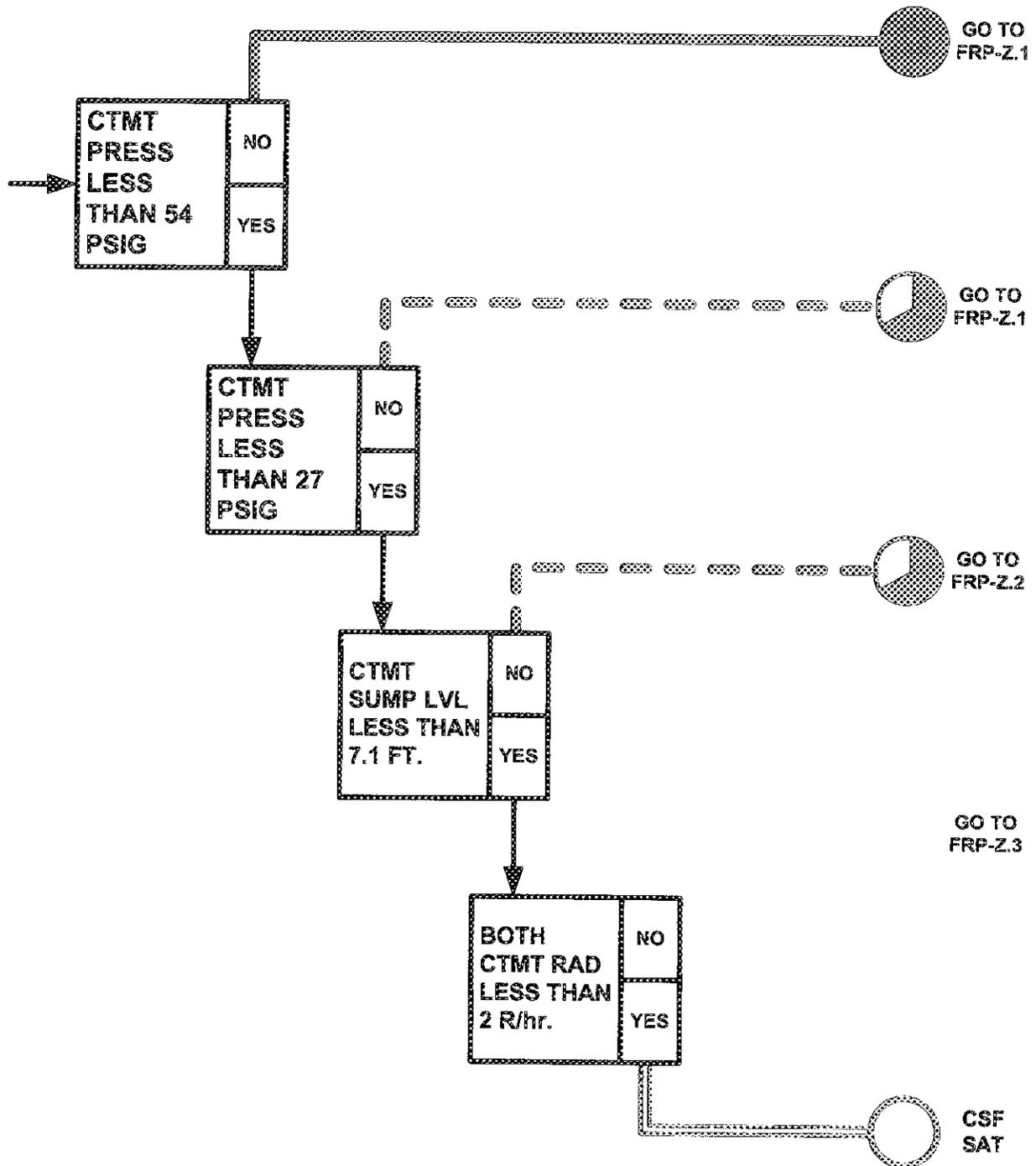




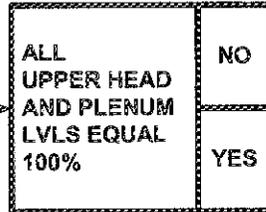
INTEGRITY

RCS PRESSURE - TEMPERATURE CRITERIA

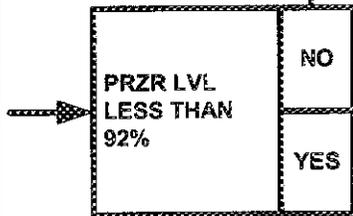




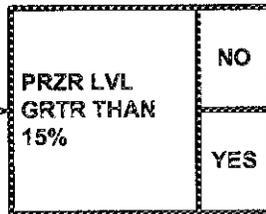
GO TO
FRP-I.3



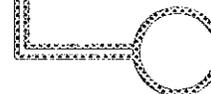
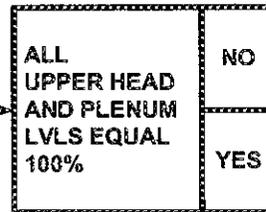
GO TO
FRP-I.1



GO TO
FRP-I.2



GO TO
FRP-I.3



CSF
SAT

CONDITIONS

When I tell you to begin, you are to DETERMINE IF STAFFING LEVELS ARE MET. The conditions under which this task is to be performed are:

- a. Both Units are at 100% power.
- b. It is night shift on Christmas day.
- c. The Ops manager has authorized maximizing time off during Christmas Eve and Christmas Day.
- d. ONLY the following positions have an active SRO license:
The Shift Manager and the Shift Supervisor.
- e. The shift complement at the beginning of night shift (2300) was:
 - Shift Manager – 1 (shared)
 - Shift Supervisor – 1 (shared)
 - Shift Support Supervisor – 2 (1 fire brigade and one STA qualified)
 - Unit operator – 1 (shared)
 - Operator at the controls – 2 (1 U1 & 1 U2)
 - Rad side SO – 2 (1 U1 & 1 U2)
 - Turbine Building – 2 (1 U1 & 1 U2)
 - Rover -- 1 (shared)
 - Diesel Building – 1 (shared)
 - Outside SO – 1 (shared)

- f. The following personnel status exists at 0300:
 - The Shift Supervisor has been taken to the hospital with chest pains.

The Shift Manager has directed you to let him know if shift staffing requirements are met and explain your decision?

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
*1. Tech Spec and Admin staffing are NOT met	Recognize the minimum shift manning is NOT going to be maintained. (CUE: None.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*2. Explanation (the standard is the minimum answer required).	1 Active SRO licensed individual is required within 2 hours to meet minimum staffing requirements.	S / U

_____ **STOP TIME**

Terminate when all elements of the task have been completed.
--

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-AP-16.0, Revision 38.0
2. Technical Specifications
3. K/A: G2.1.4 RO 2.3 SRO 3.4

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

References provided: FNP-1-AP-16.0, Revision 38.0 AND Technical Specifications.

CONDITIONS

When I tell you to begin, you are to DETERMINE IF STAFFING LEVELS ARE MET. The conditions under which this task is to be performed are:

- a. Both Units are at 100% power.
- b. It is night shift on Christmas day.
- c. The Ops manager has authorized maximizing time off during Christmas Eve and Christmas Day.
- d. ONLY the following positions have an active SRO license:
The Shift Manager and the Shift Supervisor.
- e. The shift complement at the beginning of night shift (2300) was:
 - Shift Manager – 1 (shared)
 - Shift Supervisor – 1 (shared)
 - Shift Support Supervisor – 2 (1 fire brigade and one STA qualified)
 - Unit operator – 1 (shared)
 - Operator at the controls – 2 (1 U1 & 1 U2)
 - Rad side SO – 2 (1 U1 & 1 U2)
 - Turbine Building – 2 (1 U1 & 1 U2)
 - Rover – 1 (shared)
 - Diesel Building – 1 (shared)
 - Outside SO – 1 (shared)
- f. The following personnel status exists at 0300:
 - The Shift Supervisor has been taken to the hospital with chest pains.

The Shift Manager has directed you to let him know if shift staffing requirements are met and explain your decision?

CONDITIONS

When I tell you to begin, you are to DETERMINE IF STAFFING LEVELS ARE MET. The conditions under which this task is to be performed are:

- a. Both Units are at 100% power.
- b. It is night shift on Christmas day.
- c. The Ops manager has authorized maximizing time off during Christmas Eve and Christmas Day.
- d. ONLY the following positions have an active SRO license:
The Shift Manager and the Shift Supervisor.
- e. The shift complement at the beginning of night shift (2300) was:
 - Shift Manager – 1 (shared)
 - Shift Supervisor – 1 (shared)
 - Shift Support Supervisor – 2 (1 fire brigade and one STA qualified)
 - Unit operator – 1 (shared)
 - Operator at the controls – 2 (1 U1 & 1 U2)
 - Rad side SO – 2 (1 U1 & 1 U2)
 - Turbine Building – 2 (1 U1 & 1 U2)
 - Rover – 1 (shared)
 - Diesel Building – 1 (shared)
 - Outside SO – 1 (shared)
- f. The following personnel status exists at 0300:
 - The Shift Supervisor has been taken to the hospital with chest pains.

The Shift Manager has directed you to let him know if shift staffing requirements are met and explain your decision?

Equipment Control ADMIN 3 - RO

TITLE: Perform STP-9.0, RCS LEAKAGE TEST	
PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT <u>X</u> LOCT <u>X</u>	
ACCEPTABLE EVALUATION METHOD: <u>X</u> PERFORM ___ SIMULATE ___ DISCUSS	
EVALUATION LOCATION: <u>X</u> SIMULATOR <u>X</u> CONTROL ROOM ___ PLANT	
PROJECTED TIME: <u>20 MIN</u> SIMULATOR IC NUMBER: <u>N/A</u>	
ALTERNATE PATH ___ TIME CRITICAL ___ PRA	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to perform STP-9.0, RCS LEAKAGE TEST. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1 and has been operating 300 days at 100% power.
- b. STP-9.0, RCS LEAKAGE TEST, is in progress with all initial conditions met and steps complete through step 5.3.
- c. For the simulated calculation, no verified SG tube leakage exists.
- d. The Shift Supervisor directs you to continue performing STP-9.0, RCS LEAKAGE TEST, starting at step 5.4 and continuing to step 5.8.
- e. The STP-9.0 Computer Program is not available.
- f. Use the following readings taken from the plant computer and perform STP-9.0.
- g. A pre-job brief has already been performed.

Initial conditions at 0800:

TE0453 = 647.721°F
 PC0482 = 2239.137 psig
 TC0484 = 572.881°F
 LC1600 = 49.911%
 LT0115 = 38.634
 LI-1003 = 43.1%
 LT0470 = 73.444
 FIS-168 = 000032

Final conditions at 1000:

TE0453 = 647.683°F
 PC0482 = 2239.201 psig
 TC0484 = 572.760°F
 LC1600 = 49.939%
 LT0115 = 38.527%
 LI-1003 = 43.3%
 LT0470 = 73.442
 FIS-168 = 000032

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
1. Record initial readings on data sheet 1 and initial step 5.4.	Initial readings recorded on data sheet 1. (CUE: The above parameters and values are provided on the Conditions sheet.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
2. Record the final values on data sheet 1 and initial step 5.5.	RCS Tavg verified to be within 3°F of initially recorded values and pressurizer temperature and pressure verified to have not significantly changed from values initially recorded. (CUE: The above parameters and values are provided on the Conditions sheet.)	S \ U
*3. Calculate Identified and Unidentified leakages and initial step 5.7.	Identified and Unidentified leakages are calculated. (Using the CUED values above: Identified = .01 Unidentified = -0.96 to -0.12 gpm)	S / U

The above tolerance was derived from rounding the same way through out the STP. (ie. If the candidate chose to round in each step for A, B, C, etc. or if the candidate rounded at the Total leakage and used step 6 rounding.)

NOTE TO EVALUATOR: DUE TO THE CHANGE IN TEMPERATURE THE APPROPRIATE CORRECTION FACTOR OF 100.5 WAS USED.

NOTE: THE ABOVE STANDARDS ARE BASED ON TABLES FOUND IN THE TANK CURVE BOOK.

STOP TIME

Terminate when Leak rate is calculated.

CRITICAL ELEMENTS: Critical Elements are denoted with an Asterisk (*) the element number

GENERAL REFERENCES

1. FNP-1-STP-9.0, Version 34.0
2. K/As: 000009 EA2.33 RO-3.3 SRO-3.8

GENERAL TOOLS AND EQUIPMENT**COMMENTS**

References provided: FNP-1-STP-9.0, Version 34.0, Tank curve for the PRT and RCDT.
A calculator is also needed for this task.

CONDITIONS

When I tell you to begin, you are to perform STP-9.0, RCS LEAKAGE TEST. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1 and has been operating 300 days at 100% power.
- b. STP-9.0, RCS LEAKAGE TEST, is in progress with all initial conditions met and steps complete through step 5.3.
- c. For the simulated calculation, no verified SG tube leakage exists.
- d. The Shift Supervisor directs you to continue performing STP-9.0, RCS LEAKAGE TEST, starting at step 5.4 and continuing to step 5.8.
- e. The STP-9.0 Computer Program is not available.
- f. Use the following readings taken from the plant computer and perform STP-9.0.
- g. A pre-job brief has already been performed.

Initial conditions at 0800:

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PC0482 = 2239.137 psig

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LC1600 = 49.911%

LT0115 = 38.634

LI-1003 = 43.1%

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FIS-168 = 000032

Final conditions at 1000:

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PC0482 = 2239.201 psig

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LC1600 = 49.939%

LT0115 = 38.527%

LI-1003 = 43.3%

LT0470 = 73.442

FIS-168 = 000032

11/18/04 12:32:07

UNIT 1

FNP-1-STP-9.0
October 15, 2004
Version 34.0

KEY

FARLEY NUCLEAR PLANT
SURVEILLANCE TEST PROCEDURE

FNP-1-STP-9.0

RCS LEAKAGE TEST

S
A
F
E
T
Y

R
E
L
A
T
E
D

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

RAY MARTIN
Operations Manager

Date Issued 10/18/2004

KEY

5.0 Instructions

5.1 The RCDT system is aligned as follows:

no 5.1.1 RCDT level is in the normal operating band.

no 5.1.2 RCDT PUMPS DISCH LINE ISO Q1G21HV7136 is closed.

no 5.1.3 RCDT LCV Q1G21LCV1003 MCB handswitch has been taken to closed and returned to AUTO.

NOTE: The following step is only required if increased accuracy is necessary for determination of leak rate into PRT or the MCB PRT level indicator has a problem.

I&C N/A 5.2 CV IF required, THEN have I&C connect a calibrated digital voltmeter across the output of LQY-470, location C5-231.

no 5.3 Place VCT III LVL DIVERT VLV, Q1E21LCV115A, in the VCT position.

NOTE: Batch Integrator readings will be taken prior to and at the conclusion of each make up evolution.

Hand. data should initial here

no 5.4 Read and record initial readings on data sheet 1.

NOTE: A time span of at least 2 hours should be used during normal steady state plant operations, however if plant conditions dictate, a shorter time span may be used. (30 minutes minimum).

no 5.5 After the desired time span (normally 2 hours) record final values on data sheet 1.

N/A 5.6 IF the RCS leakrate program is to be used, THEN verify that the program is revision 3.

NOTE: If the RCS leakrate program is used, then the remainder of data sheet 1 may be left blank.

*5.7 Calculate identified and unidentified leakages using the RCS leakrate program or formulas on data sheet 1.

ACCEPTANCE CRITERIA: • Unidentified leakage ≤ 1 gpm
• Identified leakage ≤ 10 gpm

N/A 5.8 IF unidentified leakage is more negative than -0.2, THEN repeat FNP-1-STP-9.0, RCS LEAKAGE TEST.

DATA SHEET 1
RCS Leakage

INSTRUMENT	NAME	INITIAL	FINAL	FINAL - INITIAL
Computer (MCB)	TIME	0800	1000	A = 120 Minutes
TE0453 (II0453)	LIQ PRZR TEMP	647.721 °F	647.683 °F	No significant change (≤ 1 °F)
PC0482, PT0455, PT0456 or PT0457 (PI 455, PI 456 or PI 457)	PRZR PRESS (Note 1)	2239.137 psig	2239.201 psig	No significant change (≤ 5 psig)
TC0484 OR Average of TY0412K, TY0422K & TY0432K (Average of TI 412D, 422D & 432D)	RCS TAVG (Note 1)	572.981 °F	572.760 °F	ΔT = -121 °F Maximum change of 0.3°F allowed if TAVG is 545°F or greater, 0.1°F if TAVG is less than 545°F.
RCS Temperature Correction Factor	CF (Note 5)		N/A	B = ΔT × CF = $\frac{-12.2}{0.2} = -12.1605$ Gal.
LC 1600 OR Average of LT0459, LT0460 & LT0461 (LI-459, 460, 461)	PRZR LVL	49.911 %	49.939 %	C = 56.3 × $\frac{0.028}{0.2} = 1.5764$ Gal.
LT0115 (LI 115)	VCT LVL	38.634 %	38.527 %	D = 14.18 × $\frac{-1.107}{0.2} = -1.51726$ Gal.
LI 1003 Waste Pnl or BOP ES261 Pos 6	RCDT LVL	43.1 % 151.57 *Gal.	43.3 % 152.28 *Gal.	E = .72 Gal. (Enter 0 if negative)
LT0470 (LI 470)	PRT LVL (Note 2)	73.444 % *Gal.	73.442 % *Gal.	F = 0 Gal. (Enter 0 if negative)
FIS 168	TOTAL FLOW BATCH INTEG	00032 Gal.	00032 Gal.	G = 0 Gal. Dilution and Blended Makeup

*From Tank Curve

Book

Total Leakage

$$= \frac{B - C - D + G}{A} = \frac{(-12.1605) - (1.5764) - (-1.51726) + (0)}{(120)} = \frac{-11.21964}{120} = -0.0935 \text{ GPM}$$

$$\text{Identified Leakage} = \frac{E + F}{A} = \frac{(.72) + (0)}{(120)} = .006 \text{ GPM}$$

Other leakage = $\frac{D}{A} = \frac{0}{120} = 0$ (Note 6)

Other Leakage: Source Rate (GPM)

$$\text{Unidentified Leakage} = \frac{\text{Total Other} - \text{Identified Leakage}}{\text{Total Leakage}} = \frac{-0.0935 - 0.006}{-0.11} = -0.12 \text{ GPM}$$

ACCEPTANCE CRITERIA:

- Unidentified leakage ≤ 1 gpm
- Identified leakage ≤ 10 gpm

- NOTE:**
- 1 **IF TAVG < 530°F, THEN use: PI-402A (PT0402) and PI-403A (PT0403), 1C and 1A Loop RCS WR PRESS (Avg. of Readings) AND TR-410 (TE0410) and TR-413 (TE0413), RCS COLD AND HOT LEG TEMP (Avg. of Readings)**
 - 2 **Calibrated fluke may be used for PRT level determination if deemed necessary.**
 - 3 **For reporting purposes values between -0.2 and 0 gpm shall be reported as 0 gpm. Values more negative than -0.2 gpm indicate a potential problem and therefore shall be reported as is.**
 - 4 **If unidentified leakage > 0.9 but < 1 gpm, test should be reperformed with ZAS secured. At maximum injection rate, ZAS can introduce ~0.03 gpm error into calculation.**
 - 5 **Obtain CF from Table 1 using the nearest value of RCS temperature. N/A if RCS Leakrate program is used.**
 - 6 **Leakage calculations are to be reported in two significant digits (c.g., 0.07 gpm).**

TABLE 1

RCS Temp (°F)	Correction Factor (gal/ °F)
200	24.3
225	26.6
250	28.9
275	31.2
300	33.5
325	36.6
350	39.8
375	42.9
400	46.0
425	51.4
450	56.7
475	62.1
500	67.4
525	76.3
545	83.5
547	84.5
550	86.1
555	88.8
560	91.7
565	94.8
570	98.2
571	98.9
572	99.7
573	100.5
574	101.2
575	101.9
577.2	103.6

CONDITIONS

When I tell you to begin, you are to perform STP-9.0, RCS LEAKAGE TEST. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1 and has been operating 300 days at 100% power.
- b. STP-9.0, RCS LEAKAGE TEST, is in progress with all initial conditions met and steps complete through step 5.3.
- c. For the simulated calculation, no verified SG tube leakage exists.
- d. The Shift Supervisor directs you to continue performing STP-9.0, RCS LEAKAGE TEST, starting at step 5.4 and continuing to step 5.8.
- e. The STP-9.0 Computer Program is not available.
- f. Use the following readings taken from the plant computer and perform STP-9.0.
- g. A pre-job brief has already been performed.

Initial conditions at 0800:

TE0453 = 647.721°F

PC0482 = 2239.137 psig

TC0484 = 572.881°F

LC1600 = 49.911%

LT0115 = 38.634

LI-1003 = 43.1%

LT0470 = 73.444

FIS-168 = 000032

Final conditions at 1000:

TE0453 = 647.683°F

PC0482 = 2239.201 psig

TC0484 = 572.760°F

LC1600 = 49.939%

LT0115 = 38.527%

LI-1003 = 43.3%

LT0470 = 73.442

FIS-168 = 000032

11/18/04 12:32:07

UNIT 1

FNP-1-STP-9.0
October 15, 2004
Version 34.0

FARLEY NUCLEAR PLANT SURVEILLANCE TEST PROCEDURE

FNP-1-STP-9.0

RCS LEAKAGE TEST

S
A
F
E
T
Y

R
E
L
A
T
E
D

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

RAY MARTIN
Operations Manager

Date Issued 10/18/2004

UNIT 1
FARLEY NUCLEAR PLANT
SURVEILLANCE TEST REVIEW SHEET

SURVEILLANCE TEST NO. FNP-1-STP-9.0	TECHNICAL SPECIFICATION REFERENCE SR 3.4.13.1
--	--

TITLE RCS LEAKAGE TEST	MODE(S) REQUIRING TEST: 1, 2, 3, 4
---------------------------	---------------------------------------

TEST RESULTS (TO BE COMPLETED BY TEST PERFORMER)

PERFORMED BY _____ DATE/TIME _____

COMPONENT OR TRAIN TESTED (if applicable) _____

ENTIRE STP PERFORMED FOR SURVEILLANCE CREDIT

PARTIAL STP PERFORMED: NOT FOR SURVEILLANCE CREDIT

REASON FOR PARTIAL: _____

TEST COMPLETED: Satisfactory Unsatisfactory

The following deficiencies occurred:

Corrective action taken or initiated:

SHIFT SUPERVISOR/ SHIFT SUPPORT SUPERVISOR REVIEW

REVIEWED BY _____ DATE _____

Procedure properly completed and satisfactory

Comments: _____

ENGINEERING SUPPORT	SCREENED BY _____	DATE _____	
GROUP SCREENING (IF APPLICABLE)	REVIEWED BY _____	DATE _____	
<input type="checkbox"/> Satisfactory and Approved			
<input type="checkbox"/> Comments: _____			

UNIT 1

TABLE OF CONTENTS

<u>Procedure Contains</u>	<u>Number of Pages</u>
Body.....	4
Data Sheet 1	2
STRS.....	1

4.0 Precautions and Limitations

- 4.1 No sampling of the RCS or CVCS shall be done during this test.
- 4.2 Any of the following will render this test void:
- 4.2.1 Emergency boration
 - 4.2.2 Diversion of letdown to the recycle holdup tanks.
 - 4.2.3 Make up from any source which does not go through the boric acid blender.
 - 4.2.4 Boration of less than 10 gpm, due to Batch Integrator counter inaccuracies.
- 4.3 To minimize the inaccuracy introduced into the calculation by RCS temperature changes, RCS temperature should be maintained as follows:
- 4.3.1 IF RCS temp is $< 545^{\circ}\text{F}$, THEN the RCS temperature should not change by more than 0.1°F during the test.
 - 4.3.2 IF RCS temp is $\geq 545^{\circ}\text{F}$, THEN the RCS temperature should not change by more than 0.3°F during the test.
 - 4.3.3 IF required to maintain RCS temperature, THEN control rods, turbine load or boron concentration should be adjusted as necessary.
- 4.4 The calculation assumes that changes in RCS volume due to PZR temperature / pressure fluctuations are negligible. Pressurizer parameters should be maintained stable to minimize inaccuracy.
- 4.5 The following guidelines should be followed to maximize precision:
- IF available, THEN computer points should be used for obtaining data.
 - For RCS Tavg, the computer point data should be entered to include three decimal places (i.e., 572.204°F).
 - For other computer points and RCDT level, the data should be entered to include at least one decimal place (i.e., 50.1 %).
 - Identified and unidentified leakage rates are to be reported in two significant digits (e.g., 0.07 gpm).
 - IF possible, THEN normal makeup to the VCT should be avoided.
- 4.6 IF the RCDT or PRT level indication is invalid, THEN use 0 gpm for RCDT or PRT portion of identified leakage unless leakage into the RCDT or PRT is to be determined using another approved method.
- 4.7 To ensure that the STP-9.0 Computer Program remains current, the Computer Services Group should be notified of any revision or TCN to the Data Sheet 1.

5.0 Instructions

5.1 The RCDT system is aligned as follows:

no

5.1.1 RCDT level is in the normal operating band.

no

5.1.2 RCDT PUMPS DISCH LINE ISO Q1G21HV7136 is closed.

no

5.1.3 RCDT LCV Q1G21LCV1003 MCB handswitch has been taken to closed and returned to AUTO.

NOTE: The following step is only required if increased accuracy is necessary for determination of leak rate into PRT or the MCB PRT level indicator has a problem.

I&C
noN/A
CV5.2 IF required, THEN have I&C connect a calibrated digital voltmeter across the output of LQY-470, location C5-231.no

5.3 Place VCT HI LVL DIVERT VLV, Q1E21LCV115A, in the VCT position.

NOTE: Batch Integrator readings will be taken prior to and at the conclusion of each make up evolution.

___ 5.4 Read and record initial readings on data sheet 1.

NOTE: A time span of at least 2 hours should be used during normal steady state plant operations, however if plant conditions dictate, a shorter time span may be used. (30 minutes minimum).

___ 5.5 After the desired time span (normally 2 hours) record final values on data sheet 1.

no NA5.6 IF the RCS leakrate program is to be used, THEN verify that the program is revision 3.

NOTE: If the RCS leakrate program is used, then the remainder of data sheet 1 may be left blank.

___ *5.7 Calculate identified and unidentified leakages using the RCS leakrate program or formulas on data sheet 1.

ACCEPTANCE CRITERIA:

- Unidentified leakage ≤ 1 gpm
- Identified leakage ≤ 10 gpm

___ 5.8 IF unidentified leakage is more negative than -0.2, THEN repeat FNP-1-STP-9.0, RCS LEAKAGE TEST.

- _____ 5.9 Return the RCDT system to normal per FNP-1-SOP-50.0, LIQUID WASTE PROCESSING SYSTEM, section 4.1.2.
- _____ 5.10 Place VCT HI LVL DIVERT VLV, Q1E21LCV115A in the AUTO position.
- _____ 5.11 IF computer point LC-0500 or LC-0501 is available, THEN review the RCS leakrate trend (last 30 days if possible) on computer point to determine if any abnormal trends exist.
- _____ 5.12 IF any abnormal leakage is detected, THEN perform an inspection and evaluation to identify and document the leakage path(s), any corrective actions, and the affects of the leakage (AOP-1.0, attachments 2 through 5).

NOTE: The R-67 sample is not required, with Shift Supervisor approval, if the RCS leakage is known to be outside containment.

- _____ 5.13 IF unidentified leakage is determined to be ≥ 0.25 gpm, THEN perform an additional STP-9.0 to confirm the result. IF the result is confirmed to be ≥ 0.25 gpm, THEN request chemistry to collect an R-67 sample for Iron analysis.
- I&C / _____ 5.14 IF applicable, THEN have I&C remove the calibrated digital voltmeter installed in step 5.2.
- _____ 5.15 IF used for RCS leakrate calculation, THEN attach the computer generated Data Sheet 1 to this procedure.

6.0 References

- 6.1 P&ID D-175037 - RCS, sheet 2
- 6.2 P&ID D-175039 - CVCS, sheet 2
- 6.3 P&ID D-175042 - Waste Processing System, sheet 1

DATA SHEET 1
RCS Leakage

INSTRUMENT	NAME	INITIAL	FINAL	FINAL - INITIAL
Computer (MCB)	TIME			A = Minutes
TE0453 (TI0453)	LIQ PRZR TEMP	°F	°F	No significant change (≤ 1 °F)
PC0482, PT0455, PT0456 or PT0457 (PI 455, PI 456 or PI 457)	PRZR PRESS (Note 1)	psig	psig	No significant change (≤ 5 psig)
TC0484 OR Average of TY0412K, TY0422K & TY0432K (Average of TI 412D, 422D & 432D)	RCS TAVG (Note 1)	°F	°F	ΔT = °F Maximum change of 0.3°F allowed if TAVG is 545°F or greater, 0.1°F if TAVG is less than 545°F.
RCS Temperature Correction Factor	CF (Note 5)		N/A	B = ΔT × CF = Gal.
LC 1600 OR Average of LT0459, LT0460 & LT0461 (LI-459, 460, 461)	PRZR LVL	%	%	C = 56.3 × % = Gal.
LT0115 (LI 115)	VCT LVL	%	%	D = 14.18 × % = Gal.
LI 1003 Waste Pnl or BOP LS261 Pos 6	RCDT LVL	%	%	E = Gal. (Enter 0 if negative)
LT0470 (LI 470)	PRT LVL (Note 2)	%	%	F = Gal. (Enter 0 if negative)
FIS 168	TOTAL FLOW BATCH INTEG	Gal.	Gal.	G = Gal. Dilution and Blended Makeup

*From Tank Curve Book

Total Leakage

$$= \frac{B - C - D + G}{A} = \frac{(\quad) - (\quad) - (\quad) + (\quad)}{(\quad)} = \frac{\quad}{\quad} \text{GPM} \quad (\text{Note 6})$$

$$\text{Identified Leakage} = \frac{E + F}{A} = \frac{(\quad) + (\quad)}{(\quad)} + \text{Other leakage} = \frac{\quad}{\quad} \text{GPM} \quad (\text{Note 6})$$

Other Leakage: Source	Rate (GPM)
_____	_____
_____	_____
Total Other	_____

$$\text{Unidentified Leakage} = \frac{\text{Total Leakage} - \text{Identified Leakage}}{\quad} = \frac{\quad}{\quad} \text{GPM} \quad (\text{Notes 3, 4, \& 6})$$

ACCEPTANCE CRITERIA:	<ul style="list-style-type: none"> • Unidentified leakage ≤ 1 gpm • Identified leakage ≤ 10 gpm
-----------------------------	---

- NOTE:**
- 1 **IF TAVG < 530°F, THEN use: PI-402A (PT0402) and PI-403A (PT0403), 1C and 1A Loop RCS WR PRESS (Avg. of Readings) AND TR-410 (TE0410) and TR-413 (TE0413), RCS COLD AND HOT LEG TEMP (Avg. of Readings)**
 - 2 **Calibrated fluke may be used for PRT level determination if deemed necessary.**
 - 3 **For reporting purposes values between -0.2 and 0 gpm shall be reported as 0 gpm. Values more negative than -0.2 gpm indicate a potential problem and therefore shall be reported as is.**
 - 4 **If unidentified leakage > 0.9 but < 1 gpm, test should be reperformed with ZAS secured. At maximum injection rate, ZAS can introduce ~0.03 gpm error into calculation.**
 - 5 **Obtain CF from Table 1 using the nearest value of RCS temperature. N/A if RCS Leakrate program is used.**
 - 6 **Leakage calculations are to be reported in two significant digits (e.g., 0.07 gpm).**

TABLE 1

RCS Temp (°F)	Correction Factor (gal/ °F)
200	24.3
225	26.6
250	28.9
275	31.2
300	33.5
325	36.6
350	39.8
375	42.9
400	46.0
425	51.4
450	56.7
475	62.1
500	67.4
525	76.3
545	83.5
547	84.5
550	86.1
555	88.8
560	91.7
565	94.8
570	98.2
571	98.9
572	99.7
573	100.5
574	101.2
575	101.9
577.2	103.6

Unit 1

Volume II Curve 28B
Reactor Coolant Drain Tank Capacity
N1G21T001
Capacity (Gallons) vs % Level
Rev. 2, December 14, 1981, C.A.P.

DOCUMENT CONTROL
CONTROLLED COPY
DO NOT REPRODUCE
COPY NO. 004

Approved:

CDN 1-28-82
Technical Superintendent Date

% LEVEL	GALLONS	% LEVEL	GALLONS
0.0	18.28	51.0	180.09
1.0	20.45	52.0	183.71
2.0	22.69	53.0	187.32
3.0	25.00	54.0	190.94
4.0	27.37	55.0	194.54
5.0	29.81	56.0	198.15
6.0	32.31	57.0	201.74
7.0	34.87	58.0	205.33
8.0	37.49	59.0	208.92
9.0	40.15	60.0	212.49
10.0	42.88	61.0	216.05
11.0	45.65	62.0	219.60
12.0	48.46	63.0	223.14
13.0	51.33	64.0	226.67
14.0	54.23	65.0	230.19
15.0	57.18	66.0	233.68
16.0	60.17	67.0	237.17
17.0	63.20	68.0	240.63
18.0	66.26	69.0	244.08
19.0	69.36	70.0	247.50
20.0	72.50	71.0	250.91
21.0	75.67	72.0	254.30
22.0	78.87	73.0	257.66
23.0	82.10	74.0	261.00
24.0	85.36	75.0	264.31
25.0	88.64	76.0	267.60
26.0	91.96	77.0	270.86
27.0	95.29	78.0	274.09
28.0	98.66	79.0	277.29
29.0	102.04	80.0	280.45
30.0	105.45	81.0	283.59
31.0	108.88	82.0	286.69
32.0	112.32	83.0	289.75
33.0	115.79	84.0	292.78
34.0	119.27	85.0	295.77
35.0	122.77	86.0	298.72
36.0	126.28	87.0	301.63
37.0	129.81	88.0	304.49
38.0	133.35	89.0	307.31
39.0	136.90	90.0	310.08
40.0	140.46	91.0	312.80
41.0	144.04	92.0	315.46
42.0	147.62	93.0	318.08
43.0	151.21	94.0	320.64
44.0	154.81	95.0	323.14
45.0	158.41	96.0	325.58
46.0	162.02	97.0	327.96
47.0	165.63	98.0	330.27
48.0	169.24	99.0	332.50
49.0	172.86	100.0	334.67
50.0	176.48		

VOLUME II CURVE 27C
 PRESSURIZER HELIUM TANK CAPACITY TABLE
 N1832T001
 CAPACITY (GAL) VS % LEVEL
 REV. 0 May 7, 1980 GAF

APPROVED:

Kenneth W. G. Crocker 5/15/80
 TECHNICAL SUPERINTENDENT DATE

% LEVEL	GALLONS						
0.0	292.12	25.0	3272.29	52.0	5066.38	78.0	7646.46
1.0	272.10	27.0	3372.49	53.0	5198.21	79.0	7906.93
2.0	325.39	28.0	3473.73	54.0	5309.92	80.0	8024.50
3.0	381.61	29.0	3575.91	55.0	5421.43	81.0	8121.58
4.0	441.16	30.0	3678.98	56.0	5532.79	82.0	8211.95
5.0	503.93	31.0	3782.92	57.0	5643.89	83.0	8303.59
6.0	568.95	32.0	3887.78	58.0	5754.56	84.0	8387.71
7.0	635.24	33.0	3993.24	59.0	5865.14	85.0	8472.25
8.0	703.82	34.0	4099.49	60.0	5975.22	86.0	8557.96
9.0	774.99	35.0	4206.43	61.0	6084.99	87.0	8639.11
10.0	848.15	36.0	4314.09	62.0	6194.11	88.0	8719.29
11.0	922.43	37.0	4422.18	63.0	6302.82	89.0	8797.57
12.0	1005.71	38.0	4530.89	64.0	6411.88	90.0	8876.64
13.0	1085.89	39.0	4640.10	65.0	6516.57	91.0	8948.91
14.0	1167.94	40.0	4749.78	66.0	6625.51	92.0	9019.98
15.0	1251.77	41.0	4859.86	67.0	6731.76	93.0	9089.88
16.0	1337.29	42.0	4970.32	68.0	6837.38	94.0	9156.95
17.0	1424.47	43.0	4981.11	69.0	6942.88	95.0	9221.72
18.0	1513.20	44.0	4192.21	70.0	7046.82	96.0	9285.64
19.0	1603.42	45.0	4303.58	71.0	7149.69	97.0	9348.19
20.0	1695.10	46.0	4415.88	72.0	7251.27	98.0	9409.61
21.0	1788.17	47.0	4528.79	73.0	7352.51	99.0	9468.99
22.0	1882.56	48.0	4638.82	74.0	7452.71	100.0	9502.95
23.0	1978.22	49.0	4750.54	75.0	7551.86		
24.0	2075.11	50.0	4862.58	76.0	7649.89		
25.0	2173.14	51.0	4974.46	77.0	7746.78		

Equipment Control ADMIN 4 - SRO

TITLE: Review A Tag Out Which Will Isolate The 1A CCW Pump	
PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT <u>X</u> LOCT ___	
ACCEPTABLE EVALUATION METHOD: <u>X</u> PERFORM ___ SIMULATE ___ DISCUSS ___	
EVALUATION LOCATION: <u>X</u> SIMULATOR <u>X</u> CONTROL ROOM ___ PLANT ___	
PROJECTED TIME: <u>45 MIN</u> SIMULATOR IC NUMBER: <u>N/A</u>	
ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to REVIEW A TAG OUT. The conditions under which this task is to be performed are:

- a. Unit 1 is at 100% power.
- b. The Rover has reported that the 1A CCW pump casing has a crack and is leaking.
- c. The eSOMS clearance computer program is not available and a manual tag out has been prepared.
- d. The most recent tag out number issued prior to this tag out was: 1-DT-05-P17-00127
- e. The most recent tag serial number issued prior to this tag out was: 500
- f. You have been directed by the Shift Supervisor to review the tag out, make any needed corrections, and submit a correct Tagout which will isolate the 1A CCW pump to stop the leak and allow repairs to the pump casing.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
*1. Determines proper electrical tagging sequence.	Determines that MCB handswitch must be tagged prior to racking out the breaker and notes the omission of the MCB handswitch on the tag out. (CUE: None.)	S / U
*2. Determines the proper breaker from the SOP Checklist.	Determines that the wrong train and component breaker is listed on the tag out and notes the correct breaker, DG04, must be tagged. (CUE: None.)	S / U
3. Locates the correct CCW Pump on the PID.	Locates 1A CCW pump on PID D175002 SH1. (CUE: None.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
4. Determines minimum valves required closed to provide isolation for 1A CCW pump per PID D175002 SH1.	Determines correct valve TPNS numbers from drawing: QV144A, QV109A, QV002A, QV278A (CUE: None.)	S / U S / U S / U S / U
5. Determines Nomenclature of minimum valves required closed to provide isolation for 1A CCW pump per SOP-23A Pg 14 & 15	Determines correct valve Nomenclature from per SOP-23A Pg 14 & 15: Q1P17V144A, 1A CCW PUMP MINI-FLOW. Q1P17V109A, 1A CCW PUMP SUCTION. Q1P17V002A, 1A CCW PUMP DISCH ISO. Q1P17V278A, 1A CCW PUMP CHEM MIXING ISO. (CUE: None.)	S / U S / U S / U S / U
*6. Determines the proper discharge valve which must be tagged.	Determines that the manual discharge valve, Q1P17V002A, is the preferred valve to be tagged for isolation and notes the mistake in tagging the check valve. (CUE: None.)	S / U
*7. Determines the proper sequence of the suction, discharge, miniflows and chem mixing valves.	Determines the proper sequence: 1. Q1P17V002A, discharge valve 2. Q1P17V109A, suction valve 3 and 4 chem. Mixing and mini-flow valves in either order. (CUE: None.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
-----------	------------	----------------------

NOTE: If examinee chooses to open the drain valve Q1P17V281A it is acceptable since it is inside the isolated boundary. This is not required, because the piping configuration should preclude the necessity to drain from this point.

- | | | | |
|------|---|--|--------------------------------|
| 8. | Determines minimum valves required opened to drain 1A CCW pump per PID D175002 SH1. | Determines correct valve TPNS numbers from drawing:

QV157B,

QV157A.
(CUE: None.) |

S / U

S / U |
| 9. | Determines Nomenclature of minimum valves required opened to drain 1A CCW pump per SOP-23A Pg 14 & 15 | Determines correct valve Nomenclature from per SOP-23A Pg 14 & 15:

Q1P17V157B, 1A CCW PUMP DRN.

Q1P17V157A, 1A CCW PUMP DRN.
(CUE: None.) |

S / U

S / U |
| *10. | Sequence the drain valves. | Drain valves can be in any order but should be listed before the vent valves. | S / U |

For a critical task, only one drain valve has to be opened to meet the task as written. More drain valves would be better, but one will drain the pump casing.

- | | | | |
|-----|--|--|---|
| 11. | Determines minimum valves required open to vent 1A CCW pump per PID D175002 SH1. | Determines correct valve TPNS numbers from drawing:

QV156A,

QV279A,

QV156D.
(CUE: None.) |

S / U

S / U

S / U |
|-----|--|--|---|

EVALUATION CHECKLIST

**RESULTS:
(CIRCLE)**

ELEMENTS:

STANDARDS:

12. Determines Nomenclature of minimum valves required open to vent 1A CCW pump per SOP-23A Pg 14 & 15

Determines correct valve Nomenclature from SOP-23A Pg 14 & 15:

Q1P17V156A, 1A CCW PUMP VT. S / U

Q1P17V279A, 1A CCW PUMP SUCT LINE VT. S / U

Q1P17V156D, 1A CCW PUMP VT.
(CUE: None.) S / U

13. Sequence the vent valves.

Vent valves can be in any order but should be listed after the drain valves. S / U

For a critical task, only one vent valve has to be opened to meet the task as written. More vent valves would be better, but one will vent the pump casing.

STOP TIME

Terminate when all elements of the task have been completed.

SEE PROVIDED CORRECT TAGOUT FOR GRADING PURPOSES.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-23.0, Version 57
2. PID D175002
3. NMP-AD-003, Equipment Clearance and Tagging
4. K/A: G2.1.24 RO 2.8 SRO 3.1

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

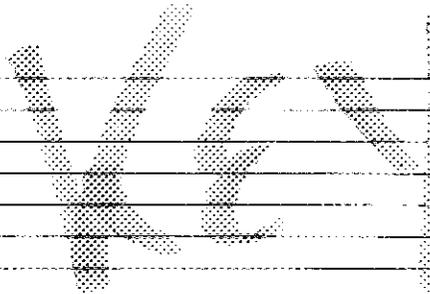
Provide NMP-AD-003, Equipment Clearance and Tagging procedure, P&IDs D175002 and D177184 and FNP-1-SOP-23.0A and several blank tagging order sheets for them to write a new tagging order if needed.

CONDITIONS

When I tell you to begin, you are to REVIEW A TAG OUT. The conditions under which this task is to be performed are:

- a. Unit 1 is at 100% power.
- b. The Rover has reported that the 1A CCW pump casing has a crack and is leaking.
- c. The eSOMS clearance computer program is not available and a manual tag out has been prepared.
- d. The most recent tag out number issued prior to this tag out was: 1-DT-05-P17-00127
- e. The most recent tag serial number issued prior to this tag out was: 500
- f. You have been directed by the Shift Supervisor to review the tag out, make any needed corrections, and submit a correct Tagout which will isolate the 1A CCW pump to stop the leak and allow repairs to the pump casing.

Figure 6 – Tagout Cover Sheet KEY



Tagout Cover Sheet

Clearance:	1-DT-05
Tagout:	1-DT-05-P17-00128
Component Affected:	Q1P17P001A-PUMP
Description:	1A CCW PUMP
OPS Instructions:	Align B Pump to B train ROUTE TO PROPERLY MARKED DRUMS. DRAIN AND PUMP AS NECESSARY TO A LEVEL BELOW 1A CCW PUMP CASING. THE CCW ROUTED TO THE DRUMS WILL NOT BE RE-USED.
Holder Instructions:	Pump is tagged out electrically and mechanically
References:	175002/1 SOP-23.0 SOP-23.0A

Tagout Attributes:

Attribute Description	Attribute Value
N/A	N/A

WorkDoc Holder List:

Number / Equipment ID	Description	1 st Verified	2 nd Verified
561307	1A CCW PUMP CASING LEAKING	<i>OR [Signature]</i>	1/10/05

Tagout Verification:

Status	Description	Name	Verification Date
Prepared	Prepared	<i>OR [Signature]</i>	1/10/05
Reviewed	Reviewed		
Authorized	Authorized		
Tags Verified Hung	Tags Verified Hung		
Removal Prepared	Removal Prepared		
Removal Reviewed	Removal Reviewed		
Removal Authorized	Removal Authorized		
Tags Verified Removed	Tags Verified Removed		
Records Forwarded	Records Forwarded		

*This is a correct
TAGOUT*

Figure 7 – Tagout Tag Listing

Tagout Tag List
 Clearance: #: 1-DT-05
 Tagout: #: 1-DT-05-P17-00128

Tag Num	Equipment Type	Equipment Description/Location	Placement			Restoration					
			Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif
0	INFO	<u>Q1P17P001B-PUMP</u> 1B CCW PUMP 100' non-rad aux. bldg	IV	1	<u>Verify 1 B CCW PUMP aligned to B train</u>						
501	DAN GER	<u>Q1P17P001A MCB</u> H/S 1A CCW PUMP MCB	IV	2	<u>STOP</u>						
502	DAN GER	<u>Q1P17P001A-LOC/REM</u> 1A CCW PUMP Local/Remote Sel. SW. (Hot Shutdown Panel 1C)	IV	3	<u>REMOTE</u>						
503	DAN GER	<u>Q1R15BKRDG04</u> 1A CCW PUMP, 4160V BUS 1G-U1-AB-N/R-121' SWGR Room	IV	4	<u>RACKED OUT</u>						
504	DAN GER	<u>Q1P17V002A</u> 1A CCW PUMP DISCH ISO AUX BLDG 100'-CCW HX RM	CV	5	<u>CLOSED</u>						
505	DAN GER	<u>Q1P17V109A</u> 1A CCW PUMP SUCT AUX BLDG 100'-CCW HX RM	CV	6	<u>CLOSED</u>						

Equipment Clearance and Tagging

Figure 7 -- Tagout Tag Listing

Tagout Tag List

Clearance: # : 1-DT-05
Tagout: #: 1-DT-05-P17-00128

Tag Num	Type	Equipment Description/Location	Placement			Restoration				
			Equipment	Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif		
506	DAN GER	Q1P17V144A 1A CCW PUMP MINI-FLOW AUX BLDG 100'-CCW HX RM		CV	7 (8)	CLOSED				
507	DAN GER	Q1P17V278A 1A CCW PUMP CHEM MIXING ISO AUX BLDG 100'-CCW HX RM		CV	8 (7)	CLOSED				
508	No-tag	Q1P17V157A 1A CCW PUMP DRN AUX BLDG 100'-CCW HX RM		CV	9 (10)	OPEN				
509	No-tag	Q1P17V157B 1A CCW PUMP DRN AUX BLDG 100'-CCW HX RM		CV	10 (9)	OPEN				
510	No-tag	Q1P17V279A 1A CCW PUMP SUCT LINE VT AUX BLDG 100'-CCW HX RM		CV	11 (12 or 3)	OPEN				

These could be done in A different order (i.e. see notes 8/13)

Vents and drains can be reversed also

(only one drain valve is required)

(only one vent valve is required)



Figure 7 – Tagout Tag Listing

Tagout Tag List

Clearance: # :	1-DT-05
Tagout: #:	1-DT-05-P17-00128

511	No-tag	Q1P17V156A 1A CCW PUMP VT AUX BLDG 100'-CCW HX RM	CV 12 (11 or 13)	OPEN				
512	No-tag	Q1P17V156D 1A CCW PUMP VT AUX BLDG 100'-CCW HX RM	CV 13 (11 or 12)	OPEN				



Figure 6 – Tagout Cover Sheet

Tagout Cover Sheet

Clearance:	1-DT-05
Tagout:	1-DT-05-P17-00128
Component Affected:	Q1P17P001A-PUMP
Description:	1A CCW PUMP
OPS Instructions:	Align B Pump to B train ROUTE TO PROPERLY MARKED DRUMS. DRAIN AND PUMP AS NECESSARY TO A LEVEL BELOW 1A CCW PUMP CASING. THE CCW ROUTED TO THE DRUMS WILL NOT BE RE-USED.
Holder Instructions:	Pump is tagged out electrically and mechanically
References:	175002/1 SOP-23.0 SOP-23.0A

Tagout Attributes:

Attribute Description	Attribute Value
N/A	N/A

WorkDoc Holder List:

Number / Equipment ID	Description	1 st Verified	2 nd Verified
561307	1A CCW PUMP CASING LEAKING	<i>[Signature]</i>	1/10/05

Tagout Verification:

Status	Description	Name	Verification Date
Prepared	Prepared	<i>[Signature]</i>	1/10/05
Reviewed	Reviewed		
Authorized	Authorized		
Tags Verified Hung	Tags Verified Hung		
Removal Prepared	Removal Prepared		
Removal Reviewed	Removal Reviewed		
Removal Authorized	Removal Authorized		
Tags Verified Removed	Tags Verified Removed		
Records Forwarded	Records Forwarded		

Mistakes Noted
in Red

Figure 7 – Tagout Tag Listing

Tagout Tag List

Clearance: # :	1-DT-05
Tagout: #:	1-DT-05-P17-00128

Tag Num	Type	Equipment ID Description/Location	Placement				Restoration						
			Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	
0	INFO	Q1P17P001B-PUMP 1B CCW PUMP 100' non-rad aux. bldg	IV	1	Verify 1 B CCW PUMP aligned to B train								
501	DAN GER	Q1P17P001A- LOC/REM 1A CCW PUMP Local/Remote Sel. SW. (Hot Shutdown Panel 1C)	IV	2	REMOTE								
502	DAN GER	Q1R15BKRF04 1C CCW PUMP, 4160VBUS 1F-U1-AB-N/R-121' SWGR Room	IV	3	RACKED OUT								
509	DAN GER	Q1P17V001A 1A CCW PUMP DISCH CHECK VALVE AUX BLDG 100'-CCW HX RM	CV	4	VALVE INTACT								

0 of 400
 of 400
 of 400

Equipment Clearance and Tagging

Figure 7 -- Tagout Tag Listing

Tagout Tag List

Clearance: # :	1-DT-05
Tagout: #:	1-DT-05-P17-00128

Tag Num	Equipment Type	Equipment Description/Location	Placement			Restoration				
			Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	Configuration Notes	1 st Verif	2 nd Verif
504	DAN GER	Q1P17V109A 1A CCW PUMP SUCT AUX BLDG 100'-CCW HX RM	CV	5	CLOSED					
505	DAN GER	Q1P17V278A 1A CCW PUMP CHEM MIXING ISO AUX BLDG 100'-CCW HX RM	CV	6	CLOSED					
506	No-tag	Q1P17V157A 1A CCW PUMP DRN AUX BLDG 100'-CCW HX RM	CV	7	OPEN <i>wrong sequence</i>					
507	DAN GER	Q1P17V144A 1A CCW PUMP MINI-FLOW AUX BLDG 100'-CCW HX RM	CV	8	CLOSED					
508	No-tag	Q1P17V157B 1A CCW PUMP DRN AUX BLDG 100'-CCW HX RM	CV	9	OPEN					
509	No-tag	Q1P17V279A 1A CCW PUMP SUCT LINE VT AUX BLDG 100'-CCW HX RM	CV	10	OPEN					

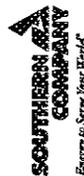


Figure 7 – Tagout Tag Listing

Tagout Tag List

Clearance: # : 1-DT-05
Tagout: #: 1-DT-05-P17-00128

510	No-tag	Q1P17V156A 1A CCW PUMP VT AUX BLDG 100'-CCW HX RM	CV	11	OPEN				
511	No-tag	Q1P17V156D 1A CCW PUMP VT AUX BLDG 100'-CCW HX RM	CV	12	OPEN				

CONDITIONS

When I tell you to begin, you are to REVIEW A TAG OUT. The conditions under which this task is to be performed are:

- a. Unit 1 is at 100% power.
- b. The Rover has reported that the 1A CCW pump casing has a crack and is leaking.
- c. The eSOMS clearance computer program is not available and a manual tag out has been prepared.
- d. The most recent tag out number issued prior to this tag out was: 1-DT-05-P17-00127
- e. The most recent tag serial number issued prior to this tag out was: 500
- f. You have been directed by the Shift Supervisor to review the tag out, make any needed corrections, and submit a correct Tagout which will isolate the 1A CCW pump to stop the leak and allow repairs to the pump casing.

Figure 6 – Tagout Cover Sheet

Tagout Cover Sheet

Clearance:	1-DT-05
Tagout:	1-DT-05-P17-00128
Component Affected:	Q1P17P001A-PUMP
Description:	1A CCW PUMP
OPS Instructions:	Align B Pump to B train ROUTE TO PROPERLY MARKED DRUMS. DRAIN AND PUMP AS NECESSARY TO A LEVEL BELOW 1A CCW PUMP CASING. THE CCW ROUTED TO THE DRUMS WILL NOT BE RE-USED.
Holder Instructions:	Pump is tagged out electrically and mechanically
References:	175002/1 SOP-23.0 SOP-23.0A

Tagout Attributes:

Attribute Description	Attribute Value
N/A	N/A

WorkDoc Holder List:

Number / Equipment ID	Description	1 st Verified	2 nd Verified
561307	1A CCW PUMP CASING LEAKING	<i>[Signature]</i>	1/10/05

Tagout Verification:

Status	Description	Name	Verification Date
Prepared	Prepared	<i>[Signature]</i>	1/10/05
Reviewed	Reviewed		
Authorized	Authorized		
Tags Verified Hung	Tags Verified Hung		
Removal Prepared	Removal Prepared		
Removal Reviewed	Removal Reviewed		
Removal Authorized	Removal Authorized		
Tags Verified Removed	Tags Verified Removed		
Records Forwarded	Records Forwarded		

Equipment Clearance and Tagging

Figure 7 -- Tagout Tag Listing

Tagout Tag List

Clearance: # :	1-DT-05
Tagout: #:	1-DT-05-P17-00128

Tag Num	Type	Equipment ID Description/Location	Placement				Restoration						
			Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	
0	INFO	Q1P17P001B-PUMP 1B CCW PUMP 100' non-rad aux. bldg	IV	1	Verify 1 B CCW PUMP aligned to B train								
501	DAN GER	Q1P17P001A- LOC/REM 1A CCW PUMP Local/RemoteSel. SW. (Hot Shutdown Panel 1C)	IV	2	REMOTE								
502	DAN GER	Q1R15BKRF04 1C CCW PUMP, 4160VBUS 1F-UT-AB-N/R-121' SWGR Room	IV	3	RACKED OUT								
503	DAN GER	Q1P17V001A 1A CCW PUMP DISCH CHECK VALVE AUX BLDG 100'-CCW HX RM	CV	4	VALVE INTACT								

Figure 7 -- Tagout Tag Listing

Tagout Tag List
 Clearance #: 1-DT-05
 Tagout #: 1-DT-05-P17-00128

Tag Num	Equipment Type	Equipment ID Description/Location	Placement			Restoration			
			Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	1 st Verif	2 nd Verif
504	DAN GER	Q1P17V109A 1A CCW PUMP SUCT AUX BLDG 100'-CCW HX RM	CV	5	CLOSED				
505	DAN GER	Q1P17V278A 1A CCW PUMP CHEM MIXING ISO AUX BLDG 100'-CCW HX RM	CV	6	CLOSED				
506	No-tag	Q1P17V157A 1A CCW PUMP DRN AUX BLDG 100'-CCW HX RM	CV	7	OPEN				
507	DAN GER	Q1P17V144A 1A CCW PUMP MINI-FLOW AUX BLDG 100'-CCW HX RM	CV	8	CLOSED				
508	No-tag	Q1P17V157B 1A CCW PUMP DRN AUX BLDG 100'-CCW HX RM	CV	9	OPEN				
509	No-tag	Q1P17V279A 1A CCW PUMP SUCT LINE VT AUX BLDG 100'-CCW HX RM	CV	10	OPEN				

Figure 7 – Tagout Tag Listing

Tagout Tag List

Clearance: # :	1-DT-05
Tagout: #:	1-DT-05-P17-00128

510	No-tag	Q1P17V156A 1A CCW PUMP VT AUX BLDG 100'-CCW HX RM	CV	11	OPEN				
511	No-tag	Q1P17V156D 1A CCW PUMP VT AUX BLDG 100'-CCW HX RM	CV	12	OPEN				

Page 4 of 4

Procedure Owner: P. D. Rushton / Nuclear Support General Manager / Vogtle Project
 (Print: Name / Title / Site)

Approved By: N/A Original initialed by Bill Arens for Ray Martin
 (Procedure Owner's Signature / Date)

Effective Dates: N/A 10/29/2004 7/07/04 7/13/04*
 Corporate FNP HNP VEGP

*Vogtle applicability phased in according to SyncPowr implementation schedule.

The individuals listed below are the members of the Peer Team responsible for the creation and maintenance of this procedure.

- | | |
|----------------------------------|--------------------|
| Farley Nuclear Plant | Ray Martin |
| Hatch Nuclear Plant | John I. Hammonds |
| Vogtle Electric Generating Plant | Steve M. Douglas |
| SNC Corporate Office | Paul D. Rushton |
| Executive Sponsor | L. Michael Stinson |

Site Specific Changes

Minor Version 3.1, change for Plant Farley. Page 17 step 6.12.1, removed wording "at the end of the shift or" and "whichever occurs first".

PROCEDURE USAGE REQUIREMENTS		SECTIONS
Continuous Use:	Procedure must be open and readily available at the work location. Follow procedure step by step unless otherwise directed by the procedure.	
Reference Use:	Procedure or applicable section(s) available at the work location for ready reference by person performing steps.	
Information Use:	Available on site for reference as needed.	ALL

Table of Contents

	<u>Page</u>
1.0 Purpose	3
2.0 Applicability	3
3.0 References	3
4.0 Definitions	3
5.0 Responsibilities	5
6.0 Procedure	8
7.0 Records	23
8.0 Commitments	23
Figure 1 – Sample Danger Tags	28
Figure 2 – Sample Caution Tags	29
Figure 3 – Sample Op Permit Tags	30
Figure 4 – Sample Temp Lift Tags	31
Figure 5 – Sample PDT Tags	32
Figure 6 – Tagout Cover Sheet	33
Figure 7 – Tagout Tag Listing	34
Figure 8 – Temp Lift Sheet	35
Figure 9 – PDT Documentation Sheet For Non-Power Plant Equipment	36
Figure 10 – Work Document/Tagout Holder Lists	37
Figure 11 – Clearance Tagout Log Sheet	38
Figure 12 - Equipment Clearance And Tagging Flowcharts	39
Figure 13 – Clearance Tagout Audit Results Form	45
Appendix 1 - Tag Standards	46
Appendix 2 - Tagout Standards	52
Appendix 3 – Tagout Restoration	58
Appendix 4 - General Techniques For Venting And Draining	59
Appendix 5 - PDT Tags/Maint. Lock Use With Operating Permit Tags	60
Appendix 6 – Non-Power Plant Personal Danger Tag Usage	62
Appendix 7 - Farley Nuclear Plant Special Considerations	64
Appendix 8 - E. I. Hatch Nuclear Plant Special Considerations	65
Appendix 9 - Vogtle Electric Generating Plant Special Considerations	66

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <i>Energy to Serve Your World™</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 3 of 66

1.0 Purpose

This procedure establishes administrative controls for protection of personnel and plant equipment during operation, maintenance, inspection, modification and testing activities. Further, it establishes a method for providing special instructions or cautions as necessary. Additionally, provisions of the procedure ensure that the status of safety-related and other important equipment is verified when the equipment is removed from and restored to service.

2.0 Applicability

This procedure applies to all SNC Nuclear Power Plants and shall be implemented for the equipment under the control of the individual site General Managers.

3.0 References

- 3.1 NMP-OS-002, "Verification Policy"
- 3.2 29CFR1910.269, Electric Power Generation, Transmission and Distribution Standard

4.0 Definitions

- 4.1 **Alternate Boundary** – A boundary equivalent to that formed by tagging the Main Steam Isolation Valves/Plugs closed. This "alternate" boundary is established administratively by maintaining the reactor less than 200 °F at Vogtle or Farley and <150°F at Hatch, and by also maintaining reactor vessel level less than Main Steam Lines at Plant Hatch.
- 4.2 **Alternate Release** – A release authorized by the Shift Manager in the event that Tagout release is required and a Work Document Holder cannot be contacted and is not on site.
- 4.3 **Authorizer** – An individual qualified to initiate implementation of Tagouts on an operating plant.
- 4.4 **Authorized Employee** – An individual designated as the "lead" person responsible for the overall direction of a crew performing maintenance when using a PDT. Usually this will be the person who hangs their Personal Danger Tags to perform work.
- 4.5 **Boundary Point** – Those components such as isolation valves and/or electrical isolation devices that are required to be tagged to provide plant and personnel safety during work activities or procedural performance.
- 4.6 **Caution Tag** - A tag used to provide special operating instructions for equipment. It may also be used to provide general information on equipment condition. Caution Tags are similar to that shown on Figure 2, and are yellow with black lettering.
- 4.7 **Clearance** - A folder containing Clearance types addressed in Section 6.2 of this procedure. The Clearance number will be a 3-part alpha numeric designator using the unit number, Tagout type, and the year issued. Example: 1-DT-04 a unit one Danger Tag issued in 2004. The unit 1 designator will be used for unit one and common equipment.
- 4.8 **Danger Tag** - A tag which, when attached to a component, prohibits the operation of that component in all circumstances except as specified in Appendix 1 section 2.1.1. Danger

tags are similar to that shown on Figure 1, and are red with black lettering.

- 4.9 **INFO ONLY Step** – A Tagout step in which no Configuration position is given. This type step may be used to provide additional information or initiate a Tagout control (such as MSIV alternate boundaries).
- 4.10 **Maintenance Lock** - An individually keyed lock used to isolate electric power to a component being tested or repaired in conjunction with an Operating Permit.
- 4.11 **Non-Power Plant Equipment** – Any equipment that has no effect on the operation of the plant, such as equipment located in out buildings. Personnel should consult with the Shift Supervisor if in doubt when making this determination. Equipment not meeting this definition should be considered “Power Plant Equipment”.
- 4.12 **Operating Permit Tag (Op Tag)** – A tag which, when attached to a component, identifies the component as being released to an Operations Permit Tagout Holder for component position alignment, testing or maintenance. Op Tags are similar to that shown on Figure 3, and are blue with white lettering.
- 4.13 **Personal Danger Tag (PDT)** - A tag, hung by an approved PDT user, and used in conjunction with either an Operating Permit Tagout or with a PDT Documentation Sheet (Figure 9).
- 4.14 **Power Plant Equipment** – Any equipment that can have an effect on the operation of the plant as designated per Site procedures. Personnel should consult with the Shift Supervisor if in doubt when making this determination.
- 4.15 **Preparer** – An individual qualified to prepare tagouts.
- 4.16 **Reviewer** – An individual qualified to review tagouts.
- 4.17 **Tagger** – A qualified person, who repositions equipment per a Tagout and hangs, removes or verifies tags.
- 4.18 **Tagging Official** - The Tagging Desk Operator (TDO), Unit Shift Supervisor C&T (USS C&T), Shift Support Supervisor (SSS), Shift Technical Advisor (STA) or Shift Supervisor that may perform all Clearance and Tagging functions outlined in this procedure. The Tagging Official can serve as designee for the Shift Supervisor, provided that person is cognizant of the plant’s status/configuration and the Shift Supervisor is made aware of all resultant changes to the plant configuration.
- 4.19 **Tagout** – A tool used to uniquely identify and authorize a collection of data to remove equipment from service, track component changes, track activities associated with the entity and return the equipment to service. A Tagout is a unique document that is used once and only once and is then stored as a completed document.
- 4.20 **Tagout Holder** – An individual or a “Plant Position” identified on a Tagout Holder List. This individual is usually the “lead” person responsible for the overall direction of a crew performing maintenance or an individual requiring administrative hold on a Tagout. It can also be the “Authorized Employee” or “lead” person responsible for performing a test or maintenance under an Operating Permit Tagout.

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		NMP-AD-003 Version 3.1 Page 5 of 66

- 4.21 **Tagout Number** – A unique control number assigned to a Tagout document. The Tagout Number will be a 6-part alpha numeric designator using the unit number, Clearance Tagout Type, year or outage identifier, system number, consecutive or assigned number and the revision number. Example: 1-DT-04-1208(E11)-00014(002) would be the second revision of the fourteenth Danger Tagout document issued in 2004. The unit 1 designator will be used for unit one and common equipment. Computer generated Tagouts will be assigned the next sequential number available. Manual or hand written Tagouts will be numbered sequentially starting with the number 30,000 proceeded by the unit, Tagout type, system number and year. An index will be maintained to prevent duplication of manually generated Tagout numbers and can be discarded at the end of the calendar year.
- 4.22 **Tagout Point** – Any device, valve, breaker, switch, etc. that is positioned by a step on a Tagout.
- 4.23 **Tag Numbers** – The number placed on each Tag. The Tag Number will be a 4-part alpha numeric designator using the unit number, Clearance Tagout Type, year issued, and the consecutive number. Example: 1-DT-04--00014 would be the fourteenth Danger Tag issued in 2004. Outage Tags will be identified by the Outage number replacing the year issued field. Example 1-DT-R14-00014 the R14 would identify the Outage code. Manual or hand written tags will be numbered sequentially starting with the number 30,000 proceeded by the unit, Clearance Tagout type, and year. An index will be maintained to prevent duplication of manually generated tag numbers and can be discarded at the end of the calendar year.
- 4.24 **Tags** – See Appendix 1 Tag Standards for Tag definitions.
- 4.25 **Temporary Lift (Temp Lift)** - The act of releasing one or more Tagout points with the possibility or intent to reinstall the Tagout points at a later time. This is performed after the component or subsystem has been placed in a configuration that assures personnel safety and the safe operation of plant equipment.
- 4.26 **Verification** - The “second check” of a component’s condition/position. Performed by an individual other than the one who performed the initial check/positioning. Requirements for verification can be found in procedure NMP-OS-002, “Verification Policy” or site specific procedures as applicable.
- 4.27 **Work Document Holder** - An individual, who may sign-on a Tagout to identify that they are working under the protection of the Tagout. The individuals signing-on to the Tagout will do so by entry of the work document, user name, and date/time on to the Work Document/Holder List. This may be done by the worker performing “hands on” work or by the Job Lead who is a representative of the workers that require the protection of a Tagout “boundary” to safely perform their assigned work.

5.0 Responsibilities

5.1 General Manager Nuclear Plant

Ensuring that plant personnel are informed of their individual responsibilities regarding the Equipment Clearance and Tagging Procedure

Southern Nuclear Operating Company		
 Nuclear Management Procedure	Equipment Clearance and Tagging	NMP-AD-003 Version 3.1 Page 6 of 66

5.2 Department Managers (all Departments)

- Ensures all department personnel (including contractors) working for their department are trained on and comply with this procedure
- Defining Departmental Titles "by Plant Position" that may be Tagout Holders, and a list of personnel in the department which can sign on as Tagout Holder by those Positions
- Will designate which individuals or groups can perform the tagging functions specified in this procedure
- Approve individuals that may use Personal Danger Tags

5.3 Operations Manager - In addition to the Department Manager responsibilities listed above, the Operations Manager is responsible for:

- Implementation of this procedure
- Ensuring clearance audit requirements specified in this procedure are met

5.4 Training Manager - In addition to the Department Manager responsibilities listed above, the Training Manager is responsible for:

- Providing Equipment Clearance and Tagging training when requested by Department Managers
- Providing Department Managers with a list of their personnel who successfully complete Equipment Clearance and Tagging training

5.5 Shift Manager

- Authorizes release of a Tagout, for a Work Document Holder when the Holder is not on site and cannot be contacted to gain their approval (Alternate Release)
- Provides approval when using a check valve as a boundary point
- Making decisions in situations not clearly covered by this procedure

5.6 Shift Supervisor

- Evaluates the impact of a Tagout on plant operations and configuration control. The evaluation should ensure unaffected systems or components are not impacted
- Ensuring Technical Specifications, ODCM, TRM and Fire Protection Program requirements are met when implementing Tagouts
- Authorization of all Tagouts
- Authorizing Temp Lifts
- Ensuring Tagout audits and reviews are performed as specified in this procedure

The Tagging Desk Operator (TDO), Unit Shift Supervisor C&T (USS C&T), Shift Support Supervisor (SSS) or Shift Technical Advisor (STA) may perform all Clearance and Tagging functions outlined above, provided that person is cognizant of the plant's status/configuration and the Shift Supervisor is made aware of all resultant changes to the plant configuration.

Southern Nuclear Operating Company		
 SOUTHERN NUCLEAR COMPANY <i>Energy to Serve Your World™</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 7 of 66

5.7 Department Supervisor

- Provide approval for use of a check valve as a boundary point
- Releasing a Tagout, for a Work Document Holder when the Holder is not on site but can be contacted to gain their approval

5.8 All Personnel (plant personnel and contractors)

- Observing equipment for the presence of Tagout tags
- Complying with the warnings/instructions on Tagout tags
- Reporting of misplaced, loose or missing tags to the Tagging Official - Personnel shall not attempt to reattach misplaced or loose tags without proper authorization

5.9 Tagout Holder

- Overall responsibility for the workers and the work activities under their control and performed under the protection of a Tagout (i.e. the Job Supervisor or Job Lead). As the job lead, may sign off another Tagout Holder or accept a Temp Lift for another Tagout Holder, however assumes all responsibilities of that Tagout Holder when doing so
- Review the Tagout for applicable precautions and/or limitations
- Verify Tagout points are adequate for the work activities under their control before allowing their personnel to work
- Verifies Tagout boundaries remain adequate for the work activities under their control for the duration of holding the Tagout.
- Ensuring that they sign on as Tagout Holder before allowing their crew to commence work
- Informing each crew member under their direction of the limits of the Tagout when directing a crew to perform work under that Tagout
- Verifies workers are clear and the equipment is ready to admit energy prior to signing off as the Tagout Holder
- If holding for Administrative purposes, ensure boundaries remain adequate to support the Administrative need.

5.10 Work Document Holder

Each individual worker must satisfy for themselves that it is safe to perform work, before commencing work

The Individual or Job Lead signing onto the Tagout as Work Document Holder will perform the following:

- Review the Tagout for applicable precautions and/or limitations
- Verify Tagout points are adequate for the work before performing work
- Sign on as Work Document Holder before commencing work
- Sign off as Work Document Holder at the end of each workday or at the completion of the job.

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <i>Energy to Serve Your World</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 8 of 66

6.0 Procedure

NOTES: This procedure contains an APPENDIX for each site that lists additional requirements unique to that site. The appropriate APPENDIX should be reviewed when determining requirements for any given situation.

Active Clearances, Tag Orders, tags and supporting documentation that were created and placed under Site Specific Procedures (i.e. prior to the creation of this shared NMP) may remain in place, however, closeout of those items should follow the "process" defined in this procedure when possible.

6.1 General

- 6.1.1 Any employee that may be exposed to hazardous energy of any type shall be protected by Danger tags and signed on the Tagout. An Operating Permit Tag with a PDT or Maintenance Lock may be used to provide individual personnel protection for certain activities.
- 6.1.2 Any questions or doubt in connection with use of Tagout tags or associated safe working conditions should be referred to the Shift Supervisor or Shift Manager until the matter is resolved.

6.1.3 Work Activities that do not require a Tagout

6.1.3.1 Work performed where the individual performing the work has continuous, direct control over the isolation device. Examples of these work activities include, but are not limited to, the following:

- Work on plug-in devices, such as recorders
- Installation of jumpers to perform testing

When these activities are performed without a Tagout, the equipment must be removed and returned to service in accordance with approved procedures.

6.1.3.2 Work performed where controlled plant conditions are maintained with minimal risk to workers or equipment. Examples of this are, but are not limited to, activities such as removal of pressurizer code safety valves or steam generator primary manways, and work performed inside the reactor cavity.

6.1.4 Maintenance Issues

6.1.4.1 Personnel performing work on mechanical systems should initially assume the system may not be drained when breaching the pressure boundary. This can happen due to problems with drain lines clogging or drain valves stuck closed etc. Extreme care should be utilized when first breaching the system pressure boundary. Techniques such as slowly loosening studs, partial loosening of fittings, etc. should be utilized to minimize the potential for spillage or pressure release in the event the system has not been adequately depressurized and drained.

Southern Nuclear Operating Company		
	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 9 of 66

6.1.4.2 Work will not be performed on a valve that has a Danger tag on its hand wheel except for special cases (Refer Appendix 1 Step 2.1.1) which may be exempted from this requirement. Concurrence must be obtained from Operations and Maintenance Management.

6.1.4.3 Components will not be removed from the system (i.e. physically cut out of the system) with Clearance Tagout tags still attached. If necessary, the Tagging Official should be contacted and the tag removed in accordance with the requirements of this procedure.

6.1.4.4 Personnel performing work on electrical systems should initially assume the circuit is energized. The worker will verify the circuit is de-energized using an appropriate circuit potential testing device before commencing work.

6.1.4.5 Performance of work activities on tagged breakers/cubicles

6.1.4.5.1 The intent of tagging electrical breakers is to electrically isolate the load side to establish a safe boundary for load side work. Electrical maintenance or other work activities which cannot energize the load side are permitted inside this boundary. Also, it is permissible to remove tagged "rackable type" breakers from cubicles providing the following conditions are met:

- Breakers must be in the "open-racked out" or "disconnect" condition with the tag on the door.
- Breakers must be returned to the cubicle location in the original tagged configuration when work is complete.

A molded case circuit breaker that is Danger Tagged cannot have maintenance performed on it or be removed from the panel. The Tagging Official should be contacted and the tag removed in accordance with the requirements of this procedure.

6.1.4.6 A Maintenance Lock may be used to isolate power to components during performance of maintenance or testing when periodic de-energization is required provided:

- The power supply has been tagged by a Danger Tagout and a Temporary Lift has been issued or,
- The power supply has been tagged by a Personal Danger Tag or,
- An Operating Permit Tagout has been installed.

The Maintenance Department is responsible for control and installation of Maintenance Locks. The use of Maintenance Locks is determined by the Tagout Holder.

6.1.5 Computer/Software Related Issues

- 6.1.5.1 Computer software may be used to generate and administrate Tagouts. If required however, Tagouts may be written manually on forms similar to the computer generated forms, provided the general process requirements (Preparation, Review, Authorization, Placement, Verification, Signing on as Tagout Holder, Work Document Holder, etc.) remain the same.
- 6.1.5.2 The forms described in this procedure are typical and may vary slightly in content from site to site. A current copy of the blank forms used to support the manual tagging process shall be maintained by Operations.
- 6.1.5.3 The computer file will normally be the "official version" or QA record copy of each Tagout. In the event a manual Tagout is generated, the hardcopy will be the QA record copy.
- 6.1.5.4 Users performing Verifications (i.e. Preparers, Reviewers, Authorizers, and Taggers) shall document their actions associated on a Tagout. This should be done by entry of their User ID and Password. When this documentation can not be performed by the performer of the action another individual(documenter) may document the action provided:
- The documenter enters their own User ID and Password, and,
 - An entry is made in the Tagout Change Log to that effect (for example, "Step 5, Placement Verification, signed off by Al Covington with permission from Hans Bishop per telecon, Time & Date").

6.2 Clearance Tagout Types

6.2.1 Danger Tagouts

- 6.2.1.1 Danger Tagouts shall be used whenever a tag is to be placed to provide personnel protection.
- 6.2.1.2 Danger Tagouts are the only Tagouts used to provide protection for personnel.
- 6.2.1.3 Two tag types are allowed under Danger Tagouts.
- Danger tags when required for personnel protection
 - Caution tags when required to provide additional information

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <i>Energy to Serve Your World®</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 11 of 66

6.2.2 Caution Tagouts

- 6.2.2.1 A Caution Tagout is used to provide special operating instructions for equipment that may be out of its normal alignment or operating mode. It may also be used to provide general information on equipment condition or configuration.
- 6.2.2.2 The only tag types allowed are Caution tags. Caution Tagouts may not have Danger tags listed on them.
- 6.2.2.3 A required component configuration may be specified. If no configuration is required at Placement, the configuration may be assigned as "N/A".
- 6.2.2.4 Caution Tagouts do not require Review.
- 6.2.2.5 The Tagging Official will determine if verification is required.

6.2.3 Operating Permit Tagouts

- 6.2.3.1 Operating Permit Tagouts may be used to track components turned over to a Tagout Holder to allow for testing, minor maintenance or configuration control.
- 6.2.3.2 Only a single Tagout Holder is allowed to hold an Operating Permit Tagout.
- 6.2.3.3 Operating Permit Tagout approval process requires at a minimum Placement Authorization and Removal Authorization from the Shift Supervisor.
- 6.2.3.4 Operating Permit tags shall not be placed on Danger tags.
- 6.2.3.5 If plant conditions require isolation of the equipment to perform testing or minor maintenance a Danger Tagout shall be created. Both Tagouts must cross reference the other Tagout when this is performed.
- 6.2.3.6 Operating Permit Tagouts will annotate the reason for the Tagout. Each Operating Permit tag will state the reason for the Tagout. (i.e. MOV, LLRT, Config Cont. etc)

6.2.4 Personal Danger Tag (PDT)/Maintenance Lock

- 6.2.4.1 PDT or Maintenance Lock programs will be administered as described in Appendix 5 & 6. This program will not be performed electronically.

6.3 Referenced Tagouts

- 6.3.1 If when preparing a Tagout, it is found that the work scope requires the use of more than one Tagout to fully isolate a work area, an additional Tagout may be created to work in conjunction with the first to cover the specific work activity. Each Tagout will contain a cross-reference to the other. The work order should also have a reference to all Tagouts necessary for performance of the applicable work scope.
- 6.3.2 The Tagging Official reviewing the Tagout for completeness shall ensure all Tagouts are cross-referenced on all associated Tagouts. The Tagout Holder is responsible for

Southern Nuclear Operating Company		
	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 12 of 66

signing on all Tagouts necessary to ensure his work is protected.

6.4 Outage Tagouts

6.4.1 Administrative Tagout

6.4.2 During outages, an Administrative Tagout may be used as necessary to control certain physical boundaries or process parameters. The Tagout does not require physical tags; instead it requires Operations to control the boundaries or parameters. An Administrative Tagout will provide worker assurance that fluid or gas will not enter their work area

6.4.2.1 This type of Tagout must be clearly identified as an "Administrative Tagout" on the Tagout. Administrative Tagouts may only be used with Operations and Maintenance Management concurrence.

6.4.2.2 Blocking Tagouts or the use of MSIV Alternate Boundaries are methods of control that may be used. These controls will be identified by the use of "INFO ONLY" step. The control used will be clearly identified in the Placement Notes field.

6.4.2.3 Reference Tagouts listed on Blocking Tagout will be referenced on the Administrative Tagout as well.

6.4.2.4 Tagout/Work Document Holders may sign on to the Administrative Tagout.

6.4.3 Blocking Tagouts

6.4.3.1 A Blocking Tagout provides for a physical boundary to be in place, when working with an Administrative Tagout. The Blocking Tagout will require tags, but workers will not be allowed to sign on as Holders of the Blocking Tagout. The Outage Shift Manager position (or higher) will be the only Tagout Holder for a Blocking Tagout.

6.4.3.2 Blocking Tagouts may be used to control certain physical boundaries or process parameters (i.e. MSIV Alternate Boundaries). The isolation of the boundary may require installation of tags on a physical boundary or it may require Operations to control the conditions or parameters of the plant.

6.4.3.3 Blocking Tagouts may use Referenced Tagouts to completely isolate the work area. The Referenced Tagout must be listed on the both the Blocking and the Administrative Tagouts.

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <i>Energy to Serve Your World</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 13 of 66

6.4.4 MSIV Alternate Boundaries

6.4.4.1 It is permissible to establish an Alternate Boundary in lieu of the MSIVs under the following conditions.

- At Plants Farley and Vogtle Main Steam temperatures are verified to be less than 200 °F
- At Plant Hatch, Main Steam temperatures are verified to be less than 150 °F
- At Plant Hatch, Reactor Vessel level is verified to be less than MSLs
- No pressure such as Nitrogen over pressure exists in the main steam system
- The main steam header has been drained as necessary to ensure no adverse water flow will occur when the MSIV's are opened

6.4.4.2 With Shift Supervisor concurrence and satisfactory completion of the above prerequisites, tags may be placed on appropriate components which will prevent heat input into the main steam system from the reactor. Consideration should be given to the following when selecting appropriate components to tag.

- Nitrogen supply to the main steam lines.
- Auxiliary steam heat from opposite Unit.
- RCP pump heat input to the RCS.
- Pressurizer heater input to the RCS.

6.4.4.3 Tagging of components associated with RCS Pump and Pressurizer Heater heat input to the RCS is not required if the following conditions are met:

- Administrative controls are verified in place to ensure the Reactor Vessel level is maintained less than MSLs at Plant Hatch.
- Administrative controls are verified in place to ensure the RCS is maintained less than 200 °F (Farley/Vogtle) or 150°F (Hatch).
- Administrative controls are in place to ensure MSIVs are re-tagged prior to RCS Temperature exceeding 200 °F (Farley/Vogtle) or 150°F (Hatch), if a MSIV boundary is required.

6.5 Tagout Placement Preparation

NOTE:

Action shall be initiated to correct any database error found such as equipment name or location, etc. during preparation, review, approval and hanging of a Tagout by the individual discovering the error

6.5.1 A Preparer will prepare the Tagout as follows:

6.5.1.1 Review the scope of work to ensure a thorough understanding of the protection needed for personnel and equipment.

6.5.1.2 Using approved documents, determine hazardous energy sources and isolations necessary to provide a safe work boundary for each work activity.

- 6.5.1.3 Identify and assess all potential hazards, automatic actions and/or effects on the plant which may result due to execution of the Tagout. These hazards should be identified in the Tagout Instructions when possible. Guidance should be provided as appropriate to inform and/or prevent any unwanted occurrences.
- 6.5.1.4 If approved documents do not exist for equipment to be tagged, then a physical walk down may be performed.
- 6.5.1.5 Enter the required information on the Tagout.
- 6.5.1.6 Components that are removed from the system or having maintenance performed on them should be identified with a "No-tag" tag type to ensure that it is positioned properly upon placement and removal. Do not hang any other type of tag on that component.
- 6.5.1.7 For components that are positioned but not tagged, mark the tag as a "No-tag" tag type.
- 6.5.1.8 For Tagout points that are to be used for information only an "INFO Step" may be used.
- 6.5.1.9 Utilizing the Tagout points, prepare the Tagout:
- Indicate type of tag
 - Indicate component number and name
 - List the required position and sequence
 - Indicate verification requirements
 - If special instructions are applicable, annotate in appropriate section
- 6.5.1.10 Sign the Tagout as Preparer.
- 6.5.1.11 Sign the Work Documents listed on the Tagout as 1st Verified.
- 6.6 Tagout Placement Review
- 6.6.1 A Reviewer will perform an independent review of the Tagout.
- 6.6.2 Verify the Tagout points and boundary isolations selected provide adequate plant and personnel safety for work activities listed.
- 6.6.3 Verify and assess all potential automatic actions and/or effects on the plant which may result due to execution of the Tagout. Ensure these items are identified and are properly documented on the Tagout when possible.
- 6.6.4 Review the Tagout points for the correct:
- Tag type used
 - Component number and name
 - Position and sequence
 - Placement verifications required

- 6.6.5 Review impact on equipment (including Tech Specs).
- 6.6.6 Review or add any special instructions that apply to the Tagout.
- 6.6.7 Sign the Tagout as Reviewer.
- 6.6.8 Sign the Work Documents listed on the Tagout as 2nd Verified.
- 6.7 Tagout Placement Authorization
- 6.7.1 Review the Tagout to ensure:
- Tagging this system or component does not have an unacceptable impact on current plant operation.
 - Tech Spec and other administrative commitments are satisfied.
 - Tagout hang sequence has been specified
 - Concurrent Verification is specified for any step that requires Verification by a second individual.
- 6.7.2 Sign the Tagout as Authorizer.
- 6.7.3 If placement verification of any component is to be waived, then N/A applicable "Verified By" blocks.
- 6.7.4 Print the Tagout Cover Sheet, Hang List and tags associated with this Tagout.
- 6.7.5 Verify a Tagout hang sequence has been specified.
- 6.7.6 Assign and brief a Tagger to hang the Tagout. If needed, assign and brief a Concurrent Verifier to accompany the Tagger.
- 6.7.7 Ensure appropriate Control Room personnel are notified of the status of the Tagout.
- 6.8 Tag Placement

NOTE:

Generally, tags shall not be hung on components that are not properly labeled. If a component label is missing or in error, consult the Tagging Official before proceeding.

- 6.8.1 Personnel hanging or verifying tags shall have in their possession the applicable Tag Hang List.
- 6.8.2 The Tagger will hang the tags using STAR, as follows:
- 6.8.2.1 Verify all required authorizations have been obtained.
- 6.8.2.2 Review the Tagout detail.
- 6.8.2.3 Ensure the Tagout tagging sequence is followed.

Southern Nuclear Operating Company		
 SOUTHERN NUCLEAR COMPANY <i>Energy to Serve Your World</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 16 of 66

6.8.2.4 Perform the following for each component listed on the Tag Hang List:

- Verify component label matches component identification on the Tag.
- Place or verify components in the required positions.
- Ensure expected response is received.
- Hang the tag on the component (see Appendix 1, step 3.0).
- Utilize place keeping on the Tag Hang List.
- Sign the Tagout as Placement 1st verification.

6.9 Tag Placement Verification

6.9.1 The verifier shall:

- Verify the correct component is tagged.
- Verify the component is in the required position.
- Verify the Tag is readily visible and securely attached.
- Utilize place keeping on the Tag Hang List.
- Sign the Tagout as Placement 2nd verification.

6.10 Tagout Holder (Sign On)

6.10.1 The Tagout Holder shall:

- 6.10.1.1 Review the Tagout for Description, Placement Instructions, and Hazards.
- 6.10.1.2 Review the Tagout boundaries against controlled documents and ensure they are adequate to protect the workers for the scope of work to be performed, prior to starting work.
- 6.10.1.3 Brief workers on work scope and safe work boundary.
- 6.10.1.4 Sign on to applicable Tagout at the beginning of the job, or when assigned to the work.
- 6.10.1.5 Sign on as a Work Document Holder if their personal protection is required.
- 6.10.1.6 The Tagout Holder shall ensure that additional tests are performed prior to starting work, as necessary, to ensure the isolation and release of hazardous energy. Examples include:
- Verification that no voltage is present using a voltage measuring device appropriate for the rated voltage of the system to be tested (on-contact measuring device for systems 600V or less, industry accepted measuring device rated for the system voltage for systems greater than 600V).
 - Verification that a bus is properly grounded.
 - Verification that a system has been completely drained with the exception of minor boundary valve leakage.
 - Use of an installed plant indicator to ensure systems are depressurized and/or cooled down.

6.10.1.7 If the Shift Supervisor holds the Tagout, then the reason should be noted on the Tagout.

6.11 Work Document Holder (Sign On)

6.11.1 The Work Document Holder signs on to applicable Tagout at the beginning of the job, or when assigned to the work.

6.12 Work Document Holder (Sign Off)

6.12.1 The Work Document Holder signs off the work document at the end of the shift or when the Tagout is no longer required, whichever occurs first.

Site Specific Change for Farley

6.12.1 The Work Document Holder signs off the work document when the Tagout is no longer required.

6.13 Tagout Holder (Sign Off)

6.13.1 The Tagout Holder shall verify the following:

- All Work Document Holders have signed off the Tagout.
- All personnel are clear and the equipment is ready for the restoration of energy.

6.13.2 A Tagout Holder may be requested to accept a Temporary Lift or sign off the Tagout to allow for testing.

6.13.3 A Tagout Holder may sign other Tagout Holders off a Tagout. If they do so, they assume all tagging responsibilities of the Tagout Holder they sign off.

6.13.4 A Tagout Holder may accept a Temp Lift for other Tagout Holders. If they do so, they assume all tagging responsibilities of the Tagout Holder they accept for.

6.13.5 Sign off the Tagout to release the equipment back to operations.

6.14 Alternate Release Authorization

6.14.1 In the event that release is required and a Work Document Holder cannot be contacted and is not on site, the release can be authorized by the Shift Manager under the following conditions:

- The Work Document Holder is not on Site.
- All reasonable attempts to contact the Work Document Holder have been made.
- A knowledgeable individual (department supervisor) has conducted a check of the job and determined, the release will not be detrimental to the plant or personnel.
- Positive steps have been taken to ensure the Work Document Holder will be notified immediately upon return to the site and prior to starting work.

6.14.2 The Shift Manager will sign off the Work Document Holder.

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <i>Energy to Serve Your World™</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 18 of 66

6.14.3 The Shift Manager will designate an individual to remove any personal locking devices and tags for components affected by the Tagout release.

6.14.4 The Alternate Release authorization is documented using the site corrective action process.

6.15 Prepare Tagout Removal

6.15.1 The Removal Preparer will prepare the Tagout as follows:

- Define Tagout point's restoration position
- Annotate deviations from the normal system configuration
- Define restoration sequence (see Appendix 3)
- Identify impact on equipment (including Tech Specs)
- Identify or add any special instructions that apply to the Tagout
- Sign the Tagout as Removal Preparer

6.16 Review Tagout Removal

6.16.1 A Reviewer will perform an independent review of the following:

- Work Document completion
- Tagout point restoration positions
- Verify the restoration sequences
- Review impact on equipment (including Tech Specs)
- Review or add any special instructions that apply to the Tagout
- Sign the Tagout as Removal Reviewer

6.17 Authorizing Tagout Removal

6.17.1 The Shift Supervisor shall perform the following:

- Ensure appropriate restoration positions and sequences have been annotated
- Verify All Holders have signed off of the Tagout
- Sign the Tagout as Removal Authorized
- Obtain a printout of the Tagout Tag Removal List

6.18 Tagout Removal

6.18.1 Personnel removing or verifying tags shall have in their possession the applicable Tag Removal List.

6.18.2 A Tagger will remove the Tagout as follows:

6.18.2.1 Review the Tagout.

6.18.2.2 Ensure the Tagout removal sequence is followed.

6.18.2.3 The Shift Supervisor shall approve any changes to restoration positions.

6.18.2.4 Perform the following for each component listed on the Tag Removal List:

- Remove the tag
- Place or verify component in the required position
- Utilize place keeping on the Tag Removal List

6.18.2.5 Sign the Tagout as Restoration 1st verification.

6.18.2.6 If the restoration position of a component on a Tagout needs to be changed after the Tagout is approved for removal, and then the Tagging Official shall update the "As-Left" configuration on the Tagout. When the tag is cleared, the "As-Left" configuration is the position personnel sign for on the Tagout.

6.19 Tagout Removal Verification

6.19.1 A verifier shall perform the following verification for each component listed on the Tag to be Removal List:

- Verify the tag is removed
- Verify the component is in the required position
- Utilize place keeping on the Tag Removal List

6.19.2 Sign the Tagout as Restoration 2nd verification.

6.19.3 If the restoration verification has been waived by the Shift Supervisor. Then the Tagging Official may N/A the applicable 2nd Verifications.

6.20 Temporary Lifts

6.20.1 Tags may be Temporary Lifted if all of the requirements below are met:

- All associated Tagout and Work Document Holders have taken any necessary actions to ensure it is safe to do so and accept the Temporary Lift
- All Tagout Holders who accept a Temporary Lift shall verify all workers are clear of the boundaries affected by the Temporary Lift
- The lift and replacement of the tags should be limited to a short duration (less than 12 hours). A Temporary Lift may go beyond 12 hours for special cases that will only be approved by the Shift Supervisor. If after a reasonable amount of time a Temporary Lift cannot be restored, the Tagout should be revised

6.20.2 Creating a Temporary Lift

6.20.2.1 The person requesting the Temporary Lift shall provide the Temporary Lift Preparer the following:

- List of tags (equipment) to be Temporary Lifted
- Required positions for the equipment affected
- Reason for the Temporary Lift

6.20.2.2 The Temporary Lift Preparer shall:

- Prepare the Temporary Lift
- Ensure the Temporary Lift will not cause undesirable system responses
- Review boundary changes and vent/drain paths for impact
- Sign the Temporary Lift as Prepared.

6.20.3 Tagout Holders and Work Document Holders

6.20.3.1 The Temporary Lift requester shall contact the Tagout Holders and obtain their permission to perform the Temporary Lift.

6.20.3.2 The Tagout Holders shall review the Temporary Lift.

6.20.3.3 The Tagout Holders shall contact all affected Work Document Holders and:

- Explain how the Temporary Lift affects the associated Tagout boundary
- Obtain their concurrence for removal of the tags
- Ensure all Work Document Holders whose safe work boundary is affected, stop work until the Temporary Lift has been rehung.

6.20.3.4 The Work Document Holders shall accept the Temporary Lift and stop work if required.

6.20.3.5 The Tagout Holder may accept the Temporary Lift for the Work Document Holder(s) that are not affected, after informing the Work Document Holder.

6.20.4 Authorizing a Temporary Lift

6.20.4.1 A Tagging Official shall complete a removal sequence.

6.20.4.2 The Shift Supervisor authorizing the Temporary Lift shall review the following:

- Ensure the Temporary Lift will not cause undesirable system responses
- Review boundary changes and vent/drain paths for impact
- Technical Specifications impact
- Ensure all Holders have accepted the Temporary Lift

6.20.4.3 Sign the Temporary Lift as Authorized.

6.20.5 Lifting Tags for a Temporary Lift by a Tagger

6.20.5.1 Review the Temporary Lift.

6.20.5.2 Lift the tags and reposition the equipment as required on the Temporary Lift.

6.20.5.3 Install Temporary Lift Tag on equipment.

6.20.5.4 Sign the Temporary Lift for lifting the tags.

NOTES: If Temporary Lift testing is completed such that Tagout may be released (retagging of the components is no longer required or desired), then go to Section 6.20.9, Releasing a Tagout that is Temporary Lifted.

To support efficient use of resources, authorization for rehang tags following successful completion of testing may be given up front, verbally, by the Shift Supervisor at the time the Temp Lift is authorized.

6.20.6 Authorizing the rehang of a Temporary Lift

6.20.6.1 The Shift Supervisor shall perform the following:

- Ensure the Temporary Lift rehang will not cause undesirable system responses
- Review boundary changes and vent/drain paths for impact
- Authorize the Temporary Lift to rehang the affected tags

6.20.7 Rehang Lifted Tags for a Temporary Lift by a Tagger

6.20.7.1 Review the Temporary Lift.

6.20.7.2 Remove Temporary Lift Tags, reposition the equipment to its original tagged position as required by the Tagout and rehang the tags.

6.20.7.3 Sign the Temporary Lift for rehanging the tags.

6.20.8 Verifying Rehang Tags for a Temporary Lift by a Tagger

6.20.8.1 Review the Temporary Lift.

6.20.8.2 Verify the tags have been rehang on the correct equipment in accordance with the Temporary Lift and the equipment is in the correct position.

6.20.8.3 Sign the Temporary Lift as Verified Rehang.

6.20.9 Releasing a Tagout that is Temporary Lifted

6.20.9.1 The Tagging Official shall verify with the Tagout and Work Document Holders that the Temporary Lift is no longer needed and the original Tagout is ready to be released.

6.20.9.2 The original Tagout(s) shall be released.

6.20.9.3 A Tag Removal List for the tags to be removed will be printed.

6.20.9.4 After the Tagout is authorized to be removed, the Tagging Official shall document on the Temporary Lift that the Temporary Lift is being released and not rehang.

6.20.9.5 The Tagging Official shall sign the Temporary Lift as Verified Rehang.

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <small>Energy to Serve Your World®</small>	Nuclear Management Procedure	Equipment Clearance and Tagging NMP-AD-003 Version 3.1 Page 22 of 66

6.21 Tagging Audits

- 6.21.1 Audits shall be performed quarterly. The Tagout audits may be exempt in cases that involve:
- High radiation or airborne contamination areas.
 - Inaccessible components
- 6.21.2 Quarterly audits that are exempted due to special cases such as inaccessibility should be performed when conditions change that will allow performance of the audit (i.e. entry into a refueling outage).
- 6.21.3 A quarterly audit of all outstanding Tagouts shall be performed to determine if they are still required. If work is complete or the Tagout is no longer necessary, then the Shift Supervisor shall direct the removal of the Tagout.

6.22 Revisions

- 6.22.1 Revisions to Tagouts will be treated like the creation of new Tagouts.

6.23 Adding Work Documents to a Tagout

- 6.23.1 To add a new work document after the Tagout has been signed as Prepared, two independent individuals must review the existing Tagout boundary and concur that the boundary is adequate for the new/revised work activity.
- 6.23.2 If the existing boundary is adequate, document review for each Work Document added by signing the Tagout 1st / 2nd WO Verifications.
- 6.23.3 If the Tagout boundary is not adequate for the addition of the work, a new Tagout will be written and implemented.

6.24 Clearance Requirements for Vendors

- 6.24.1 For vendors performing work at any site, it is incumbent upon the group utilizing the vendor to ensure the vendor is qualified to perform the work assigned.
- 6.24.2 It is also necessary for the group utilizing the vendor to ensure the vendor is clearly aware of the status of the components upon which the vendor will be working.
- 6.24.3 Based upon the system status specified, the vendor should determine any clearance requirements he/she will require for performance of his/her work.
- 6.24.4 Some vendors (e.g. elevator vendors) utilize their own techniques to assure the equipment upon which they are working is safe. If the vendor's controls are sufficient to assure safe work on **Non Power Plant Equipment**, then an additional site Tagout would not be required. The Manager of the work group responsible for the vendor is responsible for approving the vendor's equipment isolation techniques.



7.0 Records

This procedure is a QA Record and is maintained by Corporate Document Services.

8.0 Commitments

This procedure replaces the Equipment Clearance and Tagging Procedures (see References Section) at all Southern Nuclear sites. Individual Site Commitments if not incorporated into the body of the Procedure will be incorporated into the individual site specific Appendix.

Southern Nuclear Operating Company



Nuclear
Management
Procedure

Equipment Clearance and Tagging

NMP-AD-003
Version 3.1
Page 24 of 66

Site	Record #	Location #
Vogtle	CO0000166	1.0
Vogtle	CO0004862	4.16, 5.6, 5.9, 6.0, Appendix 1-1.5
Vogtle	CO0006014	Appendix 1 & 2
Vogtle	CO0006060	4.23, 6.9
Vogtle	CO0006218	6.9, 6.22, Appendix 2
Vogtle	CO0007745	5.6, 6.0, 6.22, Appendix 1 & 2
Vogtle	CO0014042	4.5, 4.7, 6.2.3, 6.22
Vogtle	CO0014043	6.17, Appendix 2
Vogtle	CO0014144	6.5.1.2
Vogtle	CO0014380	6.15, 6.16, 6.17, Appendix 2-1.1
Vogtle	CO0014409	6.21,
Vogtle	CO0015453	6.15.1, Appendix 2 - 1.14.9
Vogtle	CO0015577	5.6
Vogtle	CO0015677	5.6, 6.15, 6.16, 6.17, Appendix 2
Vogtle	CO0015909	Appendix 1- 3.9.4
Vogtle	CO0015958	Appendix 1 -3.9.1
Vogtle	CO0018817	6.22
Vogtle	CO0019031	Appendix 2
Vogtle	CO0019710	5.6, 6.7, Appendix 2
Vogtle	CO0020578	Appendix 2
Vogtle	CO0020720	6.20
Vogtle	CO0022027	Appendix 2
Vogtle	CO0022410	1.0
Vogtle	CO0022609	6.17, Appendix 2
Vogtle	CO0023683	6.20
Vogtle	CO0024178	Appendix 2
Vogtle	CO0027409	4.5, 6.2.2, Appendix 1- 2.2 & 3.10, Appendix 2
Vogtle	CO0027492	Appendix 2
Vogtle	CO0028167	6.15, 6.16, 6.17, Appendix 2 -1.13.10.3
Vogtle	CO0028259	6.15, 6.16, 6.17, Appendix 2 -1.13.10.3
Vogtle	CO0029074	6.13
Vogtle	CO0029348	5.2, 5.4
Vogtle	CO0029700	Appendix 2
Vogtle	CO0029783	6.3, 6.6, 6.10, Appendix 2
Vogtle	CO0029813	6.1.3.2
Vogtle	CO0030374	6.3, 6.10, Appendix 2
Vogtle	CO0031375	5.6, 6.0
Vogtle	CO0036288	6.21, 4.5, 6.2.2 Appendix 1
Vogtle	CO0036783	6.1.4.1
Vogtle	CO0039541	1.0
Vogtle	CO0041640	4.17, 4.24, 5.2, 5.4
Vogtle	CO0042930	Due 12/31/05 Future revision
Vogtle	1998200774	N/A
Vogtle	2000201286	N/A
Vogtle	2000201322	N/A
Vogtle	2001200056	N/A
Vogtle	2001200060	N/A

Southern Nuclear Operating Company



**Nuclear
Management
Procedure**

Equipment Clearance and Tagging

NMP-AD-003
Version 3.1
Page 25 of 66

Site	Record #	Location #
Vogtle	2001200558	6.10.1.6
Vogtle	2001201070	N/A
Vogtle	2001201904	N/A
Vogtle	2001201939	N/A
Vogtle	2002200177	N/A
Vogtle	2002200785	N/A
Vogtle	2002200963	N/A
Vogtle	2002200966	N/A
Vogtle	2002201087	6.14
Vogtle	2002202334	N/A
Vogtle	2003200478	Appendix 1-3.8
Vogtle	2003200683	Appendix 2-1.10.4
Farley	NRC 1287	Not referenced in the NMP. Release of work is specified by individual site procedures.
Farley	NRC 3482	App.3 step 1.5
Farley	NRC 4298	4.25, 6.5.1.8, 6.6.3, 6.7.3 and 6.17.1
Farley	NRC 4299	4,5,6
Farley	NRC 4300	4,5,6
Farley	NRC 5032	4,5,6
Farley	NRC 5483	5.6
Farley	NRC 6514	4, 5, 6, App.1 -7
Farley	NRC 7533	5.6
Farley	NRC 7793	4, 5, 6, App.1 -7
Farley	NRC 7794	App.2 and 3
Farley	NRC 7795	App.2 steps 1.14.3 and 1.14.6
Farley	NRC 9851	App.2 and 3
Farley	NRC 9915	App.4 step 2
Farley	NRC 9992 and 9993	6.7.1 and 6.23
Farley	CAR 2203	PHT form was replaced by OP Permit. OP Permits will be transmitted as QA record.
Farley	CAR 2389	App.1 step 3.4
Farley	CR2001001203	6.5.1.2 and 6.6.2
Farley	CR2001000416	App.1 step 3.9 thru 3.11 and App.3 step 1.13.10.
Farley	CR2000254539	App.3 step 1.14.7.1
Farley	CAR 2346	Not referenced
Farley	INPO and Broadness review (Rev.18 of AP-14)	5.9 and App.1 step 3.2. Field changes are no longer supported and are therefore not described in NMP.
Hatch	CO8901310	Entire Procedure
Hatch	CO8901422	Entire Procedure
Hatch	CO8902096	Entire Procedure
Hatch	CO8902147	Entire Procedure
Hatch	CO8901285	APP 2 – 1.13.10
Hatch	CO8902263	APP 1 – Section 1
Hatch	CO8902264	APP 1 – Section 1
Hatch	CO8902265	APP 1 – Section 4 / Section 5.6
Hatch	CO8902268	Entire Procedure
Hatch	CO8902269	Entire Procedure
Hatch	CO9000147	APP 1 – Section 1
Hatch	CO9000154	APP 1 – Section 1

Southern Nuclear Operating Company



**Nuclear
Management
Procedure**

Equipment Clearance and Tagging

NMP-AD-003
Version 3.1
Page 26 of 66

Site	Record #	Location #
Hatch	CO9000305	APP 2 – 1.14.5, 1.14.6, 1.14.8
Hatch	CO9000522	Section 5.6 / Section 6.21
Hatch	CO9000712	APP 2 – Section 1.14.9 / APP 4
Hatch	CO9000720	Entire Procedure
Hatch	CO9002039	Section 5.0
Hatch	CO9002472	Entire Procedure
Hatch	CO9002505	Entire Procedure / APP 1 / APP 2
Hatch	CO9002553	Entire Procedure
Hatch	CO9003636	APP 1 – 4.1.2 / Section 1.0 / 4.26 / 6.9 / 6.19 / Fig 6-8
Hatch	CO9004627	Section 5.0
Hatch	CO9004755	Section 5.6, 6.21
Hatch	CO9004955	Entire Procedure
Hatch	CO9004996	Entire Procedure
Hatch	CO9005012	Entire Procedure
Hatch	CO9005033	Entire Procedure
Hatch	CO9000479	APP 1 – Section 3.9
Hatch	CO9005081	APP 2 – 1.14.1 / Section 6.20
Hatch	CO9005225	Entire Procedure/ Section 6.15, 6.16, 6.17, 6.22, 6.23
Hatch	CO9005313	Section 6.9, 6.19
Hatch	CO9005334	Entire Procedure
Hatch	CO9005875	Entire Procedure
Hatch	CO9005876	Entire Procedure
Hatch	CO9006290	Entire Procedure
Hatch	CO9006299	Entire Procedure
Hatch	CO9006304	Entire Procedure
Hatch	CO9006323	Entire Procedure / APP 3
Hatch	CO9100084	Entire Procedure
Hatch	CO9100211	Entire Procedure
Hatch	CO9100363	Entire Procedure/APP 1 / Section 1
Hatch	CO9100369	Section 6.5
Hatch	CO9100386	APP 1 / Section 3.7
Hatch	CO9100398	Entire Procedure / APP 2 / Section 1.14.9
Hatch	CO9100405	Section 6.21
Hatch	CO8900700	APP 2 – 1.6 / Section 6.5, 6.6 / Section 5.2
Hatch	CO8901808	Section 1.0 – 4.26 / Fig 6-8
Hatch	CO8901959	Section 6.6, 6.16
Hatch	CO9000110	Entire Procedure
Hatch	CO9000290	APP 1 – Section 1 / APP 2 – Section 1.10
Hatch	CO9000496	Section 5.6
Hatch	CO9002036	Entire Procedure
Hatch	CO9002061	Section 5.8 / APP 1 – Section 4.0
Hatch	CO9002359	APP 2 – Section 1.1
Hatch	CO9002363	Section 1.0 – 4.26 / Fig 6-8
Hatch	CO9002364	APP 2 – Section 1.1
Hatch	CO9002700	Entire Procedure
Hatch	CO9002705	Entire Procedure
Hatch	CO9002707	Entire Procedure
Hatch	CO9003091	Entire Procedure
Hatch	CO9004085	Section 1.0 – 4.26 / Fig 6-8

Southern Nuclear Operating Company



**Nuclear
Management
Procedure**

Equipment Clearance and Tagging

NMP-AD-003
Version 3.1
Page 27 of 66

Site	Record #	Location #
Hatch	CO9005016	APP 1 – Section 1.0
Hatch	CO9005139	APP 1 – Section 1.0 / Section 5.0
Hatch	CO9006032	APP 1 / APP 2 / Section 6.0
Hatch	CO9006314	Entire Procedure
Hatch	CO9006484	Entire Procedure
Hatch	CO9006515	APP 2 – Section 1.1
Hatch	CO9100292	APP 2 – Section 1.1 / Section 6.5.1.3 / Section 6.6.3
Hatch	CO9002667	APP 1 / APP 2 / Section 6.0

Figure 1 – Sample Danger Tags

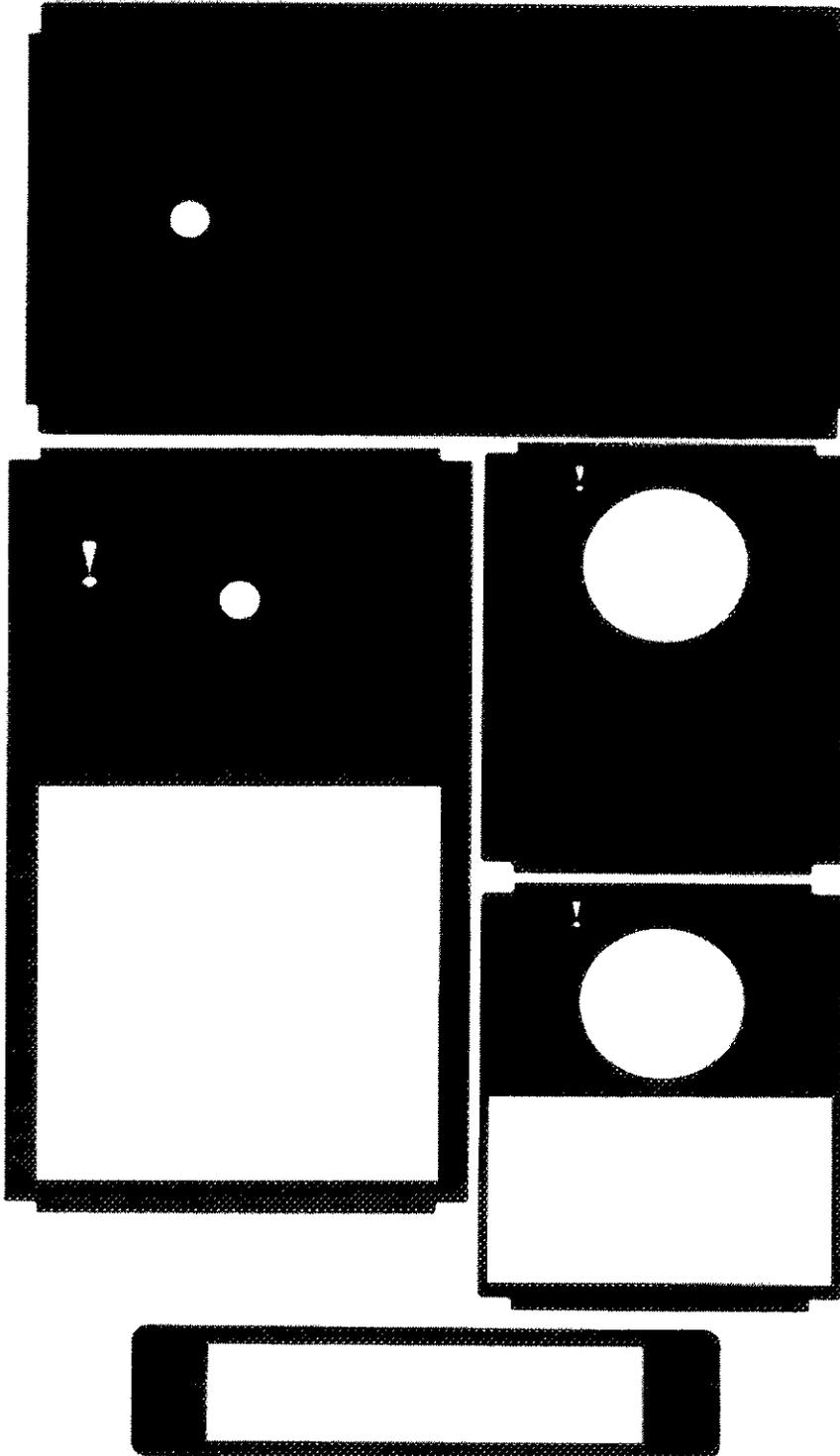


Figure 2 – Sample Caution Tags

SOUTHERN NUCLEAR

CAUTION TAG

**DO NOT OPERATE THIS EQUIPMENT UNTIL
SPECIAL INSTRUCTIONS ON THE REVERSE
SIDE ARE THOROUGHLY UNDERSTOOD**

SOUTHERN NUCLEAR

CAUTION

**DO NOT OPERATE THIS
EQUIPMENT UNTIL SPECIAL
INSTRUCTIONS BELOW ARE
THOROUGHLY UNDERSTOOD**

CAUTION

**DO NOT OPERATE THIS
EQUIP UNTIL SPECIAL
INSTRUCTIONS ON THE
REVERSE SIDE ARE
THOROUGHLY
UNDERSTOOD**

SOUTHERN NUCLEAR

CAUTION

SEE SPECIAL INSTRUCTIONS





Figure 3 – Sample Op Permit Tags

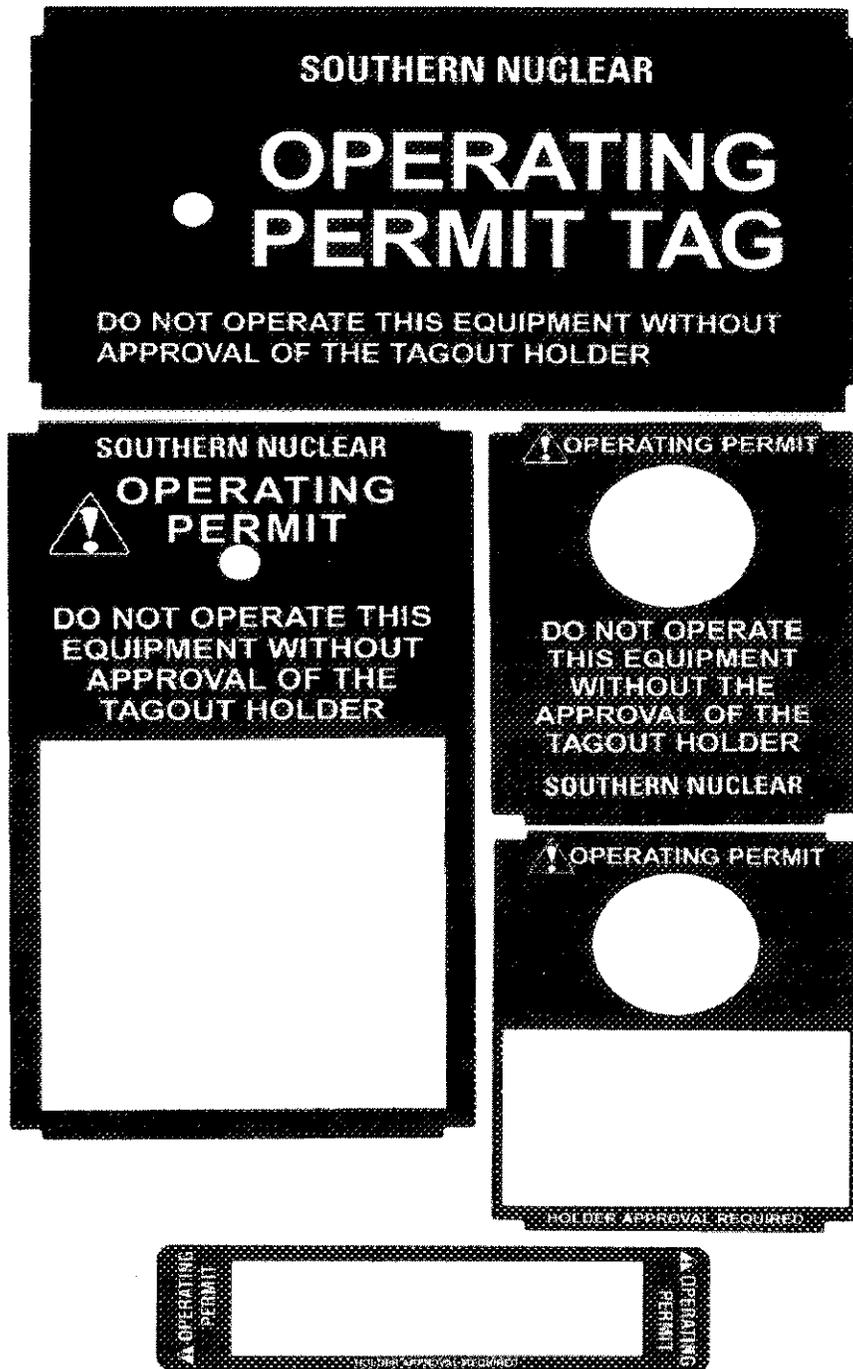


Figure 4 – Sample Temp Lift Tags

Equipment # _____

**This Component Has Been
TEMPORARILY LIFTED**

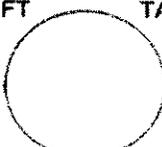
TAG NUMBER _____

REQUESTED BY _____

**TEMPORARY
LIFT TAG**

See Other Side For Further
Temporary Lift Information

TEMPORARY
LIFT TAG



COMPONENT ID _____

TAG NUMBER _____

FOR _____
(Individual)

Figure 5 – Sample PDT Tags

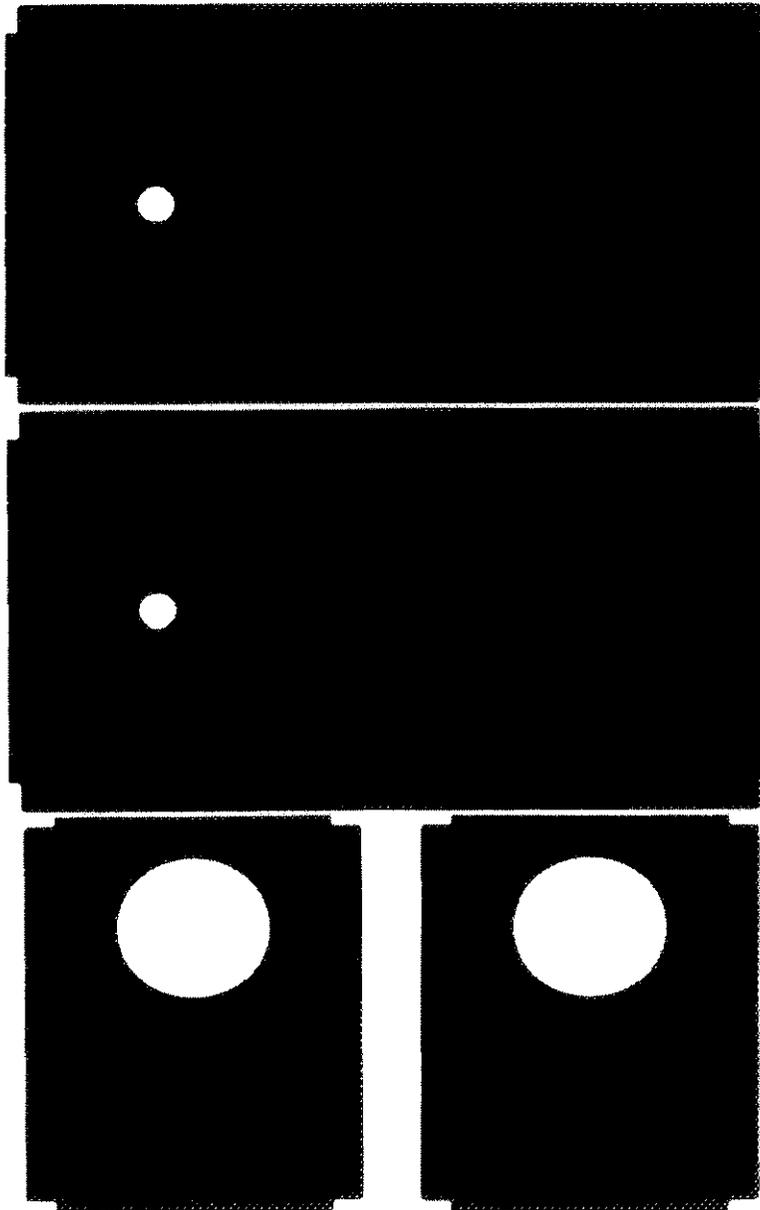




Figure 6 – Tagout Cover Sheet

Tagout Cover Sheet

Clearance:	
Tagout:	
Component Affected:	
Description:	
OPS Instructions:	
Holder Instructions:	
References:	

Tagout Attributes:

Attribute Description	Attribute Value

WorkDoc Holder List:

Number / Equipment ID	Description	1 st Verified	2 nd Verified

Tagout Verification:

Status	Description	Name	Verification Date
Prepared	Prepared		
Reviewed	Reviewed		
Authorized	Authorized		
Tags Verified Hung	Tags Verified Hung		
Removal Prepared	Removal Prepared		
Removal Reviewed	Removal Reviewed		
Removal Authorized	Removal Authorized		
Tags Verified Removed	Tags Verified Removed		
Records Forwarded	Records Forwarded		

Figure 7 – Tagout Tag Listing

Tagout Tag List

Clearance: # : _____

Tagout: # : _____

Tag Num	Type	Equipment ID Description/Location	Placement			Restoration		
			Verif	Seq	Configuration Notes	1 st Verif	2 nd Verif	
		_____			_____			
		_____			_____			
		_____			_____			
		_____			_____			
		_____			_____			
		_____			_____			

Figure 8 -- Temp Lift Sheet

Temporary Lift Number:	
Reason/Requester	

Verification:	Name	Date/Time
Prepared by:		
Reviewed by:		
Authorized by:		
Rehang Authorized by:		

Equipment List:

Equipment ID	Configuration	Equip Description	Equip Location

Affected Tags:

Equipment ID	Temp Lift Position	Tagout		Tag Type	Serial Num	Tagged Configuration	Removal	
		Type	Number				1 st Verif.	2 nd Verif.

Affected Work Doc Holders:

Name	Accepted by:	Date/Time	Name	Accepted by:	Date/Time

FARLEY JANUARY 2005 EXAM

EXAM 50-348 AND 50-364/2005-301

JANUARY 10 - 14, 2005

JANUARY 18, 2005 (written)

FINAL JPMs / Outlines

6 Pages Omitted

- NMP-AD-003, Version 1, Page 39 of 66
- NMP-AD-003, Version 3.1, Page 40 of 66
- NMP-AD-003, Version 3.1, Page 41 of 66
- NMP-AD-003, Version 3.1, Page 42 of 66
- NMP-AD-003, Version 3.1, Page 43 of 66
- NMP-AD-003, Version 3.1, Page 44 of 66

INTENTIONALLY OMITTED

6 pages

PER SISP REVIEW

Appendix 1 - Tag Standards

1.0 Use of Tags

- 1.1 The position/condition of all plant components shall be controlled by approved plant procedures. Deviations in a component's position/condition from that specified in plant procedures will be controlled by a Tagout and tagged.
- 1.2 The Shift Supervisor has the authority to have components repositioned for personnel or equipment safety and then place a Tagout as soon as time permits.
- 1.3 The control of plant components required for personnel safety shall be done by the use of Danger tags, Maintenance Locks, or PDTs.
- 1.4 The control of plant components required for equipment safety only may be done by the use of Danger Tags or Caution Tags.
- 1.5 Danger Tags will not be attached or removed without Authorization from the Shift Supervisor.
- 1.6 Tagout Tags (Danger, Caution, Ops Permit, PDT) will have the following items identified on them:
 - Tag Number (Unit, Tag Type, Sequential Number) or PDT Owner Name (PDT's)
 - Equipment ID (number)
 - Equipment Description
 - Tagged Configuration or Position (Not required for Caution or Ops Permit Tags)
 - Placement Note (Caution Tag only)
 - Reason/Owner (Operating Permit Tag only)

2.0 Types of Tags

- 2.1 Danger Tag - means do not operate the component.
 - 2.1.1 Danger tagged equipment will not be operated except in the following circumstances, and then only with the Shift Supervisor's permission:
 - Valves tagged closed may be "snugged" closed (use the applicable site "snugging" procedure where one exists)
 - Valves tagged open may be placed on or removed from the backseat.
 - Opening breaker cubicle doors or control panel doors that have Danger Tags attached
 - A breaker that is physically withdrawn to a racked out or disconnect position in accordance with a Danger Tag can have maintenance performed on it and/or can be removed from the cubicle
 - 2.1.2 Danger Tags shall not be removed until the Tagout has been released or an applicable Temporary Lift has been completed.

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <small>Energy to Serve Your World®</small>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 47 of 66

- 2.1.3 Work shall not be performed on a valve that has a Danger Tag on its local operator that could cause the valve disc to change position.
- 2.2 Caution Tag - means that out-of-normal conditions exist and/or provides amplifying information.
- 2.2.1 Caution Tags shall not be used in place of Danger Tags.
- 2.2.2 The Caution Tag verbiage shall provide guidance as to the condition of the equipment and/or precautions to be followed in operating the equipment.
- 2.2.3 Caution Tags may co-exist with other tag types on the same component
- 2.2.4 Caution tagged equipment may be operated only after satisfying the conditions specified on the Caution tag (when specified)
- 2.3 Operating Permit Tag - means that the component is under the control of an authorized Tagout Holder.
- 2.3.1 Operations Permit Tags permit operation of a component on which a tag is placed. The individual signed on as Tagout Holder is accountable for the component's status.
- 2.3.2 No more than one Operations Permit Tag shall be hanging on a component at the same time.
- 2.3.3 Danger Tags and Operations Permit Tags shall not co-exist on the same component.
- 2.3.4 PDTs or Locks are permitted on Operating Permit Tags.
- 2.3.5 Only one Tagout Holder is permitted on tagouts containing Operations Permit Tags.
- 2.3.6 Use of Operating Permit Tags may be used to control component positions, perform minor maintenance, or perform testing under the control of an approved work document or test procedure. The following are examples where the use of an Operating Permit would apply:
- Limit switches and torque switches on motor operated valves
 - Balancing pumps/motors.
 - Motor operated valve testing.
 - Operations controlled equipment which is out of the Normal position.
- 2.3.7 Operations Permit Tags associated with procedural testing shall be under the direct control of the Responsible Supervisor. The Responsible Supervisor shall meet the following requirements when manipulating equipment under test.
- 2.3.7.1 The Responsible Supervisor shall sign on as Tagout Holder for the Tagout.

Southern Nuclear Operating Company		
 Southern Nuclear Operating Company <small>Energy to Serve Your World</small>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 48 of 66

- 2.3.7.2 The Responsible Supervisor, or designee, shall inform the Shift Supervisor prior to operating an air/motor-operated valve, pump, or breaker and shall receive permission from the Shift Supervisor to do so.
- 2.3.7.3 The Shift Supervisor may operate equipment under Operations Permit Tag control in the case of an emergency response for which the equipment is needed to mitigate the consequences of the event.
- 2.3.8 Operation of the equipment under test shall be under the direct supervision of the Tagout Holder.
- 2.3.9 If a position is specified, the specified position on the Operations Permit Tag is the required position at the time the tag is placed.
- 2.4 NO TAG - means the component will be positioned in the Tagout process.
- 2.4.1 No Tags are used for two basic purposes:
- 2.4.1.1 To identify components that cannot be tagged but requires repositioning when hanging a Tagout.
- EXAMPLE: A drain valve that is going to be removed by Maintenance would have a "No Tag" step used to open the valve prior to removal and would restore the valve when maintenance was complete.
- 2.4.1.2 To identify components that may require alignment or position verification when restoring a Tagout.
- 2.4.2 There are no physical tags to hang with this tag type.
- 2.4.3 "No Tags" shall not be used in place of Danger Tags.
- 2.4.4 "No Tags" cannot be used on components tagged with Danger, Operations Permit, and Caution Tags.
- 2.5 Personal Danger Tag (PDT)
- 2.5.1 PDTs will be identical in appearance to plant Danger tags, except the name and/or picture of the User will be placed on each of the User's associated tag(s) to clearly identify the responsible User in the field.
- 2.5.2 Individuals using Personal Danger Tags (PDTs) must be approved by the Department Manager at each site.
- 2.6 Temp Lift Tag - Denotes components undergoing test in conjunction with a Temporary Lift
- 2.6.1 Temp Lift tagged equipment/components will not be operated except in the following circumstance, and then only with the Shift Supervisor's permission:
- The person in possession of the Temp Lift may operate or direct the operation of the equipment provided he/she is in communication with the person doing the

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <i>Energy to Serve Your World™</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 49 of 66

operation

3.0 General requirements for tag placement

- 3.1 If a discrepancy between a tag and equipment label is discovered, or if a component has no label or if a component cannot be positively identified, notify the Tagging Official for guidance prior to placing the tag. Labeling issues shall be resolved according to site specific labeling procedures.
- 3.2 Tags will be attached in a manner which provides maximum visibility of the tag to personnel.
- 3.3 Tags will be attached in a manner which prevents the tag from being inadvertently or unintentionally removed.
- 3.4 Tags should be attached using 50 pound rated (capable) nylon cable tie. Where a 50 pound rated device will not physically fit the attachment point, use the strongest tie that does. Non-conductive tie wraps should be used for attachment to Fuses and Links.
- 3.5 The existence of multiple active Tagouts may result in multiple tags being attached to the same isolation device, at the same time. This in turn may lead to a conflict due to the tag type, or the specified configuration, or both. The Shift Supervisor should be notified immediately of any conflicts. Do not proceed until the Shift Supervisor determines the status or the position that affords the highest degree of personnel protection.
- 3.6 When a Danger Tag is co-existing with a Caution Tag, the Danger Tag should be "on top" to be most visible.
- 3.7 Normally, "rackable type" breakers are racked to the DISCONNECT position with the charging spring DISCHARGED. If the breaker is to be racked to the REMOVED position for maintenance, then the breaker must be removed from the cubicle due to seismic considerations and either removed from the room or properly restrained in the room. The tag should be attached to the tie-wrap mount on each breaker cubicle door. The tag does not preclude opening the door.
- 3.8 If a molded case breaker has a provision for attaching a tag, that provision should be used, otherwise the tag should be attached to the tie-wrap mount adjacent to the breaker.
- 3.9 Fuses
 - 3.9.1 Fuses and blocks shall be identified by panel number and fuse location to ensure proper reinstallation.
 - 3.9.2 Unless the fuses are installed in assemblies which can be removed as an assembly and tagged, individual fuses pulled for tagging purposes shall be tagged individually.
 - 3.9.3 IF possible, a fuse blocking device should be inserted at each fuse location and individually tagged to prevent removal. Upon reinstallation, ensure fuse nomenclature faces outward and is legible.

3.9.4 IF a fuse blocking device is not feasible, perform the following:

- 3.9.4.1 Fuses should be individually bagged and properly labeled to assure correct reinstallation and placed as close as possible to the fuse holder. Upon reinstallation, ensure fuse nomenclature faces outward and is legible.
- 3.9.4.2 The tag should be attached to the conductor being de-energized such that the tag is readily visible at the associated fuse holder location. Where multiple conductors are fed from the same fuse, the single tag attachment device should be placed around all the conductors.

3.10 Links

- 3.10.1 When opening links to provide electrical separation, the link will be secured in the open position and a Danger Tag attached at the link separator divider plate hole next to the link. If a divider plate hole does not exist, attach the tag to one of the leads such that the tag is readily visible at the associated sliding link location.
- 3.10.2 IF tag attachment to the conductor(s) associated with the sliding link is not possible or feasible, after opening the sliding link a spayed lug with banana jack adapter may be secured under the sliding link screw with the tag securely attached to the banana jack.

3.11 Leads

- 3.11.1 Proper labeling and identification should be verified for all leads or conductors to be lifted to ensure correct restoration. The tag should contain the location where the wire was landed, prior to removal.
- 3.11.2 When lifting leads to provide electrical isolation, ensure that the wiring is not "daisy chained" in such a manner as to cause components other than the one being isolated to become de-energized, or alternatively, to actuate. In cases where this is unavoidable, consult the Shift Supervisor for concurrence prior to lifting the lead.
- 3.11.3 The exposed or bare portion of the lifted lead conductor(s) should be carefully insulated with electrical tape or other approved insulating method as each lead is lifted.
- 3.11.4 Each lifted lead conductor(s) should be tagged such that the tag is readily visible at the lug or termination point of the conductor. For a single cable containing multiple conductors in lieu of a separate tag for each conductor a single tag may be used provided a tie-wrap or other approved device with tag attached is securely placed around all the conductors. Each cable should be tagged separately.

3.12 Valves

- 3.12.1 When tagging valves with remote operators (reach rods), place the valve in the configuration required on the Tagout and tag the external hand wheel or operator only. Verify the clutch is engaged when operating the valve, if applicable.
- 3.12.2 When tagging valves with inoperable or broken remote operators (reach rods), place the valve in the configuration required and tag the valve itself.

- 3.12.3 When tagging manual valves without hand wheels (e.g. broken hand wheel, drill operated valves, chain operated valves) tag the valve closest to the point from which the valve would be operated (e.g. on the chain for the chain operated valves, on the stem for drill operated valves or valves with broken hand wheels).

4.0 Unattached, Missing or Inactive tags

- 4.1.1 Tagging discrepancies such as the discovery of unattached or missing tags, or inactive tags still hanging, must be reported immediately to the Shift Supervisor. If a component which should have been tagged is missing the required tag, the Shift Supervisor will determine the effect of the missing tag and stop work if necessary.
- 4.1.2 The component position will be verified in the configuration specified by the Tagout and a replacement tag attached per the Shift Supervisor's instructions. The replacement tag should have the same number and shall be verified to the same level as the original tag. The need for replacement and the names of the Taggers reattaching the tag will be reflected in the Tagout Change Log.
- 4.1.3 If a component is discovered with an inactive tag attached, the Shift Supervisor will verify the tag had been properly authorized for removal. The tag shall be removed and the affected component returned to service in accordance with the appropriate system procedure. Alignment may be documented using a system alignment checklist or other appropriate device.

Appendix 2 - Tagout Standards

NOTE: This Appendix presents general guidance; however, each situation is unique and must be individually evaluated.

- 1.1 Tagouts should include proper documentation on the Tagout form including the following items:
 - Reason for the work
 - Work Documents to be performed
 - Impact on regulatory requirements (Tech Specs, TRM, ODCM and Fire Protection Program)
 - Requirements for Verifications and Locked Components
 - Assumptions, Prerequisites, Limitations, Conditions, Coordination and/or Limitations
 - Instructions required for performance (hazards, automatic actuations and effect on plant)
 - Reference documents used
 - Other Referenced Tagouts

- 1.2 When a support system is tagged and the supported system equipment could be damaged if operated, then the supported system equipment will also be tagged.

- 1.3 Reference appropriate work documents to determine the scope of work requiring protection. The work area will determine what Tagout points are required.

- 1.4 Use controlled drawings or other controlled documents when determining Tagout points. Where controlled drawings do not exist, a physical walk down of the as-built plant should be performed.

- 1.5 Equipment such as electronic circuit cards can perform multiple functions. When utilizing such devices the effect on each of the associated functions must be considered. In such cases, a single drawing or document may be inadequate for determining all functions affected by the component. Therefore, multiple source documents including drawings, technical manuals and plant procedures should be consulted.

- 1.6 Any component to be disassembled under the Tagout, should be listed to ensure its position/configuration is checked upon restoration of the Tagout.

- 1.7 Due to the close confines of backflushable filter pits, components in these pits will be tagged to prevent their operation prior to allowing physical work in the pit.

- 1.8 In general, components which are to be worked on should not be tagged. An exception to this would be for valve work activities such as valve repacking which are decided to be performed with the associated valve on the back seat. In this case the valve manual operator may be tagged.

- 1.9 When the physical boundaries of the work area have been identified, the components within the boundary receiving electrical power should be identified and electrical power to

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <small>Energy to Serve Your World™</small>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 53 of 66

these components should normally be isolated prior to isolating the mechanical portions of the system.

- 1.10 Where procedural guidance exists, equipment should be removed from service/shutdown per appropriate plant procedures prior to being tagged.
- 1.11 Energized components should not be used as boundary points.
- 1.12 When process equipment operated by departments other than Operations needs to be removed from service for a Tagout, an "INFO Step" will be created which reflects the removal of the process equipment from service.
- 1.13 **Electrical Equipment** should be isolated prior to mechanical portion as follows:
 - 1.13.1 Switching orders or switchyard clearances will be made in accordance with the GPCO "Electric System Operation" Procedure or the APCO Electric System Operating Procedure dependent on the Site Location.
 - 1.13.2 Local and/or remote hand switches or controls associated with electrical components should be tagged prior to isolating the primary power supplies.
 - 1.13.3 Control switches shall not be used as the sole isolation point for establishing a clearance boundary unless the switch is a disconnect device which serves to deenergize the circuit requiring isolation.
 - 1.13.4 Control switch tags will indicate the position the switch will be in after being taken to the clearance position. Examples include CLOSE/AUTO or CLOSE/NORM if the switch spring returns, and CLOSE or STOP if the switch is maintained. Tagging the control switch in a certain position will mean tagging the control switch with the component in that position.
 - 1.13.5 For components controlled by pushbutton switches, tag the pushbutton(s) that will prevent the component from changing state.
 - 1.13.6 Control power should be removed when applicable. Some breakers have multiple sources of control power. An example would be breakers which can be operated from a Shutdown Panel as well as other locations. For these circuits all sources of control power must be removed.
 - 1.13.7 Next, isolate the primary power to the component using the appropriate electrical isolation device (breaker, disconnect, etc.) or using a "Blocking Device" as outlined below :
 - 1.13.7.1 The Blocking Device must physically prevent the breaker from establishing electrical contact between the breaker and the load side conductor(s).
 - 1.13.7.2 The Blocking Device used must be approved for this use by the Maintenance Department.
 - 1.13.7.3 The Tagout should include steps to remove the breaker, install the Blocking Device and then attach a Danger tag to the Blocking Device.

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <small>Energy to Serve Your World®</small>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 54 of 66

- 1.13.8 All possible power sources should be considered. Some components such as swing components have multiple breaker power feeds. For these components power must be removed from all locations.
- 1.13.9 When maintenance will be performed on switchgear all feeds must be identified; paying particular attention to components whose alternate source is from the other unit. If all feeds are not removed (de-energized) and maintenance will be performed on the switchgear, protection such as tagging or locking the energized cubicle should be added as part of the Tagout.
- 1.13.10 Special considerations are required for electrical isolation using fuses, links or lifted leads as follows.
- 1.13.10.1 Care should be used to ensure the correct device and/or leads are identified. For example: the typical electrical termination cabinet consists of four sections all of which contain a terminal block numbered 1 and may contain fuse holders with the same number. Therefore it is important to identify sufficient information such as including the section number to uniquely identify the specific fuse, terminal or lifted lead.
- 1.13.10.2 Opening links to isolate power should be used, where practical, rather than removing fuses.
- 1.13.10.3 Links/fuses are the preferred method for electrical isolation when the breaker supplies power to multiple components.
- 1.13.10.4 When lifting leads to provide electrical isolation, ensure that the wiring is not "daisy chained" in such a manner as to cause components other than the one being isolated to become deenergized, or alternatively, to actuate. In cases where this is unavoidable. Lifting individual leads from a multiple conductor location should be avoided. In cases where this is unavoidable the consequences of inadvertent interruption of power must be evaluated prior to executing the tagging operation.
- 1.13.10.5 Steps for removing or installing fuses, lifting or landing leads and opening or closing links require verification.
- 1.14 Mechanical Equipment** should be isolated next as follows
- 1.14.1 When isolating the system boundaries, the high pressure portions of the system should be isolated first to prevent the possibility of over pressurization of the low pressure portions of the system.
- 1.14.2 Special consideration should be given when using butterfly valves as boundary valves. Butterfly valves have rubber seats that may become distorted over time. Therefore, they may not provide proper isolation.
- 1.14.3 Use of manual valves is preferable to MOV's and AOVs when establishing system boundaries.
- 1.14.4 Safety Injection throttle valves should not be used as boundary points at Plant Vogtle or Plant Farley. Changing the position of a Safety Injection throttle valve will require

Southern Nuclear Operating Company		
 Southern Nuclear Company <small>Energy to Sense Your World™</small>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 55 of 66

Cold Shutdown Mode testing to verify proper balancing of the SI flow paths.

1.14.5 Motor Operated Valves MOVs

NOTE: At the discretion of the SS, the hand wheel for MOVs need not be tagged for valves located in areas having restricted personnel access. These areas include: all "locked" high radiation areas and, the inside of containment during operation in Modes 1 through 4. Additionally, valve box covers/access doors may be tagged, in lieu of tagging the hand wheel, for a MOV located in the valve box.

CAUTION: MOV tagouts may leave some 120V AC control power circuits energized. Electricians performing work should review elementary drawings or use appropriate test equipment to identify circuits that may be energized.

1.14.5.1 When a MOV requires valve testing/maintenance, an Operating Permit Tagout may be used. In this case, the following items shall be tagged when applicable:

- Local and/or remote control switches (position is not specified)
- The power supply (i.e. breaker)
- Alarm links (i.e. K2 links)
- A Maintenance Lock or PDT may be used in conjunction with the Operating Permit Tagout to control the breaker position during test equipment hookup/removal

1.14.5.2 When a MOV is serving as a system boundary point, the following items shall be Danger tagged when applicable:

- Local and/or remote control switches in the "Closed" position
- The power supply (i.e. breaker)
- Alarm links (i.e. K2 links)
- The MOV hand wheel (If agreed upon by the Tagout Authorizer and the Holders.

1.14.5.3 When a MOV is being tagged for internal valve maintenance (other than repacking on the backseat), the following items shall be Danger tagged when applicable:

- The fluid boundaries which provide isolation for the work area.
- Local and/or remote control switches (position is not specified since disassembly will occur)
- The power supply (i.e. breaker)
- Alarm links (i.e. K2 links)
- The MOV hand wheel should not be tagged since disassembly will occur

1.14.6 Air Operated Valves AOVs

NOTE: At the discretion of the SS, the air isolation valve and the hand wheel for AOVs need not be tagged for valves located in areas having restricted personnel access. In lieu of isolating air, open links or pull fuses to the air supply solenoid. These areas include: all "locked" high radiation areas and, the inside of containment during operation in Modes 1 through 4. (If this method is utilized to isolate air, a diverse means of verifying power has been removed shall be used, i.e. HS light extinguishes.)

- 1.14.6.1 When using a fail closed AOV with a hand wheel as a boundary point the following items shall be Danger tagged when applicable:
- Local and/or remote control switches in the "Closed" position
 - The air supply valve closed w/ air vented off of the valve operator
 - The hand wheel in the closed position
- 1.14.6.2 When using a fail closed AOV with out a hand wheel as a boundary point the following items shall be Danger tagged when applicable:
- Local and/or remote control switches in the "Closed" position
 - The air supply valve closed w/ air vented off of the valve operator.
- 1.14.6.3 When using a fail open AOV with a hand wheel as a boundary point the following items shall be Danger tagged when applicable:
- Local and/or remote control switches in the "Closed" position.
 - The hand wheel in the "Closed" position.
- 1.14.6.4 When using a fail open AOV without a hand wheel as a boundary point the following items shall be tagged when applicable:
- Local and/or remote control switches in the "Closed" position.
 - Mechanically or hydraulically (as appropriate) gag the valve in the closed position and Danger tag the gagging device.
- 1.14.6.5 When using a fail as is AOV in the Condensate Demineralizer System as a boundary point, perform the following:
- Local and/or remote control switches in the "Closed" position.

1.14.7 Freeze Seals

- 1.14.7.1 When other means of isolation are not available, freeze seals may be used for fluid isolation provided the following requirements are met:
- The use of a freeze seal as a boundary point is documented in the Special Instructions section of the Tagout
 - The Tagout contains steps to install the freeze seal per the approved site process at the appropriate step in the sequence (normally before venting and draining of the system)

- During the period when the freeze seal is in place, the Tagout boundary should be checked periodically for leakby out the drains/vents
- The Tagout contains steps to remove the freeze seal per the approved site process at the appropriate step in the sequence (normally the last boundary point unisolated, allowing time for the freeze seal to thaw, time dependent on ambient temperatures)
- During the period when the freeze seal is thawing, the piping within the original boundary should be checked periodically for leaks

1.14.8 Check Valves

1.14.8.1 Stop check valves may be used as a Tagout point by tagging its actuator in the "Closed" position

1.14.8.2 Normally, check valves will not be used as a fluid boundary point, however, when other means of isolation are not available, check valves may be used for fluid isolation provided the following requirements are met.

- Concurrence must be obtained from the Shift Manager and the Department Supervisor responsible for the work being performed
- If the system being isolated is contaminated, concurrence must also be obtained from Health Physics. This concurrence shall be documented in the Special Instructions section of the Tagout
- The Department Supervisor shall ensure each Holder is aware that a check valve is being used as a fluid boundary point prior to allowing work under the Tagout
- Each Holder shall brief their work crews that a check valve is being use as a fluid boundary point before allowing them to work under the Tagout

1.14.9 Vents and Drains

1.14.9.1 Following establishment of the fluid boundary, the system should be drained and vented:

- Open appropriate drain and vent valves to assure all portions of the work area will be drained and vented, and to assure the system will not re-pressurize from thermal expansion or in-leakage
- Consideration should be given to system elevations when selecting drain/vent points to assure the entire work area will be drained
- Align, and tag if necessary, internal system valves such that the vent and drain will be "in communication" during draining process
- The clearance may have to be expanded beyond the first possible isolation valve to include a vent/drain. In the event a drain or vent does not exist within the Tagout boundary, a note should be added to the Special Instructions section of the Tagout so that other definitive measures will be taken by Maintenance to confirm the system or component is adequately depressurized and/or drained. These measures may include breaking of flange connections, loosening of valve bonnets, removal of instrument tubing, or other similar actions.

Southern Nuclear Operating Company		
 Southern Company <i>Energy to Serve Your World™</i>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 58 of 66

Appendix 3 – Tagout Restoration

NOTE: This Appendix presents general guidance, however, each situation is unique and must be individually evaluated.

- 1.1 In general, the restoration sequence is the opposite of the placement sequence. The mechanical portions of systems should generally be restored first.
- 1.2 The first portion of the mechanical restoration should be to establish the system integrity. Vents and drains within the Tagout boundary should be closed (vents may have to be operated during the restoration in order to fill and vent the system).
- 1.3 Prior to restoring boundary valves, the desired configuration of the system must be determined and the effect of the unisolation of the boundary valves must be evaluated. Appropriate precautions must be taken to assure the system is properly prepared for the restoration of fluid/flow without adverse consequences (for example, water hammer, blown valve diaphragms, lifting relief valves, etc.).
- 1.4 When proper alignment of the system within the Tagout boundary has been performed, the boundary valves should be restored in a controlled manner. Normally the boundary valves isolating the low pressure portion of the system should be restored first then the boundary valves on the high pressure side should be restored.
- 1.5 Following unisolation of the system, the system should be filled and vented. Suitable vents and/or drains should be selected to assure all portions of the system have been properly filled. When performing filling and venting evolutions, the same care utilized for preventing spillage and loose hoses should be utilized as is required during the initial draining of the system.
- 1.6 Upon completion of restoration of the mechanical portions of the system, the electrical portions of the system/components should be restored. Primary power supplies should be restored first, control power should be restored next, then local hand switches. Remote hand switches should be restored last.

Southern Nuclear Operating Company			
 SOUTHERN COMPANY <small>Energy to Serve Your World®</small>	Nuclear Management Procedure	Equipment Clearance and Tagging	NMP-AD-003 Version 3.1 Page 59 of 66

Appendix 4 - General Techniques For Venting And Draining

1. When a system is to be drained, the fluids involved should be evaluated. Special handling requirements associated with the fluid to be drained should be considered. Certain substances must be treated as hazardous waste. Refer to individual site procedures and the associated MSDS for safe handling requirements. Consult the Chemistry Department as appropriate.
2. Health Physics should be consulted when venting or draining radioactive systems to assist in determining the effect on dose rates or possible plant radioactive release rates.
3. When tagging out a component that is connected to the Main Condenser (i.e., under condenser vacuum), consider the consequences of air induction and loss of vacuum prior to opening the vents or drains (i.e., when tagging out a Condensate Pump).
4. Vent hoses and attachment devices should be chosen based on the potential for pressure in the system to be drained.
5. The vent/drain hoses should be attached and routed to an appropriate drain or container.
6. When routing the hoses to the drain or container, the hose must be properly secured to prevent it from becoming dislodged during the vent or drain operation. The person routing the hose must consider the potential for pressure and drainage flow in the system to be drained. Even when system pressure is low, large flow rates could result in dislodgment.
7. When deciding where to route the vent/drain hoses consideration must be given to assure the fluid will not adversely contaminate the drain system or container. The creation of hazardous mixed waste should be carefully controlled.
8. The quantity of fluid required to be drained should be evaluated. The tanks or containers receiving the drainage should be closely monitored to assure adequate capacity throughout the drainage to prevent over fill and possible spillage.
9. Throttle drains as necessary to prevent flooding.
10. Use drainage progress evaluation techniques (such as level hoses, total drainage time, etc.) during the draining evolution to monitor progress. If the drainage is not progressing satisfactorily, a boundary valve may be leaking by the seat. Evaluate additional boundaries or other measures that should be considered. Notify the Tagging Official as required.
11. At least one drainage path between the fluid pressure source and the work area must remain open in the system during performance of work to assure the system does not refill due to potential boundary valve leak by.
12. System drainage should be complete before notifying Maintenance that the Tagout has been "verified hung". For systems which can not be adequately drained, or for systems with boundary valve leak by, the Tagging Official should notify the associated work group prior to declaring the Tagout as "verified hung". In addition, the Special Instructions section of the Tagout should reflect this notification for all subsequent Holders to see.

Appendix 5 - PDT Tags/Maint. Lock Use With Operating Permit Tags**1.0 Installation And Removal**

- 1.1 Personnel safety is assured by the clearance process through the Holder's acceptance of the Operating Permit Tagout.
- 1.2 During periods when personnel or equipment protection is required and Operating Permit Tags are used, then a PDT or Maintenance Lock shall be hung on the device to prohibit operation.
- 1.3 The PDT or Maintenance Lock shall remain in place until safe conditions are established for their removal.
- 1.4 When PDT or Maintenance Locks are used they shall be turned over to next shift or replaced with Danger Tags.
- 1.5 The Tagout Holder shall sign on to the Operating Permit Tagout prior to hanging a PDT or Maintenance Lock.
- 1.6 The PDT or Maintenance Lock shall only be hung on components that are tagged with an Operating Permit Tag or Danger Tag.
- 1.7 The Maintenance Lock shall only be hung on electrical isolation devices (e.g. Breakers).
- 1.8 When a PDT is used it shall be hung over the Operating Permit Tag.
- 1.9 The Tagout Holder should remove the PDT or Maintenance Lock prior to releasing the Operating Permit Tagout.
- 1.10 When a team of individuals are performing the work, one team member may be designated as an Authorized Employee (reference OSHA 1910.269) for the team as follows:
 - The Authorized Employee may utilize their PDT or Maintenance Lock.
 - Members of the Authorized Employee's team may perform work under the protection of the Authorized Employee's PDT or Maintenance Lock (reference OSHA 1910.269(d)(8)(ii))
 - It is the responsibility of the Authorized Employee to ensure the safety of the other team members by requiring notification to each team member prior to any change in status of the Authorized Employee's PDT or Maintenance Lock.
 - Only members of the Authorized Employee's team may perform work protected by the Authorized Employee's PDT or Maintenance Lock.
 - The Authorized Employee must be on site when their PDTs are in use.

2.0 Alternate Removal of PDTs / Maintenance Locks:

- 2.1 The employee using PDTs or Maintenance Locks is responsible for removing them. If a PDT or Maintenance Lock remains on equipment that is required for service, then the

Operating Permit Tagout Holder should contact the employee and have the PDT or Maintenance Lock removed.

- 2.2 In the event that release is required and the employee cannot be contacted, the PDTs or Maintenance Locks may be removed by the Shift Manager under the following conditions:
- The employee is not on Site.
 - All reasonable attempts to contact the employee have been made.
 - A knowledgeable individual has conducted a check of the job and determined, the release will not be detrimental to the plant or personnel.
 - Positive steps have been taken to ensure the employee will be notified immediately upon return to the site and prior to starting work.
- 2.3 The Shift Manager will designate an individual to remove any PDT or Maintenance Locks on components affected by the release.
- 2.4 The Alternate Release authorization is documented using the site corrective action process.

Southern Nuclear Operating Company		
 SOUTHERN COMPANY <small>Energy to Serve Your World®</small>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 62 of 66

Appendix 6 – Non-Power Plant Personal Danger Tag Usage

NOTE: This procedure section applies to non-power plant equipment only. It is used whenever personnel or equipment protection is needed to support work or Training activities. This procedure section may also be used to protect Contract or outside personnel when performing work. When used to protect Contract or outside personnel the name of the Supervision in charge of the activity will also be clearly marked on the PDTs. The term "Supervision in Charge of the Activity" directly refers to the SNC person either directing the activity or contracting outside personnel to perform the activity. The Supervision in Charge of the Activity must have received training in the use of Danger Tags. This Requirement may be waived for contract personnel who have their own OSHA acceptable Lockout/Tagout program with concurrence of the responsible Department Manager or his designee.

1.0 Installation and Removal

- 1.1 The PDT Documentation Sheet for Non-Power Plant Equipment must be used (Figure 9).
- 1.2 Appropriate reference material, procedures, prints, ABNs, manuals, etc. should be used to determine adequacy of the PDT boundaries.
- 1.3 PDTs will be used to isolate the system, piping or circuit being worked on, to prevent operation of the equipment from all stations that could exercise control.
- 1.4 Approval for PDT use must be obtained from the TL/ATL or Training instructor as appropriate.
- 1.5 The User that places and removes the PDTs will verify the equipment in the proper configuration.
- 1.6 PDTs may remain in effect for the duration of the job. If responsibility for the job is turned over to another User, that User will apply his/her own PDT on the designated equipment and then the original User will remove his/her PDTs.
- 1.7 There are no restrictions on the number of tags used.
- 1.8 More than one User's PDTs may be allowed on equipment and may be required when multiple tasks are performed on the same equipment (i.e. Electrical and Mechanical)
- 1.9 In addition to the name of the individual using the tag(s), the component ID or other description will be clearly marked on the PDTs.
- 1.10 The User must assure that the associated piece of equipment is properly removed from service or shutdown as required prior to opening any associated electrical isolation device. The TL/ATL/Instructor should be notified as appropriate.
- 1.11 The User's initials and the date and time will be recorded as each placement or restoration step is completed.

Southern Nuclear Operating Company		
 Southern Nuclear Company <small>Energy to Serve Your World®</small>	Nuclear Management Procedure	Equipment Clearance and Tagging
		NMP-AD-003 Version 3.1 Page 63 of 66

- 1.12 Additional PDT Documentation Sheets may be used as necessary to document tag placement and restoration.
- 1.13 When a team of individuals is performing the work, one team member may be designated as an Authorized Employee (reference OSHA 1910.269) for the team as follows:
- The Authorized Employee may utilize their PDTs or Maintenance Locks
 - Members of the Authorized Employee's team may perform work under the protection of the Authorized Employee's PDTs or Maintenance Locks (reference OSHA 1910.269(d)(8)(ii))
 - It is the responsibility of the Authorized Employee to ensure the safety of the other team members by requiring notification to each team member prior to any change in status of the Authorized Employee's PDTs or Maintenance Locks.
 - Only members of the Authorized Employee's team may perform work protected by the Authorized Employee's PDTs or Maintenance Locks.
- 1.14 When a class of students is performing a training activity, an instructor may be designated as an Authorized Employee (reference OSHA 1910.269) for the training activity as follows:
- The Authorized Employee may utilize PDTs to isolate the affected component
 - Members of the Authorized Employees training class may perform training under the protection of the Authorized Employee's PDTs (reference OSHA 1910.269(d)(8)(ii))
 - It is the responsibility of the Authorized Employee to ensure the safety of the class by providing notification to each class member prior to any change in status of the Authorized Employee's PDTs
 - Only members of the Authorized Employee's training class may perform work protected by the Authorized Employee's PDTs

2.0 Alternate Removal

- 2.1 The employee using PDTs or Maintenance Locks is responsible for removing them. If a PDT or Maintenance Lock remains on equipment that is required for service, then the employee should be contacted and the PDT or Maintenance Lock removed.
- 2.2 In the event the employee cannot be contacted, the PDTs or Maintenance Locks may be removed by the Shift Manager under the following conditions:
- The employee is not on Site.
 - All reasonable attempts to contact the employee have been made.
 - A knowledgeable individual has conducted a check of the job and determined the release will not be detrimental to the plant or personnel.
 - Positive steps have been taken to ensure the employee will be notified immediately upon return to the site and prior to starting work.
- 2.3 The Shift Manager will designate an individual to remove any PDT or Maintenance Locks on components affected by the Alternate Release.
- 2.4 The Alternate Release authorization is documented using the site corrective action process.



Appendix 7 - Farley Nuclear Plant Special Considerations

12 KV Pole Line Distribution System and Switchyard

Tagging requirements for the primary side of the 12 KV pole distribution system shall be performed in accordance with the Alabama Power Company Electric System Operating Procedure.

Tagging requirements for the secondary side of the 12 KV system (i.e. 480 V. Disconnect Switch) shall be performed in accordance with this procedure.

Southern Nuclear Operating Company			
 SOUTHERN COMPANY <i>Energy to Serve Your World</i>	Nuclear Management Procedure	Equipment Clearance and Tagging	NMP-AD-003 Version 3.1 Page 65 of 66

Appendix 8 - E. I. Hatch Nuclear Plant Special Considerations

This Appendix will be maintained for future use.

Appendix 9 - Vogtle Electric Generating Plant Special Considerations

Special Requirements for Tagouts

- 1.1 **Special Valves** - The following valves which have been identified as valves with holes in the valve disc. Due to the location of the hole, the valve may not be an adequate Tagout boundary:
- 1/2-HV-8716A RHR Train A to Hot Leg Crossover ISO
 - 1/2-HV-8716B RHR Train B to Hot Leg Crossover ISO
 - 1/2-HV-8802A SI Pump A to Hot Leg 1 & 4 ISO Valve
 - 1/2-HV-8802B SI Pump B to Hot Leg 2 & 3 ISO Valve
 - 1/2-HV-8811A CNMT Sump to RHR Pump A Suction
 - 1/2-HV-8811B CNMT Sump to RHR Pump B Suction
 - 1/2-HV-9002A CNMT Spray Pump A CNMT Sump Suction IRC
 - 1/2-HV-9002B CNMT Spray Pump B CNMT Sump Suction IRC
 - 1/2-HV-8840 RHR to Hot Leg ISO Valve
- 1.2 **Target Rock valves** -in addition to the above listed valves, review all Target Rock solenoid valves that are used as a Tagout boundary. These valves will only hold in one direction.
- 1.3 **Flanges** - If a Tagout Point requires a flange to be removed, the Tagout writer shall determine if the flange gasket is asbestos free. Indicate in the Placement Note for that Tagout Point if the gasket is asbestos free. If the gasket is not asbestos free, a work order shall be initiated for Maintenance to remove the gasket.

FNP-1-SOP-23.0A
November 8, 2000
Revision 6

FARLEY NUCLEAR PLANT
SYSTEM OPERATING PROCEDURE CHECKLIST

FNP-1-SOP-23.0A

COMPONENT COOLING WATER SYSTEM

S
A
F
E
T
Y

R
E
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A
T
E
D

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

CD'ollm
Operations Manager

Date Issued: 11-10-00

List of Effective Pages

<u>Page</u>	<u>Rev.</u>
23	2
3-22	5
1,2,24	6

November 8, 2000

MS

SYSTEM CHECK LIST FNP-1-SOP-23.0A
 COMPONENT COOLING WATER SYSTEM

Situation requiring completion of check list _____

FIRST PERSON COMPLETING _____ SECOND PERSON COMPLETING _____
 LINEUP _____ VERIFICATION (IF REQUIRED) _____

NAME (PRINTED)	INITIALS	NAME (PRINTED)	INITIALS
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

DATE/TIME 1ST CHECK COMPLETE _____ DATE/TIME VERIFICATION COMPLETE _____
 DATE/TIME _____ DATE/TIME _____

PERSON COMPLETING LOCKING _____
 DEVICE INSTALLED VERIFICATION (IF REQUIRED) _____
 DATE/TIME 1ST CHECK _____

NAME (PRINTED) INITIALS _____

SUPERVISOR REVIEW _____

SIGNATURE _____ DATE/TIME _____

DATE/TIME LOCK VERIFICATION COMPLETE _____
 DATE/TIME _____

WARNING: DO NOT USE ANY PAGE WHICH DOES NOT HAVE A VISIBLE BORDERLINE AT THE BOTTOM OF THE PAGE AND COMPLETE READABLE TITLE AT THE TOP OF THE PAGE

THIS CHECK LIST CONSISTS OF 24 PAGES

FRP-1-SOP-23.0A
December 9, 1994
REVISION 6

BREAKER NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
1.00 4160V BUS 1G	Aux Bldg 121' - B Trn Switchgear Room				
Q1R15BKRDG04	1A CCW PUMP	RACKED IN ³			
Q1R15BKRDG05	1B CCW PUMP (B TRAIN)	RACKED IN ³			
1.10 4160V BUS 1F	Aux Bldg 139' - A Trn Switchgear Room				
Q1R15BKRDG05	1B CCW PUMP (A TRAIN)	RACKED IN ³			
Q1R15BKRDG04	1C CCW PUMP	RACKED IN			
1.20 600V MCC 1U	Aux Bldg 139' - Electrical Penetration Room				
Q1R17BKRFUD4	MKUP TO CCW FROM RMW Q1P17MOV3031A (Q1P17V117A)	CLOSED			
Q1R17BKRFUE3	CCW TO 1A RHR HX Q1P17MOV3185A (Q1P17V029A)	CLOSED			
Q1R17BKRFUI3	MKUP TO CCW FROM DW STOR TK Q1P17MOV3030A (Q1P17V121A)	CLOSED			
Q1R17BKRFUS4	CCW TO 1B SFP HX Q1P17MOV3094B (Q1P17V011B)	CLOSED			
1.30 600V MCC 1V	Aux Bldg 139' - Electrical Penetration Room				
Q1R17BKRFVD2	CCW TO SECONDARY HXS Q1P17MOV3047 (Q1P17V030)	CLOSED			
Q1R17BKRFVD3	CCW TO 1A SFP HX Q1P17MOV3094A (Q1P17V011A)	CLOSED			
Q1R17BKRFVG4	MKUP TO CCW FROM DW STOR TK Q1P17MOV3030B (Q1P17V121B)	CLOSED			

1 If other than condition required.
2 Only required if locking device removed to check position.
3 Alternate DC control power located in Hot Shutdown Panel.
4 Only the BKR for the TRN that the pump is aligned to will be racked in. The other BKR will be racked out.

FNP-1-SOP-23.0A
 March 5, 1997
 REVISION 6

BREAKER NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
1.30 600V MCC 1V Aux Bldg 139' - Electrical Penetration Room					
Q1R17BKRFBV5	MKUP TO CCW FROM RMW Q1P17MOV3031B (Q1P17V117B)	CLOSED			
Q1R17BKRFBVU4	CCW TO 1B RHR HX Q1P17MOV3185B (Q1P17V029B)	CLOSED			
1.40 1B CCW Pump 4 KV Disconnect Switch Q1R18A004A-A (Inside Lower Compartment)					
N1R18LATER1	DISC SWITCH SPACE HTR BKR	CLOSED ³			
1.50 1B CCW Pump 4 KV Disconnect Switch Q1R18A004B-B (Inside Lower Compartment)					
N1R18LATER2	DISC SWITCH SPACE HTR BKR	CLOSED ⁴			

1 If other than condition required.
 2 Only required if locking device removed to check position.
 3 Disc switch Q1R18A004A space heater power supply bkr is N1R19L001J-BKR11.
 4 Disc switch Q1R18A004B space heater power supply bkr is N1R19L001J-BKR13.

VALVE NUMBER	DESCRIPTION	SEQ NO.	CONDITION REQUIRED	ACTUAL CONDITION	INIT. (LINEUP) VERIF.	INIT. VERIF.	LOCK ² VERIF.
<u>1.60 Aux Bldg 83' - Floor Drain Tank Room</u>							
N1P17V162	CCW REL HDR DRN		CLOSED & CAPPED				
<u>1.70 Aux Bldg 83' - 1B RHR Pumps Room</u>							
Q1P17V236A	1B RHR PUMP SEAL HX CCW OUTLET FIS-3062B ROOT		OPEN				
Q1P17V236B	1B RHR PUMP SEAL HX CCW OUTLET FIS-3062B ROOT		OPEN				
Q1P17V256	1B RHR PUMP SEAL HX CCW OUTLET VT		CLOSED & CAPPED				
Q1P17V915B	1B RHR pump seal cooler CCW inlet drn	1	CLOSED & CAPPED				
Q1P17V916B	1B RHR pump seal cooler CCW outlet drn	1	CLOSED & CAPPED				
Q1P17V917B	1B RHR pump seal cooler CCW inlet vent	1	CLOSED & CAPPED				
Q1P17V918B	1B RHR pump seal cooler CCW outlet vent	1	CLOSED & CAPPED				
<u>1.80 Aux Bldg 83' - 1A RHR Pump Room</u>							
Q1P17V235A	1A RHR PUMP SEAL HX CCW OUTLET FIS-3062A ROOT		OPEN				
Q1P17V235B	1A RHR PUMP SEAL HX CCW OUTLET FIS-3062A ROOT		OPEN				
Q1P17V915A	1A RHR Pump seal cooler CCW inlet drn	1	CLOSED & CAPPED				
Q1P17V916A	1A RHR Pump seal cooler CCW outlet drn	1	CLOSED & CAPPED				
<u>1.90 Aux Bldg 83' - Corridor Outside RHR HX Room</u>							
Q1P17V190	1B RHR HX CCW OUTLET DRN		CLOSED & CAPPED				

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>1.90 Aux Bldg 83' - Corridor Outside RHR HX Room</u>					
Q1P17V237A	1B RHR HX CCW OUTLET Q1P17FISH3445B ROOT	OPEN			
Q1P17V237B	1B RHR HX CCW OUTLET Q1P17FISH3445B ROOT	OPEN			
Q1P17V026B	1B RHR PUMP SEAL HX CCW OUTLET ISO	FULL OPEN & SEAL ³ WIRED			
Q1P17V025B	1B RHR PUMP SEAL HX CCW PRESS REG INLET ISO	OPEN			
Q1P17PCV3404B	1B RHR PUMP SEAL HX CCW PRESS REG	AIR CUT IN			
Q1P17V280B	PRESS REG Q1P17PCV3404B CONT SUPP ISO	OPEN			
Q1P17V151B	1B RHR PUMP SEAL HX CCW PRESS REG OUTLET ISO	OPEN			
Q1P17V184	1B RHR PUMP SEAL HX CCW INLET LINE DRN	CLOSED & CAPPED			
Q1P17V152B	1B RHR PUMP SEAL HX CCW PRESS REG BYP	CLOSED			
<u>2.00 Aux Bldg 83' - RHR HX Room</u>					
Q1P17V026A	1A RHR PUMP SEAL HX CCW OUTLET ISO	FULL OPEN & SEAL ³ WIRED			
Q1P17V029A	CCW TO 1A RHR HX	1 CLOSED ⁴			
Q1P17MOV3185A					
Q1P17V188	1A RHR PUMP SEAL HX CCW OUTLET VT	CLOSED & CAPPED			
Q1P17V124B	1B RHR HX CCW INLET DRN	CLOSED & CAPPED			

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.
- 3 Set for CCW flow balance S/S permission needed prior to changing the position of this seal wired valve
- 4 May be open if RHR system on service or if CCW pump on associated train not running.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
2.00	Adx Bldg 83' - RHR Hx Room				
Q1P17V230B	1B RHR HX CCW INLET PI-3057B ROOT	OPEN			
Q1P17V125B	1B RHR HX CCW VT	CLOSED & CAPPED			
Q1P17V231B	1B RHR HX CCW OUTLET PI-3060B ROOT	OPEN			
Q1P17V028B	1B RHR HX CCW OUTLET ISO	FULL OPEN & SEAL ³ WIRED			
Q1P17V029B Q1P17MOV3185B	CCW TO 1B RHR HX	2 CLOSED ⁴			
Q1P17V185	1B RHR HX CCW OUTLET VT	CLOSED & CAPPED			
Q1P17V124A	1A RHR HX CCW INLET DRN	CLOSED & CAPPED			
Q1P17V230A	1A RHR HX CCW INLET PI-3057A ROOT	OPEN			
Q1P17V125A	1A RHR HX CCW VT	CLOSED & CAPPED			
Q1P17V231A	1A RHR HX CCW OUTLET PI-3060A ROOT	OPEN			
Q1P17V028A	1A RHR HX CCW OUTLET ISO	FULL OPEN & SEAL ³ WIRED			
Q1P17PCV3404A	1A RHR PUMP SEAL HX CCW PRESS REG	AIR CUT IN			
Q1P17V280A	PRESS REG 3404A CONT SUPP ISO	OPEN			

1 If other than condition required.
 2 Only required if locking device removed to check position.
 3 Set for CCW flow balance S/S permission needed prior to changing the position of this seal wired valve
 4 May be open if RHR system on service or if CCW pump on associated train not running.

VALVE NUMBER	DESCRIPTION	SEQ. CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>2.00 Aux Bldg 83' - RHR HX ROOM</u>					
Q1P17V151A	1A RHR PUMP SEAL HX PRESS REG OUTLET ISO	OPEN			
Q1P17V189	1A RHR PUMP SEAL HX CCW INLET LINE DRN	CLOSED & CAPPED			
Q1P17V152A	1A RHR PUMP SEAL HX CCW PRESS REG BYP	CLOSED			
Q1P17V025A	1A RHR pump seal hx CCW press reg inlet	OPEN			
Q1P17V238A	1A RHR HX CCW OUTLET Q1P17FISH3445A ROOT	OPEN			
Q1P17V238B	1A RHR HX CCW OUTLET Q1P17FISH3445A ROOT	OPEN			
<u>2.10 Aux Bldg 100' - Liquid Waste Panel Area</u>					
Q1P17V182	CHG PUMPS & 1B SFP HX CCW RTN LINE VT	CLOSED & CAPPED			
Q1P17V261	CHG PUMPS & 1B SFP HX CCW RTN LINE DRN	CLOSED & CAPPED			
Q1P17V187	CHG PUMPS & 1B SFP HX CCW SUPP LINE VT	CLOSED & CAPPED			
Q1P17V262	CHG PUMPS & 1B SFP HX CCW SUPP LINE DRN	CLOSED & CAPPED			
<u>2.20 Aux Bldg 100' - Chemical Drain Tank Room</u>					
Q1P17V183	SEC HXS CCW SUPP LINE VT	CLOSED & CAPPED			
Q1P17V265	SEC HXS CCW RTN LINE VT	1 CLOSED & CAPPED			
<u>2.30 Aux Bldg 100' - Corridor</u>					
Q1P17HV2229	CCW SUPP TO SAMPLE CLRS	1 AIR CUT IN			

1 If other than condition required.
2 Only required if locking device removed to check position.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>2.30 Aux Bldg 100' - Corridor</u>					
Q1P17HV2229	CCW SUPP TO SAMPLE CLR (HAND JACK)	2	FULLY BACKED OUT		
Q1P17HV2229	CCW SUPP TO SAMPLE CLR	3	OPEN		
Q1P17V286	INLET ISO FOR HV-2229 CCW TO SAMPLE CLR		OPEN		
N1P17V202	CCW SUPP TO SAMPLE CLR DRN		CLOSED & CAPPED		
Q1P17V287	CCW RTN FROM SAMPLE CLR		65-75 GPM & SEAL ^{3,4} WIRED		
N1P17V201	CCW RTN FROM SAMPLE CLR DRN		CLOSED & CAPPED		
Q1P17V031	LTDN HX CCW INLET ISO		OPEN		
Q1P17V260	SEAL. WTR HX CCW INLET DRN		CLOSED & CAPPED		
Q1P17V034	SEAL. WTR HX CCW INLET ISO		OPEN		
Q1P17V253A	LTDN HX CCW OUTLET FI-3074 ROOT		OPEN		
Q1P17V253B	LTDN HX CCW OUTLET FI-3074 ROOT		OPEN		
Q1P17V033A	LTDN HX CCW INLET TEMP CONT ISO		OPEN		
Q1P17TCV3083	LTDN HX CCW TEMP CONT	1	AIR CUT IN		

1 If other than condition required.
 2 Only required if locking device removed to check position.
 3 as shown on FI-3036
 4 Set for CCW flow balance S/S permission needed prior to changing the position of this seal wired valve

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>2.30 Aux Bldg 100' - Corridor</u>					
Q1P17TCV3083	LTDN HX CCW TEMP CONT (HAND JACK DEVICE)	2	NEUTRAL POSITION		
Q1P17V033B	LTDN HX CCW OUTLET TEMP CONT ISO		FULL OPEN & SEAL ³ WIRED		
Q1P17V123	LTDN HX CCW TEMP CONT BYP		CLOSED ⁴		
Q1P17V252A	SEAL WTR HX CCW OUTLET FI-3077 ROOT		OPEN		
Q1P17V252B	SEAL WTR HX CCW OUTLET FI-3077 ROOT		OPEN		
Q1P17V036	SEAL WTR HX CCW OUTLET ISO		2 3/4 TURNS OPEN ³ & SEAL WIRED		
Q1P17V037	SEAL WTR HX CCW OUTLET ISO		OPEN		
Q1P17V254	LTDN HX CCW TEMP CONT BYP DRN		CLOSED & CAPPED		
Q1P17HV3096B	CCW TO EVAP PKGS & H2 RECOMB	1	OPEN		
Q1P17HV3096B	CCW TO EVAP PKGS & H2 RECOMB	2	AIR CUT IN		
Q1P17HV3096B	CCW TO EVAP PKGS & H2 RECOMB (MANUAL JACKING DEVICE)	3	COLLAR DISENGAGED ⁵		
Q1P17HV3096A	CCW FROM EVAP PKGS & H2 RECOMB	1	OPEN		
Q1P17HV3096A	CCW FROM EVAP PKGS & H2 RECOMB	2	AIR CUT IN		

1 If other than condition required.
 2 Only required if locking device removed to check position.
 3 Set for CCW flow balance S/S permission needed prior to changing the position of this seal wired valve
 4 For outage return to service, coordinate with SS and Stroke vlv a min. of 1 turn. Submit DR for problems
 5 and lockscrew tightened

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>2.30 Aux Bldg 100' - Corridor</u>					
Q1P17HV3096A	CCW FROM EVAP PKGS & H2 RECOMB (MANUAL JACKING DEVICE)	3	COLLAR DISENGAGED ³		
<u>2.35 Aux Bldg 100' - Letdown Hx Room</u>					
Q1P17V133	LTDN HX CCW INLET LINE DRN		CLOSED & CAPPED		
Q1P17V134	LTDN HX CCW OUTLET VT		CLOSED & CAPPED		
<u>2.40 Aux Bldg 100' - Seal Water Hx Room</u>					
Q1P17V131	SEAL WTR HX CCW DRN		CLOSED & CAPPED		
Q1P17V132	SEAL WTR HX CCW OUTLET VT		CLOSED & CAPPED		
<u>2.50 Aux Bldg 100' - Charging Pump Hallway</u>					
Q1P17V192	CHG PUMP CCW DRN		CLOSED & CAPPED		
Q1P17V137C	CHG PUMP CCW HDR DRN		CLOSED & CAPPED		
Q1P17V022C	CHG PUMP CCW HDR DRN		CLOSED & CAPPED		
Q1P17V024D	CHG PUMPS CCW DRN		CLOSED & CAPPED		
Q1P17V023D	CHG PUMPS CCW DRN		CLOSED & CAPPED		
Q1P17V137A	CHG PUMPS CCW DRN		CLOSED & CAPPED		
Q1P17V023A	CHG PUMPS CCW DRN		CLOSED & CAPPED		

1 If other than condition required.
2 Only required if locking device removed to check position.
3 and lockscrew tightened

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>2.50 Aux Bldg 100' - Charging Pump Hallway</u>					
Q1P17V024A	CHG PUMPS CCW DRN	CLOSED & CAPPED			
Q1P17V186	1A CHG PUMP CCW INLET DRN	CLOSED & CAPPED			
Q1P17V022A	CHG PUMPS CCW DRN	CLOSED & CAPPED			
<u>2.55 Aux Bldg 100' - Contaminated storage room 172</u>					
Q1P17V191	CHG PUMP CCW DRN	CLOSED & CAPPED			
<u>2.60 Aux Bldg 121' - Piping Penetration Room</u>					
Q1P17V167	RCP'S CCW SUPP TEST COMN	1 CLOSED & CAPPED			
Q1P17V165	RCP'S OIL CLR CLR CCW RTN LINE VT	CLOSED & CAPPED			
Q1P17V249A	RCP'S OIL CLR CLR CCW FI-3044 ROOT	OPEN			
Q1P17V249B	RCP'S OIL CLR CLR CCW FI-3044 ROOT	OPEN			
Q1P17V101	RCP'S OIL CLR CLR CCW RTN ISO	OPEN			
Q1P17V107	RCP'S THRM BARR CCW RTN ISO	OPEN ³			
Q1P17V250A	RCP'S THRM BARR CCW FI-3045 ROOT	OPEN			
Q1P17V250B	RCP'S THRM BARR CCW FI-3045 ROOT	OPEN			

1 If other than condition required.

2 Only required if locking device removed to check position.

3 For outage return to service, coordinate with SS and Stroke vlv a min. of 1 turn. Submit DR for problems

VALVE NUMBER	DESCRIPTION	SEQ NO.	CONDITION REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
2.60 Aux Bldg 121' - Piping Penetration Room						
Q1P17V173	RCP'S THERM BARR CCW RTN TEST CONN		CLOSED & CAPPED			
Q1P17V081	EXC LTDN & RCDDT HX'S CCW RTN ISO		OPEN			
Q1P17HV3067	CCW FROM EXC LTDN/RCDDT HXS	1	AIR CUT IN			
Q1P17HV3067	CCW FROM EXC LTDN/RCDDT HXS	2	OPEN			
Q1P17HV3067	CCW FROM EXC LTDN/RCDDT HXS (HAND JACK DEVICE)	3	NEUTRAL POSITION ³ & SEAL WIRED			
Q1P17HV3095	CCW TO EXC LTDN/RCDDT HXS	1	AIR CUT IN			
Q1P17HV3095	CCW TO EXC LTDN/RCDDT HXS	2	OPEN			
Q1P17HV3095	CCW TO EXC LTDN/RCDDT HXS (HAND JACK DEVICE)	3	NEUTRAL POSITION ³ & SEAL WIRED			
Q1P17V160	EXC LTDN & RCDDT HX'S CCW RTN LINE TEST CONN		CLOSED, SEALED & CAPPED			
Q1P17V166	EXC LTDN & RCDDT HX'S CCW SUPP LINE TEST CONN		CLOSED, SEALED & CAPPED			
Q1P17V164	CCW disch RCP oil clr test conn	1	CLOSED, SEALED & CAPPED			
Q1P17V168	RCPS CCW SUPP TEST CONN	1	CLOSED, SEALED & CAPPED			
Q1P17V161	CCW DISCH EXC LTDN & RCDDT HXS DRN		CLOSED & CAPPED			
Q1P17V251A	EXC LTDN & RCDDT HX'S CCW FI-3066 ROOT		OPEN			

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.
- 3 Set for CCW flow balance S/S permission needed prior to changing the position of this seal wired valve

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
2.60 Aux Bldg 121' - Piping Penetration Room					
Q1P17V251B	EXC LTDN & RCDT HX'S CCW FI-3066 ROOT	OPEN			
2.70 Aux Bldg 139' - Chemistry Lab (above false ceiling)					
N1P17V172A	SAMPLE HX CCW FI-3036 ROOT	OPEN			
N1P17V172B	SAMPLE HX CCW FI-3036 ROOT	OPEN			
2.80 Aux Bldg 139' - Control Panel Outside PRF Room					
Q1P17HV2229	CCW SUPP TO SAMPLE CLR	6 HS IN AUTO			
Q1P17HV2229	CCW SUPP TO SAMPLE CLR	4 OPEN			
Q1P17HV2229	CCW SUPP TO SAMPLE CLR (KEY SWITCH)	5 NORMAL			
2.90 Aux Bldg 121' - Waste Evaporator Pkg Room					
N1P17V161	TEST CONN	CLOSED & CAPPED			
N1P17V063	TEST CONN	CLOSED & CAPPED			
3.00 Aux Bldg 155' - 1A SFP HX ROOM					
Q1P17V014A	1A SFP HX CCW DRN	CLOSED			
Q1P17V015A	1A SFP HX OUTLET LINE VT	CLOSED & CAPPED			
Q1P17V228A	1A SFP HX CCW FI-3090A ROOT	OPEN			

1 If other than condition required.
2 Only required if locking device removed to check position.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>3.00 Aux Bldg 155' - 1A SFP HX ROOM</u>					
Q1P17V228B	1A SFP HX CCW FI-3080A ROOT	OPEN			
Q1P17V016A	1A SFP HX CCW OUTLET ISO	14-35 DEG OPEN & ³ SEAL WIRED			
Q1P17V011A Q1P17MOV3094A	CCW TO 1A SFP HX	1 OPEN			
<u>3.10 Aux Bldg 175' - 1B SFP HX ROOM</u>					
Q1P17V015B	1B SFP HX CCW OUTLET LINE VT	CLOSED & CAPPED			
Q1P17V229A	1B SFP HX CCW FI-3080B ROOT	OPEN			
Q1P17V229B	1B SFP HX CCW FI-3080B ROOT	OPEN			
<u>3.20 Aux Bldg 155' - Corridor Drumming Area</u>					
Q1P17V014B	1B SFP HX CCW DRN	CLOSED & CAPPED			
Q1P17V016B	1B SFP HX CCW OUTLET ISO	14-35 DEG OPEN & ³ SEAL WIRED			
Q1P17V011B Q1P17MOV3094B	CCW TO 1B SFP HX	1 OPEN			
<u>3.30 CTMT 129' - North Wall</u>					
Q1P17V162	CCW SUPP LINE TO EXC LTDN/RCDT HXS TEST CONN	CLOSED & CAPPED			
Q1P17HV3443	CCW FROM EXC LTDN/RCDT HXS	1 AIR CUT IN			
Q1P17HV3443	CCW FROM EXC LTDN/RCDT HXS	2 OPEN			

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.
- 3 Set for CCW flow balance S/S permission needed prior to changing the position of this seal wired valve

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION	INIT. VERIF.	LOCK ² VERIF.
<u>3.30 CTMT 129' - North Wall</u>					
Q1P17HV3443	CCW FROM EXC LITDN/RCDT HXS (HAND JACK DEVICE)	3	NEUTRAL POSITION		
<u>3.40 CTMT 105'</u>					
Q1P17V079	RCDT HX CCW INLET ISO		OPEN		
Q1P17V080	RCDT HX CCW OUTLET ISO		4 1/8 TURNS OPEN ³ & SEAL WIRED		
Q1P17V130	RCDT HX CCW INLET LINE DRN		CLOSED & CAPPED		
Q1P17V257	RCDT HX CCW DRN		CLOSED & CAPPED		
Q1P17V129	RCDT HX CCW VT		CLOSED & CAPPED		
Q1P17V174	RCDT HX CCW OUTLET LINE TEST CONN		CLOSED & CAPPED		
<u>3.50 Aux. Bldg 100' - CCW Hx Room</u>					
Q1P17V221A	1A CCW PUMP SUCT PI-3308A ROOT		OPEN		
Q1P17V109A	1A CCW PUMP SUCT		OPEN		
Q1P17V279A	1A CCW PUMP SUCT LINE VT		CLOSED & CAPPED		
Q1P17V156A	1A CCW PUMP VT		CLOSED & CAPPED		
Q1P17V156D	1A CCW PUMP VT		CLOSED & CAPPED		

1 If other than condition required.
 2 Only required if locking device removed to check position.
 3 Set for CCW flow balance S/S permission needed prior to changing the position of this seal wired valve

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>3.50 Aux Bldg 100' - CCW Hx Room</u>					
Q1P17V157A	1A CCW PUMP DRN	CLOSED & CAPPED			
Q1P17V157B	1A CCW PUMP DRN	CLOSED & CAPPED			
Q1P17V144A	1A CCW PUMP MINI-FLOW	OPEN			
Q1P17V278A	1A CCW PUMP CHEM MIXING ISO	CLOSED			
Q1P17V210	1A CCW PUMP MINI-FLOW VT	CLOSED & CAPPED			
Q1P17V258A	1A CCW PUMP REL HDR DRN	CLOSED & CAPPED			
Q1P17V222A	1A CCW PUMP DISCH PI-3035A ROOT	OPEN			
Q1P17V281A	1A CCW PUMP DISCH HDR DRN	CLOSED & CAPPED			
Q1P17V002A	1A CCW PUMP DISCH ISO	OPEN			
Q1P17V109B	1B CCW PUMP SUCT	OPEN			
Q1P17V279B	1B CCW PUMP SUCT LINE VT	CLOSED & CAPPED			
Q1P17V221B	1B CCW PUMP SUCT PI-3308B ROOT	OPEN			
Q1P17V156B	1B CCW PUMP VT	CLOSED & CAPPED			
Q1P17V156E	1B CCW PUMP VT	CLOSED & CAPPED			

1 If other than condition required.
2 Only required if locking device removed to check position.

FNP-1-SOP-23.0A
September 10, 1997
REVISION 5

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP) VERIF.	INIT. VERIF.	LOCK ² VERIF.
Q1P17V157C	1B CCW PUMP DRN	CLOSED & CAPPED			
Q1P17V157D	1B CCW PUMP DRN	CLOSED & CAPPED			
Q1P17V144B	1B CCW PUMP MINI-FLOW	OPEN			
Q1P17V278B	1B CCW PUMP CHEM MIXING ISO	CLOSED			
Q1P17V178	1B CCW PUMP MINI-FLOW VT	CLOSED & CAPPED			
Q1P17V258B	1B CCW PUMP REL HDR DRN	CLOSED & CAPPED			
Q1P17V281B	1B CCW PUMP DISCH HDR DRN	CLOSED & CAPPED			
Q1P17V222B	1B CCW PUMP DISCH PI-3035B ROOT	OPEN			
Q1P17V002B	1B CCW PUMP DISCH ISO	OPEN			
Q1P17V109C	1C CCW PUMP SUCT ISO	OPEN			
Q1P17V279C	1C CCW PUMP SUCT LINE VT	CLOSED & CAPPED			
Q1P17V221C	1C CCW PUMP SUCT PI-3308C ROOT	OPEN			
Q1P17V156C	1C CCW PUMP VT	CLOSED & CAPPED			
Q1P17V156F	1C CCW PUMP VT	CLOSED & CAPPED			

1 If other than condition required.
2 Only required if locking device removed to check position.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>3.50 Aux Bldg 100' - CCW Hx Room</u>					
Q1P17V1578	1C CCW PUMP DRN	CLOSED & CAPPED			
Q1P17V157F	1C CCW PUMP DRN	CLOSED & CAPPED			
Q1P17V144C	1C CCW PUMP MINI-FLOW	OPEN			
Q1P17V179	1C CCW PUMP MINI-FLOW VT	CLOSED & CAPPED			
Q1P17V278C	1C CCW PUMP CHEM MIXING ISO	CLOSED			
Q1P17V258C	1C CCW PUMP REL HDR DRN	CLOSED & CAPPED			
Q1P17V222C	1C CCW PUMP DISCH PI-3035C ROOT	OPEN			
Q1P17V002C	1C CCW PUMP DISCH ISO	OPEN			
Q1P17V110A	CCW FROM 1B RHR HX	OPEN ³			
Q1P17V017A	CCW FROM 1A SFP HX AND CHG PUMPS	OPEN			
Q1P17V110B	CCW PUMPS SUCT HDR XCONN	CLOSED ^{3,4}			
Q1P17V110C	CCW PUMPS SUCT HDR XCONN	CLOSED ^{3,4}			
Q1P17V110D	CCW PUMPS SUCT HDR XCONN	OPEN ^{3,4}			

1 If other than condition required.
 2 Only required if locking device removed to check position.
 3 For outage return to service, coordinate with SS and Stroke vlv a min. of 1 turn. Submit DR for problems
 4 May be in opposite position if 1B CCW pump aligned to B train.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL CONDITION	INIT. VERIF.	LOCK ² VERIF.
<u>3.50 Aux Bldg 100' - CCW Hx Room</u>					
Q1P17V110E	CCW PUMPS SUCT HDR XCONN	OPEN ^{3,4}			
Q1P17V017B	CCW FROM 1B SFP HX AND CHG PUMPS	OPEN			
Q1P17V281C	1C CCW PUMP DISCH HDR DRN	CLOSED & CAPPED			
Q1P17V110F	CCW FROM 1A RHR HX	OPEN			
Q1P17V004A	CCW INLET TO 1A CCW HX	OPEN			
Q1P17V003A	CCW PUMPS DISCH HDR XCONN	CLOSED ^{3,5}			
Q1P17V003B	CCW PUMPS DISCH HDR XCONN	CLOSED ^{3,5}			
Q1P17V004B	CCW INLET TO 1B CCW HX	OPEN			
Q1P17V003C	CCW PUMPS DISCH HDR XCONN	OPEN ^{3,5}			
Q1P17V003D	CCW PUMPS DISCH HDR XCONN	OPEN ^{3,5}			
Q1P17V004C	CCW INLET TO 1C CCW HX	OPEN			
Q1P17V223A	1A CCW HX CCW INLET FT-3043A ROOT	OPEN			
Q1P17V223B	1A CCW HX CCW INLET FT-3043A ROOT	OPEN			

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.
- 3 For outage return to service, coordinate with SS and Stroke vlv a min. of 1 turn. Submit DR for problems
- 4 May be in opposite position if 1B CCW pump aligned to B train.
- 5 May be in opposite position if miscellaneous header on B train.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION	INIT. VERIF.	LOCK ² VERIF.
<u>3.50 Aux Bldg 100' - CCW Hx Room</u>					
Q1P17V177	1A CCW HX CCW INLET VT	CLOSED & CAPPED			
Q1P17V226A	1A CCW HX CCW INLET PI-3038A ROOT	OPEN			
Q1P17V005A	1A CCW HX CCW DRN	CLOSED & CAPPED			
Q1P17V007A	1A CCW HX CCW VT	CLOSED & CAPPED			
Q1P17V005B	1A CCW HX CCW DRN	CLOSED & CAPPED			
Q1P17V227A	1A CCW HX CCW OUTLET PI-3041A ROOT	OPEN			
Q1P17V008A	1A CCW HX CCW OUTLET ISO	OPEN ³			
Q1P17V010A	B TRN CCW SUPP ISO	OPEN			
Q1P17V009A	CCW SUPP HDR XCONN	CLOSED ^{4,5}			
Q1P17V012A	CCW SUPP TO 1A SFP HX AND CHG PUMPS	OPEN			
Q1P17V224A	1B CCW HX CCW INLET FT-3043B ROOT	OPEN			
Q1P17V224B	1B CCW HX CCW INLET FT-3043B ROOT	OPEN			
Q1P17V180	1B CCW HX CCW INLET VT	CLOSED & CAPPED			

1 If other than condition required.

2 Only required if locking device removed to check position.

3 May be in opposite position if 1B CCW Hx on service and aligned to B Train.

4 For outage return to service, coordinate with SS and Stroke vlv a min. of 1 turn. Submit DR for problems

5 May be in opposite position if miscellaneous header on B train.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>3.50 Aux Bldg 100' - CCW Hx ROOM</u>					
Q1P17V226B	1B CCW HX CCW INLET PI-3038B ROOT	OPEN			
Q1P17V005C	1B CCW HX CCW DRN	CLOSED & CAPPED			
Q1P17V007B	1B CCW HX CCW VT	CLOSED & CAPPED			
Q1P17V005D	1B CCW HX CCW DRN	CLOSED & CAPPED			
Q1P17V227B	1B CCW HX CCW OUTLET PI-3041B ROOT	OPEN			
Q1P17V008B	1B CCW HX CCW OUTLET ISO	CLOSED ³			
Q1P17V009B	CCW SUPP HDR XCONN	CLOSED ^{4,5}			
Q1P17V009C	CCW SUPP HDR XCONN	OPEN ^{4,5}			
Q1P17V181	1C CCW HX CCW INLET VT	CLOSED & CAPPED			
Q1P17V225A	1C CCW HX CCW INLET FI-3043C ROOT	OPEN			
Q1P17V225B	1C CCW HX CCW INLET FI-3043C ROOT	OPEN			
Q1P17V226C	1C CCW HX CCW INLET PI-3038C ROOT	OPEN			
Q1P17V005E	1C CCW HX CCW DRN	CLOSED & CAPPED			

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.
- 3 May be in opposite position if 1B CCW Hx on service and aligned to either A Train or B Train.
- 4 For outage return to service, coordinate with SS and Stroke vlv a min. of 1 turn. Submit DR for problems
- 5 May be in opposite position if miscellaneous header on B train.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>3.50 Aux Bldg 100' - CCW Hx Room</u>					
Q1P17V007C	1C CCW HX CCW VT	CLOSED & CAPPED			
Q1P17V005F	1C CCW HX CCW DRN	CLOSED & CAPPED			
Q1P17V227C	1C CCW HX CCW OUTLET PI-3041C ROOT	OPEN			
Q1P17V008C	1C CCW HX CCW OUTLET ISO	OPEN ³			
Q1P17V009D	CCW SUPP HDR XCONN	OPEN ^{4,5}			
Q1P17V010B	A TRN CCW SUPP ISO	OPEN			
Q1P17V012B	CCW SUPP TO 1B SFP HX AND CHG PUMPS	OPEN			
Q1P17V116	CCW SRG TK A TRN MKUP ISO	OPEN			
Q1P17V120	CCW SRG TK B TRN MKUP ISO	OPEN			
Q1P17V175	CCW SRG TK A TRN MKUP LINE DRN	CLOSED & CAPPED			
Q1P17V176	CCW SRG TK B TRN MKUP LINE DRN	CLOSED & CAPPED			
N1P11V045	CCW SRG TK DEMIN INLET ISO	OPEN			
Q1P17V030	CCW TO SEC HXS	1 OPEN			
Q1P17MOV3047					

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.
- 3 May be in opposite position if 1B CCW Hx on service and aligned to A Train.
- 4 For outage return to service, coordinate with SS and Stroke vly a min. of 1 turn. Submit DR for problems
- 5 May be in opposite position if miscellaneous header on B train.

VALVE NUMBER	DESCRIPTION	SEQ. CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION (LINEUP)	INIT. VERIF.	LOCK ² VERIF.
<u>3.50 Aux Bldg 100' - CCW Hx Room</u>					
Q1P17V117A	MKUP TO CCW FROM RMW	1	CLOSED		
Q1P17MOV3031A					
Q1P17V121A	MKUP TO CCW FROM DW STOR TK	1	CLOSED		
Q1P17MOV3030A					
Q1P17V117B	MKUP TO CCW FROM RMW	1	CLOSED		
Q1P17MOV3031B					
Q1P17V121B	MKUP TO CCW FROM DW STOR TK	1	CLOSED		
Q1P17MOV3030B					
<u>3.60 Aux Bldg 175' - CCW Surge Tank Room</u>					
N1P17V179	CCW SRG TK DW HOSE CONN		CLOSED & CAPPED		
Q1P17V113A	CCW SRG TK A TRN DRN		CLOSED		
Q1P17V113B	CCW SRG TK B TRN DRN		CLOSED & CAPPED		
Q1P17V112A	CCW SRG TK LI-3027B&D ROOT		OPEN		
Q1P17V112B	CCW SRG TK LI-3027B&D ROOT		OPEN		
Q1P17V112C	CCW SRG TK LI-3027A&C ROOT		OPEN		
Q1P17V112D	CCW SRG TK LI-3027A&C ROOT		OPEN		
Q1P17V114	CCW SRG TK CHEM ADD		CLOSED & CAPPED		
Q1P17RV3028	CCW SRG TK AIR VT	1	AIR CUT IN		

1 If other than condition required.
2 Only required if locking device removed to check position.

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION	INIT. VERIF.	LOCK ² VERIF.
<u>3.60 Aux Bldg 175' - CCW Surge Tank Room</u>					
Q1P17RV3028	CCW SRG TK AIR VT	2	OPEN		
Q1P17RV3028	CCW SRG TK AIR VT (HAND JACK DEVICE)	3	NEUTRAL POSITION		
Q1P17V285A	CCW SRG TK LI-3027A UPPER ROOT		OPEN		
Q1P17V285B	CCW SRG TK LI-3027B UPPER ROOT		OPEN		
Q1P17V285C	CCW SRG TK LI-3027C UPPER ROOT		OPEN		
Q1P17V285D	CCW SRG TK LI-3027D UPPER ROOT		OPEN		
<u>3.70 Main Control Board</u>					
Q1P17RV3028	CCW SRG TK VT	4	OPEN		
Q1P17HV30968EA	CCW TO/FROM EVAP PKGS & H2 RECOMB (HANDSWITCH)		OPEN		
Q1P17V029A	CCW TO 1A RHR HX	2	CLOSED ³		
Q1P17MOV3185A	CCW TO 1B RHR HX	3	CLOSED ³		
Q1P17V029B	CCW TO 1A SFP HX	2	OPEN		
Q1P17MOV3185B	CCW TO 1B SFP HX	2	OPEN		
Q1P17V011A	CCW TO SECONDARY HXS	2	OPEN		
Q1P17MOV3094A					
Q1P17V011B					
Q1P17MOV3094B					
Q1P17V030					
Q1P17MOV3047					

- 1 If other than condition required.
- 2 Only required if locking device removed to check position.
- 3 May be open if RHR system on service or if CCW pump on associated train not running.

FNP-1-SOP-23.0A
 December 9, 1994
 REVISION 6

VALVE NUMBER	DESCRIPTION	SEQ CONDITION NO. REQUIRED	ACTUAL ¹ CONDITION	INIT. (LINEUP) VERIF.	INIT. VERIF.	LOCK ² VERIF.
<u>3.70 Main Control Board</u>						
Q1P17V117A	MKUP TO CCW FROM RMW	2	CLOSED			
Q1P17MOV3031A						
Q1P17V121A	MKUP TO CCW FROM DW STOR TK	2	CLOSED			
Q1P17MOV3030A						
Q1P17V117B	MKUP TO CCW FROM RMW	2	CLOSED			
Q1P17MOV3031B						
Q1P17V121B	MKUP TO CCW FROM DW STOR TK	2	CLOSED			
Q1P17MOV3030B						
Q1P17HV3067	CCW FROM EXC LTDN/RCDT HXS	4	OPEN			
Q1P17HV3443	CCW FROM EXC LTDN/RCDT HXS	4	OPEN			
Q1P17HV3095	CCW TO EXC LTDN/RCDT HXS	4	OPEN			

1 If other than condition required.
 2 Only required if locking device removed to check position.

FARLEY JANUARY 2005 EXAM

EXAM 50-348 AND 50-364/2005-301

JANUARY 10 - 14, 2005

JANUARY 18, 2005 (written)

FINAL JPMs / Outlines

2 Pages

- Title: C:\docume~2\dmcl\00003745\977ed7bc.hst
\8031a4a2\D17500~1.cal dated 12/3/2004

- Title: C:\docume~2\dmcl\00003745\977ed7bc.hst
\80328d52\D177184.cal dated 12/14/2004

INTENTIONALLY OMITTED

2 pages

PER SISP REVIEW

RADIATION CONTROL - 5 - RO and SRO

TITLE: Determine If Radiation Dose Limits Will Be Exceeded	
PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT <u>X</u> LOCT _____	
ACCEPTABLE EVALUATION METHOD: <u>X</u> PERFORM <u>X</u> SIMULATE ___ DISCUSS	
EVALUATION LOCATION: <u>X</u> SIMULATOR <u>X</u> CONTROL ROOM ___ PLANT	
PROJECTED TIME: <u>25 MIN</u> SIMULATOR IC NUMBER: <u>NA</u>	
ALTERNATE PATH ___ TIME CRITICAL ___ PRA _____	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to DETERMINE IF RADIATION DOSE LIMITS WILL BE EXCEEDED. The conditions under which this task is to be performed are:

- a. A power reduction to 12% has been performed on Unit 1.
- b. The Shift Supervisor has directed you to determine if either Worker A or Worker B will exceed annual dose limits during a containment entry to inspect the 1B RCP seal area.
- c. The transit route is <2 mr/hr except as noted on the provided survey maps.
- d. HP has determined the lowest dose route is down the containment stairwell to the 105' level, outside the bio shield, past the Regenerative Heat Exchanger, and up the 1B RCP ladder to the RCP Seal area.
- e. HP estimate is that it will take 20 seconds to pass through the field of the Regenerative Heat Exchanger on the way to the 1B RCP.
- f. OPS estimate is that it will take 5 minutes at the RCP seal area for the inspection.
- g. OPS estimate is that it will take 30 minutes inside Containment including the transit time and inspection.
- h. Worker A year to date accumulated dose is 1700 mr and Worker B year to date accumulated dose is 1680 mr.
- i. The Digital Alarming Dosimeters (DADs) Normal Dose and Dose Rate Alarm values have been adjusted by Health Physics based on expected conditions.
- j. A pre-job brief has already been performed.

Your task is to determine if either Worker A or Worker B will exceed annual dose limits during a containment entry to inspect the 1B RCP seal area.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
1. Calculates dose that will be received near the Regenerative hx each time it is passed. $(9000 \text{ mr/hr})(1 \text{ hr}/3600\text{s})(20\text{s}/\text{trip})(2\text{trips})=100 \text{ mr}$	Calculates dose that will be received, 50 mr, near the Regenerative hx each time it is passed for a total of 100 mr (once going to the RCP, and once coming back by the RCP after completion of the inspection).	S / U
2. Calculates dose that will be received near the RCP. $(2600 \text{ mr/hr})(5\text{m})(1\text{h}/60\text{min})=217 \text{ mr}$	Calculates dose that will be received by each worker near the RCP - 217 mr.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
3. Calculates total dose that will be received by each worker. 217+100=317 mr	Calculates dose that will be received by each worker during the entire entry for a total of 317 mr.	S / U
4. Calculates yearly dose which would be accumulated if the job was performed and dose accumulated as estimated. 317+1700=2017 mr > limit 317+1680=1997 mr < limit	Calculates the estimated yearly dose after job would be 2,017 mr for one worker and 1,997 mr for the other worker.	S / U

NOTE TO EVALUATOR: Examinee may indicate that an extension is required for one worker to receive more than 2,000 mr yearly dose and that the worker will be able to perform the task after an extension is granted.

*5. Determines that the annual admin dose limit would be exceeded by one worker and not by the other.	Determines that the limit would be exceeded by one worker (above the limit of 2,000 mr) and not by the other (below the limit of 2,000 mr).	S / U
6. Informs the Shift supervisor that the limit would be exceeded by one worker and not by the other.	Informs the Shift supervisor that the dose limit of one worker will be exceeded and the worker cannot perform the task without an extension. The other worker's dose limit will not be exceeded and can perform the task without an extension. (CUE: Shift Supervisor acknowledges.)	S / U

___ STOP TIME

Terminate when Shift Supervisor is informed of status.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-0-M-001, Version 18.0
2. KA: G2.3.9 RO-2.5 SRO-3.4

GENERAL TOOLS AND EQUIPMENT

Calculator

COMMENTS:

References provided: containment map and HP manual, FNP-0-M-001, Version 18.0.

CONDITIONS

When I tell you to begin, you are to DETERMINE IF RADIATION DOSE LIMITS WILL BE EXCEEDED. The conditions under which this task is to be performed are:

- a. A power reduction to 12% has been performed on Unit 1.
- b. The Shift Supervisor has directed you to determine if either Worker A or Worker B will exceed annual dose limits during a containment entry to inspect the 1B RCP seal area.
- c. The transit route is <2 mr/hr except as noted on the provided survey maps.
- d. HP has determined the lowest dose route is down the containment stairwell to the 105' level, outside the bio shield, past the Regenerative Heat Exchanger, and up the 1B RCP ladder to the RCP Seal area.
- e. HP estimate is that it will take 20 seconds to pass through the field of the Regenerative Heat Exchanger on the way to the 1B RCP.
- f. OPS estimate is that it will take 5 minutes at the RCP seal area for the inspection.
- g. OPS estimate is that it will take 30 minutes inside Containment including the transit time and inspection.
- h. Worker A year to date accumulated dose is 1700 mr and Worker B year to date accumulated dose is 1680 mr.
- i. The Digital Alarming Dosimeters (DADs) Normal Dose and Dose Rate Alarm values have been adjusted by Health Physics based on expected conditions.
- j. A pre-job brief has already been performed.

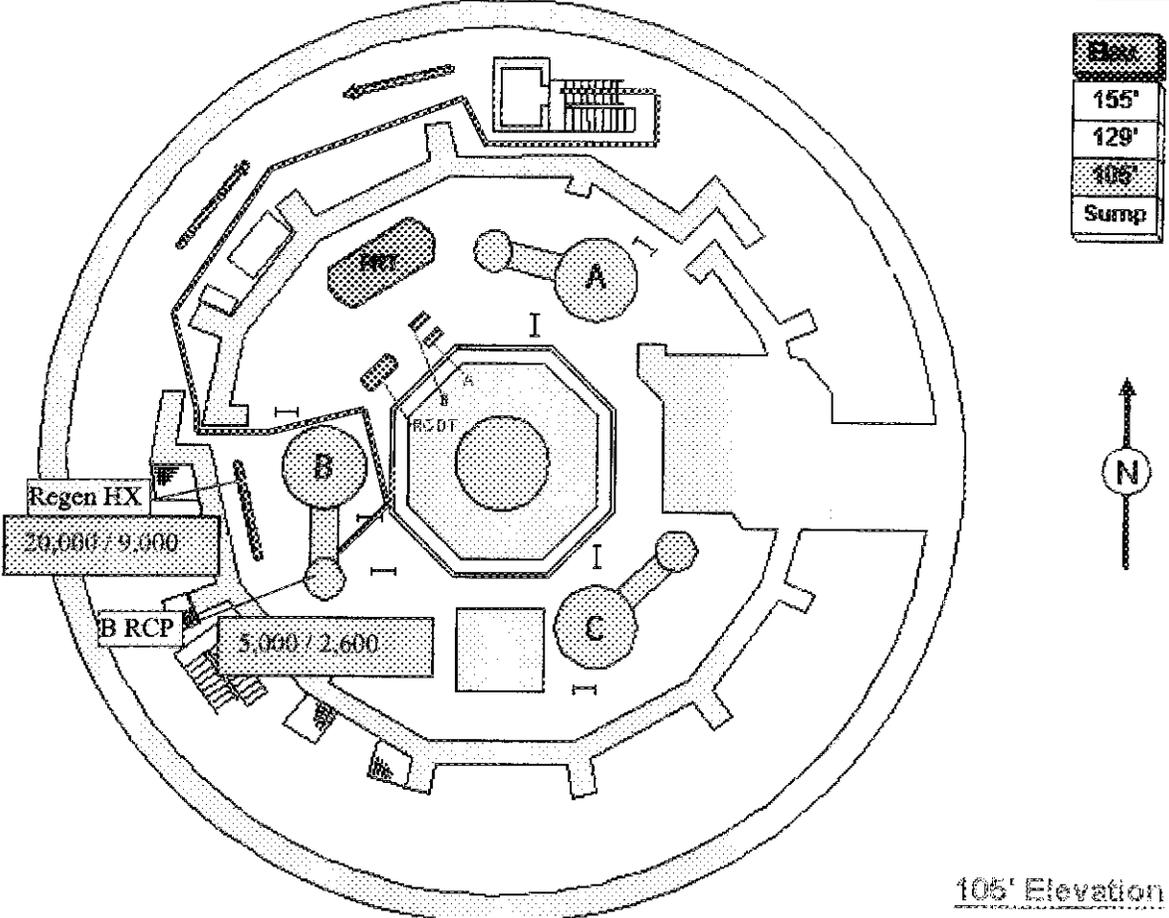
Your task is to determine if either Worker A or Worker B will exceed annual dose limits during a containment entry to inspect the 1B RCP seal area.

CONDITIONS

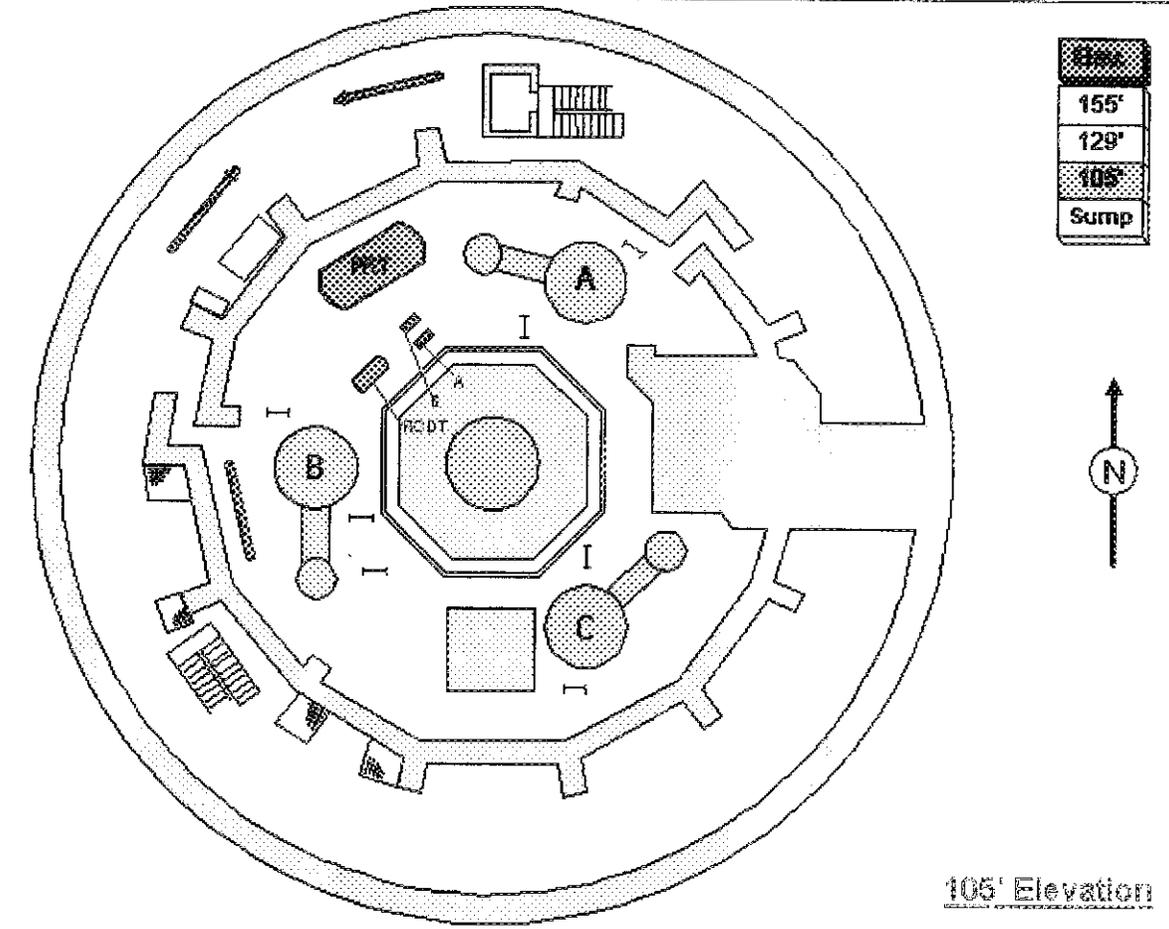
When I tell you to begin, you are to DETERMINE IF RADIATION DOSE LIMITS WILL BE EXCEEDED. The conditions under which this task is to be performed are:

- a. A power reduction to 12% has been performed on Unit 1.
- b. The Shift Supervisor has directed you to determine if either Worker A or Worker B will exceed annual dose limits during a containment entry to inspect the 1B RCP seal area.
- c. The transit route is <2 mr/hr except as noted on the provided survey maps.
- d. HP has determined the lowest dose route is down the containment stairwell to the 105' level, outside the bio shield, past the Regenerative Heat Exchanger, and up the 1B RCP ladder to the RCP Seal area.
- e. HP estimate is that it will take 20 seconds to pass through the field of the Regenerative Heat Exchanger on the way to the 1B RCP.
- f. OPS estimate is that it will take 5 minutes at the RCP seal area for the inspection.
- g. OPS estimate is that it will take 30 minutes inside Containment including the transit time and inspection.
- h. Worker A year to date accumulated dose is 1700 mr and Worker B year to date accumulated dose is 1680 mr.
- i. The Digital Alarming Dosimeters (DADs) Normal Dose and Dose Rate Alarm values have been adjusted by Health Physics based on expected conditions.
- j. A pre-job brief has already been performed.

Your task is to determine if either Worker A or Worker B will exceed annual dose limits during a containment entry to inspect the 1B RCP seal area.



105' Elevation



105' Elevation

EMERGENCY PLAN – 6 - RO

TITLE: Operate The SOUTHERN LINC ENN
PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT <u>X</u> LOCT <u>X</u>
ACCEPTABLE EVALUATION METHOD: <u>X</u> PERFORM <u>X</u> SIMULATE ___ DISCUSS
EVALUATION LOCATION: <u>X</u> SIMULATOR <u>X</u> CONTROL ROOM ___ PLANT
PROJECTED TIME: <u>10 MIN</u> SIMULATOR IC NUMBER: <u>N/A</u>
ALTERNATE PATH <u>X</u> TIME CRITICAL <u>X</u> PRA

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

A Southern linc phone and a regular telephone will be available to use. Neither phone will be plugged in and a cue card will be needed for the Southern linc phone.

**The cue card will say: WIDE AREA
FEP ENN**

The TX button at the bottom of the southern linc phone is the PTT feature. When the candidate presses this button, they can talk, and when they release this button they can listen.

OR

If the candidate takes the phone off the cradle, then the bar on the handset is the PTT feature.

CONDITIONS

When I tell you to begin, you are to OPERATE THE SOUTHERN LINC ENN. The conditions under which this task is to be performed are:

- a. Both Units are at 100% power.
- b. An approaching hurricane is projected to cause high winds on the plant site.
- c. You have been directed by the Shift Manager to make the initial notifications for a Notification of Unusual Event (NOUE) due to the approaching hurricane, using the provided GUIDELINE 4, NOTIFICATION OF UNUSUAL EVENT BLUE VERBAL NOTIFICATION FORM.
- d. A pre-job brief is not required.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
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NOTE TO EVALUATOR: USE AN UNPLUGGED SOUTHERN LINC ENN PHONE.

CRITICAL TIME OF 10 MINUTES STARTS WHEN THE TASK IS UNDERSTOOD AND COMMENCED. This simulates 5 minutes has elapsed since classification was made and 10 more minutes remain to notify both Alabama and Georgia.

Candidate has the option to use the OPX or telephone. If either is used, the candidate will have to call each number and relay the information IAW the form at the bottom of the page. Alabama and Georgia is required.

START CRITICAL TIME

- | | | | |
|----|---|---|-------|
| 1. | Press group pushbutton, verify display shows WIDE AREA, FEP ENN. Correct per step 6 of the instructions if necessary. | Press group pushbutton. (CUE: Place cue card on phone display that says; WIDE AREA, FEP ENN.) | S / U |
| 2. | Pickup handset and press the bar or leave in cradle, press TX, wait for the chirp and announce “This is <u>name/title</u> at Farley Nuclear Plant. Please obtain a Notification of Unusual Event BLUE initial notification form and monitor the ENN.” Release the PTT feature. | Pickup handset or leave in cradle, press to talk (TX), wait for the chirp. (CUE: chirp is heard.) Announce “This is <u>name/title</u> at Farley Nuclear Plant. Please obtain a Notification of Unusual Event BLUE initial notification form and monitor the ENN.” Release the PTT feature. | S / U |

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
3. Press PTT feature and request a state level agency for Alabama. Example “Alabama Radiation Control at Montgomery EOC, are you on the line?” Release PTT feature to allow the party to answer.	Press PTT feature and request a state level agency for Alabama acknowledge manning of the ENN. (CUE: SAY: <u>No response.</u>)	S / U
*4. Enter time when the attempt was made to contact Alabama.	Time entered on Guideline 4 form in the blank for Alabama.	S / U
5. Press PTT feature and request a state level agency for Georgia acknowledge manning of the ENN. Example “GEMA at Atlanta EOC, are you on the line?” Release PTT feature to allow the party to answer.	Press PTT feature and request a state level agency for Georgia acknowledge manning of the ENN. (CUE: GEMA on the line.)	S / U
*6. Enter time when the attempt was made to contact Georgia.	Time entered on Guideline 4 form in the blank for Georgia.	S / U
<u>END CRITICAL TIME</u>		
7. Obtain name of person acknowledging	Name of person acknowledging is obtained. (CUE: This is Buddy Carter at GEMA.)	S / U
8. Enter name of the person contacted for Georgia.	Name entered on Guideline 4 form.	S / U
*9. Press PTT feature and read the following: “Please prepare to receive a Notification of Unusual Event BLUE initial notification message with acknowledgment” , then slowly read the Notification of Unusual Event initial notification form over the ENN. Release the PTT after reading two or three lines to allow individuals to respond.	Candidate reads; “Please prepare to receive a Notification of Unusual Event BLUE initial notification message with acknowledgment” , then slowly reads the NOUE initial notification form over the ENN, releasing the PTT feature after reading two or three lines to allow individuals to respond. (CUE: respond as necessary as candidate reads the form.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*10. Have GEMA acknowledge receipt of the message and fill in the acknowledged block.	Candidate asks for receipt of message with acknowledgement and fills in acknowledged block. (CUE: GEMA acknowledges receipt of message.)	S / U
*11. Use one of the phone numbers to call Alabama Radiation Control at Montgomery EOC: OPX (6628), phone (334-242-4378 or 4379.)	Candidate uses the phone to call 334-242-4378 or 4379. (CUE: say: ARC at Montgomery EOC is on the line.)	S / U
*12. Read the following over the phone: “Please prepare to receive a Notification of Unusual Event BLUE initial notification message with acknowledgment” , then slowly read the Notification of Unusual Event initial notification form over the phone.	Candidate reads; “Please prepare to receive a Notification of Unusual Event BLUE initial notification message with acknowledgment” , then slowly reads the NOUE initial notification form over the phone. (CUE: respond as necessary as candidate reads the form.)	S / U

The examiner can stop the candidate at step 12 when they say they would read the form to the state agency.

_____ **STOP TIME**

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-0-EIP-9.0, Version 51.0
2. KAs: G2.4.43 RO-2.8 SRO-3.5
G2.4.39 RO-3.3 SRO-3.1

GENERAL TOOLS AND EQUIPMENT:

SOUTHERN LINC and telephone provided.

COMMENTS:

References provided: All FNP-0-EIP's and the Guideline 4 forms filled out to the point that the candidate can transmit the data from the form.

CONDITIONS

When I tell you to begin, you are to OPERATE THE SOUTHERN LINC ENN. The conditions under which this task is to be performed are:

- a. Both Units are at 100% power.
- b. An approaching hurricane is projected to cause high winds on the plant site.
- c. You have been directed by the Shift Manager to make the initial notifications for a Notification of Unusual Event (NOUE) due to the approaching hurricane, using the provided GUIDELINE 4, NOTIFICATION OF UNUSUAL EVENT BLUE VERBAL NOTIFICATION FORM.
- d. A pre-job brief is not required.

CONDITIONS

When I tell you to begin, you are to OPERATE THE SOUTHERN LINC ENN. The conditions under which this task is to be performed are:

- a. Both Units are at 100% power.
- b. An approaching hurricane is projected to cause high winds on the plant site.
- c. You have been directed by the Shift Manager to make the initial notifications for a Notification of Unusual Event (NOUE) due to the approaching hurricane, using the provided GUIDELINE 4, NOTIFICATION OF UNUSUAL EVENT BLUE VERBAL NOTIFICATION FORM.
- d. A pre-job brief is not required.

GUIDELINE 4
NOTIFICATION OF UNUSUAL EVENT
BLUE VERBAL NOTIFICATION FORM

1. This is a Drill Actual Emergency Initial

2. Site: Farley Nuclear Plant

3. Confirmation Phone Numbers: (334)899-5156 or (334)794-0800 Ext. 4662 or 4663

5. Emergency Classification:
 Notification Of Unusual Event

6. Emergency Declaration At: Time/Date 5 Minutes ago 01 / today / 05
(central) MM DD YY

7. Emergency Classification criteria:
 N1.1 N1.2 N1.3 N1.4 N2.1 N2.2
 N2.3 N3.1 N3.2 N3.3 N4.1 N4.2 N4.3 N4.4 N4.5
 N5.1 N6.1 N6.2 N7.1 N7.2 N7.3 N7.4 N7.5 N7.6
 N7.7 N7.8 N7.9 N7.10 N8.1

Failed Barriers: RCS Containment Fuel Clad none Heat Removal Sys Inadequate

10 Emergency Releases: None Is Occurring

14. Meteorological Data Wind Direction (from) 135 Speed(mph) 2.3 ΔT 0.2

15 Recommended Actions:

There are no recommended protective actions.

16. Approved By: J Young Emergency Director
(Name) (Title)

- A. x Line 1 check box A or B.
- B. x Line 6 fill in the declaration time/date (time that you evaluated the condition in procedure).
- C1. x Line 7 check the box(es) for the criteria requiring this emergency classification (only one required).
- C2. x Check all failed barriers or none; check heat removal inadequate if appropriate.
- C3. x If more information is required, list it on a separate page; read it over the ENN when line 7 is read.
- D. x Line 10 if an Emergency Radioactive release is in progress, check box C; otherwise, check box A.
- E. x Line 14-enter the current met data (35 foot elevation preferred) from PPC (ERDS) or the BOP.
- F. x Line 16, the Emergency Director must sign this form.
- G. _____ Within 15 minutes of declaration time, using the ENN (instructions on following page), contact the state agencies listed below. Enter below the time of the attempted initial ENN contact (transmission time). Enter below the name of the person contacted once obtained. Check the acknowledged box when receipt of message is acknowledged. The table on the next page lists methods of contact.

Alabama Radiation Control OR State Troopers
OR Houston Co. Time _____ Name _____ Acknowledged
 GEMA OR Early County Time _____ Name _____ Acknowledged

If AEMA is not on the ENN, they are not required to be notified.

AEMA Time _____ Name _____ Acknowledged

H. _____ Proceed to the following page for the REMAINING NOTIFICATIONS at step I.

GUIDELINE 4
NOTIFICATION OF UNUSUAL EVENT
BLUE VERBAL NOTIFICATION FORM

SOUTHERN LINC ENN INSTRUCTIONS FOR INITIAL NOTIFICATION

1. Press group pushbutton, verify display shows WIDE AREA, FEP ENN. Correct per step 6 below if necessary. Pickup handset or leave in cradle, press to talk (PTT), wait for the chirp and announce "This is name/title at Farley Nuclear Plant. Please obtain a Notification of Unusual Event BLUE initial notification form and monitor the ENN." Release the PTT.
2. PTT and request a state level agency (see NOTIFICATION MEANS table below) for Alabama and Georgia, a county level agency for Houston County (not required IF Alabama Radiation Control is at the FEOC) and Early County (not required if GEMA at the FEOC), and AEMA acknowledge manning of the ENN per step H on the previous page. Example "Alabama Radiation Control at Montgomery EOC are you on the line?" Release the PTT after each request to allow the party to answer
3. PTT and announce on the ENN "Please prepare to receive a Notification of Unusual Event BLUE initial notification message with acknowledgment", then slowly read the Notification of Unusual Event initial notification form over the ENN. Release the PTT after reading two or three lines to allow individuals to respond.
4. Have the agencies contacted above, acknowledge receipt of the message and fill in the checkbox on previous page when they do.
5. If any required agency could not be contacted on the ENN, then use numbers listed below or in FNP-0-EIP-8.3 to contact them by any available means as soon as possible.
6. If the display does not show "WIDE AREA, FEP ENN" when group is pressed, press the button with the square until the top line is indicated, then press the arrow buttons until "WIDE AREA" is displayed, then press the button under OK. Press the button with the square until the second line is indicated then press the arrow buttons until "FEP ENN" is displayed, then press the button under OK

NOTIFICATION MEANS (underlined numbers are available 24 hours a day)

<p>ALABAMA State Agencies In preferred order Alabama Radiation Control at Montgomery EOC ENN (1305), OPX (6628), phone (334-242-4378) FAX (334-264-4396) State Troopers in Montgomery ENN (1303), phone (334-242-4378, 4379) Alabama Radiation Control at Alabama Forward EOC ENN (1307), OPX 6621, phone (334-793-1565) FAX (8-257-1535) HOUSTON COUNTY ENN(1307), OPX (6621), FAX(8-257-1535) phone (334-794-9720, 793-9655, 334-677-4807, 4808)</p>	<p>GEORGIA State Agencies In preferred order GEMA at Atlanta EOC ENN (1304), OPX (6629), Phone (404-635-7200) FAX (404-627-4850) GEMA at Georgia Forward EOC ENN (22) OPX (6626) phone (229-723-4826) FAX (8-257-2455) EARLY COUNTY ENN(1308) ENN(41) OPX (6622)FAX(8-257-2455) phone(229-723-3577, 3578, 4826)</p>
<p>AEMA COURTESY NOTIFICATION ENN (1306)</p>	<p>FLORIDA State Agency Florida Department of Emergency Management phone (800-320-0519) (850-413- 9911) FAX (850-488-7841)</p>

REMAINING NOTIFICATIONS (continued from previous page)

- I _____ Fax a copy of the previous page NOUE BLUE VERBAL NOTIFICATION FORM to the State of Florida, EOF, and EOC using speed dial #10 or an alternative method of contact that is listed in the table above.
- J _____ Verify the State of Florida has received the FAX using the numbers listed in the table above.
- K _____ Complete Figure 6, side 1, follow-up message as soon as possible.
- L _____ Fax Figure 6, side 1, to state and local agencies as soon as possible, but within 30 minutes of the verbal notification per the instructions on Figure 6, side 2.
- M _____ Provide the information on Figure 6, side 1, to the NRC as soon as possible, but within one hour of the declaration per the instructions on Figure 6, side 2.

EMERGENCY PLAN - 7 - SRO

TITLE: Classify An Emergency Event and Complete the Initial Notification Form

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT ___

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A

ALTERNATE PATH ___ TIME CRITICAL X PRA

THIS JPM IS TIME CRITICAL

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to CLASSIFY AN EMERGENCY EVENT AND COMPLETE THE EVENT NOTIFICATION FORM. The conditions under which this task is to be performed are:

- a. Both Units are operating at 100% power.
- b. The on shift Security Captain has received a report from the FBI that they have credible imminent threat of sabotage. A semi-truck filled with explosive devices is en-route to Farley Nuclear Plant. The truck is scheduled to arrive in 35 minutes.
- c. Wind Speed is 1 MPH, Wind Direction is from 85°, and DELTA T is 0.5°F.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		

NOTE: THE TIME IT TAKES TO CLASSIFY THE EVENT IS TIME CRITICAL AND SHOULD BE COMPLETED IN 15 MINUTES.

TIME CRITICAL START TIME

*1.	Contact counting room to initiate offsite dose assessment.	Shift radiochemist contacted to initiate offsite dose assessment. (CUE: Shift radiochemist acknowledges.)	S / U
*2.	Classify the event.	Event classified as an Alert per EIP-9.0.	S / U

TIME CRITICAL STOP /START TIME

NOTE: ACCURATE COMPLETION OF CERTAIN STEPS EIP-9.0, ALERT NOTIFICATION FORM, ARE ESSENTIAL TO ENSURE ADEQUATE NOTIFICATION OF STATE AND LOCAL AGENCIES. THESE STEPS ARE SHOWN AS THE STANDARDS FOR ELEMENT NUMBER 3.

ELEMENT 3, FOR THE REQUIREMENTS OF THIS JPM, MUST BE COMPLETED IN 15 MINUTES AND IS THEREFORE TIME CRITICAL. THE ACTUAL 15 MINUTE CRITICAL TIME PERIOD ALSO INCLUDES THE NOTIFICATION OF AT LEAST ONE AGENCY IN EACH STATE.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*3. Complete EIP-9.0, Alert Notification Form	Identifies A8.1 as criteria for Alert	S / U
	Completes declaration time date	S / U
	Completes met tower data	S / U
	Approves the declaration form	S / U

TIME CRITICAL STOP TIME
Terminate JPM when initial notification form is completed

CRITICAL ELEMENTS: Critical Elements are denoted with an Asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-0-EIP-8.1, Version 6.0
2. FNP-0-EIP-9.0, Version 51.0
3. KA: G2.4.41 RO-2.3 SRO-4.1

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

References provided: All EIPs and Guidelines 1, 2, 3 and 4.

CONDITIONS

When I tell you to begin, you are to **CLASSIFY AN EMERGENCY EVENT AND COMPLETE THE EVENT NOTIFICATION FORM**. The conditions under which this task is to be performed are:

- a. Both Units are operating at 100% power.
- b. The on shift Security Captain has received a report from the FBI that they have credible imminent threat of sabotage. A semi-truck filled with explosive devices is en-route to Farley Nuclear Plant. The truck is scheduled to arrive in 35 minutes.
- c. Wind Speed is 1 MPH, Wind Direction is from 85°, and DELTA T is 0.5°F.

CONDITIONS

When I tell you to begin, you are to CLASSIFY AN EMERGENCY EVENT AND COMPLETE THE EVENT NOTIFICATION FORM. The conditions under which this task is to be performed are:

- a. Both Units are operating at 100% power.
- b. The on shift Security Captain has received a report from the FBI that they have credible imminent threat of sabotage. A semi-truck filled with explosive devices is en-route to Farley Nuclear Plant. The truck is scheduled to arrive in 35 minutes.
- c. Wind Speed is 1 MPH, Wind Direction is from 85°, and DELTA T is 0.5°F.

**GUIDELINE 1
GENERAL EMERGENCY
RED VERBAL NOTIFICATION FORM**

- 1. A This is a Drill B Actual Emergency Initial
- 2. Site: Farley Nuclear Plant
- 3. Confirmation Phone Numbers: (334)899-5156 or (334)794-0800 Ext. 4662 or 4663
- 5. Emergency Classification: General Emergency

6. Emergency Declaration At: Time/Date _____ / _____ / _____
(central) MM DD YY

7. Emergency Classification criteria: G1.1 G1.2 G2.1 G3.1
Failed Barriers: RCS Containment Fuel Clad none Heat Removal Sys Inadequate

10. Emergency Releases: A None C Is Occurring

14. Meteorological Data A Wind Direction (from) _____ B Speed(mph) _____ C AT _____

15. Recommended Actions:

Evacuate and control access in down wind zones

A-2 B-5 C-5 D-5 E-5 F-5 I-5 J-5 K-5

D1 Shelter and control access in down wind zones **OR** D2 Evacuate and control access in down wind zones

B-10 C-10 D-10 E-10 F-10 G-10 H-10 I-10 J-10 K-10

AND In all affected areas: Monitor environmental radiation levels, locate and evacuate hot spots and implement control and possible confiscation of food and water supplies and consider evacuation of children and pregnant women.

E Other _____

16. Approved By: _____ Emergency Director
(Name) (Title)

A. _____ Line 1 check box A or B.

B. _____ Line 6 fill in the declaration time/date (time that you evaluated the condition in procedure).

C1. _____ Line 7 check the box(es) for the criteria requiring this emergency classification (only one required).

C2. _____ Check all failed barriers or none, check heat removal inadequate if appropriate.

C3. _____ If more information is required, list it on a separate page, read it over the ENN when line 7 is read.

D. _____ Line 10 if an Emergency Radioactive release is in progress, check box C otherwise check box A.

E. _____ Line 14 enter the current met data (35 foot elevation preferred) from PPC (ERDS) or the BOP

F. _____ Line 15 indicated the PARs required for this declaration, by selecting the down wind zones in lines C and D1 or D2. Use line E as appropriate. For example list PARs beyond 10 miles.

G. _____ Line 16 the Emergency Director must sign this form.

H. _____ Within 15 minutes of declaration time, using the ENN (instructions on following page), contact the state and local agencies listed below. Enter below the time of the attempted initial FNN contact (transmission time). Enter below the name of the person contacted once obtained. Check the acknowledged box when receipt of message is acknowledged. The table on the next page lists methods of contact.

Alabama Radiation Control **OR** State Troopers

OR Houston Co Time _____ Name _____ Acknowledged

GEMA **OR** Early County Time _____ Name _____ Acknowledged

If Alabama Radiation Control is at the FEOC in Houston County then Houston County is not required to be notified.

Houston County Time _____ Name _____ Acknowledged

If GEMA is at the FEOC in Early County then Early County is not required to be notified.

Early County Time _____ Name _____ Acknowledged

If AEMA is not on the ENN, they are not required to be notified.

AEMA Time _____ Name _____ Acknowledged

I. _____ Proceed to the following page for the REMAINING NOTIFICATIONS at step J.

**GUIDELINE 1
GENERAL EMERGENCY
RED VERBAL NOTIFICATION FORM**

SOUTHERN LINC ENN INSTRUCTIONS FOR INITIAL NOTIFICATION

1. Press group pushbutton, verify display shows WIDE AREA, FEP ENN. Correct per step 6 below if necessary. Pickup handset or leave in cradle, press to talk (PTT), wait for the chirp and announce "This is name/title at Farley Nuclear Plant. Please obtain a GENERAL EMERGENCY RED initial notification form and monitor the ENN." Release the PTT.
2. PTT and request a state level agency (see NOTIFICATION MEANS table below) for Alabama and Georgia, a county level agency for Houston County (not required if Alabama Radiation Control is at the FEOC) and Early County (not required if GEMA at the FEOC), and AEMA acknowledge manning of the ENN per step H on the previous page. Example "Alabama Radiation Control at Montgomery EOC are you on the line?" Release the PTT after each request to allow the party to answer
3. PTT and announce on the ENN "Please prepare to receive a GENERAL EMERGENCY, RED initial notification message with acknowledgment", then slowly read the GE initial notification form over the ENN. Release the PTT after reading two or three lines to allow individuals to respond.
4. Have the agencies contacted above, acknowledge receipt of the message and fill in the checkbox on previous page when they do.
5. If any required agency could not be contacted on the ENN, then use numbers listed below or in FNP-0-EIP-8.3 to contact them by any available means as soon as possible.
6. If the display does not show "WIDE AREA, FEP ENN" when group is pressed, press the button with the square until the top line is indicated, then press the arrow buttons until "WIDE AREA" is displayed, then press the button under OK. Press the button with the square until the second line is indicated then press the arrow buttons until "FEP ENN" is displayed, then press the button under OK.

NOTIFICATION MEANS (underlined numbers are available 24 hours a day)

<p>ALABAMA State Agencies In preferred order Alabama Radiation Control at Montgomery EOC ENN (1305), OPX (6628), phone (334-242-4378) FAX (334-264-4396) State Troopers in Montgomery ENN (1303), phone (334-242-4378, 4379) Alabama Radiation Control at Alabama Forward EOC ENN (1307), OPX 6621), phone (334-793-1565) FAX (8-257-1535) HOUSTON COUNTY ENN(1307), OPX (6621), FAX(8-257-1535) phone (334-794-9720, 793-9655, 334-677-4807, 4808)</p>	<p>GEORGIA State Agencies In preferred order GEMA at Atlanta EOC ENN (1304), OPX (6629), Phone (404-635-7200) FAX (404-627-4850) GEMA at Georgia Forward EOC ENN (1308) OPX (6626) phone (229-723-4826) FAX (8-257-2455) EARLY COUNTY ENN(1308) OPX (6622)FAX(8-276-4655) phone(229-723-3577, 3578, 4826)</p>
<p>AEMA COURTESY NOTIFICATION ENN (1306)</p>	<p>FLORIDA State Agency Florida Department of Emergency Management phone (800-320-0519) (850-413- 9911) FAX (850-488-7841)</p>

REMAINING NOTIFICATIONS (continued from previous page)

- J. ___ Fax a copy of the previous page GENERAL EMERGENCY RED VERBAL NOTIFICATION FORM to the State of Florida, EOF and EOC using speed dial #10 or an alternative method of contact that is listed in the table above.
- K. ___ Verify the state of Florida has received the FAX using the numbers listed in the table above.
- L. ___ Complete Figure 6, side 1, follow-up message as soon as possible.
- M. ___ Fax Figure 6, side 1, to state and local agencies as soon as possible, but within 30 minutes of the verbal notification per the instructions on Figure 6, side 2.
- N. ___ Provide the information on Figure 6, side 1, to the NRC as soon as possible, but within one hour of the declaration per the instructions on Figure 6, side 2.

GUIDELINE 2
SITE AREA EMERGENCY
ORANGE VERBAL NOTIFICATION FORM

- 1. This is a Drill Actual Emergency Initial
- 2. Site: Farley Nuclear Plant
- 3. Confirmation Phone Numbers: (334)899-5156 or (334)794-0800 Ext. 4662 or 4663
- 5. Emergency Classification: Site Area Emergency

- 6. Emergency Declaration At: _____ Time/Date _____ / _____ / _____
(central) MM DD YY
- 7. Emergency Classification criteria: S1.1 S1.2 S2.1 S2.2 S3.1 S3.2
 S3.3 S3.4 S4.1 S4.2 S5.1 S5.2 S6.1 S6.2 S6.3
 S7.1 S7.2 S7.3 S7.4 S7.5 S7.6 S7.7 S8.1 S8.2
Failed Barriers: RCS Containment Fuel Clad none Heat Removal Sys Inadequate

- 10 Emergency Releases: None Is Occurring
- 14. Meteorological Data Wind Direction (from) _____ Speed(mph) _____ AT _____

- 15 Recommended Actions:
 There are no recommended protective actions.
 Evacuate and control access in down wind zones
 A-2 B-5 C-5 D5 E-5 F-5 I-5 J-5 K-5
 Shelter and control access in down wind zones **OR** Evacuate and control access in down wind zones
 B-10 C-10 D-10 E-10 F-10 G-10 H-10 I-10 J-10 K-10

AND In all affected areas: Monitor environmental radiation levels, located and evacuate hot spots and implement control and possible confiscation of food and water supplies and consider evacuation of children and pregnant women.

Other _____

- 16. Approved By: _____ Emergency Director
(Name) (Title)

- A. Line 1 check box A or B.
- B. Line 6 fill in the declaration time/date (time that you evaluated the condition in procedure).
- C1. Line 7 check the box(es) for the criteria requiring this emergency classification (only one required).
- C2. Check all failed barriers or none, check heat removal inadequate if appropriate.
- C3. If more information is required, list it on a separate page, read it over the ENN when line 7 is read.
- D. Line 10 if an Emergency Radioactive release is in progress, check box C otherwise check box A.
- E. Line 14-enter the current met data (35 foot elevation preferred) from PPC (ERDS) or the BOP.
- F. Line 15 indicated the PARs required for this declaration, (normally 15A, none for SAE). If PARs are required, indicate by selecting the down wind zones in lines C and D1 or D2. Use line E if necessary.
- G. Line 16, the Emergency Director must sign this form.
- H. Within 15 minutes of declaration time, using the ENN (instructions on following page), contact the state agencies listed below. Enter below the time of the attempted initial ENN contact (transmission time). Enter below the name of the person contacted once obtained. Check the acknowledged box when receipt of message is acknowledged. The table on the next page lists methods of contact.

Alabama Radiation Control **OR** State Troopers
OR Houston Co. Time _____ Name _____ Acknowledged
GEMA **OR** Early County Time _____ Name _____ Acknowledged
If AEMA is not on the ENN, they are not required to be notified.
AEMA Time _____ Name _____ Acknowledged

- I. Proceed to the following page for the REMAINING NOTIFICATIONS at step J.

**GUIDELINE 2
SITE AREA EMERGENCY
ORANGE VERBAL NOTIFICATION FORM**

- SOUTHERN LINC ENN INSTRUCTIONS FOR INITIAL NOTIFICATION**
1. Press group pushbutton, verify display shows WIDE AREA, FEP ENN. Correct per step 6 below if necessary. Pickup handset or leave in cradle, press to talk (PTT), wait for the chirp and announce **"This is name/title at Farley Nuclear Plant. Please obtain a SITE AREA EMERGENCY ORANGE initial notification form and monitor the ENN."** Release the PTT.
 2. PTT and request a state level agency (see NOTIFICATION MEANS table below) for Alabama and Georgia, a county level agency for Houston County (not required IF Alabama Radiation Control is at the FEOC) and Early County (not required if GEMA at the FEOC), and AEMA acknowledge manning of the ENN per step H on the previous page. Example **"Alabama Radiation Control at Montgomery EOC are you on the line?"** Release the PTT after each request to allow the party to answer
 3. PTT and announce on the ENN **"Please prepare to receive a SITE AREA EMERGENCY ORANGE initial notification message with acknowledgment"**, then slowly read the SAE initial notification form over the ENN. Release the PTT after reading two or three lines to allow individuals to respond.
 4. Have the agencies contacted above, acknowledge receipt of the message and fill in the checkbox on previous page when they do.
 5. If any required agency could not be contacted on the ENN, then use numbers listed below or in FNP-0-EIP-8.3 to contact them by any available means as soon as possible.
 6. If the display does not show "WIDE AREA, FEP ENN" when group is pressed, press the button with the square until the top line is indicated, then press the arrow buttons until "WIDE AREA" is displayed, then press the button under OK. Press the button with the square until the second line is indicated then press the arrow buttons until "FEP ENN" is displayed, then press the button under OK

NOTIFICATION MEANS (underlined numbers are available 24 hours a day)	
<p>ALABAMA State Agencies In preferred order Alabama Radiation Control at Montgomery EOC ENN (1305), OPX (6628), phone (334-242-4378) FAX (334-264-4396) State Troopers in Montgomery ENN (1303), phone (334-242-4378, 4379) Alabama Radiation Control at Alabama Forward EOC ENN (1307), OPX 6621), phone (334-793-1565) FAX (8-257-1535) HOUSTON COUNTY ENN(1307), OPX (6621), FAX(8-257-1535) phone (334-794-9720, 793-9655, 334-677-4807, 4808)</p>	<p>GEORGIA State Agencies In preferred order GEMA at Atlanta EOC ENN (1304), OPX (6629), Phone (404-635-7200) FAX (404-627-4850) GEMA at Georgia Forward EOC ENN (22) OPX (6626) phone (229-723-4826) FAX (8-257-2455) EARLY COUNTY ENN(1308) ENN(41) OPX (6622)FAX(8-276-4655) phone(229-723-3577, 3578, 4826)</p>
<p>AEMA COURTESY NOTIFICATION ENN (1306)</p>	<p>FLORIDA State Agency Florida Department of Emergency Management phone (800-320-0519) (850-413- 9911) FAX (850-488-7841)</p>

- REMAINING NOTIFICATIONS (continued from previous page)
- J _____ Fax a copy of the previous page SITE AREA EMERGENCY, ORANGE VERBAL NOTIFICATION FORM to the State of Florida, EOF and EOC using speed dial #10 or an alternative method of contact that is listed in the table above.
- K _____ Verify the State of Florida has received the FAX using the numbers listed in the table above.
- L _____ Complete Figure 6, side 1, follow-up message as soon as possible.
- M _____ Fax Figure 6, side 1, to state and local agencies as soon as possible, but within 30 minutes of the verbal notification per the instructions on Figure 6, side 2.
- N _____ Provide the information on Figure 6, side 1 to the NRC as soon as possible but within one hour of the declaration per the instructions on Figure 6, side 2.

**GUIDELINE 3
ALERT**

YELLOW VERBAL NOTIFICATION FORM

- 1. A This is a Drill B Actual Emergency Initial
- 2. Site: Farley Nuclear Plant
- 3. Confirmation Phone Numbers: (334)899-5156 or (334)794-0800 Ext. 4662 or 4663
- 5. Emergency Classification: Alert
- 6. Emergency Declaration At: _____ Time/Date _____ / ____ / ____
(central) MM DD YY
- 7. Emergency Classification criteria: A1.1 A1.2 A2.1 A2.2 A2.3 A3.1
 A3.2 A4.1 A4.2 A4.3 A4.4 A4.5 A4.6 A5.1 A5.2
 A5.3 A5.4 A5.5 A6.1 A6.2 A6.3 A7.1 A7.2 A7.3
 A7.4 A7.5 A7.6 A7.7 A7.8 A8.1 A 8.2
Failed Barriers: RCS Containment Fuel Clad none Heat Removal Sys Inadequate
- 10 Emergency Releases: A None C Is Occurring
- 14. Meteorological Data A Wind Direction (from) _____ B Speed(mph) _____ C ΔT _____
- 15. Recommended Actions:
 There are no recommended protective actions.

16. Approved By: _____ Emergency Director
(Name) (Title)

- A. _____ Line 1 check box A or B.
- B. _____ Line 6 fill in the declaration time/date (time that you evaluated the condition in procedure).
- C1. _____ Line 7 check the box(es) for the criteria requiring this emergency classification (only one required).
- C2. _____ Check all failed barriers or none; check heat removal inadequate if appropriate.
- C3. _____ If more information is required, list it on a separate page; read it over the ENN when line 7 is read.
- D. _____ Line 10 if an Emergency Radioactive release is in progress check box C otherwise check box A
- E. _____ Line 14-enter the current met data (35 foot elevation preferred) from PPC (ERDS) or the BOP.
- F. _____ Line 16, the Emergency Director must sign this form.
- G. _____ Within 15 minutes of declaration time, using the ENN (instructions on following page), contact the state agencies listed below. Enter below the time of the attempted initial ENN contact (transmission time). Enter below the name of the person contacted once obtained. Check the acknowledged box when receipt of message is acknowledged. The table on the next page lists methods of contact.

Alabama Radiation Control **OR** State Troopers
OR Houston Co. Time _____ Name _____ Acknowledged
GEMA **OR** Early County Time _____ Name _____ Acknowledged
If AEMA is not on the ENN, they are not required to be notified.
AEMA Time _____ Name _____ Acknowledged

H. _____ Proceed to the following page for the REMAINING NOTIFICATIONS at step i.



GUIDELINE 3

ALERT

YELLOW VERBAL NOTIFICATION FORM

- SOUTHERN LINC ENN INSTRUCTIONS FOR INITIAL NOTIFICATION**
1. Press group pushbutton, verify display shows WIDE AREA, FEP ENN. Correct per step 6 below if necessary. Pickup handset or leave in cradle, press to talk (PTT), wait for the chirp and announce "This is name/title at Farley Nuclear Plant. Please obtain a ALERT YELLOW initial notification form and monitor the ENN." Release the PTT.
 2. PTT and request a state level agency (see NOTIFICATION MEANS table below) for Alabama and Georgia, a county level agency for Houston County (not required IF Alabama Radiation Control is at the FEOC) and Early County (not required if GEMA at the FEOC), and AEMA acknowledge manning of the ENN per step H on the previous page. Example "Alabama Radiation Control at Montgomery EOC are you on the line?" Release the PTT after each request to allow the party to answer
 3. PTT and announce on the ENN "Please prepare to receive a ALERT YELLOW initial notification message with acknowledgment", then slowly read the Alert initial notification form over the ENN. Release the PTT after reading two or three lines to allow individuals to respond.
 4. Have the agencies contacted above, acknowledge receipt of the message and fill in the checkbox on previous page when they do.
 5. If any required agency could not be contacted on the ENN, then use numbers listed below or in FNP-0-EIP-8.3 to contact them by any available means as soon as possible.
 6. If the display does not show "WIDE AREA, FEP ENN" when group is pressed, press the button with the square until the top line is indicated, then press the arrow buttons until "WIDE AREA" is displayed, then press the button under OK. Press the button with the square until the second line is indicated then press the arrow buttons until "FEP ENN" is displayed, then press the button under OK.

NOTIFICATION MEANS (underlined numbers are available 24 hours a day)	
<p>ALABAMA State Agencies In preferred order Alabama Radiation Control at Montgomery EOC ENN (1305), OPX (6628), phone (334-242-4378) FAX (334-264-4396) State Troopers in Montgomery ENN (1303), phone (334-242-4378, 4379) Alabama Radiation Control at Alabama Forward EOC ENN (1307), OPX 6621), phone (334-793-1565) FAX (8-257-1535) HOUSTON COUNTY ENN(1307), OPX (6621), FAX(8-257-1535) phone (334-794-9720, 793-9655, 334-677-4807, 4808) AEMA COURTESY NOTIFICATION ENN (1306)</p>	<p>GEORGIA State Agencies In preferred order GEMA at Atlanta EOC ENN (1304), OPX (6629), Phone (404-635-7200) FAX (404-627-4850) GEMA at Georgia Forward EOC ENN (22) OPX (6626) phone (229-723-4826) FAX (8-257-2455) EARLY COUNTY ENN(1308) ENN(41) OPX (6622)FAX(8-257-2455) phone(229-723-3577, 3578, 4826)</p>
	<p>FLORIDA State Agency Florida Department of Emergency Management phone (800-320-0519) (850-413- 9911) FAX (850-488-7841)</p>

REMAINING NOTIFICATIONS (continued from previous page)

- I _____ Fax a copy of the previous page ALERT YELLOW VERBAL NOTIFICATION FORM to the State of Florida, EOF, and EOC using speed dial #10 or an alternative method of contact that is listed in the table above.
- J _____ Verify the State of Florida has received the FAX using the numbers listed in the table above.
- K _____ Complete Figure 6, side 1, follow-up message as soon as possible.
- L _____ Fax Figure 6 side 1, to state and local agencies as soon as possible, but within 30 minutes of the verbal notification per the instructions on Figure 6, side 2.
- M _____ Provide the information on Figure 6, side 1, to the NRC as soon as possible, but within one hour of the declaration per the instructions on Figure 6, side 2.

**GUIDELINE 4
NOTIFICATION OF UNUSUAL EVENT
BLUE VERBAL NOTIFICATION FORM**

- SOUTHERN LINC ENN INSTRUCTIONS FOR INITIAL NOTIFICATION**
1. Press group pushbutton, verify display shows WIDE AREA, FEP ENN. Correct per step 6 below if necessary. Pickup handset or leave in cradle, press to talk (PTT), wait for the chirp and announce "This is name/title at Farley Nuclear Plant. Please obtain a Notification of Unusual Event BLUE initial notification form and monitor the ENN." Release the PTT.
 2. PTT and request a state level agency (see NOTIFICATION MEANS table below) for Alabama and Georgia, a county level agency for Houston County (not required IF Alabama Radiation Control is at the FEOC) and Early County (not required if GEMA at the FEOC), and AEMA acknowledge manning of the ENN per step H on the previous page. Example "Alabama Radiation Control at Montgomery EOC are you on the line?" Release the PTT after each request to allow the party to answer
 3. PTT and announce on the ENN "Please prepare to receive a Notification of Unusual Event BLUE initial notification message with acknowledgment", then slowly read the Notification of Unusual Event initial notification form over the ENN. Release the PTT after reading two or three lines to allow individuals to respond.
 4. Have the agencies contacted above, acknowledge receipt of the message and fill in the checkbox on previous page when they do.
 5. If any required agency could not be contacted on the ENN, then use numbers listed below or in FNP-0-EIP-8.3 to contact them by any available means as soon as possible.
 6. If the display does not show "WIDE AREA, FEP ENN" when group is pressed, press the button with the square until the top line is indicated, then press the arrow buttons until "WIDE AREA" is displayed, then press the button under OK. Press the button with the square until the second line is indicated then press the arrow buttons until "FEP ENN" is displayed, then press the button under OK

NOTIFICATION MEANS (underlined numbers are available 24 hours a day)	
ALABAMA State Agencies In preferred order Alabama Radiation Control at Montgomery EOC ENN (1305), OPX (6628), phone (334-242-4378) FAX (334-264-4396) State Troopers in Montgomery ENN (1303), phone (334-242-4378, 4379) Alabama Radiation Control at Alabama Forward EOC ENN (1307), OPX 6621), phone (334-793-1565) FAX (8-257-1535) HOUSTON COUNTY ENN(1307), OPX (6621), FAX(8-257-1535) phone (334-794-9720, 793-9655, 334-677-4807, 4808)	GEORGIA State Agencies In preferred order GEMA at Atlanta EOC ENN (1304), OPX (6629), Phone (404-635-7200) FAX (404-627-4850) GEMA at Georgia Forward EOC ENN (22) OPX (6626) phone (229-723-4826) FAX (8-257-2455) EARLY COUNTY ENN(1308) ENN(41) OPX (6622)FAX(8-257-2455) phone(229-723-3577, 3578, 4826)
AEMA COURTESY NOTIFICATION ENN (1306)	FLORIDA State Agency Florida Department of Emergency Management phone (800-320-0519) (850-413- 9911) FAX (850-488-7841)

- REMAINING NOTIFICATIONS (continued from previous page)
- I _____ Fax a copy of the previous page NOUE BLUE VERBAL NOTIFICATION FORM to the State of Florida, EOF, and EOC using speed dial #10 or an alternative method of contact that is listed in the table above.
 - J _____ Verify the State of Florida has received the FAX using the numbers listed in the table above.
 - K _____ Complete Figure 6, side 1, follow-up message as soon as possible.
 - L _____ Fax Figure 6, side 1, to state and local agencies as soon as possible, but within 30 minutes of the verbal notification per the instructions on Figure 6, side 2.
 - M _____ Provide the information on Figure 6, side 1, to the NRC as soon as possible, but within one hour of the declaration per the instructions on Figure 6, side 2.

Facility: <u>Farley Nuclear Plant</u>		Date of Examination: <u>January 10, 2005</u>
Exam Level (circle one): RO / SRO-i / SRO-U		Operating Test No.: _____
Control Room Systems (8 for RO; 7 for SRO-i; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
a. CRO-65B Perform an emergency boration 024AA2.02 (3.9/4.4) use esp-0.1 go to attach. 2	S/ M/ A/ E	1
b. CRO-343C Establish Letdown As Required In response To A Spurious Safety Injection 004A2.12 (4.1/4.3)	S/ D/ A/ E	2
c. CRO-333A Perform the required actions for CL recirc 011EA1.11 (4.2/4.2)	S/ M/ A/ E	3
d. CRO-358B Place a SGFP in service 059A4.03 (2.9*/2.9)	S/ M/ A/L	4s
e. CRO-43A Start a RCP 003A1.01 (2.9/2.9)	S/ M/ A/ L	4P
f. CRO-127A Perform Corrective Actions In Response To A Malfunction Of The Excore NIS - Power Range Failure (015A4.02 3.9/3.9) changed this on 9-15-2004	S/ D	7
g. CRO-415A Start the station blackout D/G 064A3.06 (3.3/3.4)	S/ M/ A/ E	6
h. <i>CRO-350A Operate Post LOCA H2 recombiner 028A4.01 (4.0*/4.0*) RO only</i>	C/ D/ E	5
In-Plant Systems (3 for RO; 3 for SRO-i; 3 or 2 for SRO-U)		
i. SO – 386 Conduct a Waste Gas release 071A4.26 (3.1/3.9)	D/ R	9
j. SO- 590 Place The SJAE Filtration Unit In Service 037AA1.02 (3.1/2.9)	D	4S
k. SO-448 Align Backup Air To PORVs From Nitrogen Bottles 065AA2.07 (2.8/3.2)	D/R/E	8
@ All control room (and in-plant) systems must be different and serve different safety functions; in plant systems and functions may overlap those tested in the control room.		
*Type Codes	Criteria for RO/ SRO-i/ SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect form bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

CONDITIONS

When I tell you to begin, you are to PERFORM AN EMERGENCY BORATION. The conditions under which this task is to be performed are:

- a. Chemical and Volume Control System is in operation with 1A charging pump running.
- b. 1A BAT is on service, 1B BAT pump is tagged out for bearing replacement.
- c. Unit 1 is in Mode 3 at normal operating temperature.
- d. A Reactor Trip has occurred, and ESP-0.1, Reactor Trip Response, is in progress.
- e. Letdown was inadvertently isolated on the Reactor Trip.
- f. One control Rod has not inserted.
- g. The Shift Supervisor directs you to perform the actions of ESP-0.1, step 3, RNO.
- h. A pre-job brief is NOT required.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
1. Attempt to start 1A boric acid transfer pump.	1A BAT Pump handswitch taken to start. (CUE: Pump breaker indicator lights NOT lit.)	S / U
NOTE: Examinee may choose to NOT perform steps aligning either NORMAL or ALTERNATE emergency borate paths due to recognizing that no BAT pumps are running and no flow will be obtained.		
2. Align normal emergency boration flow path.	Open EMERG BORATE TO CHG PUMP SUCT Q1E21MOV8104 open (CUE: Q1E21MOV8104 red light is LIT.)	S / U
*3. Verify 45 gpm letdown orifice in service.	OPEN LTDN ORIF ISO 45 GPM Q1E21HV8149A. (CUE: Q1E21HV8149A red light is LIT.)	S / U
*4. Verify 60 gpm letdown orifice in service.	OPEN LTDN ORIF ISO 60 GPM Q1E21HV8149B or C. (CUE: Q1E21HV8149B or C red light is LIT.)	S / U
*5. Verify charging flow greater than 40 gpm.	Adjust charging flow to greater than 40 gpm by manually opening FCV-122. (CUE: FI-122A reads >40 gpm.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
6. Check emergency & manual boration flow greater than 30 gpm.	Check emergency & manual boration flow greater than 30 gpm. (CUE: FI-110 & FI-113 indicate 0 gpm.)	S / U
NOTE: Examinee will determine Boration flow not adequate and commence verifying Boration flow path per Attachment 2.		
7. Verify 1A CHG PUMP header valves open.	Verifies 1A CHG PUMP hdr valves open. (CUE: CHG PUMP SUCTION HDR ISO Q1E21MOV 8130A, 8130B, 8131A & 8131B red lights are lit.)	S / U
8. Check Boration flow adequate.	Determine that NO boration flow from either BAT pump via either boration flowpath is available. (CUE: FI-110 and FI-113 indicates 0 gpm.)	S / U
*9. Align charging pump suction to RWST.	Open RWST TO CHG PMP valves Q1E21LCV115B & D, Close VCT OUTLET ISO Q1E21LCV115C & E. (CUE: LCV115B & D red lights are LIT, LCV115C & E green lights are LIT.)	S / U
10. Verify charging pump discharge flow path – ALIGNED.	Verify CHG PUMPS TO REGEN HX Q1E21MOV8107 & MOV8108 open. (CUE: MOV8107 & 8108 red lights are LIT.)	S / U
11. Verify only one charging line valve – OPEN.	Verify RCS NORMAL CHG LINE Q1E21HV8146 OR RCS ALT CHG LINE Q1E21HV8147 OPEN. (CUE: Q1E21HV8146 OR Q1E21HV8147 red light is LIT.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*12. Verify charging flow - GREATER THAN 92 gpm.	CHG FLOW FK 122 manually adjusted as necessary. (CUE: FI-122A indicates 110 gpm.)	S / U

The above task is only critical IF charging flow was below 92 gpm from the above steps and the candidate has to increase charging flow to >92 gpm.

STOP TIME

Terminate when flow rate has been verified adequate.

CRITICAL ELEMENTS: Critical Elements Are Denoted By An Asterisk (*) In Front Of The Element Number.

GENERAL REFERENCES

1. FNP-1-ESP-0.1, Version 24.0
2. Technical Specifications
3. K/As: 024AA2.02 RO-3.9 SRO-4.4
024AA2.01 RO-3.8 SRO-4.1

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS

CONDITIONS

When I tell you to begin, you are to PERFORM AN EMERGENCY BORATION. The conditions under which this task is to be performed are:

- a. Chemical and Volume Control System is in operation with 1A charging pump running.
- b. 1A BAT is on service, 1B BAT pump is tagged out for bearing replacement.
- c. Unit 1 is in Mode 3 at normal operating temperature.
- d. A Reactor Trip has occurred, and ESP-0.1, Reactor Trip Response, is in progress.
- e. Letdown was inadvertently isolated on the Reactor Trip.
- f. One control Rod has not inserted.
- g. The Shift Supervisor directs you to perform the actions of ESP-0.1, step 3, RNO.
- h. A pre-job brief is NOT required.

CONDITIONS

When I tell you to begin, you are to PERFORM AN EMERGENCY BORATION. The conditions under which this task is to be performed are:

- a. Chemical and Volume Control System is in operation with 1A charging pump running.
- b. 1A BAT is on service, 1B BAT pump is tagged out for bearing replacement.
- c. Unit 1 is in Mode 3 at normal operating temperature.
- d. A Reactor Trip has occurred, and ESP-0.1, Reactor Trip Response, is in progress.
- e. Letdown was inadvertently isolated on the Reactor Trip.
- f. One control Rod has not inserted.
- g. The Shift Supervisor directs you to perform the actions of ESP-0.1, step 3, RNO.
- h. A pre-job brief is NOT required.

SIMULATOR 2 - RO AND SRO-I

TITLE: Establish Letdown As Required In Response To A Spurious Safety Injection
 PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT X
 ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE
 DISCUSS _____
 EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM
 PLANT _____
 PROJECTED TIME: 10 MIN SIMULATOR IC NUMBER: IC-163
 ALTERNATE PATH X TIME CRITICAL ___ PRA ___

Trainer/Date:		Trainee:	
Evaluator/Date:			
Overall JPM	Satisfactory	<input type="checkbox"/>	Unsatisfactory
		<input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)			

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to ESTABLISH LETDOWN AS REQUIRED IN RESPONSE TO A SPURIOUS SAFETY INJECTION. The conditions under which this task is to be performed are:

- a. Unit 1 has experienced a spurious safety injection.
- b. Pressurizer level is at 55% and CCW is aligned to the miscellaneous header.
- c. ESP-1.1, SI Termination, is in progress and has been completed through Step 13.4.
- d. You are directed to perform Step 14 of ESP-1.1 and establish letdown flow.
- e. A pre-job brief is not required.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
------------------	-------------------	------------------------------

START TIME: _____

- | | | |
|--|--|-------|
| 1. Open LTDN LINE PENE RM ISO HV8175A and B. | SO directed to open HV-8175A & B on the PRIP. (CUE: The SO reports HV-8175A & B are open.) | S / U |
| 2. Open LTDN LINE CTMT ISO HV8152. | HV-8152 handswitch taken to open (CUE: HV-8152 red light is lit.) | S / U |

NOTE TO EVALUATOR: IN THE NEXT ELEMENT, IT IS ACCEPTABLE FOR THE EXAMINEE TO NOT OPEN LCV-460 WHEN LCV-459 FAILS TO OPEN.

- | | | |
|--|--|-------|
| 3. Open LTDN LINE ISO valves LCV459 and 460. | Handswitch for LCV-459 and LCV-460 taken to open. (CUE: <u>LCV-459 green light is lit</u> , LCV-460 red light is lit.) | S / U |
|--|--|-------|

NOTE TO EVALUATOR: IN THE NEXT ELEMENT, IT IS NOT CRITICAL TO CLOSE LCV-460 AND HV8152, BUT IT IS A GOOD OPERATING PRACTICE.

- | | | |
|--|---|-------|
| 4. Close LTDN LINE ISO valve LCV460 and LTDN LINE CTMT ISO valve HV8152. | LCV460 & HV8152 handswitches taken back to closed. (CUE: LCV460 & HV8152 green lights are lit.) | S / U |
| *5. Open CCW TO EXC LTDN/RCDT HXS Q1P17HV3095. | HV-3095 handswitch taken to open. (CUE: HV-3095 red light is lit.) | S / U |

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*6. Open CCW FROM EXC LTDN / RCDT HXS Q1P17HV3067/3443.	HV-3067 & 3443 handswitches for taken to open. (CUE: HV-3067 & 3443 red lights are lit.)	S / U
7. Adjust EXC LTDN HX DISCH HIK 137 closed.	HIK-137 adjusted closed. (CUE: HIK-137 demand indicates zero.)	S / U
*8. Open EXC LTDN ISO HV8153 and HV8154.	HV-8153 & 8154 handswitches taken to open. (CUE: HV-8153 & 8154 red lights are lit.)	S / U
9. Align EXC LTDN DIVERT VLV HV8143 to VCT.	HV-8143 is checked in VCT position. (CUE: HV8143 is aligned to the VCT.)	S / U

CUE: SHIFT SUPERVISOR DIRECTS MAXIMUM ALLOWED EXCESS LETDOWN FLOW.

*10. Adjust EXC LTDN HX DISCH HIK 137 as required.	HIK-137 adjusted to maintain less than 165°F on TI-139. (CUE: TI-139 indicates less than 160°F and stable.)	S / U
--	---	-------

STOP TIME: _____

Terminate when HIK-137 has been adjusted and excess letdown temperature is stable.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-ESP-1.1, Version 20.0
2. K/As: 004A2.12 RO-4.1 SRO-4.3

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to ESTABLISH LETDOWN AS REQUIRED IN RESPONSE TO A SPURIOUS SAFETY INJECTION. The conditions under which this task is to be performed are:

- a. Unit 1 has experienced a spurious safety injection.
- b. Pressurizer level is at 55% and CCW is aligned to the miscellaneous header.
- c. ESP-1.1, SI Termination, is in progress and has been completed through Step 13.4.
- d. You are directed to perform Step 14 of ESP-1.1 and establish letdown flow.
- e. A pre-job brief is not required.

CONDITIONS

When I tell you to begin, you are to ESTABLISH LETDOWN AS REQUIRED IN RESPONSE TO A SPURIOUS SAFETY INJECTION. The conditions under which this task is to be performed are:

- a. Unit 1 has experienced a spurious safety injection.
- b. Pressurizer level is at 55% and CCW is aligned to the miscellaneous header.
- c. ESP-1.1, SI Termination, is in progress and has been completed through Step 13.4.
- d. You are directed to perform Step 14 of ESP-1.1 and establish letdown flow.
- e. A pre-job brief is not required.

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS FOR COLD LEG RECIRCULATION. The conditions under which this task is to be performed are:

- a. SI system in operation following a Large Break LOCA.
- b. ESP-1.3, Transfer to Cold Leg Recirculation, has been entered and all steps through Step 7.2 have been completed.
- c. You are the extra operator. The Shift Supervisor has directed you to transfer to cold leg recirculation starting at Step 7.3 of ESP-1.3.
- d. A pre-job brief is NOT required.

NOTE: THIS JPM MAY BE PERFORMED ON EITHER UNIT

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
*1. Stop both RHR pumps	A and B RHR pump handswitches taken to stop. (CUE: Amps indicate '0', green lights LIT.)	S / U
*2. Close RWST TO 1A RHR PUMP Q1E11MOV8809A	MOV-8809A handswitch taken to closed. (CUE: MOV-8809A VPI green light lit.)	S / U
*3. Open CTMT SUMP TO 1A RHR PUMP Q1E11MOV8811A and 8812A	MOV-8811A and MOV-8812A, handswitches taken to open. (CUE: MOV8811A and 8812A VPI red lights lit.)	S / U
*4. Close RHR TO RCS HOT LEGS XCON Q1E11MOV8887A	MOV-8887A handswitch taken to closed. (CUE: MOV8887AVPI green light lit.)	S / U
*5. Start 1A RHR pump	Handswitch for 1A RHR PMP taken to start. (CUE: Pump amp meter indicates 40 amps, pump breaker red light lit.)	S / U
6. Verify A Train LHSI flow is stable	FI-605A checked. (CUE: FI-605A stable at 2600 gpm.)	S / U
*7. Close RWST TO 1B RHR PUMP Q1E11MOV8809B	MOV-8809B handswitch taken to closed. (CUE: MOV-8809B VPI red light lit.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
8. Open CTMT SUMP TO 1B RHR PUMP Q1E11MOV8811B and 8812B	MOV-8811B and MOV-8812B, handswitches taken to open. (CUE: MOV8811B VPI red light LIT and 8812B green light LIT.)	S / U
<p>NOTE: MOV8812B does not open. ALTERNATE PATH STARTS HERE</p>		
*9. Stop the 1C (running B train) CHG PUMP.	The 1C CHG PUMP is tripped on overcurrent – (CUE: 1C CHG PUMP green light and amber light is LIT.)	S / U
10. Verify charging pump miniflow valves CLOSED	Indications for MOVs 8109A/B/C and 8106 checked. (CUE: Charging pump miniflow VPI Green lights are lit.)	S / U
11. Check OPEN B Charging Pump suction Hdr Iso Valves	Position indication for CHG PMP SUCTION HDR ISO VALVE MOV- 8130A and B checked. (CUE: VPI red lights lit.)	S / U
*12. CLOSE B Chg Pump Suct Hdr Iso from B Train	Handswitches for CHG PMP SUCTION HDR ISO VALVE 8131A and B taken to close. (CUE: VPI green lights lit.)	S / U
*13. OPEN MOV8706A - 1A RHR HX TO Chg Pump SUCTION	MOV-8706A handswitch taken to open. (CUE: VPI red light lit.)	S / U
14. Verify VCT level is > 5%	LI-112 and LI-115 are checked. (CUE: LI-115/112 indicates 30% level.)	S / U
<p>NOTE: IF EXAMINEE OBSERVES CHARGING PUMP AMPS - CUE: 1A CHARGING PUMP AMPS ARE 150 AND STABLE.</p>		
*15. CLOSE LCV-115B – RWST to Chg pump	Handswitch for RWST TO CHG PUMP LCV-115B taken to close. (CUE: VPI green light lit.)	S / U
16. Verify the B train - 1C charging pump stopped.	1C charging pump is tripped. (CUE: PUMP green light and amber light is LIT.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
17. Verify 1A charging pump running	Charging pump indications checked. (CUE: 1A chg pump red light is lit, amps 150.)	S / U
18. Check OPEN B Charging Pump discharge Hdr Iso Valves MOV8132A & B	Position indication for CHG PMP DISCH HDR ISO VLV MOV-8132A and B checked. (CUE: VPI red lights lit.)	S / U
*19. CLOSE B Charging Pump Discharge Hdr to B Train Valves -- MOV8133A & B	Handswitch for CHG PMP DISCH HDR MOV-8133A and B taken closed. (CUE: VPI green lights lit.)	S / U
20. Verify SI flow is stable on FI-943	Flow is checked on FI-943, HHSI Flow A train recirc flow (CUE: SI flow is stable at 600 gpm on FI-943.)	S / U
21. Verify SI flow is stable on FI-605A	Flow is checked on FI-605A RHR HDR flow.(Cue: SI flow is stable at 2200 gpm on FI-605A.)	S / U

____ STOP TIME

Terminate when SI flow is determined to be stable.

* **CRITICAL ELEMENTS:** Critical Elements are denoted with an Asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1- ESP-1.3 Rev. 16
2. K/As: 011 EA1.11 RO-4.2 SRO-4.2

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS FOR COLD LEG RECIRCULATION. The conditions under which this task is to be performed are:

- a. SI system in operation following a Large Break LOCA.
- b. ESP-1.3, Transfer to Cold Leg Recirculation, has been entered and all steps through Step 7.2 have been completed.
- c. You are the extra operator. The Shift Supervisor has directed you to transfer to cold leg recirculation starting at Step 7.3 of ESP-1.3.
- d. A pre-job brief is NOT required.

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS FOR COLD LEG RECIRCULATION. The conditions under which this task is to be performed are:

- a. SI system in operation following a Large Break LOCA.
- b. ESP-1.3, Transfer to Cold Leg Recirculation, has been entered and all steps through Step 7.2 have been completed.
- c. You are the extra operator. The Shift Supervisor has directed you to transfer to cold leg recirculation starting at Step 7.3 of ESP-1.3.
- d. A pre-job brief is NOT required.

SIMULATOR 4 - RO AND SRO-I

TITLE: Place 1A SGFP On Service	
PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT <u>X</u> LOCT <u>X</u>	
ACCEPTABLE EVALUATION METHOD: <u>X</u> PERFORM ___ <u>X</u> SIMULATE ___ DISCUSS	
EVALUATION LOCATION: <u>X</u> SIMULATOR <u>X</u> CONTROL ROOM ___ PLANT	
PROJECTED TIME: <u>8 MIN</u> SIMULATOR IC NUMBER: <u>JPM IC-253 (base IC-31)</u>	
ALTERNATE PATH <u>X</u> TIME CRITICAL ___ PRA	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to PLACE 1A SGFP ON SERVICE. The conditions under which this task is to be performed are:

- a. A plant startup is in progress and UOP-1.2, Startup of Unit From Hot Standby to Minimum Load, is in progress.
- b. Reactor Power is stable between 1-2%.
- c. A SGFP startup is in progress & has been turning on condensate flow for 60 minutes
- d. Directed by Shift Supervisor to perform Steps 4.3.13 through 4.3.30 of SOP-21.0 for 1A SGFP.
- e. KC3, 1A or 1B SGFP TRIPPED, Annunciator has just cleared.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Latch 1A SGFP turbine	1A SGFP TURBINE LATCH pushbutton depressed. (CUE: TURBINE TRIPPED light off, TURBINE LATCH pushbutton lit.)	S / U
2. Verify the LP and HP GOV valves indicate closed.	Verify the LP and HP GV's indicate closed. (VALVE CLOSED lights are lit.)	S / U
*3. Open the MN FW TO 1A, 1B and 1C SG STOP VLVs	Open MN FW TO 1A, 1B and 1C SG STOP VLVs. (CUE: Q1N21MOV3232A, B and C VPI red lights are lit.)	S / U
*4. Open 1A SGFP LOW PRESSURE STOP VALVE	1A SGFP LOW PRESSURE STOP VALVE OPEN pushbutton depressed. (CUE: Pushbutton LIT.)	S / U
*5. Open 1A SGFP HIGH PRESSURE STOP VALVE	1A SGFP HIGH PRESSURE STOP VALVE OPEN pushbutton depressed. (CUE: Pushbutton LIT.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
6. Dispatch an operator to the SGFP to observe the pump during startup and to report any rubbing or vibration.	Dispatch an operator to the SGFP to observe the pump during startup and to report any rubbing or vibration. (CUE: NO rubbing or vibration reported.)	S / U
7. Check that the Miniflow valve is open & unisolated	Verify open 1A SGFP MINIFLOW (CUE: 1A SGFP MINIFLOW red light lit.)	S / U
8. Check 1A SGFP RECIRC FCV INLET ISO N1N21V502A open on secondary valve indication panel.	Call TBSO to check 1A SGFP RECIRC FCV INLET ISO N1N21V502A open (CUE: TBSO reports V502A open.)	S / U
9. Check that the SGFP Suct is unisolated (N1N21V526A)	Call TBSO to check 1A SGFP SUCTION ISO N1N21V526A open (CUE: TBSO reports V526A open.)	S / U
*10. Raise 1A SGFP to minimum speed	1A SGFP INCREASE SPEED PUSHBUTTON depressed. (CUE: 1A SGFP RPM indicator increases in rpm, BOILER CONTROL light lit, INCREASE SPEED pushbutton lit.)	S / U

NOTE: SGFP speed will continue to increase to 5400 RPM and KA5 will come into alarm.

NOTE: Examinee may attempt to lower speed by depressing the DECREASE SPEED pushbutton. This will not reduce SGFP speed DUE TO A SPEED CONTROL circuit FAILURE. Candidate should reference KA5.

11. Recognize that the SGFP Speed control has been lost and KA5, SGFP TURB VIB/THRUST BRG WEAR ALARM, has just come in.	Candidate should reference KA5 ARP. (CUE: vibration exceeds 7 mils.)	S / U
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- *12. IAW KA5 or due to loss of SGFP speed control, TRIP the 1A SGFP. Trip the 1A SGFP by depressing the red TURBINE TRIP pushbutton. (CUE: Turbine Tripped light LIT and LOW PRESS STOP VALVES CLOSED lights are lit.) S / U

STOP TIME; _____

Terminate when the 1A SGFP is tripped.

CRITICAL ELEMENTS: Critical Elements are denoted with an Asterisk (*) before the element number.

GENERAL REFERENCES:

- 1. FNP-1-SOP-21.0 Version 57.0
- 2. FNP-1-ARP-1.10 Version 46
- 3. K/As: 059A1.07 RO-2.5 SRO-2.6

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to PLACE 1A SGFP ON SERVICE. The conditions under which this task is to be performed are:

- a. A plant startup is in progress and UOP-1.2, Startup of Unit From Hot Standby to Minimum Load, is in progress.
- b. Reactor Power is stable between 1-2%.
- c. A SGFP startup is in progress & has been turning on condensate flow for 60 minutes
- d. Directed by Shift Supervisor to perform Steps 4.3.13 through 4.3.30 of SOP-21.0 for 1A SGFP.
- e. KC3, 1A or 1B SGFP TRIPPED, Annunciator has just cleared.

CONDITIONS

When I tell you to begin, you are to PLACE 1A SGFP ON SERVICE. The conditions under which this task is to be performed are:

- a. A plant startup is in progress and UOP-1.2, Startup of Unit From Hot Standby to Minimum Load, is in progress.
- b. Reactor Power is stable between 1-2%.
- c. A SGFP startup is in progress & has been turning on condensate flow for 60 minutes
- d. Directed by Shift Supervisor to perform Steps 4.3.13 through 4.3.30 of SOP-21.0 for 1A SGFP.
- e. KC3, 1A or 1B SGFP TRIPPED, Annunciator has just cleared.

CONDITIONS

When I tell you to begin, you are to START 1A RCP. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 5 with RCS temperature at 125°F.
- b. A bubble is established in the pressurizer.
- c. 1B RCP is running.
- d. RCS pressure is 365 psig.
- e. UOP-1.1, Startup of Unit from Cold Shutdown to Hot Standby, Step 5.27 directs 1A RCP startup IAW SOP-1.1, Reactor Coolant System.
- f. SOP-1.1 has been completed through step 4.1.9.
- g. You have been directed by the Shift Supervisor to continue the startup of the 1A RCP per SOP-1.1, starting at Step 4.1.10.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Start the oil lift pump for 1A RCP	Start oil lift pump for 1A RCP. (CUE: Red indicating light is on.)	S / U
2. Verify 1A RCP SEAL LEAKOFF VALVE Q1E21HV-8141A is open	HV-8141A verified open. (CUE: VPI red light lit.)	S / U
3. Verify 1A RCP No. 1 seal leakoff flow rate is within the limits of Figure 1	Seal leakoff flow rate determined to be within limits. Seal leakoff FR read. (CUE: A = 1.0.)	S / U
4. Verify that DC4, SEAL WTR INJ FLTR HI D/P, and DD1, RCP SEAL INJ FLOW LO, annunciators are clear	Check annunciators DC4 & DD1. (CUE: DC4 & DD1 are not lit.)	S / U
5. Verify all RCP No. 1 seal ΔPs are greater than 200 psid	PI-156A, 155A, and 154A indication verified greater than 200 psid. (CUE: RCP seal ΔPs indicate A = 380; B = 310; C = 380.)	S / U
6. Verify that DC3, RCP #1 SEAL LO D/P annunciator is clear	Check annunciator DC3, RCP # 1 SEAL LO D/P, is clear. (CUE: Annunciator DC3 is clear.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*7. Verify oil lift pump for 1A RCP has been running for at least two minutes and is producing adequate pressure	At least two minutes has elapsed and white indicating light is on. (CUE: Two minutes has elapsed; white indicating light is on.)	S / U
*8. Start 1A RCP	Pump handswitch placed to start. (CUE: Pump breaker indicator red light lit, FI-414, 415, and 416 show increasing flow rate. (Flow indicators stabilize at \approx 110%.)	S / U
9. Verify RCP 1A amperage decreases to normal operating range	1A RCP AMPMETER checked. (CUE: Amp meter indicates 850 amps.)	S / U
10. Verify EF1, 1A RCS LOOP FLOW LO or 1A RCP BKR OPEN annunciator is clear	EF1 Annunciator is verified clear. (CUE: EF1 is clear.)	S / U
*11. After at least one minute stop oil lift pump for 1A RCP	After at least one minute has elapsed Oil Lift Pump handswitch taken to stop. (CUE: Pump breaker indicator green light lit.)	S / U
12. Observe RCP operating parameters very closely during the initial several minutes after starting. Special attention should be given to indications relating to seal performance.	Observes RCP parameters. (CUE: If the JPM is simulated, indicate annunciator HH4 has just come into alarm.)	S / U

SIMULATOR OPERATOR INITIATE "HH4, RCP VIB TRBL" ALARM (SIMULATE 1B RCP HIGH vibration when Rad Side SO is dispatched)
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*13. Observes annunciator HH4, RCP VIB TRBL. Enters ARP-1.8.	Acknowledges annunciator & enters ARP-1.8. (CUE: HH4 is lit.)	S / U
14. Check 1A RCP parameters	RCS flow, subcooling, amps, seal injection flow and bearing temperatures checked. (CUE: All parameters are normal.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*15. Dispatch the Rad Side SO to investigate the RCP Vibe panel.	Dispatches the Rad Side SO to investigate the RCP Vibe panel. (CUE: 1B RCP frame and shaft vibe alarms are in at the Bently Nevada panel.)	S / U

It is very important to ensure the candidate repeats back 1B RCP correctly. Correct them if not repeated back properly.

Report: **1B RCP vibrations are:**

Shaft- 22 mils horizontal, 16 mils vertical; Frame- 3 mils vertical and 4 mils horizontal.

1A RCP Vibe readings are normal

*16. Secure 1B RCP	1B RCP handswitch taken to stop. (CUE: 1B RCP breaker indicator green light lit, amps = 0.)	S / U
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STOP TIME

Terminate when 1B RCP is Secured.

CRITICAL ELEMENTS: Critical Elements are denoted with an Asterisk (*) before the element number.

GENERAL REFERENCES

1. FNP-1-SOP-1.1 Version 37.0
2. FNP-1-UOP-1.1
3. FNP-1-ARP-1.8 Version 28
4. K/As: 003A1.01 RO-2.9 SRO-2.9

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS

CONDITIONS

When I tell you to begin, you are to START 1A RCP. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 5 with RCS temperature at 125°F.
- b. A bubble is established in the pressurizer.
- c. 1B RCP is running.
- d. RCS pressure is 365 psig.
- e. UOP-1.1, Startup of Unit from Cold Shutdown to Hot Standby, Step 5.27 directs 1A RCP startup IAW SOP-1.1, Reactor Coolant System.
- f. SOP-1.1 has been completed through step 4.1.9.
- g. You have been directed by the Shift Supervisor to continue the startup of the 1A RCP per SOP-1.1, starting at Step 4.1.10.

CONDITIONS

When I tell you to begin, you are to START 1A RCP. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 5 with RCS temperature at 125°F.
- b. A bubble is established in the pressurizer.
- c. 1B RCP is running.
- d. RCS pressure is 365 psig.
- e. UOP-1.1, Startup of Unit from Cold Shutdown to Hot Standby, Step 5.27 directs 1A RCP startup IAW SOP-1.1, Reactor Coolant System.
- f. SOP-1.1 has been completed through step 4.1.9.
- g. You have been directed by the Shift Supervisor to continue the startup of the 1A RCP per SOP-1.1, starting at Step 4.1.10.

SIMULATOR 6 - RO AND SRO-I

TITLE: Perform Corrective Actions In Response To A Malfunction Of The Excure NIS - Power Range Failure

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT X

ACCEPTABLE EVALUATION METHOD: X PERFORM ___ SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 5 MIN SIMULATOR IC NUMBER: JPM IC-255

ALTERNATE PATH ___ TIME CRITICAL ___ PRA

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input checked="" type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to PERFORM CORRECTIVE ACTIONS IN RESPONSE TO A MALFUNCTION OF THE EXCORE NIS - POWER RANGE FAILURE. The conditions under which this task is to be performed are:

- a. Unit 1 is at 95% power with the ramp on hold for a calorimetric.
- b. NI-44 upper detector current indicator has failed low.
- c. You are to perform the actions of FB4, PR UPPER DET HI FLUX DEV OR AUTO DEF, starting with step 4.
- d. A pre-job brief is not required.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
1. Verify rod control is in manual.	Rod control is placed in manual. (CUE: The rods are in manual.)	S / U
*2. Place the rod stop bypass selector for N-44 to N44.	Rod stop bypass switch taken to N-44. (CUE: Selector switch in N-44 position.)	S / U
*3. Place the comparator channel defeat switch to N-44.	N-44 selected on comparator channel defeat switch. (CUE: Annunciator FC5 has cleared.)	S / U
*4. Place the upper and lower section selector to N-44.	N-44 selected on the upper and lower detector current comparator switches. (CUE: Annunciators FB4 and FB5 cleared.)	S / U
*5. Remove the control power fuses from the "A" drawer for N-44.	Correct fuses removed. (CUE: Annunciators FC1 & FC3 alarm & the drawer bistable lights go dark. Examinee should recognize that 7300 cabinet test switches are not required to be operated for NI-44 failure.)	S / U

_____ STOP TIME

Terminate after fuses are removed

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES

1. FNP-1-ARP-1.6, Version 44.0
2. FNP-2-ARP-1.6, Version 31.0
3. K/As: 015A4.02 RO-3.9 SRO-3.9
 015A2.01 RO-3.5 SRO-3.9

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS

CONDITIONS

When I tell you to begin, you are to **PERFORM CORRECTIVE ACTIONS IN RESPONSE TO A MALFUNCTION OF THE EXCORE NIS - POWER RANGE FAILURE**. The conditions under which this task is to be performed are:

- a. Unit 1 is at 95% power with the ramp on hold for a calorimetric.
- b. NI-44 upper detector current indicator has failed low.
- c. You are to perform the actions of FB4, PR UPPER DET HI FLUX DEV OR AUTO DEF, starting with step 4.
- d. A pre-job brief is not required.

CONDITIONS

When I tell you to begin, you are to PERFORM CORRECTIVE ACTIONS IN RESPONSE TO A MALFUNCTION OF THE EXCORE NIS - POWER RANGE FAILURE. The conditions under which this task is to be performed are:

- a. Unit 1 is at 95% power with the ramp on hold for a calorimetric.
- b. NI-44 upper detector current indicator has failed low.
- c. You are to perform the actions of FB4, PR UPPER DET HI FLUX DEV OR AUTO DEF, starting with step 4.
- d. A pre-job brief is not required.

SIMULATOR 7 – RO AND SRO-I

TITLE: Start The Station Blackout Diesel Generator	
PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT <u>X</u> LOCT <u>X</u>	
ACCEPTABLE EVALUATION METHOD: <u>X</u> PERFORM ___ SIMULATE ___ DISCUSS	
EVALUATION LOCATION: <u>X</u> SIMULATOR <u>X</u> CONTROL ROOM ___ PLANT	
PROJECTED TIME: <u>8 MIN</u> SIMULATOR IC NUMBER <u>IC-256</u>	
ALTERNATE PATH <u>X</u> TIME CRITICAL ___ PRA ___	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

Need 1B DG in Mode 3 and tagged out for the initial conditions.

This JPM starts in Attachment 8 of AOP-5.0. ALSO insert cmf malf / cbk1dg02_cc5

CONDITIONS

When I tell you to begin, you are to START THE STATION BLACKOUT DIESEL GENERATOR. The conditions under which this task is to be performed are:

- a. Unit 1 and Unit 2 have experienced an LOSP.
- b. The 1B diesel generator has experienced a start failure, 2B DG is tagged out.
- c. The Unit 2 Shift Supervisor has given permission to use the 2C diesel generator for Unit 1 emergency power.
- d. The Shift Supervisor has requested that you restore power to the 1G 4160V emergency bus using AOP-5.0, Loss of A or B Train Electrical Power, Attachment 8. Load shed verification has been completed.
- e. A pre-job brief is NOT required.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
START TIME		
1. Verify 2C DG MODE SELECTOR SWITCH in MODE 1.	2C DG MODE SELECTOR SWITCH position checked. (CUE: The MSS is in MODE 1.)	S / U
*2. Place 2C DG UNIT SELECTOR SWITCH in Unit 1.	2C DG UNIT SELECTOR SWITCH placed in Unit 1. (CUE: The USS is in Unit 1.)	S / U
*3. Depress 2C DG DIESEL START pushbutton	2C DG DIESEL START pushbutton depressed. (CUE: DIESEL CRANKING light lit, annunciator for 2C DG TRBL alarming, 2C DG rpm's increasing and other indications that 2C DG started.)	S / U
4. Verify 2C DG starts.	Indications for verification that 2C DG started are checked. (CUE: DIESEL AT SYNCH SPEED light lit, 4160V, 60 cycles, 900 rpm, or other indications as identified by examinee.)	S / U
5. Verify Unit 1 2C DG OUTPUT BKR DJ06 closes.	Indication for Unit 1 2C DG OUTPUT BKR DJ06 checked. (CUE: BKR DJ06 red light lit.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
6. Verify 1J 4160V bus tie to 1G 4160V bus BKR DG13 closed.	Indication for 1J 4160V bus tie to 1G 4160V bus BKR DG13 checked. (CUE: BKR DG13 red light lit.)	S / U
*7. Verify 1G 4160V bus tie to 1L 4160V bus BKR DG02 closed.	Indication for 1G 4160V bus tie to 1L 4160V bus BKR DG02 checked. (CUE: BKR DG02 green and yellow light lit.)	S / U

Commence emergency shutdown of 2C Diesel Generator. (Plaque on EPB or Attachment 5)
Candidate may look at voltage, load and frequency and then use step 10, Verify adequate SW flow to get to Attachment 5.

ATTACHMENT 5 ENTERED

8. Verify SI reset.	SI-RESET on MCB. (CUE: MLB-1 1-1 not lit, MLB-1 11-1 not lit.)	S / U
*9. Place the 2C diesel generator in MODE 2.	Place the 2C diesel MODE SELECTOR SWITCH to MODE 2. (CUE: 2C diesel MODE SELECTOR SWITCH to MODE 2.)	S / U
*10. Reset DG Emerg. Start signal.	Depress 2C diesel generator DIESEL EMERG START RESET pushbutton. (CUE: DIESEL EMERG START RESET pushbutton Depressed.)	S / U
*11. Stop the 2C DG.	Depress 2C diesel generator STOP pushbutton. (CUE: Diesel STOP light lit.)	S / U
*12. Place 2C diesel generator in MODE 3.	Place 2C diesel generator MODE SELECTOR SWITCH to MODE 3. (CUE: 2C diesel generator MODE SELECTOR SWITCH is in MODE 3.)	S / U

EVALUATION CHECKLIST**ELEMENTS:**

- *13. Depress affected diesel generator DIESEL EMERG START RESET pushbutton.

STANDARDS:

Depress 2C diesel generator DIESEL EMERG START RESET pushbutton. (CUE: DIESEL EMERG START RESET pushbutton depressed.)

**RESULTS:
(CIRCLE)**

S / U

STOP TIME

Terminate when 2C Diesel emergency shutdown has been completed

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-AOP- 5.0, Version 24.0
2. K/As: 064A3.06 RO-3.3 SRO-3.4

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **START THE STATION BLACKOUT DIESEL GENERATOR**. The conditions under which this task is to be performed are:

- a. Unit 1 and Unit 2 have experienced an LOSP.
- b. The 1B diesel generator has experienced a start failure, 2B DG is tagged out.
- c. The Unit 2 Shift Supervisor has given permission to use the 2C diesel generator for Unit 1 emergency power.
- d. The Shift Supervisor has requested that you restore power to the 1G 4160V emergency bus using AOP-5.0, Loss of A or B Train Electrical Power, Attachment 8. Load shed verification has been completed.
- e. A pre-job brief is NOT required.

CONDITIONS

When I tell you to begin, you are to START THE STATION BLACKOUT DIESEL GENERATOR. The conditions under which this task is to be performed are:

- a. Unit 1 and Unit 2 have experienced an IOSP.
- b. The 1B diesel generator has experienced a start failure, 2B DG is tagged out.
- c. The Unit 2 Shift Supervisor has given permission to use the 2C diesel generator for Unit 1 emergency power.
- d. The Shift Supervisor has requested that you restore power to the 1G 4160V emergency bus using AOP-5.0, Loss of A or B Train Electrical Power, Attachment 8. Load shed verification has been completed.
- e. A pre-job brief is NOT required.

Control Room (IN Plant) 8 – RO ONLY

TITLE: Operate Post LOCA Hydrogen Recombiner	
PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT <u>X</u> LOCT <u>X</u>	
ACCEPTABLE EVALUATION METHOD: ___ PERFORM <u>X</u> SIMULATE ___ DISCUSS	
EVALUATION LOCATION: ___ SIMULATOR ___ CONTROL ROOM <u>X</u> PLANT	
PROJECTED TIME: <u>8 MIN</u> SIMULATOR IC NUMBER: <u>N/A</u>	
ALTERNATE PATH ___ TIME CRITICAL ___ PRA	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to OPERATE POST LOCA HYDROGEN RECOMBINER. The conditions under which this task is to be performed are:

- a. A loss of reactor coolant has occurred.
- b. EEP-1, Loss of Reactor or Secondary Coolant, is in progress.
- c. Pre-LOCA containment temperature was 90°F and Post-LOCA containment pressure is 4 psig.
- d. Containment hydrogen concentration is 2%
- e. Directed by Shift Supervisor to place the 1A POST LOCA H2 RECOMBINER on service per Attachment 3 of EEP-1.
- f. A pre-job brief is NOT required.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
1. Check 1A POST LOCA CTMT H2 RECOMBINER output temp 1150 - 1400°F.	All 3 channels on temperature indicator checked. (CUE: Temperature is <u>120°F</u> for channel checked.)	S / U
2. Verify POWER AVAILABLE indicating light lit	Power available light checked. (CUE: Power available light is lit.)	S / U
3. Adjust POWER ADJUST setting to 000	Power adjusted to 000. (CUE: Indicator reads 000.)	S / U
*4. Turn on POWER OUT switch	Power out switch placed in ON. (CUE: Switch is on.)	S / U
5. Verify red pilot light lit	Checks red pilot light lit. (CUE: Red pilot light lit.)	S / U
6. Determine initial power out setting using Attachment 3, Figure 1	Power out setting determined from Attach 3, figure 1 to be 54 KW (No cue is to be provided since this is a reading obtained from the graph.) Acceptable range is 53 - 55 kw.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*7. Slowly adjust POWER ADJUST clockwise until POWER OUT meter indicates initial power setting.	Power out meter adjusted to value in element 6 (53-55 kw).	S / U
Cue for above say: Power out reading indicates whatever candidate determined it to be from the graph.		
8. Monitor temperature readout to be 1150 - 1400° F.	Candidate reads current temperature (CUE: Temperature reads 1100° F.)	S / U
*9. Adjust POWER ADJUST slowly to a higher value to increase temperature to the proper band.	POWER ADJUST is slowly adjusted to a higher value to increase temperature. (CUE: Temperature reads 1300° F.)	S / U
10. Inform the control room the 1A POST LOCA CTMT H2 RECOMBINER is on service.	Candidate informs control room. (CUE: CR acknowledges.)	S / U

STOP TIME

Terminate after control room informed.
--

CRITICAL ELEMENTS: Critical Elements are denoted with an Asterisk (*) before the element number.

GENERAL REFERENCES:

- FNP-1-EEP-1, Attachment 3, Version 25.0
- K/As: 0028A1.01 RO-3.4 SRO-3.8
0028A2.01 RO-3.4 SRO-3.6

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

Reference provided FNP-1-EEP-1, Attachment 3, Version 25.0.

CONDITIONS

When I tell you to begin, you are to OPERATE POST LOCA HYDROGEN RECOMBINER. The conditions under which this task is to be performed are:

- a. A loss of reactor coolant has occurred.
- b. EEP-1, Loss of Reactor or Secondary Coolant, is in progress.
- c. Pre-LOCA containment temperature was 90°F and Post-LOCA containment pressure is 4 psig.
- d. Containment hydrogen concentration is 2%
- e. Directed by Shift Supervisor to place the 1A POST LOCA H2 RECOMBINER on service per Attachment 3 of EEP-1.
- f. A pre-job brief is NOT required.

CONDITIONS

When I tell you to begin, you are to OPERATE POST LOCA HYDROGEN RECOMBINER. The conditions under which this task is to be performed are:

- a. A loss of reactor coolant has occurred.
- b. EEP-1, Loss of Reactor or Secondary Coolant, is in progress.
- c. Pre-LOCA containment temperature was 90°F and Post-LOCA containment pressure is 4 psig.
- d. Containment hydrogen concentration is 2%
- e. Directed by Shift Supervisor to place the 1A POST LOCA H₂ RECOMBINER on service per Attachment 3 of EEP-1.
- f. A pre-job brief is NOT required.

Step

Action/Expected Response

Response NOT Obtained

ATTACHMENT 3

POST LOCA HYDROGEN RECOMBINER OPERATION

1 Check 1A post LOCA containment hydrogen recombinaer output temperature - 1150-1400°F.

TEMPERATURE READOUT

- Channel 1
- Channel 2
- Channel 3

1 Align 1A post LOCA containment hydrogen recombinaer for operation.

- 1.1 Verify POWER AVAILABLE indicating light lit.
- 1.2 Adjust POWER ADJUST setting to 090.
- 1.3 Turn on POWER OUT SWITCH.
- 1.4 Verify red pilot light lit.

NOTE: The 12 psig value should be used for containment pressures greater than 12 psig.

1.5 Determine initial power out setting using ATTACHMENT 3, FIGURE 1 .

1.6 Slowly adjust POWER ADJUST clockwise until POWER OUT meter indicates initial power out setting.

1.7 Control POWER ADJUST to maintain recombinaer output temperature 1150-1400°F.

TEMPERATURE READOUT

- Channel 1
- Channel 2
- Channel 3

Step

Action/Expected Response

Response NOT Obtained

ATTACHMENT 3

- | | |
|---|--|
| <p>..... 2</p> <p>Check 1B post LOCA containment hydrogen recombiner output temperature - 1150-1400°F.</p> <p>TEMPERATURE READOUT</p> <p><input type="checkbox"/> Channel 1</p> <p><input type="checkbox"/> Channel 2</p> <p><input type="checkbox"/> Channel 3</p> | <p>2</p> <p>Align 1B post LOCA containment hydrogen recombiner for operation.</p> <p>2.1 Verify POWER AVAILABLE indicating light lit.</p> <p>2.2 Adjust POWER ADJUST setting to 000.</p> <p>2.3 Turn on POWER OUT SWITCH.</p> <p>2.4 Verify red pilot light lit.</p> |
|---|--|

NOTE: The 12 psig value should be used for containment pressures greater than 12 psig.

- 2.5 Determine initial power out setting using ATTACHMENT 3, FIGURE 1 .
- 2.6 Slowly adjust POWER ADJUST clockwise until POWER OUT meter indicates initial power out setting.
- 2.7 Control POWER ADJUST to maintain recombiner output temperature 1150-1400°F.

TEMPERATURE READOUT

- Channel 1
- Channel 2
- Channel 3

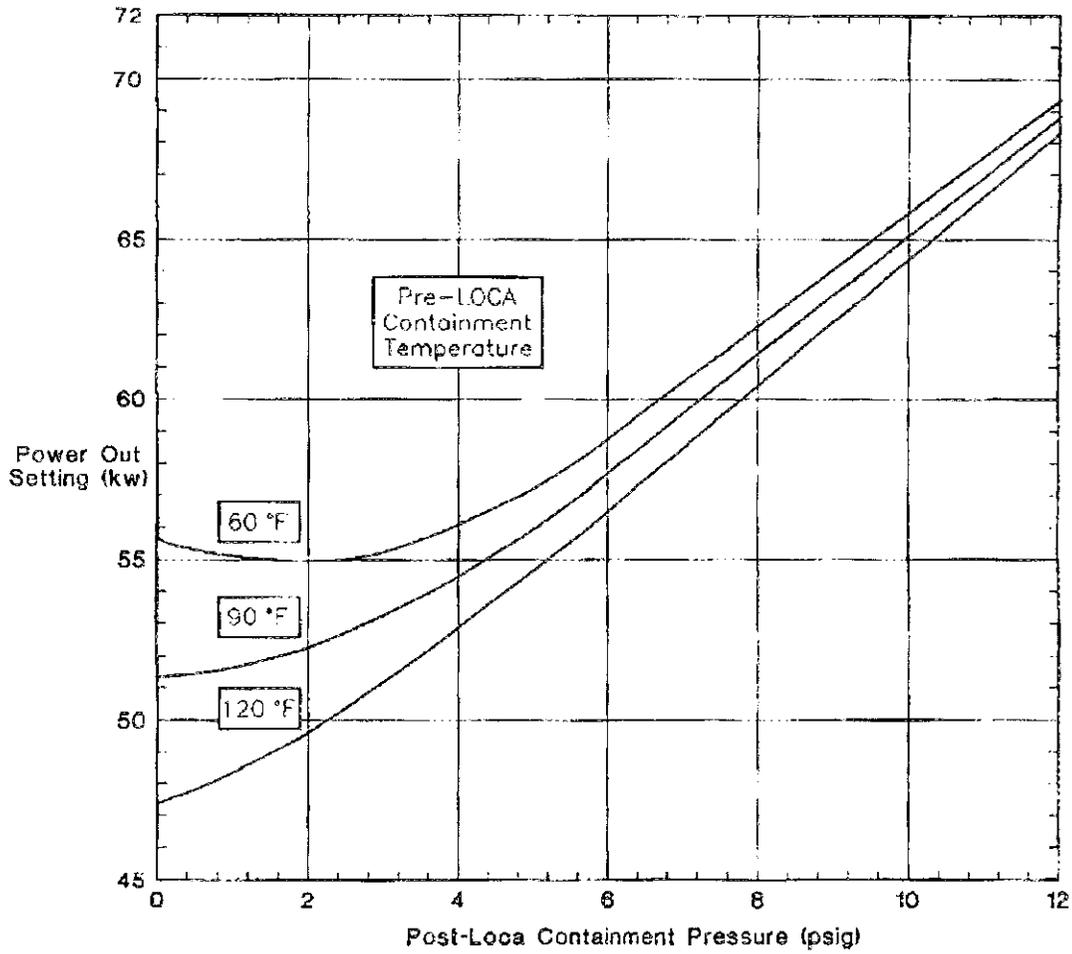
- 3 Notify control room of post LOCA containment hydrogen recombiner status.

-END-

ATTACHMENT 3

FIGURE 1

RECOMBINER POWER OUT SETTING



IN PLANT JPM 9 – RO AND SRO-I

TITLE: Conduct A Waste Gas Release	
PROGRAM APPLICABLE: SOT <u>X</u> SOCT ___ OLT <u>X</u> LOCT	
ACCEPTABLE EVALUATION METHOD: ___ PERFORM <u>X</u> SIMULATE ___ DISCUSS	
EVALUATION LOCATION: ___ SIMULATOR ___ CONTROL ROOM <u>X</u> PLANT	
PROJECTED TIME: <u>30 MIN</u> SIMULATOR IC NUMBER: <u>N/A</u>	
ALTERNATE PATH ___ TIME CRITICAL ___ PRA	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

This is going to be done on Unit 2. It does have paperwork for Unit 1.

CONDITIONS

When I tell you to begin, you are to CONDUCT A WASTE GAS RELEASE. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1.
- b. The initial conditions of SOP-51.1, Waste Gas System Gas Decay Tank Release, have been completed.
- c. #3 WGDT has been sampled and analyzed.
- d. A WGDT Batch Gaseous Waste Release Permit has been issued per CCP-208.
- e. The waste gas system is shut down per SOP-51.0.
- f. SOP-51.1 has been completed up to step 4.1.7 .
- g. You are directed to start at step 4.1.7 and complete SOP-51.1 to release #3 WGDT which is at 60 psig.

NOTE: THIS JPM MAY BE PERFORMED ON EITHER UNIT. USE THE [BRACKETED] NUMBERS FOR UNIT TWO [2].

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Open #3 WGDT outlet valve. (100")	Q1[2]G22V019C (v7823C) is opened by turning the handwheel counter-clockwise. (CUE: V019C is open.)	S / U
*2. Open bank 'A' GDT bank outlet valve. (100')	Q1[2]G22V017 (v7825) is opened by turning the handwheel counterclockwise. (CUE: V017 is open.)	S / U
3. Verify RCV-14, GAS DECAY TANK DISCHARGE N2G22HIK0014 flow controller is set at zero position	RCV-14 flow controller is verified at zero demand. (CUE: RCV -14 indicates '0' demand.)	S / U
4. Verify the plant vent pressure regulator is set for 15 psi (83')	Checks setpoint on plant vent pressure regulator Q1[2]G22V205. (CUE: V205 setpoint indicator is set for 15 psi.)	S / U
*5. Using key Z-10 [V-131], unlock and open RCV-14 upstream isolation. (83')	Q1[2]G22V089 is unlocked and turned counterclockwise until opened. (CUE: V089 is unlocked and open.)	S / U

NOTE: KEY IS OBTAINED AS PART OF THE INITIAL CONDITIONS OF SOP-51.1.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*6. Open the RCV-14 downstream isolation. (83')	Q1[2]G22V207 is opened by turning the handwheel counterclockwise. (CUE: V207 is open.)	S / U
*7. Turn 2HS-014 WASTE GAS DISCH CONTROL valve handswitch to open. (GWPP panel)	GDT discharge valve to plant vent stack, 2HS-014 handswitch is turned to open. (CUE: 2HS-014 handswitch is in the open position.)	S / U
*8. Record start time and #3 WGDT tank pressure (2PI5-1038) in SOP-51.1	Start time and tank pressure, 2PI5-1038, are recorded in SOP-51.1. (CUE: The current time is the start time and #3 WGDT pressure is 60 psig.) Ensure examinee identifies correct pressure indicator and range.	S / U
*9. Slowly open GDT discharge valve to plant vent RCV-14 using the Waste Gas Discharge Control HIK-014 on the Waste Gas Panel and verify R-14 count rate is less than R-14 setpoint and GDT #3 pressure is dropping slow enough to ensure the release of the entire tank will take greater than 1 hour	GDT discharge valve to plant vent RCV-14 is slowly opened while verifying R-14 count rate is less than R-14 setpoint, <15,200 CPM, and #3 GDT pressure is dropping slow enough to ensure the release will take greater than 1 hour. (CUE: RCV-14 indicates red light lit, R-14 is less than the R-14 setpoint and #3 GDT pressure drops 1 psig every 5 minutes.)	S / U
*10. Monitor all GDT pressures during the release to ensure only #3 GDT pressure is dropping	All GDT pressures are monitored to ensure #3 GDT is the only GDT which shows a pressure drop. (CUE: All other GDT pressures are remaining constant, #3 GDT pressure is dropping.)	S / U

STOP TIME

Terminate JPM when all elements of this JPM are completed.
--

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-51.1, Version 22.0
2. FNP-2-SOP-51.1, Version 18.0
3. FNP-1-CCP-213.1, Version 17.0
4. FNP-2-CCP-213.1, Version 16.0
5. FNP-0-CCP-208, Version 55.0
6. Technical Specification
7. K/As: 071A2.02 RO-3.3 SRO-3.6
071A3.02 RO-3.6 SRO-3.8
071A4.09 RO-3.3 SRO-3.5
071A4.26 RO-3.1 SRO-3.9

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

REFERENCES PROVIDED FNP-1-SOP-51.1, Version 22.0 OR FNP-2-SOP-51.1, Version 18.0

CONDITIONS

When I tell you to begin, you are to CONDUCT A WASTE GAS RELEASE. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1.
- b. The initial conditions of SOP-51.1, Waste Gas System Gas Decay Tank Release, have been completed.
- c. #3 WGDT has been sampled and analyzed.
- d. A WGDT Batch Gaseous Waste Release Permit has been issued per CCP-208.
- e. The waste gas system is shut down per SOP-51.0.
- f. SOP-51.1 has been completed up to step 4.1.7.
- g. You are directed to start at step 4.1.7 and complete SOP-51.1 to release #3 WGDT which is at 60 psig.

CONDITIONS

When I tell you to begin, you are to CONDUCT A WASTE GAS RELEASE. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1.
- b. The initial conditions of SOP-51.1, Waste Gas System Gas Decay Tank Release, have been completed.
- c. #3 WGDT has been sampled and analyzed.
- d. A WGDT Batch Gaseous Waste Release Permit has been issued per CCP-208.
- e. The waste gas system is shut down per SOP-51.0.
- f. SOP-51.1 has been completed up to step 4.1.7.
- g. You are directed to start at step 4.1.7 and complete SOP-51.1 to release #3 WGDT which is at 60 psig.

FARLEY NUCLEAR PLANT
SYSTEM OPERATING PROCEDURE
FNP-2-SOP-51.1

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WASTE GAS SYSTEM
GAS DECAY TANK RELEASE

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

RAY MARTIN
Operations Manager

Date Issued 3-25-04

TABLE OF CONTENTS

<u>Procedure Contains</u>	<u>Number of Pages</u>
Body	8

FARLEY NUCLEAR PLANT
UNIT 2
SYSTEM OPERATING PROCEDURE SOP-51.1

WASTE GAS SYSTEM GAS DECAY TANK RELEASE

1.0 Purpose

This procedure provides the Initial Conditions, Precautions and Limitations, and Instructions for the release of a gas decay tank to the vent stack. Instructions are included in the following sections.

4.1 Gas decay tank release.

4.2 Radiation monitor R-0014 check.

2.0 Initial Conditions

- no 2.1 The version of this procedure has been verified to be the current version and correct unit for the task. (OR 1-98-498)
- no 2.2 The electrical distribution system is energized and aligned for normal operation per System Check List FNP-2-SOP-36.0, PLANT ELECTRICAL DISTRIBUTION LINE-UP, with exceptions noted.
- no 2.3 The compressed air system is in service and aligned for normal operation per FNP-2-SOP-31.0, COMPRESSED AIR SYSTEM.
- no 2.4 Radiation monitors R-14 or R-21 and R-22 are in service per FNP-2-SOP-45.0, RADIATION MONITORING SYSTEM.
- no 2.5 The Gas Decay Tank to be released has been sampled and an approved gaseous waste release permit has been issued.
- no 2.6 The Waste Gas System is NOT in operation, per FNP-2-SOP-51.0, WASTE GAS SYSTEM.
- no 2.7 Obtain key #V-131 from Shift Support Supervisor.

3.0 Precautions and Limitations

- 3.1 Radiation monitor R-14 must be frequently observed during the release of radioactive gas to assure that the count rate is not approaching R-14 setpoint as stated on the release permit.
- 3.2 IF R-14 becomes inoperable while discharging gaseous waste to the vent stack, THEN discharge shall be stopped immediately and the Shift Supervisor notified.
- 3.3 Once a gas decay tank has been isolated for sampling purposes, prior to discharging to the vent stack, the tank shall remain in an isolated condition to prevent the introduction of any gas which could alter the concentration of the tank's contained volume.

4.0 Instructions

NOTE: Initial each step as completed. Instructions for completion of gaseous waste release permit are specified in FNP-0-CCP-213, GASEOUS WASTE RELEASE PROGRAM.

CAUTION: Ensure counting room technician isolates waste gas tank from sample panel after sample has been taken.

4.1 WGDT No. 3 Release Permit No. 30357-028-003-G.

NOTE: Steps 4.1.1 through 4.1.5 may be performed in any order.

RD 4.1.1 Verify ALL the gas decay tanks isolated as follows:

NOTE: Perform the following steps in conjunction with Table 1 to determine the valves required to isolate the respective GDT.

RD 4.1.1.1 Verify Closed GDT inlet & outlet valves.

RD 4.1.1.2 Verify Closed GDT bank inlet & outlet valves.

TABLE 1					
GDT	BANK	GDT OUTLET VALVE	GDT INLET VALVE	GDT BANK INLET VALVE	GDT BANK OUTLET VALVE
1	A	2-GWD-V-7823A (Q2G22V019A)	2-GWD-V-7820A (Q2G22V025A)	2-GWD-V-7818 (Q2G22V029)	2-GWD-V-7825 (Q2G22V017)
2	A	2-GWD-V-7823B (Q2G22V019B)	2-GWD-V-7820B (Q2G22V025B)	2-GWD-V-7818 (Q2G22V029)	2-GWD-V-7825 (Q2G22V017)
3	A	2-GWD-V-7823C (Q2G22V019C)	2-GWD-V-7820C (Q2G22V025C)	2-GWD-V-7818 (Q2G22V029)	2-GWD-V-7825 (Q2G22V017)
4	B	2-GWD-V-7833A (Q2G22V022A)	2-GWD-V-7830A (Q2G22V026A)	2-GWD-V-7828 (Q2G22V030)	2-GWD-V-7835 (Q2G22V020)
5	B	2-GWD-V-7833B (Q2G22V022B)	2-GWD-V-7830B (Q2G22V026B)	2-GWD-V-7828 (Q2G22V030)	2-GWD-V-7835 (Q2G22V020)
6	B	2-GWD-V-7833C (Q2G22V022C)	2-GWD-V-7830C (Q2G22V026C)	2-GWD-V-7828 (Q2G22V030)	2-GWD-V-7835 (Q2G22V020)
7	SHUT-DOWN	2-GWD-V-7886A (Q2G22V074A)	2-GWD-V-7883A (Q2G22V085A)	2-GWD-V-7881 (Q2G22V083)	2-GWD-V-7888 (Q2G22V076)
8	SHUT-DOWN	2-GWD-V-7886B (Q2G22V074B)	2-GWD-V-7883B (Q2G22V085B)	2-GWD-V-7881 (Q2G22V083)	2-GWD-V-7888 (Q2G22V076)

NOTE: Refer to FNP-0-M-011, OFFSITE DOSE CALCULATION MANUAL for release limitations with R-14 out of service.

CP 4.1.2 Verify recorders RR-14 or RR-22 in operation OR verify that the Rad Met Data Acquisition (RMDA) System is operable.

NOTE: The setpoint for R-14 and R-22 can be obtained from FNP-2-CCP-213.1, GASEOUS EFFLUENT RADIATION MONITORING SYSTEM SETPOINTS.

NO 4.1.3 Read and record actual setpoint and background on R-14 and R-22.

	Setpoint	Background
R-14	<u>15,200</u>	<u>120</u>
R-22	<u>12,500</u>	<u>140</u>

NO 4.1.4 Verify setpoints in step 4.1.3 are \leq setpoint on release permit Section II.

CP 4.1.5 Establish dilution flow rate, as stated in gaseous waste release permit, Section 2 and record actual flow rate _____.

CP 4.1.6 Perform test on process radiation monitor R-14 per section 4.2 of this procedure.

NOTE: Perform the following steps in conjunction with Table 1 to determine the valves required to align the respective gas decay tank for discharge.

_____ 4.1.7 Open gas decay tank outlet valve
_____ (Record TPNS from Table 2).

_____ 4.1.8 Open gas decay tank bank outlet valve
_____ (Record TPNS from Table 2).

GDT	BANK	GDT OUTLET VALVE	GDT BANK OUTLET VALVE
1	A	2-GWD-V-7823A (Q2G22V019A)	2-GWD-V-7825 (Q2G22V017)
2	A	2-GWD-V-7823B (Q2G22V019B)	2-GWD-V-7825 (Q2G22V017)
3	A	2-GWD-V-7823C (Q2G22V019C)	2-GWD-V-7825 (Q2G22V017)
4	B	2-GWD-V-7833A (Q2G22V022A)	2-GWD-V-7835 (Q2G22V020)
5	B	2-GWD-V-7833B (Q2G22V022B)	2-GWD-V-7835 (Q2G22V020)
6	B	2-GWD-V-7833C (Q2G22V022C)	2-GWD-V-7835 (Q2G22V020)
7	SHUT-DOWN	2-GWD-V-7886A (Q2G22V074A)	2-GWD-V-7888 (Q2G22V076)
8	SHUT-DOWN	2-GWD-V-7886B (Q2G22V074B)	2-GWD-V-7888 (Q2G22V076)

_____ 4.1.9 Verify the following:

_____ 4.1.9.1 RCV-14 flow controller is at zero position.

_____ 4.1.9.2 Plant vent pressure regulator 2-GWD-V-7896
(Q2G22V205) is set for 15 psi. (located next to RCV-14).

_____ 4.1.10 Unlock and open RCV-14 upstream isolation valve 2-GWD-V-7895
(Q2G22V089) (key #V-131).

_____ 4.1.11 Open RCV-14 downstream isolation valve 2-GWD-V-7898
(Q2G22V207).

_____ 4.1.12 Turn gas decay tank discharge valve to plant vent 2-GWD-RCV-14
(Q2G22V206) handswitch (2HS-014) to OPEN.

- _____ 4.1.13 Record the following and notify the Shift Radiochemist:
- Start Time _____
- Tank Press _____ PSIG
- _____ 4.1.14 Slowly open gas decay tank discharge valve to plant vent 2-GWD-RCV-14 (Q2G22V206) using WASTE GAS DISCHARGE CONTROL HIK-014, and verify the following:
- _____ 4.1.14.1 R-14 count rate is less than R-14 setpoint.
- _____ 4.1.14.2 The pressure in GDT is decreasing at a rate that ensures the release of the entire tank will take greater than one hour. (This ensures release rate specified on the Gaseous Waste Release Permit, Sec. II, is not exceeded.)
- _____ 4.1.15 Monitor all gas decay tank pressures during the release. Ensure that only the tank which is being released exhibits a pressure decrease. IF any other tanks show a pressure decrease OR increase, THEN stop the release and notify the Shift Supervisor.
- _____ 4.1.16 WHEN the desired gas decay tank pressure has been obtained, THEN turn the gas decay tank discharge valve to plant vent 2-GWD-RCV-14 (Q2G22V206) handswitch (2HS-014) to CLOSE and position the controller to zero.
- _____ 4.1.17 Record the following and notify the Shift Radiochemist:
- Stop Time _____
- Tank Press _____ PSIG
- Final R-14 count rate _____ CPM
- Final R-22 count rate _____ CPM
- _____/_____/ 4.1.18 Close RCV-14 downstream isolation valve 2-GWD-V-7898 (Q2G22V207).
- _____/_____/ 4.1.19 Close and lock closed RCV-14 upstream isolation valve 2-GWD-V-7895 (Q2G22V089) (Key #V-131).
- _____ 4.1.20 Verify locking device properly installed on RCV-14 upstream isolation valve 2-GWD-V-7895 (Q2G22V089).

- _____ 4.1.21 Close gas decay tank bank outlet valve from step 4.1.8
_____ (Record TPNS).
- _____ 4.1.22 Close gas decay tank outlet valve from step 4.1.7
_____ (Record TPNS).
- _____ 4.1.23 Return key to Shift Support Supervisor.
- _____ 4.1.24 Record the average values during the release of R-14 and R-22 from
the recorder readings OR record average value obtained from the
RMDA system.

R-14 Average _____ Recorder/RMDA
(circle one used)

R-22 Average _____ Recorder/RMDA
(circle one used)
- _____ 4.1.25 Transfer required data to the release permit.

Operator _____

Date _____
- _____ 4.1.26 IF necessary, THEN return waste gas system to operation per FNP-2-
SOP-51.0, WASTE GAS SYSTEM.

4.2 Radiation monitor R-14 check.

rw 4.2.1 Verify RCV-14 isolation valves 2-GWD-V-7895 (Q2G22V089) and 2-GWD-V-7898 (Q2G22V207) are closed before performing this test.

rw 4.2.2 Turn gas decay tank discharge valve to plant vent 2-GWD-RCV-14 (Q2G22V206) handswitch (2HS-014) to OPEN.

rw 4.2.3 Adjust HIK-014 flow controller to 100%.

NOTE: • Either step 4.2.4 or step 4.2.5 may be utilized to satisfy the isolation capabilities of RCV-14. Steps not required to be performed should be marked N/A (NOT APPLICABLE).

• Step 4.2.4 will insert a signal approximately equal to 10^5 cpm. IF the current trip setpoint of RCV-14 is greater than 10^5 cpm, THEN guidance is provided to perform step 4.2.5.

4.2.4 Initiate HIGH ALARM on channel R-14 as follows:

rw 4.2.4.1 Place the OPERATION SELECTOR switch to PULSE CAL.

rw 4.2.4.2 Verify HIGH ALARM is received.

rw 4.2.4.3 IF HIGH ALARM is received, THEN proceed to step 4.2.4.4. Otherwise, proceed to step 4.2.5.

rw 4.2.4.4 Verify 2-GWD-RCV-14 (Q2G22V206) closes.

rw 4.2.4.5 Operate handswitch (2HS-014) for 2-GWD-RCV-14 (Q2G22V206) from WGP to verify that valve cannot be opened.

rw 4.2.4.6 Reset HIGH ALARM using the OPERATION SELECTOR switch.

rw 4.2.4.7 Place the OPERATION SELECTOR switch to OPERATE.

rw 4.2.4.8 Turn gas decay tank discharge valve to plant vent 2-GWD-RCV-14 (Q2G22V206) handswitch (2HS-014) to CLOSED

rw 4.2.4.9 Adjust HIK-014 flow controller to 0%.

rw 4.2.4.10 Proceed to step 4.1.7.

4.2.5 Initiate high alarm on channel R-14 by having I&C insert a test signal as follows:

NA
I&C

4.2.5.1 Place the operation selector to LEVEL CAL.

NA
I&C

4.2.5.2 Adjust A-1 R3 clockwise to the alarm setpoint.

NA

4.2.5.3 Verify 2-GWD-RCV-14 (Q2G22V206) closes.

NA

4.2.5.4 Operate handswitch (2HS-014) for 2-GWD-RCV-14 (Q2G22V206) from WGP to verify that the valve cannot be opened.

NA
I&C

4.2.5.5 Adjust A-1 R3 counter-clockwise to its minimum position.

NA
I&C

4.2.5.6 Reset the high alarm using the OPERATION SELECTOR switch.

NA
I&C

4.2.5.7 Place the OPERATION SELECTOR switch to OPERATE.

NA

4.2.5.8 Turn gas decay tank discharge valve to plant vent 2-GWD-RCV-14 (Q2G22V206) handswitch (2HS-014) to CLOSED

NA

4.2.5.9 Adjust HIK-014 flow controller to 0%.

NA

4.2.5.10 Proceed to step 4.1.7.

5.0 References

- 5.1 P&ID, D-205042, sheets 5 and 6, Waste Processing System
- 5.2 Westinghouse System Description SD-ALA-409
- 5.3 FNP-0-M-011, OFFSITE DOSE CALCULATION MANUAL
- 5.4 FSAR Vol. XI Section 11.3 and 11.4
- 5.6 FNP-0-CCP-213

Unit 1
procedure

11/18/04 12:25:46

UNIT 1

FNP-1-SOP-51.1
October 30, 2004
Version 22.0

FARLEY NUCLEAR PLANT SYSTEM OPERATING PROCEDURE

FNP-1-SOP-51.1

WASTE GAS SYSTEM GAS DECAY TANK RELEASE

S
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R
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L
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T
E
D

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

RAY MARTIN
Operations Manager

Date Issued 11-5-04

UNIT 1

TABLE OF CONTENTS

<u>Procedure Contains</u>	<u>Number of Pages</u>
Body	8

FARLEY NUCLEAR PLANT
UNIT 1
SYSTEM OPERATING PROCEDURE SOP-51.1

WASTE GAS SYSTEM GAS DECAY TANK RELEASE

1.0 Purpose

This procedure provides the Initial Conditions, Precautions and Limitations, and Instructions for the release of a gas decay tank to the vent stack. Instructions are included in the following sections.

- 4.1 Gas decay tank release.
- 4.2 Radiation monitor R-14 check.

2.0 Initial Conditions

- no 2.1 The version of this procedure has been verified to be the current version and correct unit for the task. (OR 1-98-498)
- no 2.2 The electrical distribution system is energized and aligned for normal operation per system check list FNP-1-SOP-36.0, PLANT ELECTRICAL DISTRIBUTION LINE-UP, with exceptions noted.
- ms 2.3 The compressed air system is in service and aligned for normal operation per FNP-1-SOP-31.0, COMPRESSED AIR SYSTEM.
- no 2.4 Radiation monitors R-14 or R-21 and R-22 are in service per FNP-1-SOP-45.0, RADIATION MONITORING SYSTEM.
- no 2.5 The gas decay tank to be released has been sampled and an approved gaseous waste release permit has been issued.
- no 2.6 The Waste Gas System is NOT in operation, per FNP-1-SOP-51.0, WASTE GAS SYSTEM.
- ni 2.7 Obtain Key #Z-10 from Shift Support Supervisor.

3.0 Precautions and Limitations

- 3.1 Radiation monitor R-14 must be frequently observed during the release of radioactive gas to assure that the count rate is not approaching R-14 setpoint as stated on the release permit.
- 3.2 IF R-14 becomes inoperable while discharging gaseous waste to the vent stack, THEN discharge shall be stopped immediately and the Shift Supervisor notified.
- 3.3 Once a gas decay tank has been isolated for sampling purposes, prior to discharging to the vent stack, the tank shall remain in an isolated condition to prevent the introduction of any gas which could alter the concentration of the tank's contained volume.

4.0 Instructions

NOTE: Initial each step as completed. Instructions for completion of gaseous waste release permit are specified in FNP-0-CCP-213, GASEOUS WASTE RELEASE PROGRAM.

CAUTION: Ensure counting room technician isolates waste gas tank from sample panel after sample has been taken.

4.1 WGDT No. 3 Release Permit No. 30 357-028-003-G.

NOTE: Steps 4.1.1 through 4.1.5 may be performed in any order.

ms 4.1.1 Verify ALL the gas decay tanks isolated as follows:

NOTE: Perform the following steps in conjunction with Table 1 to determine the valves required to isolate the respective GDT.

ms 4.1.1.1 Verify Closed GDT inlet & outlet valves.

ms 4.1.1.2 Verify Closed GDT bank inlet & outlet valves.

TABLE 1

GDT	BANK	GDT OUTLET VALVE	GDT INLET VALVE	GDT BANK INLET VALVE	GDT BANK OUTLET VALVE
1	A	1-GWD-V-7823A (Q1G22V019A)	1-GWD-V-7820A (Q1G22V025A)	1-GWD-V-7818 (Q1G22V029)	1-GWD-V-7825 (Q1G22V017)
2	A	1-GWD-V-7823B (Q1G22V019B)	1-GWD-V-7820B (Q1G22V025B)	1-GWD-V-7818 (Q1G22V029)	1-GWD-V-7825 (Q1G22V017)
3	A	1-GWD-V-7823C (Q1G22V019C)	1-GWD-V-7820C (Q1G22V025C)	1-GWD-V-7818 (Q1G22V029)	1-GWD-V-7825 (Q1G22V017)
4	B	1-GWD-V-7833A (Q1G22V022A)	1-GWD-V-7830A (Q1G22V026A)	1-GWD-V-7828 (Q1G22V030)	1-GWD-V-7835 (Q1G22V020)
5	B	1-GWD-V-7833B (Q1G22V022B)	1-GWD-V-7830B (Q1G22V026B)	1-GWD-V-7828 (Q1G22V030)	1-GWD-V-7835 (Q1G22V020)
6	B	1-GWD-V-7833C (Q1G22V022C)	1-GWD-V-7830C (Q1G22V026C)	1-GWD-V-7828 (Q1G22V030)	1-GWD-V-7835 (Q1G22V020)
7	SHUT-DOWN	1-GWD-V-7886A (Q1G22V074A)	1-GWD-V-7883A (Q1G22V085A)	1-GWD-V-7881 (Q1G22V083)	1-GWD-V-7888 (Q1G22V076)
8	SHUT-DOWN	1-GWD-V-7886B (Q1G22V074B)	1-GWD-V-7883B (Q1G22V085B)	1-GWD-V-7881 (Q1G22V083)	1-GWD-V-7888 (Q1G22V076)

NOTE: Refer to FNP-0-M-011, OFFSITE DOSE CALCULATION MANUAL for release limitations with R-14 out of service.

ms 4.1.2 Verify recorder RR0100 (points RR-14 or RR-22) in operation OR verify that the Rad Met Data Acquisition (RMDA) system is operable.

NOTE: The setpoint for R-14 and R-22 can be obtained from FNP-1-CCP-213.1, GASEOUS EFFLUENT RADIATION MONITORING SYSTEM SETPOINTS.

ms 4.1.3 Read and record actual setpoint and background on R-14 and R-22.

	Setpoint	Background
R-14	<u>15,200</u>	<u>120</u>
R-22	<u>12,500</u>	<u>140</u>

ms 4.1.4 Verify R-14 setpoint in step 4.1.3 is < setpoint on release permit Section II.

ms 4.1.5 Establish dilution flow rate, as stated in gaseous waste release permit, Section 2 and record actual flow rate _____.

ms 4.1.6 Perform test on process radiation monitor R-14 per section 4.2.

NOTE: Perform the following steps in conjunction with Table 1 to determine the valves required to align the respective gas decay tank for discharge.

4.1.7 Open gas decay tank outlet valve _____ (Record TPNS from Table 2).

4.1.8 Open gas decay tank bank outlet valve _____ (Record TPNS from Table 2).

GDT	BANK	GDT OUTLET VALVE	GDT BANK OUTLET VALVE
1	A	1-GWD-V-7823A (Q1G22V019A)	1-GWD-V-7825 (Q1G22V017)
2	A	1-GWD-V-7823B (Q1G22V019B)	1-GWD-V-7825 (Q1G22V017)
3	A	1-GWD-V-7823C (Q1G22V019C)	1-GWD-V-7825 (Q1G22V017)
4	B	1-GWD-V-7833A (Q1G22V022A)	1-GWD-V-7835 (Q1G22V020)
5	B	1-GWD-V-7833B (Q1G22V022B)	1-GWD-V-7835 (Q1G22V020)
6	B	1-GWD-V-7833C (Q1G22V022C)	1-GWD-V-7835 (Q1G22V020)
7	SHUT-DOWN	1-GWD-V-7886A (Q1G22V074A)	1-GWD-V-7888 (Q1G22V076)
8	SHUT-DOWN	1-GWD-V-7886B (Q1G22V074B)	1-GWD-V-7888 (Q1G22V076)

4.1.9 Verify the following:

4.1.9.1 RCV-14 flow controller is at zero position.

4.1.9.2 Plant Vent Press. Regulator 1-GWD-V-7896 (Q1G22V205) is set for 15 psi. (located next to RCV-14).

4.1.10 Unlock and open RCV-14 upstream isolation valve 1-GWD-V-7895 (Q1G22V089). (Key #Z-10)

4.1.11 Open RCV-14 downstream isolation valve 1-GWD-V-7898 (Q1G22V207).

4.1.12 Turn gas decay tank discharge valve to plant vent 1-GWD-RCV-14 (Q1G22V206) handswitch (1HS-014) to OPEN.

- _____ 4.1.13 Record the following and notify the Shift Radiochemist:

Start Time _____

Tank Press _____ PSIG
- _____ 4.1.14 Slowly open gas decay tank discharge valve to plant vent 1-GWD-RCV-14 (Q1G22V206) using WASTE GAS DISCHARGE CONTROL HIK-014, and verify the following:

 - _____ 4.1.14.1 R-14 count rate is less than R-14 setpoint.
 - _____ 4.1.14.2 The pressure in GDT is decreasing at a rate that ensures the release of the entire tank will take greater than one hour. (This ensures release rate specified on the Gaseous Waste Release Permit, Sec. II, is not exceeded.)
- _____ 4.1.15 Monitor all gas decay tank pressures during the release. Ensure that only the tank which is being released exhibits a pressure decrease and no other tank pressure increases. Stop the release and notify the Shift Supervisor if one of the above occurs.
- _____ 4.1.16 WHEN the desired gas decay tank pressure has been obtained, THEN turn the gas decay tank discharge valve to plant vent 1-GWD-RCV-14 (Q1G22V206) handswitch (1HS-014) to CLOSE and position the controller to zero.
- _____ 4.1.17 Record the following and notify the Shift Radiochemist:

Stop Time _____

Tank Press _____ PSIG

Final R-14 count rate _____ CPM

Final R-22 count rate _____ CPM
- / 4.1.18 Close RCV-14 downstream isolation valve 1-GWD-V-7898 (Q1G22V207).
- / 4.1.19 Close and lock closed RCV-14 upstream isolation valve 1-GWD-V-7895 (Q1G22V089). (Key #Z-10)
- _____ 4.1.20 Verify locking device properly installed on RCV-14 upstream isolation valve 1-GWD-V-7895 (Q1G22V089).

UNIT 1

- _____ 4.1.21 Close gas decay tank bank outlet valve from step 4.1.8
_____ (Record TPNS).
- _____ 4.1.22 Close gas decay tank outlet valve from step 4.1.7
_____ (Record TPNS).
- _____ 4.1.23 Return key to Shift Support Supervisor.
- _____ 4.1.24 IF operable during the release, THEN record the average values during
the release of R-14 and R-22 from the recorder RR-0100 OR record
average value obtained from the RMDA system.

R-14 Avg _____ Recorder/RMDA
(circle one used)

R-22 Avg _____ Recorder/RMDA
(circle one used)
- _____ 4.1.25 Transfer required data to the release permit.

Operator _____

Date _____
- _____ 4.1.26 IF necessary, THEN return waste gas system to operation per
FNP-1-SOP-51.0, WASTE GAS SYSTEM.

4.2 Radiation monitor R-14 check.

- ms 4.2.1 Verify RCV-14 isolation valves 1-GWD-V-7895 (Q1G22V089) and 1-GWD-V-7898 (Q1G22V207) are closed before performing this test.
- ms 4.2.2 Turn gas decay tank discharge valve to plant vent 1-GWD-RCV-14 (Q1G22V206) handswitch (1HS-014) to OPEN.
- ms 4.2.3 Adjust HIK-014 flow controller to 100%.

NOTE: • Either step 4.2.4 or step 4.2.5 may be utilized to satisfy the isolation capabilities of RCV-14. Steps not required to be performed should be marked N/A (NOT APPLICABLE).

• Step 4.2.4 will insert a signal approximately equal to 10^5 cpm. **IF** the current trip setpoint of RCV-14 is greater than 10^5 cpm, **THEN** guidance is provided to perform step 4.2.5.

4.2.4 Initiate high alarm on channel R-14 as follows:

- ms 4.2.4.1 Place the OPERATION SELECTOR switch to PULSE CAL.
- ms 4.2.4.2 Verify HIGH ALARM is received.
- ms 4.2.4.3 **IF** HIGH ALARM is received, **THEN** proceed to step 4.2.4.4. Otherwise, proceed to step 4.2.5.
- ms 4.2.4.4 Verify 1-GWD-RCV-14 (Q1G22V206) closes.
- ms 4.2.4.5 Operate handswitch (1HS-014) for 1-GWD-RCV-14 (Q1G22V206) from WGP to verify that valve cannot be opened.
- ms 4.2.4.6 Reset HIGH ALARM using the OPERATION SELECTOR switch.
- ms 4.2.4.7 Place the OPERATION SELECTOR switch to OPERATE.
- ms 4.2.4.8 Turn gas decay tank discharge valve to plant vent 1-GWD-RCV-14 (Q1G22V206) handswitch (1HS-014) to CLOSED.
- ms 4.2.4.9 Adjust HIK-014 flow controller to 0%.
- ms 4.2.4.10 Proceed to step 4.1.7.

4.2.5 Initiate high alarm on channel R-14 by having I&C insert test signal as follows:

NA
I&C

4.2.5.1 Place the operation selector to LEVEL CAL.

NA
I&C

4.2.5.2 Adjust A-1 R3 clockwise to the alarm setpoint.

NA

4.2.5.3 Verify that 1-GWD-RCV-14 (Q1G22V206) closes.

NA

4.2.5.4 Operate handswitch (IHS-014) for 1-GWD-RCV-14 (Q1G22V206) from WGP to verify that the valve cannot be opened from the panel.

NA
I&C

4.2.5.5 Adjust A-1 R3 counter-clockwise to its minimum position.

NA
I&C

4.2.5.6 Reset the high alarm using the OPERATION SELECTOR switch.

NA
I&C

4.2.5.7 Place the OPERATION SELECTOR switch to OPERATE.

NA

4.2.5.8 Turn gas decay tank discharge valve to plant vent 1-GWD-RCV-14 (Q1G22V206) handswitch (IHS-014) to CLOSED.

NA

4.2.5.9 Adjust HIK-014 flow controller to 0%.

NA

4.2.5.10 Proceed to step 4.1.7.

5.0 References

- 5.1 P&ID - D-175042 Shts 5 & 6 - Waste Processing System
- 5.2 Westinghouse System Description SD-ALA-409
- 5.3 FSAR VOL XI Section 11.3 and 11.4
- 5.4 FNP-0-M-011, Offsite Dose Calculation Manual
- 5.5 PCN 80-804
- 5.6 FNP-0-CCP-213

HATCH GASEOUS WASTE RELEASE PERMIT
WASTE GAS DECAY TANK

UNIT # 1

GWRP # 30357-028-003-6

PART I Operational Data:

Gas Decay Tank No. 3 Tank Pressure 43 (psig)

Release Permit requested by: OPS

Date 01 / 12 / 2005 Time 02:00

PART II Pre-Release Data:

RELEASE ESTIMATES FOR THIS SOURCE - See Attached

Maximum Monitor Setpoint: RE-14 15 200 CPM

Comment: ① Notify counting room if RE-14 alarms or is over
② Release contents of Tank with 1 to 2 psig remaining

This permit authorizes the Batch Release of Gas Decay Tank No. 3 at

a release rate of 17 cfm

with a MINIMUM of 1 (enter 1 or 2) Fan Operation.

Start Date 01 / 12 / 2005 Expiration Date 01 / 15 / 2005

Approved by: T.H. CHEWIST Date 01 / 12 / 05 Time 04:15

PART III Operational Data:

Actual number of AUX BLDG MAIN EXHAUST FANS in operation: 1 (1 or 2)

RE14 SETPOINT CHANGE REQUIRED () Yes () No

AS FOUND SETPOINT _____ cpm () N/A AS LEFT SETPOINT VERIFIED BY: NA
AS LEFT SETPOINT _____ cpm () N/A (I&C)

DATE NA TIME NA

RE14 CAL DUE DATE: NA

RE-14 Reading During Release _____ cpm

Post Release: _____ cpm

WGDT # _____ Initial Pressure _____ psig Final Pressure: _____ psig

SOP OTC # _____

RELEASE START DATE ___/___/___ TIME: ___:___

RELEASE END DATE ___/___/___ TIME: ___:___

RELEASE CONDUCTED BY: _____

Data Reviewed by: _____ Date ___/___/___ Time ___:___

PART IV CHM UPDATE:

FOR DOSE CALCULATIONS - See Attached
FOR RELEASE RATES AND DURATION - See Attached

Comment: _____

Permit Updated by: _____ Date: ___/___/___ Time ___:___

IN PLANT JPM 10 – RO, SRO-I and SRO-U

TITLE: Place The SJAE Filtration Unit In Service	
PROGRAM APPLICABLE: SOT <u> X </u> SOCT <u> X </u> OLT <u> X </u> LOCT <u> X </u>	
ACCEPTABLE EVALUATION METHOD: <u> X </u> PERFORM <u> X </u> SIMULATE <u> </u> DISCUSS <u> </u>	
EVALUATION LOCATION: <u> </u> SIMULATOR <u> </u> CONTROL ROOM <u> X </u> PLANT	
PROJECTED TIME: <u> 2 MIN. </u> SIMULATOR IC NUMBER: <u> N/A </u>	
ALTERNATE PATH <u> </u> TIME CRITICAL <u> </u> PRA	

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

This is going to be done on Unit 1.

CONDITIONS

When I tell you to begin, you are to PLACE THE SJAE FILTRATION UNIT IN SERVICE. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1.
- b. A small tube leak exists in 'A' steam generator and AOP-2.0, Steam Generator Tube Leakage, has been entered.
- c. You have been directed by the control room to place the SJAE filtration unit in service using SOP-28.5, Condenser Air Removal System.
- d. The SJAE discharge line drain trap has been routed to a poly-bottle with a filtered vent.
- e. A pre-job brief is not required.

NOTE: THIS JPM MAY BE PERFORMED ON EITHER UNIT. USE THE [BRACKETED] INFORMATION FOR UNIT TWO [2].

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
START TIME		
*1. Place local control handswitch for the SJAE filtration unit suction valves in FILTER.	Local control switch placed in FILTER. (CUE: Handswitch is in FILTER.)	S / U
2. Verify open SJAE FILTER SUCT DMPR N1[2]U41HV3677B	Valve N1[2]U41HV3677B is open. (CUE: Valve is open.)	S / U
3. Verify closed SJAE FILTER BYP DMPR N1[2]U41HV3677A	Valve N1[2]U41HV3677A is closed. (CUE: Valve is closed.)	S / U
*4. Close SJAE FILTER BYP DMPR manual isolation N1[2]U41V018	Valve N1[2]U41V018 is taken to the closed position. (CUE: Valve is closed.)	S / U
5. Inform control room that SJAE filtration unit has been placed in service	Control room informed. (CUE: Control room acknowledges that the SJAE filtration unit is in service.)	S / U

STOP TIME

Terminate after the control room is notified that the SJAE filtration unit is in service.

12/13/04 10:17 AM

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-28.5, Version 25
2. FNP-2-SOP-28.5, Version 20
3. K/As: 037AA1.02 RO-3.1 SRO-2.9

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

REFERENCES PROVIDED: FNP-1-SOP-28.5, Version 25 OR FNP-2-SOP-28.5, Version 20

CONDITIONS

When I tell you to begin, you are to PLACE THE SJAE FILTRATION UNIT IN SERVICE. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1.
- b. A small tube leak exists in 'A' steam generator and AOP-2.0, Steam Generator Tube Leakage, has been entered.
- c. You have been directed by the control room to place the SJAE filtration unit in service using SOP-28.5, Condenser Air Removal System.
- d. The SJAE discharge line drain trap has been routed to a poly-bottle with a filtered vent.
- e. A pre-job brief is not required.

CONDITIONS

When I tell you to begin, you are to PLACE THE SJAE FILTRATION UNIT IN SERVICE. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1.
- b. A small tube leak exists in 'A' steam generator and AOP-2.0, Steam Generator Tube Leakage, has been entered.
- c. You have been directed by the control room to place the SJAE filtration unit in service using SOP-28.5, Condenser Air Removal System.
- d. The SJAE discharge line drain trap has been routed to a poly-bottle with a filtered vent.
- e. A pre-job brief is not required.

FARLEY NUCLEAR PLANT
SYSTEM OPERATING PROCEDURE
FNP-1-SOP-28.5

CONDENSER AIR REMOVAL SYSTEM

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

Richard Wells
Operations Superintendent

Date Issued 6/30/03

TABLE OF CONTENTS

<u>Procedure Contains</u>	<u>Number of Pages</u>
Body.....	13

FARLEY NUCLEAR PLANT
UNIT 1
SYSTEM OPERATING PROCEDURE SOP-28.5

CONDENSER AIR REMOVAL SYSTEM

1.0 Purpose

This procedure provides Initial Conditions, Precautions, Limitations, and Instructions for operation of the Condenser Air Removal System. Instructions are included in the following sections:

- 4.1 System Start-up and Normal Operation
- 4.2 System Shutdown
- 4.3 SJAE Filter Operation
- 4.4 Removing an Air Ejector from Service at Power.
- 4.5 Returning a SJAE to Service at Power.
- 4.6 Swapping from Main Steam to Aux Steam supply.

2.0 Initial Conditions

- 2.1 The electrical distribution system is energized and aligned for normal operation per FNP-1-SOP-36.0, PLANT ELECTRICAL DISTRIBUTION LINE-UP, with exceptions noted.
- 2.2 The compressed air system is aligned for normal operation per FNP-1-SOP-31.0, COMPRESSOR AIR SYSTEM.
- 2.3 The condenser air removal system valves and electrical distribution systems are aligned per System Checklist FNP-1-SOP-28.5A, with exceptions noted.
- 2.4 The condensate system is aligned for normal operation per FNP-1-SOP-21.0, CONDENSATE AND FEEDWATER SYSTEM.
- 2.5 The turbine generator is on the turning gear.
- 2.6 Gland steam sealing system is aligned for normal operation per FNP-1-SOP-28.4, GLAND SEALING STEAM SYSTEM.
- 2.7 The auxiliary steam and condensate system is aligned for normal operation per FNP-1-SOP-55.1, AUXILIARY STEAM AND CONDENSATE SYSTEM.

- 2.8 The following surveillance test procedures are current before commencing to draw a vacuum in the main condenser.

FNP-1-STP-227.15A	TURBINE BUILDING VENTILATION EXHAUST MONITOR (N1D11RE0015B)
FNP-1-STP-227.16A	TURBINE BUILDING VENTILATION EXHAUST MONITOR (N1D11RE0015C)

3.0 Precautions and Limitations

- 3.1 The turbine generator and feedwater turbines must be placed on turning gear prior to placing the gland sealing steam system in service.
- 3.2 The gland sealing steam system must be placed in operation prior to drawing a vacuum on the main condenser.
- 3.3 The condenser vacuum breaker must not be closed until the condenser air removal system is in service.
- 3.4 Condenser vacuum must be maintained until turbine speed is less than 180 RPM.

4.0 Instructions

4.1 System Startup and Normal Operations

4.1.1 Start 1A(1B) Hogger.

4.1.1.1 Open steam jet hogging ejector 1A(1B) outlet N1N51V507A(B).

4.1.1.2 Open Hogger steam supply iso N1P20V520.

NOTE: In the following step, WHEN the steam supply valves to 1A(1B) Hogger N1P20V904A(B) open, THEN the 1A(1B) Hogger suction valves N1N51V506A(B) will open.

4.1.1.3 Open 1A(1B) HOGGER.

- 4.1.2 Perform the following:
- 4.1.2.1 Close CONDENSER VAC BKR VLVS N1N51V519A&B (MCB)
 - 4.1.2.2 Close 1A COND VACUUM BREAKER ISO N1N51V518A and establish a water seal.
 - 4.1.2.3 Close 1A COND VACUUM BREAKER ISO N1N51V518B and establish a water seal.

NOTE: If the condenser pressure reduction stops before reaching approximately 2 psia, it may be necessary to secure one hogger (the preferred hogger to secure is 1B due to piping configuration).

- 4.1.3 Decrease condenser pressure to approximately 2 psia.
- 4.1.3.1 If necessary, secure one hogger by performing steps 4.1.5.1 and 4.1.5.3 (Do not perform 4.1.5.2 at this time).
- 4.1.4 Place a steam jet air ejector in service as follows:
- 4.1.4.1 Place LCS SJAE Makeup Air Sol Vlv N1U41G531-N to OPEN (switch for HV-3827, located under stairwell)
 - 4.1.4.2 Verify open N1U41V018 SJAE FILTER BYP MAN ISO.
 - 4.1.4.3 At LCS for SJAE FILTRATION N1U41G529-N, place control switch for SJAE filtration unit valves in BYPASS.
 - 4.1.4.4 At LCS for SJAE FILTRATION N1U41G529-N, depress the start pushbutton to start the SJAE filtration unit.
 - 4.1.4.5 Verify open SJAE FILTER BYP DMPR N1U41HV3677A.
 - 4.1.4.6 Verify closed SJAE FILTER SUCT DMPR N1U41HV3677B.
 - 4.1.4.7 Verify open SJAE FILTRATION UNIT DISCH DMPR N1U41HV3826.
 - 4.1.4.8 Start the R-28 pump.
 - 4.1.4.9 Open AS TO SJAE N1P20V521 (MCB)

NOTE: In the following steps, one section is normally placed on service for each SJAE.

- 4.1.4.10 Open 1A(1B) SJAE A SECTION ISO (MCB)
- 4.1.4.11 Open 1A(1B) SJAE B SECTION ISO (MCB)
- 4.1.4.12 WHEN steam is available from main steam, THEN open MS TO SJAE N1N11V902 AND close AS TO SJAE N1P20V521.

4.1.5 Stop the operating 1A(1B) Hogger.

NOTE: In the following step, WHEN the steam supply valves to 1A(1B) Hogger close, THEN the 1A(1B) Hogger suction valves N1N41V506A(B) will close.

- 4.1.5.1 Close 1A(1B) HOGGER.
- 4.1.5.2 Close Hogger steam supply iso N1P20V520.
- 4.1.5.3 Close steam jet hogging ejector 1A(1B) outlet N1N51V507A(B).

4.1.6 Monitor and maintain condenser pressure less than 1.5 psia. IF necessary, THEN place another steam jet air ejector in service.

4.2 System Shutdown

- 4.2.1 Secure nitrogen injection to the condenser per FNP-1-SOP-21.0, CONDENSATE AND FEEDWATER SYSTEM.
- 4.2.2 Remove the steam jet air ejectors from service as follows:
 - 4.2.2.1 Close 1A SJAE B SECTION ISO (MCB)
 - 4.2.2.2 Close 1B SJAE B SECTION ISO (MCB)
 - 4.2.2.3 Close 1A SJAE A SECTION ISO (MCB)
 - 4.2.2.4 Close 1B SJAE A SECTION ISO (MCB)
 - 4.2.2.5 Verify closed MS TO SJAE N1N11V902 (MCB)
 - 4.2.2.6 Verify closed AS TO SJAE N1P20V521 (MCB)

4.2.3 Perform the following:

CAUTION: Condenser vacuum must be maintained until turbine speed is less than 180 RPM.

- 4.2.3.1 Open condenser vacuum breaker isolation valve N1N51V518A.
- 4.2.3.2 Open condenser vacuum breaker isolation valve N1N51V518B.
- 4.2.3.3 Open condenser vacuum breaker valves N1N51V519A / 519B (MCB)
- 4.2.4 At LCS for SJAE FILTRATION N1U41G529-N, depress the stop pushbutton to stop the SJAE filtration unit.
- 4.2.5 At LCS for SJAE FILTRATION N1U41G529-N, place control switch for SJAE filtration unit valves in FILTER.
- 4.2.6 Place LCS SJAE Makeup Air Sol Vlv N1U41G531-N to CLOSE (switch for HV-3827, located under stairwell)
- 4.2.7 Verify closed SJAE FILTRATION UNIT DISCH DMPR N1U41HV3826.
- 4.2.8 Stop the R-28 pump.

4.3 Air Ejector Filter Operation

NOTE: The SJAE discharge line drain trap drains to the Turbine Building Sump. IF the filtration unit is being placed in service due to a tube leak, THEN consideration should be given to EITHER isolating the drain trap by closing 1A/1B SJAE after Cond Drn to Waste (N1N51V594A/B) and opening 1A/1B SJAE after Cond Drn Iso to the Condenser (N1N51V645A/B) OR routing the drainage to a poly bottle with a filtered vent.

- 4.3.1 To place SJAE filter in operation, at LCS for SJAE FILTRATION N1U41G529-N place local control handswitch for SJAE filtration unit valves in FILTER and perform the following:
 - 4.3.1.1 Verify open SJAE FILTER SUCT DMPR N1U41HV3677B.

- 4.3.1.2 Verify closed SJAE FILTER BYP DMPR N1U41HV3677A.
- 4.3.1.3 Close SJAE FILTER BYP MAN ISO N1U41V018.
- 4.3.2 To bypass SJAE filter, perform the following:
 - 4.3.2.1 Verify open SJAE FILTER BYP MAN ISO N1U41V018.
 - 4.3.2.2 At LCS for SJAE FILTRATION N1U41G529-N place local control handswitch for SJAE filtration unit valves in BYPASS.
 - 4.3.2.3 Verify closed SJAE FILTER SUCT DMPR N1U41HV3677B.
 - 4.3.2.4 Verify open SJAE FILTER BYP DMPR N1U41HV3677A.
- 4.3.3 To direct SJAE discharge directly to TB 155' elevation for maintenance or testing, perform the following:

NOTE: The intent of this section is to allow the filtration unit to be shutdown for maintenance or testing, while maintaining flow through R-15 so that it remains operable. The discharge path is through make-up damper N1U41HV3827.

- 4.3.3.1 Verify open SJAE FILTRATION UNIT MAKEUP AIR DMPR N1U41HV3827.
- 4.3.3.2 At LCS for SJAE FILTRATION N1U41G529-N, verify control switch for SJAE filtration unit valves in BYPASS.
- 4.3.3.3 Stop the SJAE filtration unit.
- 4.3.3.4 Close SJAE FILTER BYP MAN ISO N1U41V018.
- 4.3.3.5 Stop the R-28 pump.
- 4.3.3.6 WHEN desired to restart the filtration unit, THEN continue with this section.
- 4.3.3.7 Verify open N1U41V018 SJAE FILTER BYP MAN ISO.
- 4.3.3.8 At LCS for SJAE FILTRATION N1U41G529-N, place control switch for SJAE filtration unit valves in BYPASS.

- 4.3.3.9 At LCS for SJAE FILTRATION N1U41G529-N, depress the start pushbutton to start the SJAE filtration unit.
- 4.3.3.10 Verify open SJAE FILTER BYP DMPR N1U41HV3677A.
- 4.3.3.11 Verify closed SJAE FILTER SUCT DMPR N1U41HV3677B.
- 4.3.3.12 Verify open SJAE FILTRATION UNIT DISCH DMPR N1U41HV3826.
- 4.3.3.13 Start the R-28 pump.

4.4 Removing an Air Ejector from Service at Power

CAUTION: Air in leakage is the major concern during this evolution. Improper isolation and control of the evolution can result in a loss of condenser vacuum. Past problems causing air in leakage during SJAE removal from service have been failure of SJAE section drain valves N1N51V598A(B) / 599A(B).

- 4.4.1 Review ARP's KK1 and KK2 (TURB COND VAC LO AND LO-LO)
- 4.4.2 Determine which air ejector is to be removed from service.
 - 1A SJAE N1N51H002A
 - 1B SJAE N1N51H002B
- 4.4.3 Station appropriate personnel locally at the air ejectors.
- 4.4.4 Ensure appropriate personnel know the location of the loop seal drain to condenser valves for the air ejector to be isolated.

N1N51V618---1A SJAE Loop Seal drn to B Condenser
 N1N51V620---1B SJAE Loop Seal drn to B Condenser

NOTE: Operation of a SJAE MCB hand switch actuates the steam supply valve, condenser suction valve, and the SJAE drain valve for the applicable section placed in service. The MCB indication for a SJAE is supplied by the condenser suction valve for the applicable section.

4.4.5 On the air ejector to remain in service, place both sections in operation by opening the appropriate air ejector section isolations from the MCB.

1A SJAE---A SECTION ISO OPEN

1A SJAE---B SECTION ISO OPEN

or

1B SJAE---A SECTION ISO OPEN

1B SJAE---B SECTION ISO OPEN

4.4.6 Have personnel stationed locally verify that the steam supply valve, condenser suction valve, and the SJAE drain valve actuate properly.

4.4.7 Have personnel stationed locally adjust steam supply regulator N1N51V595A(B) settings as necessary. Normal inlet steam pressure should be approximately 150 Psi.

4.4.8 Have personnel stationed locally monitor manometer readings on the SJAE to remain in service.

4.4.9 Ensure condenser vacuum remains stable before continuing in this section of the procedure.

NOTE: Operation of a SJAE MCB hand switch actuates the steam supply valve, condenser suction valve, and the SJAE drain valve for the applicable section placed in service. The MCB indication for a SJAE is supplied by the condenser suction valve for the applicable section.

4.4.10 On the air ejector to be removed from service ensure only one section is in service.

4.4.11 On the SJAE being removed from service, verify only one section isolation is open on the MCB.

1A SJAE A SECTION ISO or B SECTION ISO

1B SJAE A SECTION ISO or B SECTION ISO

- 4.4.12 Close the manual inlet isolation for the SJAE being removed from service.

N1N51V503A---1A SJAE inlet iso
N1N51V503B---1B SJAE inlet iso

- 4.4.13 On the air ejector to be removed from service, close the operating section isolation valve from the MCB.

1A SJAE---A SECTION ISO or B SECTION ISO
1B SJAE---A SECTION ISO or B SECTION ISO

- 4.4.14 Have personnel stationed locally verify proper operation of the steam supply valve, condenser suction valve, and the SJAE drain valve for the applicable section removed from service.

- 4.4.15 Verify condenser vacuum remains stable.

- 4.4.16 Close the loop seal drain to the condenser valve on the SJAE removed from service.

N1N51V618---1A SJAE Loop seal drn to B Condenser
N1N51V620---1B SJAE Loop seal drn to B Condenser

- 4.4.17 Close the manual steam supply valve to the SJAE removed from service

N1N11V514A---1A SJAE Stm supp iso
N1N11V514B---1B SJAE Stm supp iso

- 4.4.18 IF required, THEN isolate condensate flow to the off service air ejector as follows:

NOTE: Isolating condensate flow through one SJAE could affect the SJAE Bypass Pressure Control Valve operations and SGFP suction pressure.

- 4.4.18.1 Increase MCB monitoring of the SJAE Bypass Pressure Control Valve M/A station CP4055E and SGFP suction pressure.

- 4.4.18.2 Station personnel locally to monitor the operation of the SJAE Bypass Pressure Control Valve N1N21V901.

- 4.4.18.3 Isolate condensate flow to the off service air ejector by closing the appropriate manual isolation valves.

N1N21V532A---1A SJAE inlet iso
 N1N21V531A---1A SJAE outlet iso
 N1N21V532B---1B SJAE inlet iso
 N1N21V531B---1B SJAE outlet iso

- 4.5 Returning a SJAE to Service at Power.

- 4.5.1 IF condensate flow was isolated to the off service air ejector, THEN restore condensate flow as follows:

- 4.5.1.1 Station appropriate personnel locally at the SJAE Bypass Pressure Control Valve N1N21V901.

NOTE: Restoring condensate flow through an isolated SJAE could affect SJAE Bypass Pressure Control Valve operations and SGFP suction pressure.

- 4.5.1.2 Increase MCB monitoring of the SJAE Bypass Pressure Control Valve M/A station CP4055E and SGFP suction pressure.

- 4.5.1.3 Establish condensate flow by opening the appropriate isolation valves for the SJAE being placed in service.

N1N21V532A---1A SJAE inlet iso
 N1N21V531A---1A SJAE outlet iso
 N1N21V532B---1B SJAE inlet iso
 N1N21V531B---1B SJAE outlet iso

- 4.5.2 On the SJAE being returned to service open the manual steam supply isolation valve.

N1N11V514A---1A SJAE Stm supp iso
 N1N11V514B---1B SJAE Stm supp iso

NOTE: Operation of a SJAE MCB hand switch actuates the steam supply valve, condenser suction valve, and the SJAE drain valve for the applicable section placed in service. The MCB indication for a SJAE is supplied by the condenser suction valve for the applicable section.

4.5.3 On the SJAE being returned to service, un-isolate one section of the air ejector by opening one of the following from the MCB.

1A SJAE----A SECTION ISO or B SECTION ISO
1B SJAE----A SECTION ISO or B SECTION ISO

4.5.4 Have personnel stationed locally verify proper operation of the steam supply valve, condenser suction valve, and the SJAE drain valve for the applicable section being returned to service.

4.5.5 Have personnel stationed locally adjust steam pressure regulator N1N51V595A(B) as required to maintain approximately 150 psig.

4.5.6 After un-isolating a section of the SJAE being returned to service, verify a vacuum is established prior to opening N1N51V503A(B) in step 4.5.7.

4.5.7 On the SJAE being returned to service open the appropriate manual suction isolation valve.

N1N51V503A---1A SJAE inlet iso
N1N51V503B---1B SJAE inlet iso

4.5.8 Open the loop seal drain to condenser valve for the SJAE being returned to service.

N1N51V618---1A SJAE Loop seal drn to B Condenser
N1N51V620---1B SJAE Loop seal drn to B Condenser

4.5.9 Monitor condenser vacuum and verify it remains stable.

4.6 Swapping from Main Steam to Aux Steam supply

4.6.1 IF Aux Steam is NOT cross-connected, THEN perform the following:

4.6.1.1 Verify open MS to AS Hdr Manual Isolation valve N1N11V612.

CAUTION Do not exceed 200# on the auxiliary steam header.

4.6.1.2 Verify Unit 1 aux stm hdr pressure regulator is set to maintain ~ 180 psig as indicated on N1P20PI511.

4.6.1.3 Verify open MS To AS Iso valve N1P20V525. (MCB)

4.6.1.4 Verify open ASB Stm Supp To Aux Bldg valve N1P20V519. (MCB)

4.6.1.5 Verify open SJAE Stm Supply Iso valve N1P20V550.

4.6.1.6 Station personnel at the SJAE and the aux stm hdr pressure regulator to verify proper SJAE operation and to ensure proper aux stm pressure is maintained during steam supply swap.

4.6.1.7 Open AUX STM to SJAE valve N1P20V521. (MCB)

4.6.1.8 Close MS to SJAE valve N1N11V902. (MCB)

4.6.2 IF Aux Steam is cross-connected (Unit 2 Supplying), THEN perform the following:

- 4.6.2.1 Check open N2P20V519, ASB STM SUPP TO AUX BLDG. (Unit 2 MCB)
- 4.6.2.2 Check closed N1P20V525, MS TO AS ISO. (Unit 1 MCB)
- 4.6.2.3 Check open N1P20V533, AS Supply From Unit 1 to Unit 2 X-CONN.

CAUTION Do not exceed 200# on the auxiliary steam header.

- 4.6.2.4 Verify Unit 2 aux. steam header pressure regulator is set to maintain ~ 180 psig as indicated on N2P20PI2973.
- 4.6.2.5 Verify open SJAE Stm Supply Iso valve N1P20V550.
- 4.6.2.6 Station personnel at the Unit 1 SJAE and the Unit 2 aux stm hdr pressure regulator to verify proper SJAE operation and to ensure proper aux stm pressure is maintained during steam supply swap.

NOTE: As additional load is placed on the Aux Steam System, it may be necessary to adjust the setpoint to maintain sufficient system pressure for proper SJAE operation.

- 4.6.2.7 Open AUX STM to SJAE valve N1P20V521. (MCB)
- 4.6.2.8 Close MS to SJAE valve N1N11V902. (MCB)

5.0 References

- 5.1 P & ID's
 - 5.1.1 D-170114 - Main Steam System.
 - 5.1.2 D-170130 - Auxiliary Steam System.
 - 5.1.3 D-170064 - Condenser Vacuum System.
 - 5.1.4 U-160269 - Steam Flow Diagrams - Surface Condenser.
 - 5.1.5 D-175027 - Turbine Building HVAC.
- 5.2 Instruction Manual - U-160888 Surface Condenser.
- 5.3 PCN's
 - 5.3.1 PCN 81-1052
 - 5.3.2 PCN 84-2774
 - 5.3.3 PCN 85-3297

IN PLANT JPM 11 – RO, SRO-I and SRO-U

TITLE: Align Backup Air To PORVs From Nitrogen Bottles	
PROGRAM APPLICABLE: SOT <u> X </u> SOCT <u> X </u> OLT <u> X </u> LOCT <u> X </u>	
ACCEPTABLE EVALUATION METHOD: <u> X </u> PERFORM <u> X </u> SIMULATE <u> </u> DISCUSS <u> </u>	
EVALUATION LOCATION: <u> </u> SIMULATOR <u> </u> CONTROL ROOM <u> X </u> PLANT	
PROJECTED TIME: <u> 8 MIN </u> SIMULATOR IC NUMBER: <u> N/A </u>	
ALTERNATE PATH <u> </u> TIME CRITICAL <u> </u> PRA <u> </u>	

Trainer/Date:		Trainee:	
Evaluator/Date:			
Overall JPM Performance:	Satisfactory <input type="checkbox"/>	Unsatisfactory	<input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)			

EXAMINER: _____

This is going to be done on Unit 2. It does have paperwork for Unit 1.

CONDITIONS

When I tell you to begin, you are to ALIGN BACKUP NITROGEN BOTTLES TO THE PORVs. The conditions under which this task is to be performed are:

- a. The Plant has lost Instrument Air.
- b. Operation of the PORVs is required.
- c. You are directed by the CRO to Align Backup Nitrogen to the PORVs per SOP-62.1, Back-up Air or Nitrogen Supply to the Pressurizer Power Operated Relief Valves.
- d. A pre-job brief is not required.

NOTE: THIS JPM MAY BE PERFORMED ON EITHER UNIT. THE UNIT TWO NUMBERS, IF DIFFERENT, ARE [BRACKETED].

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		

NOTE: EXAMINEE MAY CHOOSE WHICH NITROGEN BOTTLE TO PLACE ON SERVICE. IF ASKED, NITROGEN BOTTLE PRESSURE IS 2000 psig FOR EACH BOTTLE.

- | | | |
|---|--|-------|
| *1. Place a nitrogen bottle on service | Turn the outlet valve counterclockwise on the nitrogen bottle to be placed on service. (CUE: Outlet valve is open.) | S / U |
| *2. Open nitrogen isolation to back-up instrument air valve | N1P19V136A(B)
[N2P19V244A(B)] is turned counterclockwise. (CUE: V136A(B) [V244A(B)] is open.) | S / U |
| *3. Adjust instrument air control pressure | Q1[2]P19PCV2228A(B) is adjusted to \approx 100 psig as indicated on PI-2228. (CUE: PI-2228 indicates 100 psig when adjustment made to PCV.) | S / U |

CUE: When PI-2228 is read, say: PI-2228 indicates 0 psig.

- | | | |
|--|--|-------|
| *4. Open the PORV back-up air supply valve | On the PRIP, Open Q1[2]P19HV2228 by taking the handswitch to the START position to open valve. (CUE: VPI red light lit.) | S / U |
|--|--|-------|

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
5. Inform the CRO that backup air is aligned to PORVs from nitrogen bottles	Call the control room. (CUE: The CRO acknowledges.)	S / U

STOP TIME

Terminate after CRO acknowledges backup air is aligned to PORVs from the nitrogen bottles.
--

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-62.1, Version 16.0
2. FNP-2-SOP-62.1, Version 14.0
3. KAs: 065AA2.07 RO-2.8 SRO-3.2

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

REFERENCES PROVIDED: FNP-1-SOP-62.1, Version 16.0 OR FNP-2-SOP-62.1, Version 14.0

CONDITIONS

When I tell you to begin, you are to ALIGN BACKUP NITROGEN BOTTLES TO THE PORVs. The conditions under which this task is to be performed are:

- a. The Plant has lost Instrument Air.
- b. Operation of the PORVs is required.
- c. You are directed by the CRO to Align Backup Nitrogen to the PORVs per SOP-62.1, Back-up Air or Nitrogen Supply to the Pressurizer Power Operated Relief Valves.
- d. A pre-job brief is not required.

CONDITIONS

When I tell you to begin, you are to ALIGN BACKUP NITROGEN BOTTLES TO THE PORVs. The conditions under which this task is to be performed are:

- a. The Plant has lost Instrument Air.
- b. Operation of the PORVs is required.
- c. You are directed by the CRO to Align Backup Nitrogen to the PORVs per SOP-62.1, Back-up Air or Nitrogen Supply to the Pressurizer Power Operated Relief Valves.
- d. A pre-job brief is not required.

FARLEY NUCLEAR PLANT
SYSTEM OPERATING PROCEDURE
FNP-2-SOP-62.1

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BACK-UP AIR OR NITROGEN SUPPLY TO THE
PRESSURIZER POWER OPERATED RELIEF VALVES

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PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

Todd Youngblood
Operations Manager

Date Issued 05-30-03

TABLE OF CONTENTS

<u>Procedure Contains</u>	<u>Number of Pages</u>
Body.....	3

FARLEY NUCLEAR PLANT
UNIT 2
SYSTEM OPERATING PROCEDURE SOP-62.1
BACK-UP AIR OR NITROGEN SUPPLY TO THE
PRESSURIZER POWER OPERATED RELIEF VALVES

1.0 Purpose

This procedure provides the Initial Conditions, Precautions and Limitations, and Instructions for Operation of the Back-up Air or Nitrogen Supply to the Pressurizer Power Operated Relief Valves. Instructions are included in the following sections:

- 4.1 Operation of the PRZR PORVs Upon Loss of Instrument Air Using Alternate Instrument Air Supply.
- 4.2 Operation of the PRZR PORVs Upon Loss of Instrument Air Using Nitrogen Supply.
- 4.3 Shifting from One Nitrogen Bottle to the Other Nitrogen Bottle.
- 4.4 Returning System to Normal Operation.
- 4.5 Checking PRZR PORV Nitrogen Bottle Pressure.

2.0 Initial Conditions

- 2.1 The back-up air or nitrogen supply to the pressurizer power operated relief valves system valves are aligned per system check list FNP-2-SOP-62.1A.

3.0 Precautions and Limitations

- 3.1 Any time the PRZR PORVs are operated monitor PRT parameters.
- 3.2 IF at any time the PRZR PORVs don't reseat properly, THEN close the appropriate PRZR PORV ISO.

4.0 Instructions

- 4.1 Operation of the PRZR PORVs Upon Loss of Instrument Air Using Alternate Instrument Air Supply.
 - 4.1.1 Open back-up instrument air to PRZR PORVs valve N2P19V242.
 - 4.1.2 Open PORV BKUP AIR SUPPLY Q2P19HV2228. (PRIP)
 - 4.1.3 Verify proper operation of PRZR PORVs.

4.2 Operation of the PRZR PORVs Upon Loss of Normal Instrument Air Using Nitrogen Supply.

NOTE:

- **Place in service only one nitrogen bottle at a time. WHEN the pressure decreases to approximately 150-200 psig, THEN place the other nitrogen bottle on service per step 4.3, and change out the used nitrogen bottle.**
- **PORV BKUP air supply Q2P19HV2228 fails closed on a loss of 'B' train DC. IF entry into this procedure was due to a loss of 'B' Train DC Bus, THEN normal instrument air can be restored jacking open IA TO PENE RM N2P19HV3885 (100' non-rad plant heating equipment room), and then opening IA TO PENE RM N2P19HV3825 and IA TO CTMT Q2P19HV3611 from the BOP.**
- **IF entry into this procedure was due to a loss of 'A' Train DC Bus, THEN the following guidance will allow operation of the PORVs.**

4.2.1 Open the nitrogen bottle outlet valve on the bottle to be placed in service.

4.2.2 Open nitrogen isolation to back-up instrument air valve N2P19V244A(B) and adjust N2P19PCV2228A(B) to indicate approximately 100 psig on PI 2228.

4.2.3 Open PORV BKUP AIR SUPPLY Q2P19HV2228. (PRIP)

4.2.4 Verify proper operation of PRZR PORVs.

4.3 Shifting from One Nitrogen Bottle to the Other Nitrogen Bottle.

4.3.1 Open the nitrogen bottle outlet valve on the fully charged bottle.

4.3.2 Open nitrogen isolation to back-up instrument air valve N2P19V244A(B) on the fully charged nitrogen bottle.

4.3.3 Close nitrogen isolation to back-up instrument air valve N2P19V244A(B) on the used nitrogen bottle.

4.3.4 Close the nitrogen bottle outlet valve on the used bottle.

4.3.5 Replace the used nitrogen bottle with a fully charged nitrogen bottle.

4.3.6 Repeat steps 4.3.1 thru 4.3.5 as necessary to insure adequate nitrogen to PRZR PORVs.

4.4 Returning System to Normal Operation.

4.4.1 IF the alternate instrument air to CTMT was used, THEN perform the following:

4.4.1.1 Close PORV BKUP AIR SUPPLY Q2P19HV2228. (PRIP)

4.4.1.2 Close back-up instrument air to PRZR PORVs valve N2P19V242.

4.4.1.3 Verify valve position of Q2P19HV2228 by performing a partial FNP-2-STP-14.0, CTMT INTEGRITY VERIFICATION TEST.

4.4.2 IF the back-up nitrogen supply was used, THEN perform the following:

4.4.2.1 Close PORV BKUP AIR SUPPLY Q2P19HV2228. (PRIP)

4.4.2.2 Close nitrogen isolation to backup instrument air valve N2P19V244A(B).

4.4.2.3 Close the nitrogen bottle outlet valve.

4.4.2.4 Verify valve position of Q2P19HV2228 by performing a partial FNP-2-STP-14.0, CTMT INTEGRITY VERIFICATION TEST.

4.5 Checking PORV Nitrogen Bottle Pressure.

4.5.1 Verify N2P19V244A(B) closed.

4.5.2 Open compressed nitrogen bottle 2A(2B) outlet isolation valve and obtain reading on PI 2283A(B).

4.5.3 Close compressed nitrogen bottle 2A(2B) outlet isolation valve.

4.5.4 IF, The total N₂ pressure between the two bottles is less than 2400 psig THEN, submit a MSR to change out the lower pressure bottle. The pressure of both N₂ bottles added together must be greater than 2200 psig. Inform the SS when the sum of both N₂ bottle is less than 2200 psig. (Ref IAS-SSA-003; Westinghouse letter APW-A-5299; PCN-80-643)

5.0 References

5.1 D-205034 sheet 4.

Unit 1

11/18/04 12:26:09

UNIT 1

FNP-1-SOP-62.1
October 21, 2004
Version 16.0

FARLEY NUCLEAR PLANT
SYSTEM OPERATING PROCEDURE
FNP-1-SOP-62.1

BACK-UP AIR OR NITROGEN SUPPLY TO THE
PRESSURIZER POWER OPERATED RELIEF VALVES

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PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

RAY MARTIN
Operations Manager

Date Issued 10-29-04

UNIT 1

TABLE OF CONTENTS

<u>Procedure Contains.....</u>	<u>Number of Pages</u>
Body.....	4

FARLEY NUCLEAR PLANT
UNIT 1
SYSTEM OPERATING PROCEDURE SOP-62.1

BACK-UP AIR OR NITROGEN SUPPLY TO THE
PRESSURIZER POWER OPERATED RELIEF VALVES

1.0 Purpose

This procedure provides the Initial Conditions, Precautions and Limitations, and Instructions for Operation of the Back-up Air or Nitrogen Supply to the Pressurizer Power Operated Relief Valves. Instructions are included in the following sections:

- 4.1 Operation of the PRZR PORVs Upon Loss of Instrument Air Using Alternate Instrument Air Supply
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- 4.3 Shifting from One Nitrogen Bottle to the Other Nitrogen Bottle
- 4.4 Returning System to Normal Operation
- 4.5 Checking PRZR PORV Nitrogen Bottle Pressure

2.0 Initial Conditions

- 2.1 The back-up air or nitrogen supply to the pressurizer power operated relief valves system valves are aligned per system check list FNP-1-SOP-62.1A.

3.0 Precautions and Limitations

- 3.1 Any time the PRZR PORVs are operated monitor PRT parameters.
- 3.2 IF at any time the PRZR PORVs don't reseat properly, THEN close the appropriate PRZR PORV ISO.

4.0 Instructions

- 4.1 Operation of the PRZR PORVs Upon Loss of Instrument Air Using Alternate Instrument Air Supply
- 4.1.1 Open back-up instrument air to PRZR PORVs valve N1P19V134.
- 4.1.2 Open PORV BKUP AIR SUPPLY Q1P19HV2228. (PRIP)
- 4.1.3 IF Q1P19HV2228 will not open, THEN unlock AND open Q1P19V1099, HV2228-B BYP ISO VLV (key Z-286).
- 4.1.4 Verify proper operation of PRZR PORVs.
- 4.2 Operation of the PRZR PORVs Upon Loss of Normal Instrument Air Using Nitrogen Supply

NOTE:

- Place in service only one nitrogen bottle at a time. WHEN the pressure decreases to approximately 150 psig to 200 psig, THEN place the other nitrogen bottle on service per step 4.3, and change out the used nitrogen bottle.
- PORV BKUP air supply Q1P19HV2228 fails closed on a loss of 'B' Train DC. IF entry into this procedure was due to a loss of 'B' Train DC Bus, THEN normal instrument air can be restored by jacking open IA TO PENE RM N1P19HV3885 (100' non-rad plant heating equipment room), and then opening IA TO PENE RM N1P19HV3825 and IA TO CTMT Q1P19HV3611 from the BOP.
- IF entry into this procedure was due to a loss of 'A' Train DC Bus, THEN the following guidance will allow operation of the PORVs.

- 4.2.1 Open the nitrogen bottle outlet valve on the bottle to be placed in service.
- 4.2.2 Open nitrogen isolation to back-up instrument air valve N1P19V136A(B) and adjust N1P19PCV2228A(B) to indicate approximately 100 psig on PI 2228.
- 4.2.3 Open PORV BKUP Air Supply Q1P19HV2228. (PRIP)
- 4.2.4 IF Q1P19HV2228 will not open, THEN unlock AND open Q1P19V1099, HV2228-B BYP ISO VLV (key Z-286).
- 4.2.5 Verify proper operation of PRZR PORVs.

- 4.3 Shifting from One Nitrogen Bottle to the Other Nitrogen Bottle
- 4.3.1 Open the nitrogen bottle outlet valve on the fully charged bottle.
- 4.3.2 Open nitrogen isolation to back-up instrument air valve N1P19V136A(B) on the fully charged nitrogen bottle.
- 4.3.3 Close nitrogen isolation to back-up instrument air valve N1P19V136A(B) on the used nitrogen bottle.
- 4.3.4 Close the nitrogen bottle outlet valve on the used bottle.
- 4.3.5 Replace the used nitrogen bottle with a fully charged nitrogen bottle.
- 4.3.6 Repeat steps 4.3.1 thru 4.3.5 as necessary to insure adequate nitrogen to PRZR PORVs.
- 4.4 Returning System to Normal Operation
- 4.4.1 IF the alternate instrument air to CTMT was used, THEN perform the following:
- 4.4.1.1 Close PORV BKUP AIR SUPPLY Q1P19HV2228. (PRIP)
- 4.4.1.2 IF Q1P19V1099, HV2228 BYP ISO VLV, was unlocked and opened, THEN close AND lock Q1P19V1099 (key Z-286.)
- 4.4.1.3 Close backup instrument air to PRZR PORVs valve N1P19V134.
- 4.4.1.4 Verify the position of the following valves by performing a partial FNP-1-STP-14.0, CONTAINMENT INTEGRITY VERIFICATION TEST.
- Q1P19HV2228, PORV BKUP AIR SUPPLY
 - Q1P19V1099, HV2228 BYP ISO VLV
- 4.4.2 IF the back-up nitrogen supply was used, THEN perform the following:
- 4.4.2.1 Close PORV BKUP AIR SUPPLY Q1P19HV2228. (PRIP)
- 4.4.2.2 IF Q1P19V1099, HV2228 BYP ISO VLV, was unlocked and opened, THEN close AND lock Q1P19V1099 (key Z-286.)

- 4.4.2.3 Close nitrogen isolation to backup instrument air valve NIP19V136A(B).
- 4.4.2.4 Close the nitrogen bottle outlet valve.
- 4.4.2.5 Verify the position of the following valves by performing a partial FNP-1-STP-14.0, CONTAINMENT INTEGRITY VERIFICATION TEST.
 - Q1P19HV2228, PORV BKUP AIR SUPPLY
 - Q1P19V1099, HV2228 BYP ISO VLV

4.5 Checking PORV Nitrogen Bottle Pressure

- 4.5.1 Verify NIP19V136A(B) closed.
- 4.5.2 Open compressed nitrogen bottle 1A(1B) outlet isolation valve and obtain reading on PI 596(597).
- 4.5.3 Close compressed nitrogen bottle 1A(1B) outlet isolation valve.
- 4.5.4 Nitrogen Pressure (Ref: IAS-SSA-003; Westinghouse letter APW-A-5299; PCN-80-643)
 - 4.5.4.1 IF the total N₂ pressure between the two bottles is less than 2400 psig, THEN submit a CR to change out the lower pressure bottle.
 - 4.5.4.2 The pressure of both N₂ bottles added together must be greater than 2200 psig. IF the sum of both N₂ bottle is less than 2200 psig, THEN inform the SS.

5.0 References

- 5.1 D-175034 sheets 1, 3