



Entergy
Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

**OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE**

SLD ON/6

SRO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: CANAL DISCHARGE APPROVAL

REV: 0

DATE: 5/23/03

NRC K/A SYSTEM NUMBER: 2.3.6 2.1/3.1

JAF TASK NUMBER: _____

JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: *[Signature]*

OPERATION REVIEW: _____

APPROVED: _____

~~~~~  
CANDIDATE NAME: \_\_\_\_\_

S.S. NUMBER: \_\_\_\_\_

JPM Completion: ( ) Simulated (X) Performed

Location: ( ) Plant (X) Simulator

DATE PERFORMED: \_\_\_\_\_

TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ( ) Satisfactory ( ) Unsatisfactory

~~~~~  
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: _____

PROGRAM ADMINISTER

DOC. COMPLETE: _____

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

SRO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: CANAL DISCHARGE APPROVAL

Current Update: 5/23/03
Date

By: RWD
Int.

Outstanding Items:

☐ Technical Review

☐ Additional Information

☐ Questions and Answers

☐ Validation

☐ Procedural Change Required

☐ None

Comments:

Simulator validated 5/24/03. Any IC

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

SRO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: CANAL DISCHARGE APPROVAL

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. OP-49, LIQUID RADIOACTIVE WASTE SYSTEM, Rev. 51

III. TOOLS AND EQUIPMENT

- A. Calculator

IV. SET UP REQUIREMENTS

- A. Simulator in any operating configuration with tempering gate full closed
- B. 17RM-350 data sheet containing background and K-factor is posted at 09-11
- C. Operator Aid 446 available in Shift Manager Office
- D. Partially completed Canal Discharge Worksheet (OP-49 Attachment 5).
- E. Confirm or correct calculations for current revisions of Op Aid 446 and Liquid Process Monitor Cal Data

V. EVALUATOR NOTES

- A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

- A. Candidate is presented with a partially completed Canal Discharge Worksheet.
- B. Candidate completes worksheet and sets 17RM-350 for canal discharge.

*** - CRITICAL STEP**

VII. INITIATING CUE

You are the Shift Manager. Waste Sample Tank A has been in recycle for the last 3 hours. Complete this Canal Discharge Worksheet and set the radiation monitor in preparation for discharging the sample tank.

EVALUATOR

Hand partially completed Canal Discharge Worksheet to candidate.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Select procedure	Candidate selects OP-49, Section E.23	SAT / UNSAT
2.	7. Liquid rad monitor (17RM-350) background cps	Candidate records 43 from Liquid Process Monitor Cal Data posted at 09-11 panel	SAT / UNSAT
3.	8. Liquid rad monitor (17RM-350) K-factor $\mu\text{Ci/ml/cps}$	Candidate records 2.09E-7 from Liquid Process Monitor Cal Data posted at 09-11 panel	SAT / UNSAT
4.	9. Tempering gate/flow %	Candidate obtains EPIC value of 0% (EPIC-A-3547)	SAT / UNSAT
5.	10. Calculate Canal Flow Rate (CFR):	396,000	SAT / UNSAT
6.	11. Calculate Canal Dilution Factor (CDF):	5.05E-5	SAT / UNSAT
7.	12. Calculate FL:	5.05E-3	SAT / UNSAT
8.	13. Calculate Background Correction Activity (BCA) in $\mu\text{Ci/ml}$:	5.6E-6	SAT / UNSAT
*9.	14. Calculate Hi/Hi setpoint in $\mu\text{Ci/ml}$:	3.8E-2	SAT / UNSAT
*10.	15. Calculate Hi setpoint in $\mu\text{Ci/ml}$:	1.9E-2	SAT / UNSAT
*11.	16. Obtain 17RM-350 potentiometer setting for Hi-Hi setpoint from OPAID 446.	8.8 turns	SAT / UNSAT
*12.	17. Obtain 17RM-350 potentiometer setting for Hi setpoint from OPAID 446.	8.4 turns	SAT / UNSAT

S/RO/NLO NEW

TASK TITLE: CANAL DISCHARGE APPROVAL

	STEP	STANDARD	EVALUATION / COMMENT
13.	18. Enter potentiometer settings for Hi and Hi-Hi setpoints on Discharge Permit Section B and attach this worksheet to the discharge permit.	EVALUATOR Indicate that this activity is complete	SAT / UNSAT
*14.	Adjust 17RM-350 setpoints	At panel 09-11, candidate unlocks HI and HI-HI Potentiometers and adjusts to 8.4 and 8.8 turns respectively. Candidate re-locks the potentiometers.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

DATA

1. Number of running circulating water pumps (36P-1A/B/C) 3
2. Number of running service water pumps (46P-1A/B/C) 2
3. Tank Discharge Flow Rate (maximum) TDFR 20 gpm
4. Tank Activity (ACT) 3.8×10^{-4} $\mu\text{Ci/ml}$ (from discharge permit)
5. Required Dilution Factor (DF) 100 (from discharge permit)
6. Liquid rad monitor (17RM-350) reading 70 cps
(EPIC-A-1209)

NOTE 1: Items 7 and 8 are obtained at panel 09-14

NOTE 2: Background should be maintained **LESS THAN** 1000 cps.
It is recommended that the detector canister be flushed
to levels below this prior to discharge.

7. Liquid rad monitor (17RM-350) background 43 cps
8. Liquid rad monitor (17RM-350) K-factor 2.09×10^{-7} $\mu\text{Ci/ml/cps}$
9. Tempering gate/flow 0 %
(EPIC-A-3547)

CALCULATIONS

10. Calculate Canal Flow Rate (CFR):

$$\text{CFR} = \frac{(\#1 \times 120,000) + (\#2 \times 18,000)}{1 - (\#9 \div 100)} = \frac{396,000}{1 - (0 \div 100)} = 396,000 \text{ gpm}$$

11. Calculate Canal Dilution Factor (CDF):

$$\text{CDF} = \frac{\text{TDFR}}{\text{CFR}} = \frac{\#3}{\#10} = \frac{20}{396,000} = 5.05 \times 10^{-5}$$

12. Calculate F_L :

$$F_L = \text{CDF} \times \text{DF} = \#11 \times \#5 = 5.05 \times 10^{-3}$$

13. Calculate Background Correction Activity (BCA) in $\mu\text{Ci/ml}$:

$$\text{BCA} = (\#6 - \#7) \times \#8 = (70 - 43) \times 2.09 \times 10^{-7} = 5.6 \times 10^{-6} \mu\text{Ci/ml}$$

COMPLETED FORMS ARE ATTACHED TO THE DISCHARGE PERMIT

14. Calculate Hi/Hi setpoint in $\mu\text{Ci}/\text{ml}$:

$$\text{Hi/Hi} = \frac{(\text{ACT})}{2 \times F_L} = \frac{\#4}{2 \times \#12} + \#13 = \frac{3.8 \times 10^{-2}}{} \mu\text{Ci}/\text{ml}$$

15. Calculate Hi setpoint in $\mu\text{Ci}/\text{ml}$:

$$\text{Hi} = \frac{(\text{ACT})}{4 \times F_L} = \frac{\#4}{4 \times \#12} + \#13 = \frac{1.9 \times 10^{-2}}{} \mu\text{Ci}/\text{ml}$$

16. Obtain 17RM-350 potentiometer setting for Hi-Hi setpoint from OPAID 446.

Hi/Hi ~ 8.8 turns

17. Obtain 17RM-350 potentiometer setting for Hi setpoint from OPAID 446.

Hi ~ 6.4 turns

18. Enter potentiometer settings for Hi and Hi-Hi setpoints on Discharge Permit Section B and attach this worksheet to the discharge permit.

Performed by (SM) _____

Print/Sign/Date _____

Independent Verification _____

Print/Sign/Date _____

COMPLETED FORMS ARE ATTACHED TO THE DISCHARGE PERMIT

OP-49

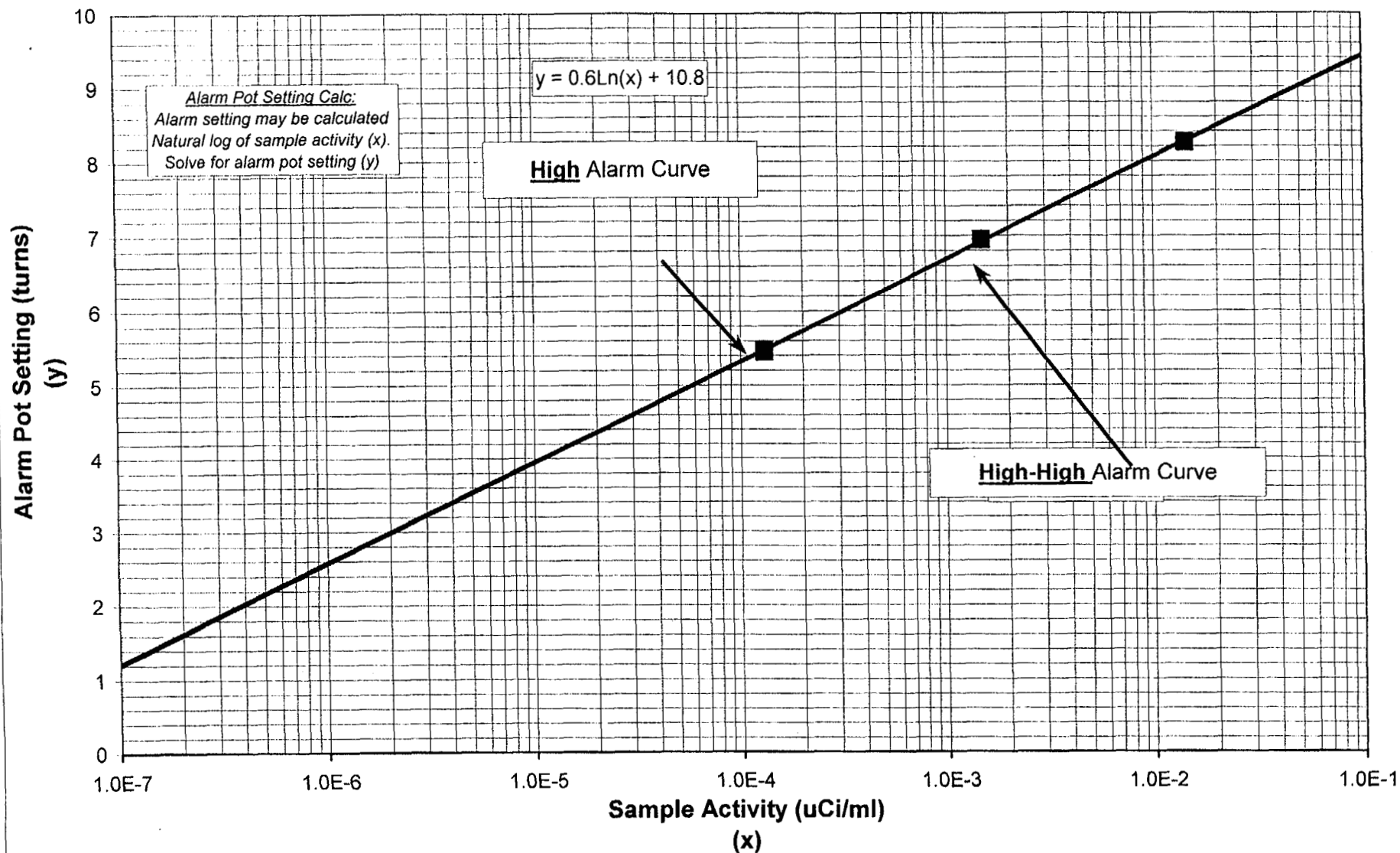
Rev. No. 51

LIQUID RADIOACTIVE
WASTE SYSTEM

ATTACHMENT 5

Page 215 of 216

Liquid Radwaste Effluent Monitor Sample Activity vrs. Alarm Pot Setting



NOTE: ----->> INCREASING ACTIVITY ----->>

Cal Date: 5/13/03

■ HIGH ALARM POT

▲ HIGH-HIGH ALARM POT

Do N se After 912103

5/1 03

Prepared By: Mike R

LIQUID PROCESS MONITOR CAL CATA

Page 1 of 1

TO CALCULATE ACTIVITY:

$$\begin{array}{ccccc} \text{Activity} & = & \text{Monitor Reading} & - & \text{Background} \times \text{K-Factor} \\ (\mu\text{Ci/ml}) & & (\text{cps}) & & (\text{cps}) \quad (\mu\text{Ci/ml/cps}) \end{array}$$

MONITOR ID	ID #	CAL DATE	BACKGROUND cps	K FACTOR $\frac{\mu\text{Ci/ml}}{\text{cps}}$
RADWASTE LIQUID	17RM-350	5/13/03	43	$2.09\text{E-}7$
NORMAL SERVICE WATER	17RM-351	4/29/03	2	$2.30\text{E-}7$
RBCLC	17RM-352	12/26/02	20	$2.30\text{E-}7$

DATE POSTED: 5/13/03

CHEM TECHNICIAN: *Kevin R. Siferd*

APPROVED FOR POSTING:

James Schultz
CHEM/RADIOCHEM SUPERVISOR

SP-03.07

Rev. No. 5

LIQUID PROCESS RADIATION
MONITORS

ATTACHMENT 7

Page 57 of 60

DATA

1. Number of running circulating water pumps (36P-1A/B/C) 3
2. Number of running service water pumps (46P-1A/B/C) 2
3. Tank Discharge Flow Rate (maximum) TDFR 20 gpm
4. Tank Activity (ACT) 3.8×10^{-4} 3.8 $\mu\text{Ci/ml}$ (from discharge permit)
5. Required Dilution Factor (DF) 100 (from discharge permit)
6. Liquid rad monitor (17RM-350) reading 70 cps
(EPIC-A-1209)

NOTE 1: Items 7 and 8 are obtained at panel 09-14

NOTE 2: Background should be maintained **LESS THAN** 1000 cps.
It is recommended that the detector canister be flushed to levels below this prior to discharge.

7. Liquid rad monitor (17RM-350) background _____ cps
8. Liquid rad monitor (17RM-350) K-factor _____ $\mu\text{Ci/ml/cps}$
9. Tempering gate/flow _____ %
(EPIC-A-3547)

CALCULATIONS

10. Calculate Canal Flow Rate (CFR):

$$\text{CFR} = \frac{(\#1 \times 120,000) + (\#2 \times 18,000)}{1 - (\#9 \div 100)} = \text{_____} \text{ gpm}$$

11. Calculate Canal Dilution Factor (CDF):

$$\text{CDF} = \frac{\text{TDFR}}{\text{CFR}} = \frac{\#3}{\#10} = \text{_____}$$

12. Calculate F_L :

$$F_L = \text{CDF} \times \text{DF} = \#11 \times \#5 = \text{_____}$$

13. Calculate Background Correction Activity (BCA) in $\mu\text{Ci/ml}$:

$$\text{BCA} = (\#6 - \#7) \times \#8 = \text{_____} \mu\text{Ci/ml}$$

COMPLETED FORMS ARE ATTACHED TO THE DISCHARGE PERMIT

OP-49

Rev. No. 51LIQUID RADIOACTIVE
WASTE SYSTEM

ATTACHMENT 5

Page 214 of 216

14. Calculate H_i/H_i setpoint in $\mu\text{Ci}/\text{ml}$:

$$H_i/H_i = \frac{(ACT)}{2 \times F_i} = \frac{\#4}{2 \times \#12} + \#13 = \underline{\hspace{2cm}} \mu\text{Ci/ml}$$

15. Calculate H_i setpoint in $\mu\text{Ci/ml}$:

$$Hi = \frac{(ACT)}{4 \times F_t} = \frac{\#4}{4 \times \#12} + \#13 = \underline{\hspace{2cm}} \mu Ci/ml$$

16. Obtain 17RM-350 potentiometer setting for Hi-Hi setpoint from OPAID 446.

Hi/Hi _____

17. Obtain 17RM-350 potentiometer setting for Hi setpoint from OPAID 446.

Hi _____

18. Enter potentiometer settings for Hi and Hi-Hi setpoints on Discharge Permit Section B and attach this worksheet to the discharge permit.

Performed by (SM) _____
Print/Sign/Date

Independent Verification _____
Print/Sign/Date

COMPLETED FORMS ARE ATTACHED TO THE DISCHARGE PERMIT



Entergy
Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

**OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE**

SRO ONLY

 SRO NEW TASK TITLE: EVALUATE SURVEILLANCE TEST
ACCEPTANCE CRITERIA
APPL. TO JPM NUMBER
REV: 0 DATE: 5/23/03 NRC K/A SYSTEM NUMBER: 2.2.12 3.0/3.4
JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:
ESTIMATED COMPLETION TIME: 20 Minutes
SUBMITTED: *[Signature]* OPERATION REVIEW:
APPROVED:

~~~~~  
CANDIDATE NAME:                           S.S. NUMBER:                     

JPM Completion:    (   ) Simulated      (   ) Performed

Location:            (   ) Plant            (   ) Simulator

DATE PERFORMED:                           TIME TO COMPLETE:        Minutes

PERFORMANCE EVALUATION:    (   ) Satisfactory      (   ) Unsatisfactory

~~~~~  
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:
SIGNATURE/PRINTED

CANDIDATE REVIEW:
SIGNATURE

REVIEWED BY: DOC. COMPLETE:
PROGRAM ADMINISTER

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

SRO

NEW

TASK TITLE: EVALUATE SURVEILLANCE TEST ACCEPTANCE
CRITERIA

APPL. TO

JPM NUMBER

Current Update: 5/23/03
Date

By: RWD
Int.

Outstanding Items:

☐ Technical Review

☐ Additional Information

☐ Questions and Answers

☐ Validation

☐ Procedural Change Required

☐ None

Comments:

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

SRO

NEW

**TASK TITLE: EVALUATE SURVEILLANCE TEST ACCEPTANCE
CRITERIA**

APPL. TO

JPM NUMBER

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. AP-03.11, OPERABILITY AND REPORTABILITY DETERMINATIONS
- B. AP-19.01, SURVEILLANCE TESTING PROGRAM
- C. ST-01B, MSIV FAST CLOSURE TEST

III. TOOLS AND EQUIPMENT

- A. None

IV. SET UP REQUIREMENTS

- A. Best if conducted in the Control Room or the simulator.
- B. If performed in alternative locations, normal controlled references and prints may need to be available.

V. EVALUATOR NOTES

- A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

- A. Candidate will review a completed ST-01B Surveillance Test containing test failure data that was not recorded by the performer or SNO
- B.

*** - CRITICAL STEP**

S/RO/NLO
TASK TITLE:

VII. INITIATING CUE

You are the Control Room Supervisor. The SNO has just completed ST-01B, MSIV FAST CLOSURE TEST, and forwards it to you to complete the management SRO review.

EVALUATOR

Hand copy of completed Surveillance Test to candidate.

	STEP	STANDARD	EVALUATION / COMMENT
1.	11.2.1 Verify data is within required tolerances.	Candidate review all data recorded in Surveillance Test. Candidate may determine that step 8.6.3 does not meet acceptance criteria.	SAT / UNSAT
2.	11.2.2 Verify data attachments, such as recorder printouts and calibration sheets are included as required.	This step is not applicable to this test.	SAT / UNSAT
3.	11.2.3 Verify required initials and signatures have been entered.	Candidate review all initial/signature blocks for completion	SAT / UNSAT
*4.	11.2.4 Review test to determine if test results satisfy acceptance criteria: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Satisfactory with corrective actions <input type="checkbox"/> Unsatisfactory	Candidate will recognize that step 8.6.3 does not meet acceptance criteria and therefore check the Unsatisfactory box	SAT / UNSAT
5.	11.2.5 IF Level 1 acceptance criteria is not satisfied, THEN immediately notify Operations Manager or alternate. Record name of person notified.	Candidate will make the required notification <u>EVALUATOR</u> Receive and acknowledge the notification	SAT / UNSAT
6.	11.2.6 Initiate required corrective and compensatory actions. <input type="checkbox"/> Not required <input type="checkbox"/> Required	Candidate will indicate the need to complete a Tech Spec review, Condition Report and PID and check the Required box. <u>EVALUATOR</u> Report to candidate that all are in progress.	SAT / UNSAT

S/RO/NLO

TASK TITLE:

	STEP	STANDARD	EVALUATION / COMMENT
7.	11.2.7 Sign and record date and time. Management SRO Date/Time	Candidate will sign, date and time the surveillance test	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

ENTERGY NUCLEAR OPERATIONS, INC.
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
OPERATIONS SURVEILLANCE TEST PROCEDURE

MAIN TURBINE BYPASS VALVE CYCLE TEST
ST-21Q
REVISION 0

APPROVED BY: [Signature]
RESPONSIBLE PROCEDURE OWNER

DATE 6/2/02

EFFECTIVE DATE: _____

FIRST ISSUE ☒

FULL REVISION ☐

LIMITED REVISION ☐

***** * * CONTINUOUS USE * * *****	***** * * TSR * * *****
***** * * TECHNICAL * * *****	***** * * 3 * * *****

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 REQUIREMENTS	4
2.0 PURPOSE	4
3.0 REFERENCES	4
4.0 PREREQUISITES	5
5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS	5
6.0 PRECAUTIONS AND LIMITATIONS	6
7.0 GENERAL TEST METHODS	7
8.0 PROCEDURE	8
8.1 Main Turbine Bypass Valve Testing While Shutdown in Cold Condition	8
9.0 RETURN TO NORMAL	10
10.0 ACCEPTANCE CRITERIA	10
11.0 ACCEPTANCE VERIFICATION	11
12.0 ATTACHMENTS	14
1. <u>TEST SIGNOFF LOG</u>	15

NOTE: Sections 4 and 5 may be performed in any order or concurrently.

Init

NOTE: This test is to be performed as directed from OP-9 Section D.2. Required prerequisites are established in OP-9 Section D.2

4.0 PREREQUISITES

- 4.1 SM has granted permission to perform this test. _____
- 4.2 Revision Number of this Working Copy is the same as the revision number listed in the Master Copy of the Index of Operations Surveillance Test Procedures. _____
- 4.3 Test personnel have read this procedure and are thoroughly familiar with its contents. _____
- 4.4 EHC Section (Panel 09-5) Lamp Test has been completed per Subsection G.2 of OP-9. _____
- 4.5 Start of test recorded. _____
Date/Time
- 4.6 Start of test recorded in NCO Log Book. _____
- 4.7 Reactor is in Mode 4. _____

5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS

5.1 Test Equipment

None

5.2 Special Tools

None

5.3 Materials

None

7.0 GENERAL TEST METHODS

- 7.1 The main turbine bypass valves will be cycled one at a time from the panel and observed locally for proper operation.
- 7.2 This test will be performed in conjunction with OP-9 Section D.2, Main Turbine Valve Testing While Shutdown in Cold Condition.
- 7.3 This procedure may be used for post-work testing and verification of operability for applicable equipment provided the following actions are performed:
 - 7.3.1 The actions and requirements of Sections 1 through 6, 10, and 11 are satisfied.
 - 7.3.2 The applicable portions of Sections 8 and 9 are performed.
 - 7.3.3 Signoffs for non-applicable portions of Sections 8 and 9 are marked "NA". Non-applicable subsections may be marked "NA" by drawing a diagonal line on each page and marking the page "NA".
 - 7.3.4 The reason for partial performance of this test is documented in Subsection 11.3.

Init

- 8.1.4 Test BPV-3 as follows at BYP VLV TEST section:
- A. Depress and hold SELECT BPV-3 pushbutton. ()
 - B. Verify BPV-3 opens at moderate speed until 85 to 95% open, then fast opens to full open. ()
 - C. Release SELECT BPV-3 pushbutton. ()
 - D. Verify BPV-3 closes smoothly to full closed. ()
 - E. Verify READY TO SELECT light comes on. ()

- 8.1.5 Test BPV-4 as follows at BYP VLV TEST section:
- A. Depress and hold SELECT BPV-4 pushbutton. ()
 - B. Verify BPV-4 opens at moderate speed until 85 to 95% open, then fast opens to full open. ()
 - C. Release SELECT BPV-4 pushbutton. ()
 - D. Verify BPV-4 closes smoothly to full closed. ()
 - E. Verify READY TO SELECT light comes on. ()

- 8.1.6 **WHEN** main turbine bypass valve testing is complete, perform the following at BPV VLV TEST section:
- A. Depress OFF pushbutton at BYP VLV TEST section. ()
 - B. Verify READY TO SELECT light goes off. ()

11.0 ACCEPTANCE VERIFICATION**11.1 NCO/SNO Review**

- 11.1.1 Verify required data has been recorded and is within required tolerances.
- 11.1.2 Verify required initials and signatures have been entered.
- 11.1.3 Review test to determine if test acceptance criteria has been satisfied.
- 11.1.4 Check one of the following as appropriate for test results:

- ☐ Acceptance criteria satisfied, no corrective action required.
- ☐ Acceptance criteria satisfied, corrective action required.
- ☐ Acceptance criteria not satisfied.

- 11.1.5 **IF** acceptance criteria is satisfied **AND** corrective action is required,
THEN perform the following:

- A. Describe in Subsection 11.3, Remarks.
- B. Initiate a PID and record PID number.

PID Number

- 11.1.6 **IF** acceptance criteria is not satisfied,
THEN perform the following:

- A. Immediately notify SM.
- B. Initiate a PID and record PID number.

PID Number

- 11.1.7 Sign and record date and time.

SNO or NCO

Date/Time

11.3 Remarks

[illegible]

Page 1 of 1

[illegible]

Total Man-Hours _____

LCO INDEX

[illegible]

This IS NOT a Quality Record

Page 1 of 1

LCO Tracking No.

This IS a Quality Record

!EXP4.2.10

Tracking No. _____

TS/TRM/ODCM No.: _____

CONDITION INITIATING LCO: _____

_____REQUIRED ACTION: _____

_____COMPLETION TIME (Frequency): _____

RESPONSIBLE DEPARTMENT: _____

Date							
Time/Init	/	/	/	/	/	/	/
Date							
Time/Init	/	/	/	/	/	/	/
Date							
Time/Init	/	/	/	/	/	/	/
Date							
Time/Init	/	/	/	/	/	/	/

This IS a Quality Record

AP-12.08

Rev. No. 3

LCO TRACKING AND SAFETY FUNCTION DETERMINATION PROGRAM

ATTACHMENT 1

Page 38 of 49

TS/TRM/ODCM No. : _____

This IS a Quality Record

Tracking No. _____

TS/TRM/ODCM No.: _____

Continuation SheetThis IS a Quality Record

AP-12.08

Rev. No. 3

LCO TRACKING AND SAFETY FUNCTION DETERMINATION PROGRAM

ATTACHMENT 1

Page 40 of 49

ENTERGY NUCLEAR OPERATIONS, INC.
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
OPERATIONS SURVEILLANCE TEST PROCEDURE

MSIV FAST CLOSURE TEST (1ST)
ST-1B
REVISION 23

APPROVED BY: 
RESPONSIBLE PROCEDURE OWNER

DATE 6/11/02

EFFECTIVE DATE: 6-14-02

FIRST ISSUE ☐

FULL REVISION ☐

LIMITED REVISION ☒

*****	*****
* CONTINUOUS USE *	* TSR *
*****	*****

* TECHNICAL *	

REVISION SUMMARY SHEET

- | REV. NO. | CHANGE AND REASON FOR CHANGE |
|----------|--|
| 23 | <p>Added clarification to frequency that valves tested at a cold shutdown frequency may include valves tested while decreasing power to cold shutdown or while increasing power to steady state power operation (NUREG-1482 Section 3.1.1.1 supporting PCR dated 5/16/02)</p> <p>Revised prerequisites to change plant condition to Rx Pressure < 5psig to allow testing prior to cold shutdown to minimize MSIV dry stroking (PCR dated 5/16/02)</p> <p>Revised prerequisite on water level to include option of New GE REM Steam line plugs installed and steam lines drained, allows performance earlier in outage (PCR dated 4/19/02)</p> <p>Revised Section 8 and Section 9 to include provisions for MSIVs remaining closed per OP-65 (PCR dated 5/16/02)</p> |
| 22 | <p>Revised prerequisite to refer to Reactor Mode for support of ITS.</p> <p>Made changes to the Operations Department Operating Shift Organization titles per FYI #02-005 throughout. Changes not rev barred.</p> |
| 21 | <p>Deleted the requirement to record calibration due date in Sections 4 and 5 per ODSO-31.</p> <p>Revised Section 11 to eliminate SM and Assistant Operations Manager review and replaced with one review by a Management SRO. This change reduces the administrative burden of multiple independent reviews. Change made with Rev. 23 to AP-02.01.</p> <p>Revised Section 1.2 to include Improved Technical Specification references.</p> |
| 20 | <p>Deleted Tech Spec frequency of quarterly and updated Tech Spec surveillance references in Subsection 1.2.1 to reflect Tech Spec Amendment 242. (PCR #1 dated 2/24/99)</p> <p>Full revision to reflect change to IST program to perform MSIV fast closure at Cold Shutdown. Also deleted testing of 29MOV-74 and 29MOV-77 (relocated to ST-1C) and updated procedure title.</p> |

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 REQUIREMENTS	4
2.0 PURPOSE	6
3.0 REFERENCES	6
4.0 PREREQUISITES	7
5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS	8
6.0 PRECAUTIONS AND LIMITATIONS	8
7.0 GENERAL TEST METHODS	10
8.0 PROCEDURE	11
8.1 MSIV 29AOV-80A Test	11
8.2 MSIV 29AOV-86A Test	11
8.3 MSIV 29AOV-80B Test	12
8.4 MSIV 29AOV-86B Test	12
8.5 MSIV 29AOV-80C Test	13
8.6 MSIV 29AOV-86C Test	13
8.7 MSIV 29AOV-80D Test	14
8.8 MSIV 29AOV-86D Test	14
9.0 RETURN TO NORMAL	15
10.0 ACCEPTANCE CRITERIA	18
11.0 ACCEPTANCE VERIFICATION	19
12.0 ATTACHMENTS	23
1. <u>TEST SIGNOFF LOG</u>	24

1.0 REQUIREMENTS**1.1 Frequency**

?COM1.4.1

IST cold shutdown testing shall be performed as follows:

- Valve exercising shall commence within 48 hours of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power.
- Completion of all cold shutdown testing is not a prerequisite to plant startup, provided testing began within 48 hours of achieving cold shutdown. Any testing not completed during one cold shutdown shall be scheduled first during the next cold shutdown.
- For extended outages, testing need not begin within 48 hours provided all valves that are required to be tested during cold shutdown are tested before plant startup.
- Valves tested at a cold shutdown frequency may include valves tested while decreasing power to cold shutdown or while increasing power to steady state power operation.
- Cold shutdown tests are not required if satisfactorily completed within the past 3 months (92 days).
- Cold shutdown tests shall be completed before startup from a Refueling Outage, unless test has been completed within the past 3 months (92 days).

1.2 Technical Specifications**1.2.1 Surveillance Requirements**

- SR 3.6.1.3.6

NOTE: SR 3.6.1.3.7 is satisfied by completion of ST-1B and ST-1D.

- Partially satisfies SR 3.6.1.3.7

1.2.2 Limiting Conditions for Operation

LCO 3.6.1.3

1.3 Other

ASME Section XI 1989 Edition no addenda

1.4 Commitments

- 1.4.1 JAFNPP Inservice Testing Program for Pumps and Valves, Cold Shutdown Justification CSJ-018 defers testing of MSIVs to cold shutdown.

1.5 Expectations

None

2/28/07
R/S
10/28/07

2.0 PURPOSE

To test MSIVs as required by the IST Program.

3.0 REFERENCES**3.1 Performance References**

None

3.2 Developmental References

- 3.2.1 ODSO-32, Shutdown Procedure
- 3.2.2 OP-1, Main Steam System
- 3.2.3 ASME Section XI 1989 Edition no addenda
- 3.2.4 Inservice Testing Program For Pumps and Valves, Third Interval
- 3.2.5 AP-19.05, Pump and Valve Inservice Testing
- 3.2.6 ESK-7A, 7B
- 3.2.7 FM-29A
- 3.2.8 1.67-97 thru 98
- 3.2.9 1.70-98 thru 110
- 3.2.10 AP-01.04, Tech Spec Related Requirements, Lists and Tables
- 3.2.11 NUREG-1482 Guidelines for Inservice Testing at Nuclear Power Plants, Section 3.1.1.1
- 3.2.12 JD-01-123, GE REM Light Dryer Wet Transfer System

NOTE: Sections 4 and 5 may be performed in any order or concurrently.

Init

4.0 PREREQUISITES

4.1 SM has granted permission to perform this test.

4.2 Revision Number of this Working Copy is the same as the revision number listed in the Master Copy of the Index of Operations Surveillance Test Procedures.

4.3 Test personnel have read this procedure and are thoroughly familiar with its contents.

4.4 Start of test recorded. Today 15 min ago
Date/Time

4.5 Start of test recorded in SNO Log.

4.6 [CTS]

Reactor is shutdown, Reactor Pressure <5 psig.

[ITS]

Reactor is in Mode 3, 4 or Mode 5, Reactor Pressure <5 psig.

4.7 RPV Water Level is **LESS THAN** 270 inches or GE REM Main Steam Line plugs installed with steamlines drained.

4.8 Calibration for each instrument listed in Subsection 5.1 is up-to-date.

4.9 **IF** ST-41D, Remote Valve Position Indication Verification (IST), is in progress,
THEN performance of this test has been coordinated with the performance of ST-41D.

N/A

5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS**5.1 Test Equipment**

Stopwatch

001
Serial Number**5.2 Special Tools**

None

5.3 Materials

None

6.0 PRECAUTIONS AND LIMITATIONS**6.1 Precautions**

None

6.2 Limitations

6.2.1 Test personnel shall immediately notify the SNO or CRS of any failure to meet acceptance criteria.

6.2.2 Test personnel shall print name, sign initials, and enter date on Attachment 1 before performing Section 8 of this test.

6.2.3 When test personnel complete their assigned portion of this test, they shall enter hours worked on Attachment 1.

6.2.4 Once this test has been started, any additional test personnel shall read this procedure and become thoroughly familiar with its contents before performing any portion of this test.

- 6.2.5 Multiple working copies of this test may be used provided the following requirements are satisfied:

NOTE: The work site is defined as the location where work is controlled. The location of the work site is at the discretion of the SNO.

- A. A working copy of this test shall be retained at the work site.
 - B. The work site working copy shall be the legal record for documenting this test.
 - C. Data from all steps performed away from the work site, including signatures, initials, and recorded values, is transcribed into the work site working copy following completion of test.
- 6.2.6 Conditional (**IF, THEN**) steps in this test may be marked "NA" if not applicable.
- 6.2.7 Steps in this test marked "NR" are not required to be initialed.

7.0 GENERAL TEST METHODS

- 7.1 This test consists of eight subsections which test MSIVs as required by the IST Program.
- 7.2 Subsections 8.1 through 8.8 may be performed in any order as necessary to facilitate plant operations or maintenance. Steps within each subsection shall be performed in the order specified.
- 7.3 Valve closing times are measured from when the control switch is placed in close until the red open indicating light goes off. IST limits are listed as (IST:). Tech Spec time limits are listed as (TS:).
- 7.4 This procedure may be used for post-work testing and verification of operability for applicable equipment provided the following actions are performed:
- 7.4.1 The actions and requirements of Sections 1 through 6, 10, and 11 are satisfied.
 - 7.4.2 The applicable portions of Sections 8 and 9 are performed.
 - 7.4.3 Signoffs for non-applicable portions of Sections 8 and 9 are marked "NA". Non-applicable subsections may be marked "NA" by drawing a diagonal line on each page and marking the page "NA".
 - 7.4.4 The reason for partial performance of this test is documented in Subsection 11.4.

8.0 PROCEDURE

Init

8.1 MSIV 29AOV-80A Test

- 8.1.1 Record as-found position of
MSIV 29AOV-80A.

Open
(position)

l

- 8.1.2 Ensure open MSIV 29AOV-80A.

l

- 8.1.3 Close and time MSIV 29AOV-80A.

Closing time 3.7 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.1.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.1.5 Ensure MSIV 29AOV-80A is in the as-found
position recorded in Step 8.1.1.

l

8.2 MSIV 29AOV-86A Test

- 8.2.1 Record as-found position of
MSIV 29AOV-86A.

closed
(position)

l

- 8.2.2 Ensure open MSIV 29AOV-86A.

l

- 8.2.3 Close and time MSIV 29AOV-86A.

Closing time 4.1 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.2.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.2.5 Ensure MSIV 29AOV-86A is in the as-found
position recorded in Step 8.2.1.

l

8.3 MSIV 29AOV-80B Test

Init

- 8.3.1 Record as-found position of
MSIV 29AOV-80B.

Open
(position)

l

- 8.3.2 Ensure open MSIV 29AOV-80B.

l

- 8.3.3 Close and time MSIV 29AOV-80B.

Closing time 3.1 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.3.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.3.5 Ensure MSIV 29AOV-80B is in the as-found
position recorded in Step 8.3.1.

l

8.4 MSIV 29AOV-86B Test

- 8.4.1 Record as-found position of
MSIV 29AOV-86B.

Closed
(position)

l

- 8.4.2 Ensure open MSIV 29AOV-86B.

l

- 8.4.3 Close and time MSIV 29AOV-86B.

Closing time 3.3 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.4.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.4.5 Ensure MSIV 29AOV-86B is in the as-found
position recorded in Step 8.4.1.

l

8.5 MSIV 29AOV-80C Test

Init

- 8.5.1 Record as-found position of
MSIV 29AOV-80C.

Open
(position)

l

- 8.5.2 Ensure open MSIV 29AOV-80C.

l

- 8.5.3 Close and time MSIV 29AOV-80C.

Closing time 3.9 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.5.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.5.5 Ensure MSIV 29AOV-80C is in the as-found
position recorded in Step 8.5.1.

l

8.6 MSIV 29AOV-86C Test

- 8.6.1 Record as-found position of
MSIV 29AOV-86C.

Closed
(position)

l

- 8.6.2 Ensure open MSIV 29AOV-86C.

l

- 8.6.3 Close and time MSIV 29AOV-86C.

Closing time 5.9 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.6.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.6.5 Ensure MSIV 29AOV-86C is in the as-found
position recorded in Step 8.6.1.

l

8.7 MSIV 29AOV-80D Test

Init

- 8.7.1 Record as-found position of
MSIV 29AOV-80D.

Open
(position)

l

- 8.7.2 Ensure open MSIV 29AOV-80D.

l

- 8.7.3 Close and time MSIV 29AOV-80D.

Closing time 3.5 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.7.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.7.5 Ensure MSIV 29AOV-80D is in the as-found
position recorded in Step 8.7.1.

l

8.8 MSIV 29AOV-86D Test

- 8.8.1 Record as-found position of
MSIV 29AOV-86D.

Closed
(position)

l

- 8.8.2 Ensure open MSIV 29AOV-86D.

l

- 8.8.3 Close and time MSIV 29AOV-86D.

Closing time 4.5 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

l

- 8.8.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.8.5 Ensure MSIV 29AOV-86D is in the as-found
position recorded in Step 8.8.1.

l

9.0 RETURN TO NORMAL

Init

9.1 System Restoration

9.1.1 IF MSIVs remained closed per OP-65 Section F,
THEN each MSIV is closed:

- MSIV 29AOV-80A
- MSIV 29AOV-86A
- MSIV 29AOV-80B
- MSIV 29AOV-86B
- MSIV 29AOV-80C
- MSIV 29AOV-86C
- MSIV 29AOV-80D
- MSIV 29AOV-86D

()
()
()
()
()
()
()
()

N/A

9.1.2 IF MSIVs were not closed per OP-65 Section F,
THEN each MSIV is in the as-found position
recorded in the specified step:

- MSIV 29AOV-80A is in the position
recorded in Step 8.1.1
- MSIV 29AOV-86A is in the position
recorded in Step 8.2.1
- MSIV 29AOV-80B is in the position
recorded in Step 8.3.1
- MSIV 29AOV-86B is in the position
recorded in Step 8.4.1
- MSIV 29AOV-80C is in the position
recorded in Step 8.5.1
- MSIV 29AOV-86C is in the position
recorded in Step 8.6.1
- MSIV 29AOV-80D is in the position
recorded in Step 8.7.1
- MSIV 29AOV-86D is in the position
recorded in Step 8.8.1

(✓)

(✓)

(✓)

(✓)

(✓)

(✓)

(✓)

(✓)

2

9.1.3 IF all MSIVs are open,
THEN the following MSIV CLOSURE TRIP relays
are energized

- 5A-K3E at panel 09-15
- 5A-K3A at panel 09-15
- 5A-K3C at panel 09-15
- 5A-K3G at panel 09-15
- 5A-K3F at panel 09-17
- 5A-K3B at panel 09-17
- 5A-K3D at panel 09-17
- 5A-K3H at panel 09-17

()
()
()
()
()
()
()
()

N/A

9.1.4 Steps 9.1.1 through 9.1.3 verified
by Licensed Operator.

R. H. Kelly / Friday
Signature/Date

9.2 Review and Signoff

Init

- 9.2.1 Test completed. Today / 2 min Ago
Date/Time
- 9.2.2 Test personnel have recorded hours worked on
Attachment 1.
- 9.2.3 Man-Hours totalled and recorded on
Attachment 1.

222

10.0 ACCEPTANCE CRITERIA**10.1 Level 1 Acceptance Criteria**

- Each tested valve was cycled and closed within the following stroke time limits:

Valve	IST Stroke Time (secs)	Tech Spec Stroke Time (secs)	Step
29AOV-80A	3 to 5	3 to 5	8.1.3
29AOV-86A	3 to 5	3 to 5	8.2.3
29AOV-80B	3 to 5	3 to 5	8.3.3
29AOV-86B	3 to 5	3 to 5	8.4.3
29AOV-80C	3 to 5	3 to 5	8.5.3
29AOV-86C	3 to 5	3 to 5	8.6.3
29AOV-80D	3 to 5	3 to 5	8.7.3
29AOV-86D	3 to 5	3 to 5	8.8.3

- If a valve stroke time does not meet the IST limit, the valve shall be declared inoperable and applicable LCO actions shall be taken. An IST evaluation which determines that valve operation is acceptable may be used to restore the valve to an operable status if Tech Spec limits are not exceeded.

10.2 Level 2 Acceptance Criteria

None

11.0 ACCEPTANCE VERIFICATION**11.1 SNO Review**

11.1.1 Verify required data has been recorded and is within required tolerances. (✓)

11.1.2 Verify required initials and signatures have been entered. (✓)

11.1.3 **IF** Level 1 Acceptance Criteria **OR** Level 2 LLRT valve acceptance criteria was not met, **THEN** perform the following:

A. Sign off ST as unsatisfactory.

B. Immediately notify the CRS.

C. Initiate a DER.

N/A
DER number

D. If necessary, initiate a PID.

N/A
PID number

NOTE: A DER is required for instruments that exceed As Found tolerances for tracking purposes.

11.1.4 **IF** only Level 2 Acceptance Criteria was not met, **THEN** perform the following:

A. Sign off ST as satisfactory with corrective actions.

B. Initiate either a DER or a PID.

N/A
PID/DER number

11.1.5 Identify test results:

- (✓) Satisfactory
() Satisfactory with corrective actions
() Unsatisfactory

11.1.6 Sign and record date and time.

Randal W. Berry
SNO

Tuesday 12min ago
Date/Time

11.1.7 Record results in SNO log. (✓)

11.2 Management SRO Review

- 11.2.1 Verify data is within required tolerances. ()
- 11.2.2 Verify data attachments, such as recorder printouts and calibration sheets are included as required. ()
- 11.2.3 Verify required initials and signatures have been entered. ()
- 11.2.4 Review test to determine if test results satisfy acceptance criteria:
- () Satisfactory
- () Satisfactory with corrective actions
- () Unsatisfactory
- 11.2.5 IF Level 1 acceptance criteria is not satisfied, THEN immediately notify Operations Manager or alternate. Record name of person notified.

Person Notified

- 11.2.6 Initiate required corrective and compensatory actions.
- () Not required
- () Required
- 11.2.7 Sign and record date and time.

Management SRO

Date/Time

11.3 IST Coordinator Review

11.3.1 Review test results. ()

11.3.2 Update records as required. ()

IST Coordinator

Date/Time

11.4 Remarks

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

12.0 **ATTACHMENTS**

1. TEST SIGNOFF LOG



James A. FitzPatrick Nuclear Power Plant

**OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE**

SRO OND

SRO NEW TASK TITLE: AOP-28/43 Procedure Execution
APPL. TO JPM NUMBER
REV: 0 DATE: 5/21/03 NRC K/A SYSTEM NUMBER: 2.1.20 4.3/4.2
JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:
ESTIMATED COMPLETION TIME: 10 Minutes
SUBMITTED: [Signature] OPERATION REVIEW:
APPROVED: _____

~~~~~  
CANDIDATE NAME: S.S. NUMBER:

JPM Completion: ( ) Simulated (X) Performed

Location: ( ) Plant (X) Simulator

DATE PERFORMED: TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ( ) Satisfactory ( ) Unsatisfactory

~~~~~  
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____
SIGNATURE/PRINTED

CANDIDATE REVIEW: _____
SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____
PROGRAM ADMINISTER

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

SRO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: AOP-28/43 Procedure Execution

Current Update: 5/21/03
Date

By: RWD
Int.

Outstanding Items:

☐ Technical Review

☐ Additional Information

☐ Questions and Answers

☐ Validation

☐ Procedural Change Required

☐ None

Comments:

Simulator validated 5/24/03. IC 133

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

SRO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: AOP-28/43 Procedure Execution

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. AOP-28, Operation During Plant Fires, Rev. 12
- B. AOP-43, Plant Shutdown From Outside The Control Room, Rev. 28

III. TOOLS AND EQUIPMENT

- A. None

IV. SET UP REQUIREMENTS

- A. MFI-FP02:Z69, Fire (smoke) alarm in North Cable Run Room inserted on trigger.
- B. MFI-FP02:Z57, Fire (smoke) alarm in Relay room inserted on same trigger on 30 second TD
- C. Override on Cable Run Room High Temp Amber and CO2 initiation Red lamps on same trigger with 10 second TD
- D. ANXXYY. Randomly select multiple horseshoe annunciators to crywolf. Assign to the same trigger at varying time delays up to 2 minutes

V. EVALUATOR NOTES

- A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

- A. The set up above is modeling a North Cable Run Room large fire that has moved to the Relay Room in the vicinity of the Interposing Relay (annunciator) cabinets.
- B. Fire Alarm, Suppression System Actuation, and verbal report confirm a large fire in the relay room.
- C. Unexpected alarms confirm entry into AOP-28.

* - CRITICAL STEP

S/RO/NLO NEW

TASK TITLE: AOP-28/43 Procedure Execution

VII. INITIATING CUE

You are the Control Room Supervisor. Your panel operators are simulated. The plant is operating normally at 100% CTP. Respond accordingly to events unrelated to other candidates.

EVALUATOR

Have simulator operator trigger fire alarm and after a short delay, call Control Room Supervisor to report a large fire in the Relay Room

	STEP	STANDARD	EVALUATION / COMMENT
1.	Receive alarms	Candidate acknowledges and recognizes fire indication in north cable run room, relay room and suppression system actuation.	SAT / UNSAT
2.	Order fire brigade response per EAP-3	<u>EVALUATOR</u> When ordered, indicate that the Fire Brigade is responding as directed	SAT / UNSAT
3.	Reference AOP-28	Candidate obtains AOP-28.	SAT / UNSAT
4.	Enter AOP-28	Candidate assesses that symptoms warrant AOP-28 entry at section "C".	SAT / UNSAT
*5.	Determine applicable AOP-28 Attachment	Candidate determines that AOP-28 exit and AOP-43 entry is required	SAT / UNSAT
6.	Reference AOP-43	Candidate obtains AOP-43.	SAT / UNSAT
7.	Enter AOP-43	Candidate assesses that symptoms warrant AOP-43 entry at section "C". <u>EVALUATOR</u> Indicate to the candidate that he smells and sees smoke. The view of the 09-5 is hazy and worsening. You may consider requesting additional random crywolf annunciators.	SAT / UNSAT

S/RO/NLO NEW

TASK TITLE: AOP-28/43 Procedure Execution

	STEP	STANDARD	EVALUATION / COMMENT
*8.	C.1.4 IF Control Room evacuation is required, OR a loss of shutdown capability from the Control Room occurs, THEN operators perform their assigned subsection, injection must occur within 30 minutes of initial SRV actuation:	Candidate determines that a control room evacuation is required and orders operators to perform their assigned subsections.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			



James A. FitzPatrick Nuclear Power Plant
OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE

SRO ONLY

SRO NEW TASK TITLE: TECHNICAL SPECIFICATION EVALUATION AND LCO TRACKING
APPL. TO JPM NUMBER
REV: 0 DATE: 5/23/03 NRC K/A SYSTEM NUMBER: 2.1.12 2.9/4.0
JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:
ESTIMATED COMPLETION TIME: 15 Minutes
SUBMITTED: [Signature] OPERATION REVIEW:
APPROVED:
~~~~~

CANDIDATE NAME:      S.S. NUMBER:        
JPM Completion:    ( ) Simulated      ( ) Performed  
Location:            ( ) Plant            ( ) Simulator  
DATE PERFORMED:      TIME TO COMPLETE:      Minutes  
PERFORMANCE EVALUATION:    ( ) Satisfactory      ( ) Unsatisfactory  
~~~~~  
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:
SIGNATURE/PRINTED

CANDIDATE REVIEW:
SIGNATURE

REVIEWED BY: DOC. COMPLETE:
PROGRAM ADMINISTER

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

SRO

NEW

TASK TITLE: TECHNICAL SPECIFICATION EVALUATION AND
LCO TRACKING

APPL. TO

JPM NUMBER

Current Update: 5/23/03
Date

By: RWD
Int.

Outstanding Items:

 Technical Review

 Additional Information

 Questions and Answers

 Validation

 Procedural Change Required

 None

Comments:

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

SRO

NEW

TASK TITLE: TECHNICAL SPECIFICATION EVALUATION AND
LCO TRACKING

APPL. TO

JPM NUMBER

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. Technical Specification 3.7.6, SR 3.7.6.1 and Bases
B. ST-21Q, Main Turbine Bypass Valve Cycle Test, Rev. 0
C. AP-19.01, SURVEILLANCE TESTING PROGRAM

III. TOOLS AND EQUIPMENT

- A. None

IV. SET UP REQUIREMENTS

- A. Best if conducted in the Control Room or the simulator.
B. If performed in alternative locations, normal controlled references and prints may need to be available.

V. EVALUATOR NOTES

- A.
B.

VI. TASK CONDITIONS

- A. A plant startup is in progress, making preparations to enter Mode 2.
B. ST-21Q is in progress.
C. SNO reports that BPV-3 will not open and therefore will not meet the level 1 acceptance criteria. BPV-1 and 2 responded properly
D. Candidate evaluates Tech Spec impact of the failure.

* - CRITICAL STEP

S/RO/NLO NEW

TASK TITLE: TASK TITLE: TECHNICAL SPECIFICATION EVALUATION

VII. INITIATING CUE

You are the SM/CRS. A plant startup completing a refuel outage is in progress. Preparations are being made to enter Mode 2. ST-21Q, MAIN TURBINE BYPASS VALVE CYCLE TEST, is in progress. The SNO reports that Bypass Valve Number 3 will not open and will therefore fail the level 1 acceptance criteria. Bypass Valves 1 and 2 responded properly.

EVALUATOR

Hand candidate Attachment 1, Initiating Cue

Interactive discussion may be required to facilitate this evaluation

	STEP	STANDARD	EVALUATION / COMMENT
1.	Assess the report	Candidate will determine that the BPV-3 is inoperable <u>EVALUATOR</u> If requested, provide blank copy of ST-21Q	SAT / UNSAT
2.	Determine Technical Specification applicability	Candidate determines that BPV-3 has failed SR-3.7.6.1 and LCO 3.7.6 is affected.	SAT / UNSAT
*3.	Declare Bypass System inoperable	Candidate determines that Applicability of LCO is not met and LCO is therefore not applicable. Candidate also determines that plant operation is limited to <25% CTP (LCO-3.0.4)	SAT / UNSAT
4.		<u>EVALUATOR</u> If the candidate initiates any of the below, report that they are in progress: <ul style="list-style-type: none">• Management Notifications• Problem Identification (PID) process• Corrective Action (CR) Process	

S/RO/NLO NEW

TASK TITLE: TASK TITLE: TECHNICAL SPECIFICATION EVALUATION

	STEP	STANDARD	EVALUATION / COMMENT
5.	Initiate LCO tracking process	EVALUATOR Candidate prompting may be required. Candidate obtains AP-12.08 or LCO tracking binder and determines that LCO tracking is required	SAT / UNSAT
*6.	Complete AP-12.08, Attachment 1 and 2	EVALUATOR Provide candidate with blank AP-12.08 Attachment 1 and 2 Attachment 2 of this JPM contains AP-12.08 Attachment 1 and 2 key entries for this condition	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

ATTACHMENT 1

You are the SM/CRS. A plant startup completing a refuel outage is in progress. Preparations are being made to enter Mode 2. ST-21Q, MAIN TURBINE BYPASS VALVE CYCLE TEST, is in progress. The SNO reports that Bypass Valve Number 3 will not open and will therefore fail the level 1 acceptance criteria. Bypass Valves 1 and 2 responded properly.

LCO TRACKING SHEET

Page 1 of 1

EXP4.2.5, 4.2.6, 4.2.8

LCO Tracking No. 003-001

1 DATE: TODAY 2 TIME: NOW 3 % PWR S/D 4 MODE: 4 Page 1 of 1

5 SYSTEM/COMPONENT or PARAMETER main Turbine Bypass System, BPV-3

6 TS/TRM/ODCM NO.

3.7.67 Applicable Modes: 1 2 3 4

Other:

Thermal Power \geq 25% RTP8 CR NO. XXYY9 PID/WR NO. XXYY

10 CONDITION INITIATING LCO: Planned

Unplanned ☒SF-214 Failure

11 CONDITION

12 REQUIRED ACTION

13 COMPLETION TIME

		Required by: Date: ____/____/____ Time: _____	Completed: Date: ____/____/____ Time: _____ Initials: _____
		Required by: Date: ____/____/____ Time: _____	Completed: Date: ____/____/____ Time: _____ Initials: _____
		Required by: Date: ____/____/____ Time: _____	Completed: Date: ____/____/____ Time: _____ Initials: _____

14 COMPLETE PAGE 2. RECORD NAME/DEPARTMENT NOTIFIED IF OTHER THAN OPS REQUIRED TO COMPLETE ACTION:

15 LCO 3.0.6 ENTERED

☐ YES ☒ NO ☐ NA

16 LOSS OF SAFETY FUNCTION

NO17 CRS: Joe Candidate

18 SM:

CLOSEOUT

19 LCO RESTORED DATE/TIME

20 COMMENTS/CORRECTIVE ACTIONS

21 CRS:

22 SM:

This IS a Quality Record

AP-12.08

LCO TRACKING AND SAFETY FUNCTION DETERMINATION PROGRAM

ATTACHMENT 1

Rev. No. 3Page 37 of 49

EXP4.2.10

Tracking No. _____

TS/TRM/ODCM No.: _____

CONDITION INITIATING LCO: _____

_____REQUIRED ACTION: _____

_____COMPLETION TIME (Frequency): _____

RESPONSIBLE DEPARTMENT: _____

Date							
Time/Init	/	/	/	/	/	/	/
Date							
Time/Init	/	/	/	/	/	/	/
Date							
Time/Init	/	/	/	/	/	/	/
Date							
Time/Init	/	/	/	/	/	/	/

This IS a Quality Record

Page 1 of 1

TS/TRM/ODCM No.: _____

This IS a Quality Record

Tracking No. _____

TS/TRM/ODCM No.: _____

Continuation SheetThis IS a Quality Record

AP-12.08

Rev. No. 3

LCO TRACKING AND SAFETY FUNCTION DETERMINATION PROGRAM

ATTACHMENT 1

Page 40 of 49

EAL DECLARATION JPM'S FILED WITH APPROPRIATE
SCENARIOS



Entergy
Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

**OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE**

RD ONLY

S/RQ NEW
APPL. TO JPM NUMBER

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

REV: 0 DATE: 6/5/03 NRC K/A SYSTEM NUMBER: 2.4.21

JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: *[Signature]* OPERATION REVIEW:

APPROVED: _____

~~~~~  
CANDIDATE NAME: S.S. NUMBER:

JPM Completion: ( ) Simulated (X) Performed

Location: ( ) Plant (X) Simulator

DATE PERFORMED: TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ( ) Satisfactory ( ) Unsatisfactory

~~~~~  
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____
SIGNATURE/PRINTED

CANDIDATE REVIEW: _____
SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____
PROGRAM ADMINISTER

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

S/RO NEW
APPL. TO JPM NUMBER

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

Current Update: 6/5/03
 Date

By: RWD
 Int.

Outstanding Items:

☐ Technical Review

☐ Additional Information

☐ Questions and Answers

☐ Validation

☐ Procedural Change Required

☐ None

Comments:

Previous Revision Dates:

None

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO NEW
APPL. TO JPM NUMBER

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. ST-40C, COMPUTER OUT OF SERVICE SURVEILLANCE, Rev. 16

III. TOOLS AND EQUIPMENT

- A. Simulator Telephone to Instructor Console (Optional)

IV. SET UP REQUIREMENTS

- A. Reset the Simulator to any at power IC with the Generator synced to the grid.
- B. Insert Override Pen 2, 06PR/FR-98 NR RX PRESS TURB STM FLOW, to fail downscale.

V. EVALUATOR NOTES

- A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

- A. EPIC has been lost.
- B. The Shift Manager has directed that ST-40C, COMPUTER OUT OF SERVICE SURVEILLANCE, section 8.4.2, TREND RECORDER CHECK, be performed.

*** - CRITICAL STEP**

S/RO/NLO NEW

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

VII. INITIATING CUE

EPIC has been lost. The Shift Manager has directed that ST-40C, COMPUTER OUT OF SERVICE SURVEILLANCE, section 8.4, TREND RECORDER CHECK, be performed.

EVALUATOR

Evaluation of candidate will be based on verifying that the candidate clearly checks all of the listed instrumentation and the critical step will be to identify the faulted instrument, 06PR/FR-98 NR RX PRESS TURB STM FLOW, has failed.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Candidate obtains procedure ST-40C, COMPUTER OUT OF SERVICE SURVEILLANCE	Candidate selects ST-40C, COMPUTER OUT OF SERVICE SURVEILLANCE. Candidate identifies Section 8.4, TREND RECORDER CHECK <u>EVALUATOR</u> Upon Section selection, hand candidate a partially performed copy of ST-40C, COMPUTER OUT OF SERVICE SURVEILLANCE	SAT / UNSAT
2.	Candidate reviews procedure	N/A	SAT / UNSAT
3.	8.4 Trend Recorder Check 8.4.2 Verify trend recorders listed below are trending data and the parameter recorded is indicating the expected value.	<u>CANDIDATE</u> Performs step 8.4.2- verifying each of the following instruments:	SAT / UNSAT
Note- The following Instruments are located on Panel-09-2			
4.	17RR-53 STACK HIGH RANGE RAD MON	<u>CANDIDATE</u> Initials for 17RR-53 STACK HIGH RANGE RAD MON <u>EVALUATOR</u> monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT

S/RO/NLO NEW

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

	STEP	STANDARD	EVALUATION / COMMENT
5.	17RR-434 TURB BLDG HI RANGE VENT MON	CANDIDATE Initials for 17RR-434 TURB BLDG HI RANGE VENT MON EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
6.	17RR-463 RADW HI RANGE VENT MON	CANDIDATE Initials for 17RR-463 RADW HI RANGE VENT MON EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
7.	17RR-455 RX BLDG VENT MON (BELOW REFUEL FLOOR)	CANDIDATE Initials for 17RR-455 RX BLDG VENT MON (BELOW REFUEL FLOOR) EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT

Note- The following Instruments are located on Panel-09-3

8.	16-1TR-131A TORUS TEMP A	CANDIDATE Initials for 16-1TR-131A TORUS TEMP A EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
9.	27PR-115A1 PC PRESS	CANDIDATE Initials for 27PR-115A1 PC PRESS EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
10.	27PR-115A2 PC PRESS	CANDIDATE Initials for 27PR-115A2 PC PRESS EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
11.	23LR-203A PC LVL	CANDIDATE Initials for 23LR-203A PC LVL EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT

S/RO/NLO NEW

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

	STEP	STANDARD	EVALUATION / COMMENT
12.	23LR-202A TORUS LVL	CANDIDATE Initials for 23LR-202A TORUS LVL EVALUATOR monitor candidate to ensure he/she verifies indicated value is:_____	SAT / UNSAT
13.	06PR-61A RX VESSEL PRESS	CANDIDATE Initials for 06PR-61A RX VESSEL PRESS EVALUATOR monitor candidate to ensure he/she verifies indicated value is:_____	SAT / UNSAT
14.	27PR-115B2 PC PRESS	CANDIDATE Initials for 27PR-115B2 PC PRESS EVALUATOR monitor candidate to ensure he/she verifies indicated value is:_____	SAT / UNSAT
15.	27PR-115B1 PC PRESS	CANDIDATE Initials for 27PR-115B1 PC PRESS EVALUATOR monitor candidate to ensure he/she verifies indicated value is:_____	SAT / UNSAT
16.	23LR-203B PC LVL	CANDIDATE Initials for 23LR-203B PC LVL EVALUATOR monitor candidate to ensure he/she verifies indicated value is:_____	SAT / UNSAT
17.	23LR-202B TORUS LVL	CANDIDATE Initials for 23LR-202B TORUS LVL EVALUATOR monitor candidate to ensure he/she verifies indicated value is:_____	SAT / UNSAT
18.	06PR-61B RX VESSEL PRESS	CANDIDATE Initials for 06PR-61B RX VESSEL PRESS EVALUATOR monitor candidate to ensure he/she verifies indicated value is:_____	SAT / UNSAT

S/RO/NLO NEW

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

	STEP	STANDARD	EVALUATION / COMMENT
19.	16-1TR-108 DW TEMP A	CANDIDATE Initials for 16-1TR-108 DW TEMP A EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
20.	10FR-143 RHR FLOW	CANDIDATE Initials for 10FR-143 RHR FLOW EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
21.	02-3LR-98 RX WTR LVL FUEL ZONE	CANDIDATE Initials for 02-3LR-98 RX WTR LVL FUEL ZONE EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
22.	16-1TR-131B TORUS TEMP B	CANDIDATE Initials for 16-1TR-131B TORUS TEMP B EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
23.	16-1TR-107 DW TEMP B	CANDIDATE Initials for 16-1TR-107 DW TEMP B EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT
Note- The following Instruments are located on Panel-09-4			
24.	16-1DPR-200 DW PRESS, TORUS PRESS, DW TO TORUS DIFF PRESS	CANDIDATE Initials for 16-1DPR-200 DW PRESS, TORUS PRESS, DW TO TORUS DIFF PRESS EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____	SAT / UNSAT

S/RO/NLO NEW

TASK TITLE: PERFORM CONTROL ROOM ACTIONS FOR ST-40C

	STEP	STANDARD	EVALUATION / COMMENT
25.	02TR-165 RWR LOOP INLET TEMP	<p>CANDIDATE Initials for 02TR-165 RWR LOOP INLET TEMP</p> <p>EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____</p>	SAT / UNSAT
Note- The following Instruments are located on Panel-09-5			
26.	06LR/PR-97 WR RX PRESS RX LVL	<p>CANDIDATE Initials for 06LR/PR-97 WR RX PRESS RX LVL</p> <p>EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____</p>	SAT / UNSAT
27.	02-3LR-85B RX WTR LVL	<p>CANDIDATE Initials for 02-3LR-85B RX WTR LVL</p> <p>EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____</p>	SAT / UNSAT
*28.	06PR/FR-98 NR RX PRESS TURB STM FLOW	<p>CANDIDATE Determines that 06PR/FR-98 NR RX PRESS TURB STM FLOW has failed downscale and reports to Supervision.</p> <p>EVALUATOR monitor candidate to ensure he/she verifies indicated value is: _____</p> <p>Role Play Acting as Supervisor-Acknowledge report and direct candidate to terminate task</p>	<p>CRITICAL TASK</p> <p>SAT / UNSAT</p>
EVALUATOR: Terminate the task at this point.			

ENTERGY NUCLEAR OPERATIONS, INC.
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
SURVEILLANCE TEST PROCEDURE

COMPUTER OUT OF SERVICE SURVEILLANCE
ST-40C
REVISION 16

APPROVED BY:


RESPONSIBLE PROCEDURE OWNER

DATE 12/6/02

EFFECTIVE DATE: 12/20/02

FIRST ISSUE ☐

FULL REVISION ☐

LIMITED REVISION ☒

*****	*****
* REFERENCE USE *	* TSR *
*****	*****

* TECHNICAL *	

REVISION SUMMARY SHEET

REV. NO. CHANGE AND REASON FOR CHANGE

16 Added Attachments 3 and 6, listed a key in Subsection 5.2, added Subsection 8.3, added Step 8.9.4, added Step 10.1.4 and revised Subsection 1.2 to provide method for calculating average drywell temperature on a loss of plant computer.
CA-02-2922-1

15 Deleted the requirement to record Calibration Due Dates in Sections 4 and 5 per ODS0-31.

Revised Step 6.2.5 to be consistent with Surveillance Test format.

The electric lift feature of SRV's is no longer bypassed in ST-40C. The following changes have been made to support this (ACT-01-60461) (PCR #1 dated 8/25/01):

- Deleted OP-68 from references
- Added bullet to Step 8.1.1 as shift discussion item.
- Revised and retitled Subsection 8.7, avoiding restrictive and unnecessary LCO.
- Revised Step 8.8.3 to monitor vice restore.
- Deleted Step 9.1.2

Added Step 8.2.1 to ensure compliance with the SPDES permit.

Clarified Step 9.2.1 calculations are performed on Attachment 2.

Added "Average" before "screenwell" in Step 10.1.1 to reflect the name as indicated in Step 8.2.4 and Attachment 2.

Added "Average" before "plant" in Step 10.1.2 to reflect the name as indicated in Step 8.2.5 and Attachment 2.

Corrected title of last table column on Attachment 4 to be consistent with action taken.

Revised Section 1.2 to include Improved Technical Specification references.

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 REQUIREMENTS	4
2.0 PURPOSE	4
3.0 REFERENCES	5
4.0 PREREQUISITES	6
5.0 TEST EQUIPMENT, SPECIAL TOOLS AND MATERIALS	7
6.0 PRECAUTIONS AND LIMITATIONS	8
7.0 GENERAL TEST METHODS	10
8.0 PROCEDURE	11
8.1 Required Notifications and Briefings	11
8.2 Circulating Water Temperature Check	12
8.3 Drywell Temperature Check	14
8.4 Trend Recorder Check	16
8.5 Balance of Plant Check	19
8.6 Rod Worth Minimizer Inoperable Check	19
8.7 Core Thermal Power Evaluation	19
8.8 Additional Monitoring of SRV Electric Lift Feature	20
8.9 Restoration	21
9.0 RETURN TO NORMAL	22
10.0 ACCEPTANCE CRITERIA	23
11.0 ACCEPTANCE VERIFICATION	24
12.0 ATTACHMENTS	27
1. <u>TEST SIGNOFF LOG</u>	28
2. <u>INTAKE, DISCHARGE, AND INTAKE-DISCHARGE DIFFERENTIAL TEMPERATURE CALCULATION</u>	29
3. <u>DRYWELL TEMPERATURE CALCULATION</u>	33
4. <u>RESISTANCE VS TEMPERATURE TABLE</u>	34
5. <u>CIRC WATER RTD LIFTED LEAD CONTROL FORM</u>	36
6. <u>DRYWELL RTD LIFTED LEAD CONTROL FORM</u>	38

1.0 REQUIREMENTS**1.1 Frequency**

Each shift when the Emergency Plant Information Computer (EPIC) is inoperable

1.2 Technical Specifications**1.2.1 Surveillance Requirements**

SR 3.6.1.5.1

1.2.2 Limiting Conditions for Operation

- LCO 3.3.2.1 and Table 3.3.2.1-1 Function 2
- LCO 3.6.1.5

1.3 Other**1.3.1 Permit Requirements**

CP-04.03, State Pollutant Discharge Elimination System Permit

1.4 Commitments

None

2.0 PURPOSE

To provide a checklist to ensure plant parameters which are normally monitored, displayed, and recorded by the Emergency Plant Information Computer (EPIC), are being monitored, displayed, and recorded by the following methods:

Trend recorders

Auxiliary operator plant tours and operating logs

Determining screenwell intake temperature, plant discharge temperature, and intake-discharge differential temperature

3.0 REFERENCES

3.1 Performance References

- 3.1.1 CP-04.03, State Pollutant Discharge Elimination System Permit.
- 3.1.2 OP-64, Rod Worth Minimizer
- 3.1.3 ST-5E, Core Performance Daily Surveillance
- 3.1.4 ODS0-17, Auxiliary Operator Plant Tour and Operating Logs
- 3.1.5 EP-1, EOP Entry and Use
- 3.1.6 AOP-61, Screenwell Intake Temperature High

3.2 Developmental References

- 3.2.1 Modification F1-88-050, GEPAC Removal, IP-1, Appendix I Curve No. 5 Resistance VS Temperature Table 10Q Platinum RTD
- 3.2.2 JAF-SE-96-048, Revision 1, Revision to FSAR to Raise Maximum Allowable Lake Temperature From 82°F to 85°F
- 3.2.3 M1-97-070, SRV Electric Lift Feature / ATWS Level 2 Setpoint Change
- 3.2.4 FE-36AA
- 3.2.5 FE-36AB
- 3.2.6 FE-36AC
- 3.2.7 FE-36AD
- 3.2.8 FE-81C
- 3.2.9 FE-81G
- 3.2.10 FE-90F
- 3.2.11 FE-90H
- 3.2.12 FM-49A
- 3.2.13 SE-9ABE
- 3.2.14 SE-9ABV
- 3.2.15 SE-9ACG
- 3.2.16 SE-9ADC

NOTE: Sections 4 and 5 may be performed in any order or concurrently.

Init

4.0 PREREQUISITES

- 4.1 SM has granted permission to perform this test. Q
- 4.2 Revision Number of this Working Copy is the same as the revision number listed in the Master Copy of the Index of Operations Surveillance Test Procedures. Q
- 4.3 Test personnel have read this procedure and are thoroughly familiar with its contents. Q
- 4.4 Start of test recorded. Today / 10 minutes ago
Date/Time Q
- 4.5 Start of test recorded in SNO Log. Q
- 4.6 I&C Department notified that I&C assistance is required. Q
- 4.7 Required M&TE verified to be within calibration and its identification number recorded in Subsection 5.1. Q

5.0 TEST EQUIPMENT, SPECIAL TOOLS AND MATERIALS

5.1 Test Equipment

5.1.1 RTD Readout and Simulator

Model No. 15 I&C No. 86562

5.1.2 Digital Multimeter

170A 141
I&C No.

5.2 Special Tools

Key #Orange-520 for Foxboro 09-24 & 09-25 panels

5.3 Materials

Tags for marking disconnected leads

6.0 PRECAUTIONS AND LIMITATIONS

6.1 Precautions

6.1.1 Disconnected electrical leads shall be insulated using small sections of electrical insulation sleeving taped to the wire insulation.

- Non-shrunk heat shrink tubing may also be used.
- Disconnected leads should not be insulated with electrical tape, as the adhesive can remain on the conductor when removed.

NOTE: An acceptable method for insulating adjacent terminals is electrical tape placed over the top of the terminal board.

6.1.2 Before connecting or disconnecting electrical jumpers or leads, personnel shall ensure adjacent terminals, exposed metal, tools, and test equipment are insulated as necessary to prevent accidental shorting or grounding.

6.2 Limitations

6.2.1 Test personnel shall immediately notify the CRS of any failure to meet acceptance criteria.

6.2.2 Test personnel shall print name, sign initials, and enter date on Attachment 1 before performing Section 8 of this test.

6.2.3 When test personnel complete their assigned portion of this test, they shall enter dose received and hours worked on Attachment 1.

6.2.4 Once this test has been started, any additional test personnel shall read this procedure and become thoroughly familiar with its contents before performing any portion of this test.

6.2.5 Multiple working copies of this test may be used provided the following requirements are satisfied:

NOTE: The work site is defined as the location where work is controlled. The location of the work site is at the discretion of the SNO.

- A. A working copy of this test shall be retained at the work site.
- B. The work site working copy shall be the legal record for documenting this test.
- C. Data from all steps performed away from the work site, including signatures, initials, and recorded values, is transcribed into the work site working copy following completion of the test.

7.0 GENERAL TEST METHODS

- 7.1 This test consists of six subsections which provide increased monitoring of parameters normally monitored by EPIC.
- 7.2 Subsections 8.2 through 8.8 may be performed in any order necessary to facilitate plant operations. Subsection 8.2 is performed once each hour while EPIC is out of service.

Init

NOTE: The EPIC system; HOSTs, DAsEs, and Microvaxes, could become inoperable in various ways. If available, the EPIC HEALTH display is useful in determining if a system component has failed-over to a redundant component, and in determining the status of the EPIC system.

8.0 PROCEDURE

8.1 Required Notifications and Briefings

NOTE: Steps 8.1.1 through 8.1.3 may be performed in any order or concurrently.

8.1.1 Conduct a briefing with all shift personnel to discuss the affect EPIC inoperability has on plant operations. As a minimum, emphasize the following:

- Monitoring alternate indications listed in EP-1 on a frequent and continuous basis. (✓)

- Expedient investigation and reporting of all annunciators and alarms on panels, including panels located outside of the Control Room. (✓)

- Obtaining circulating water temperatures on an hourly basis to comply with the SPDES permit. (✓)

- Core thermal data, including thermal limit data that may not be available. (✓)

- Making detailed building rounds on an increased frequency. (✓)

- Reporting off-normal observations upon detection. (✓)

- Monitoring SRV electric lift alternate indication on a frequent basis. (✓) SM

8.1.2 Ensure all on shift licensed reactor operators and senior reactor operators review EP-1. SM

8.1.3 Notify a computer specialist. SM

8.2 Circulating Water Temperature Check

Init

NOTE 1: Attachment 2 may be photocopied as necessary for hourly circulating water temperature checks.

NOTE 2: Leads that were disconnected to determine circulating water temperatures do not require re-connection until the computer is restored and the final set of hourly temperature checks is performed.

8.2.1 WHILE EPIC is inoperable, perform Subsection 8.2 hourly to comply with SPDES permit.

NR

8.2.2 IF leads have not been disconnected, THEN disconnect leads listed on Attachment 5 as follows. Document performance on Attachment 5:

- A. Ensure lead is labeled.
- B. Hang tag on lead stating lead is disconnected per ST-40C.
- C. Disconnect lead.

8.2.3 Direct I&C to determine and record temperatures for the EPIC computer points on Attachment 2 once each hour using an RTD Readout & Simulator or Multimeter.

NOTE 1: EPIC-A-1503 corresponds to 36RTD-105B2 and EPIC-A-1504 corresponds to 36RTD-105A2 Screenwell Inlet Temperatures on Attachment 2.

NOTE 2: AOP-61 contains current entry conditions based on screenwell intake temperature.

8.2.4 Determine average screenwell intake temperature by completing calculation on Attachment 2.

8.2.5 Determine average circulating water inlet temperature by completing calculation on Attachment 2.

- | | | <u>Init</u> |
|-------|--|-------------|
| 8.2.6 | Determine average plant discharge water temperature by completing calculation on Attachment 2. | _____ |
| 8.2.7 | Determine intake-discharge differential temperature by completing calculation on Attachment 2. | _____ |

8.3 Drywell Temperature Check

Init

NOTE 1: Attachment 3 may be photocopied as necessary for daily drywell temperature checks.

NOTE 2: Leads that were disconnected to determine drywell temperatures do not require re-connection until the computer is restored and the final set of daily temperature checks is performed.

8.3.1 WHILE EPIC is inoperable, perform Subsection 8.3 every 24 hours to comply SR 3.6.1.5.1.

NR

8.3.2 IF leads have not been disconnected, THEN disconnect leads listed on Attachment 6 as follows. Document performance on Attachment 6:

- A. Ensure lead is labeled.
- B. Hang tag on lead stating lead is disconnected per ST-40C.
- C. Disconnect lead.

8.3.3 Direct I&C to perform the following once every 24 hours using an RTD Readout & Simulator or Multimeter and Attachment 3.

- A. IF a legitimate reading can be obtained from one RTD in an associated DRYWELL AREA, THEN place a checkmark on Attachment 3 for the RTD monitored and record the indicated temperature in the READING column.
- B. IF neither RTD for an associated DRYWELL AREA is providing a legitimate reading, THEN perform the following on Attachment 3:
 - 1. Record "none" for READING
 - 2. Line out the associated WEIGHTING FACTOR
 - 3. Record "0" under CORRECTED VALUE

- 8.3.4 Determine average drywell temperature by performing the following using Attachment 3:
- A. Multiply the recorded READING by the WEIGHTING FACTOR and record the result under CORRECTED VALUE.
 - B. IF the READING for any DRYWELL AREA was recorded as "none" on Attachment 3, THEN perform the following:
 - 1. Record the sum of all the used WEIGHTING FACTORS in the SUM OF USED WEIGHTING FACTORS block.
 - 2. Record the sum of all the CORRECTED VALUES in the SUM OF CORRECTED VALUES block.
 - C. IF no DRYWELL AREAS had a READING recorded as "none", THEN perform the following:
 - 1. Record "1" in the SUM OF USED WEIGHTING FACTORS block.
 - 2. Record the sum of all the CORRECTED VALUES in the SUM OF CORRECTED VALUES block.
 - D. Determine average drywell temperature by dividing the SUM OF CORRECTED VALUES by the SUM OF USED WEIGHTING FACTORS and record the result as the AVERAGE DRYWELL TEMPERATURE on Attachment 3.

8.4 Trend Recorder Check Init

- 8.4.1 IF recorder is not required to be operational for current plant conditions AND trend recorder is not operating, THEN mark recorder "NA". NR
- 8.4.2 Verify trend recorders listed below are trending data and the parameter recorded is indicating the expected value.

PANEL 09-2

17RR-53	STACK HIGH RANGE RAD MON	()
17RR-434	TURB BLDG HI RANGE VENT MON	()
17RR-463	RADW HI RANGE VENT MON	()
17RR-455	RX BLDG VENT MON (BELOW REFUEL FLOOR)	()

PANEL 09-3

16-1TR-131A	TORUS TEMP A	()
27PR-115A1	PC PRESS	()
27PR-115A2	PC PRESS	()
23LR-203A	PC LVL	()
23LR-202A	TORUS LVL	()
06PR-61A	RX VESSEL PRESS	()
27PR-115B2	PC PRESS	()
27PR-115B1	PC PRESS	()
23LR-203B	PC LVL	()
23LR-202B	TORUS LVL	()
06PR-61B	RX VESSEL PRESS	()
16-1TR-108	DW TEMP A	()
10FR-143	RHR FLOW	()
02-3LR-98	RX WTR LVL FUEL ZONE	()
16-1TR-131B	TORUS TEMP B	()
16-1TR-107	DW TEMP B	()

(Continued on next page)

Init

8.4.2 (Cont)

PANEL 09-4

16-1DPR-200 DW PRESS, TORUS PRESS,
DW TO TORUS DIFF PRESS ()

02TR-165 RWR LOOP INLET TEMP ()

PANEL 09-5

06LR/PR-97 WR RX PRESS RX LVL ()

02-3LR-85B RX WTR LVL ()

06PR/FR-98 NR RX PRESS TURB STM FLOW ()

07R-45 SRM COUNTS ()

07PR-46A, B, APRM/IRM/RBM C, and D ()

EXOSENSOR PANEL (RELAY ROOM)

27PCR-101A TORUS HYDROGEN/OXYGEN
CONCENTRATION ()

27PCR-101B DRYWELL HYDROGEN/OXYGEN
CONCENTRATION ()

SIP

68TR-102 DW COOL AND DW TORUS TEMP ()

68TR-101 DW COOL AND DW TEMP ()

68TR-103 DW COOL AND DW TORUS TEMP ()

27R-101 TORUS LEVEL ()

27R-102 TORUS LEVEL ()

(Continued on next page)

Init

8.4.2 (Cont)

PANEL 67HV-1

17RR-433 TB VENT MON REC

PANEL 66HV-3A

17RR-456 REFUEL FLOOR EXH MON REC

PANEL 69HV-12

17RR-458 RADWASTE VENT MON REC

8.5 Balance of Plant Check

Init

NOTE: Only one set of Auxiliary Operator Plant Tour Logs is required if EPIC is out of service for LESS THAN 4 hours.

Complete the following Auxiliary Operator Plant Tour Logs per ODS0-17 at least every 4 hours:

- Reactor Building Tour Log
- Turbine Building Tour Log
- Radwaste Building Tour Log

NOTE: Subsection 8.6 may be marked "NA" if not applicable.

8.6 Rod Worth Minimizer Inoperable Check

IF the Rod Worth Minimizer is required,
AND the EPIC failure caused the Rod Worth Minimizer to become inoperable,
THEN comply with Section E of OP-64.

8.7 Core Thermal Power Evaluation

IF all of the following conditions exist:

- Core thermal power data is not available from Monicore,

AND

- Reactor power is GREATER THAN OR EQUAL TO 25%,

AND

It is anticipated that Monicore will not be available for next scheduled ST-5E,

THEN notify Reactor Analyst Group.

8.8 Additional Monitoring of SRV Electric Lift Feature

NOTE: Bypassing the SRV electric lift feature as a result of the loss of EPIC is not required, based on regulatory requirements. A heightened operator awareness of the status of SRV electric lift is desired and obtained by more frequent monitoring of relay room panel indications.

Monitor indications which provide "precursor" information of a problem or potential problem with the SRV electric lift feature, such as, but not limited to:

- local supervisory lights (which detect initiation signals)
- pressure indications (showing if one of the four pressure loops or if a transmitter had failed)
- bypass switch position and corresponding light indications (if any SRV electric lift feature is bypassed)

8.9 Restoration

Init

WHEN computer has been restored, perform the following:

- 8.9.1 Obtain final set of circulating water temperature readings. _____
- 8.9.2 Obtain final set of drywell temperature readings. _____
- 8.9.3 Reconnect leads listed on Attachment 5 by performing the following. Document performance on Attachment 5:
 - A. Reconnect lead. _____
 - B. Remove tag stating lead lifted per ST-40C. _____
- 8.9.4 Reconnect leads listed on Attachment 6 by performing the following. Document performance on Attachment 6:
 - A. Reconnect lead. _____
 - B. Remove tag stating lead lifted per ST-40C. _____
- 8.9.5 WHEN directed by SM, secure from additional monitoring of SRV electric lift feature. _____

9.0 RETURN TO NORMAL

Init

9.1 System Restoration

9.1.1 Leads lifted per Attachment 5 have been reconnected. _____

9.1.2 Step 9.1.1 verified by Licensed Operator. _____

Signature/Date

9.2 Review and Signoff

9.2.1 The calculations performed in the following steps on Attachment 2 have been independently verified:

- 8.2.3 ()
- 8.2.4 ()
- 8.2.5 ()
- 8.2.6 ()

Independent Verification _____/
Signature/Date9.2.2 Test completed. _____/
Date/Time

9.2.3 Test personnel have recorded dose received and hours worked on Attachment 1. _____

9.2.4 Man-Rem and Man-Hours totalled and recorded on Attachment 1. _____

10.0 ACCEPTANCE CRITERIA**10.1 Level 1 Acceptance Criteria**

- 10.1.1 Average screenwell intake temperature is LESS THAN OR EQUAL TO 85°F per Step 8.2.4.
- 10.1.2 Average plant discharge water temperature is LESS THAN OR EQUAL TO 112°F per Step 8.2.5.
- 10.1.3 Intake-discharge differential temperature is LESS THAN OR EQUAL TO 32.4°F per Step 8.2.7.
- 10.1.4 Average Drywell Temperature is LESS THAN OR EQUAL TO 135°F per Step 8.3.4.D.
- 10.1.5 Trend recorders listed shall be operable per Subsection 8.4.
- 10.1.6 Auxiliary operator plant tour logs have been completed per Subsection 8.5.

10.2 Level 2 Acceptance Criteria

None

11.0 ACCEPTANCE VERIFICATION

11.1 Performer Review

11.1.1 Verify required data has been recorded and is within required tolerances. ()

11.1.2 Verify required initials and signatures have been entered. ()

11.1.3 IF Level 1 Acceptance Criteria was not met, THEN perform the following:

A. Sign off ST as unsatisfactory.

B. Immediately notify the CRS.

C. Initiate a CR.

CR number

D. If necessary, initiate a PID.

PID number

NOTE: A CR is required for instruments that exceed As Found tolerances for tracking purposes.

11.1.4 IF only Level 2 Acceptance Criteria was not met, THEN perform the following:

A. Sign off ST as satisfactory with corrective actions.

B. Initiate either a CR or a PID.

PID/CR number

11.1.5 Identify test results:

() Satisfactory

() Satisfactory with corrective actions

() Unsatisfactory

11.1.6 Record results in narrative log. ()

11.1.7 Sign and record date and time.

Date/Time

11.2 Management SRO Review

- 11.2.1 Verify data is within required tolerances. ()
- 11.2.2 Verify data attachments, such as recorder printouts and calibration sheets are included as required. ()
- 11.2.3 Verify required initials and signatures have been entered. ()
- 11.2.4 Review test to determine if test results satisfy acceptance criteria:
- () Satisfactory
 - () Satisfactory with corrective actions
 - () Unsatisfactory
- 11.2.5 IF Level 1 acceptance criteria is not satisfied, THEN immediately notify Operations Manager or alternate. Record name of person notified.

Person Notified

- 11.2.6 Initiate required corrective and compensatory actions.
- () Not required
 - () Required
- 11.2.7 Sign and record date and time.

Management SRO

Date/Time

11.3 Remarks

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

12.0 ATTACHMENTS

1. TEST SIGNOFF LOG
2. INTAKE, DISCHARGE, AND INTAKE-DISCHARGE
DIFFERENTIAL TEMPERATURE CALCULATION
3. DRYWELL TEMPERATURE CALCULATION
4. RESISTANCE VS TEMPERATURE TABLE
5. CIRC WATER RTD LIFTED LEAD CONTROL FORM
6. DRYWELL RTD LIFTED LEAD CONTROL FORM

INTAKE, DISCHARGE, AND INTAKE-DISCHARGE DIFFERENTIAL TEMPERATURE CALCULATION

Page 1 of 4

36RTD- Type	DESC	LEAD NO.	T.B	TERM #	TEMP	CALC REF
105B2 100 Ω PLATINUM	SCREENWELL INTAKE TEMP	T083 +	1R18	13		A
		T083 -	1R18	14		
	09DAS-14	T083 P	1R18	15		
105A2 100 Ω PLATINUM	SCREENWELL INTAKE TEMP	T082 +	1R18	18		B
		T082 -	1R18	19		
	09DAS-14	T082 P	1R18	20		
103A1B 10 Ω PLATINUM	CW INLET TEMP CNDSR 33C-10A	F128 +	1R18	4		C
		F128 -	1R18	5		
	09DAS-15	F128 P	1R18	6		
103A2A 10 Ω PLATINUM	CW INLET TEMP CNDSR 33C-10A	F130 +	1R19	1		D
		F130 -	1R19	2		
	09DAS-15	F130 P	1R19	3		
103B1A 10 Ω PLATINUM	CW INLET TEMP CNDSR 33C-10B	F133 +	1R19	10		E
		F133 -	1R19	11		
	09DAS-15	F133 P	1R19	12		

* Connection of leads only required after final set of temperature readings

Time completed by I&C _____

Performed by I&C _____
Signature

ST-40C
Rev. No. 16

COMPUTER OUT OF SERVICE SURVEILLANCE

ATTACHMENT 2
Page 29 of 40

INTAKE, DISCHARGE, AND INTAKE-DISCHARGE DIFFERENTIAL TEMPERATURE CALCULATION

Page 2 of 4

36RTD- Type	DESC CABINET	LEAD NO.	T.B	TERM #	TEMP	CALC REF
103B2A 10 Ω PLATINUM	CW INLET TEMP CNDSR 33C-10B 09DAS-15	F136 +	1R18	18		F
		F136 -	1R18	19		
		F136 P	1R18	20		
106A 100 Ω PLATINUM	PLANT DISCHARGE WATER A TEMP 09DAS-14	T100 +	1R17	1		G
		T100 -	1R17	2		
		T100 P	1R17	3		
106B 100 Ω PLATINUM	PLANT DISCHARGE WATER B TEMP 09DAS-14	T101 +	1R17	4		H
		T101 -	1R17	5		
		T101 P	1R17	6		
106C 100 Ω PLATINUM	PLANT DISCHARGE WATER C TEMP 09DAS-14	T102 +	1R17	7		I
		T102 -	1R17	8		
		T102 P	1R17	9		
106D 100 Ω PLATINUM	PLANT DISCHARGE WATER D TEMP 09DAS-14	T103 +	1R17	10		J
		T103 -	1R17	11		
		T103 P	1R17	12		

* Connection of leads only required after final set of temperature readings

Time completed by I&C _____

Performed by I&C _____
Signature

NOTE: Average screenwell intake temperature limit is
<85°F.

8.2.3 Average Screenwell Intake Temperature
Calculation

$$\frac{(A + B)}{2} = \text{Ave Screenwell Intake Temp}$$

$$\frac{(\quad + \quad)}{2} = \frac{\quad}{(\leq 85^{\circ}\text{F})}^{\circ}\text{F} \quad \overline{\text{Init}}$$

8.2.4 Average Circulating Water Inlet Temperature
Calculation

$$\frac{(C + D + E + F)}{4} = \text{Ave Circ Water Inlet Temp}$$

$$\frac{(\quad + \quad + \quad)}{4} = \frac{\quad}{\quad}^{\circ}\text{F} \quad \overline{\text{Init}}$$

NOTE: Average plant discharge water temperature limit is
≤112°F.

8.2.5 Average Plant Discharge Water Temperature
Calculation

$$\frac{(G + H + I + J)}{4} = \text{Ave Plant Disch Water Temp}$$

$$\frac{(\quad + \quad + \quad)}{4} = \frac{\quad}{(\leq 112^{\circ}\text{F})}^{\circ}\text{F} \quad \overline{\text{Init}}$$

INTAKE, DISCHARGE AND INTAKE-DISCHARGE
DIFFERENTIAL TEMPERATURE CALCULATION

Page 4 of 4

NOTE: Intake-discharge differential temperature limit is $\leq 32.4^{\circ}\text{F}$.

8.2.6 Intake-Discharge Differential Temperature Calculation

NOTE: Step A or B may be marked "NA" if not applicable.

A. Circulating inlet water tempering in progress

(8.2.5 - 8.2.4) = intake-discharge differential temp

() = $\frac{\quad}{(\leq 32.4^{\circ}\text{F})}^{\circ}\text{F}$ Init

B. Circulating inlet water tempering not in progress

(8.2.5 - 8.2.3) = intake-discharge differential temp

() = $\frac{\quad}{(\leq 32.4^{\circ}\text{F})}^{\circ}\text{F}$ Init

DRYWELL TEMPERATURE CALCULATION

Page 1 of 1

DRYWELL AREA	RTD 16-1RTD-	READING	WEIGHTING FACTOR	CORRECTED VALUE
0	() 101 () 120		0.1133	
1	() 102 () 119		0.1652	
2	() 103 () 104		0.3560	
3	() 105 () 106		0.1313	
4	() 107 () 108		0.0470	
5	() 109 () 117		0.0534	
6	() 110 () 111		0.0715	
7	() 112 () 118		0.0621	
SUM OF USED WEIGHTING FACTORS:				
SUM OF CORRECTED VALUES:				
AVERAGE DRYWELL TEMPERATURE:				<u> </u> ≤135°F

RESISTANCE VS TEMPERATURE TABLE

10 Ω Platinum RTD
 Alpha = 0.00385 $\Omega/\Omega/^{\circ}\text{C}$

Temperature $^{\circ}\text{F}$	Resistance Ohms	Temperature $^{\circ}\text{F}$	Resistance Ohms
32	10.00	75	10.93
33	10.02	76	10.95
34	10.04	77	10.97
35	10.07	78	11.00
36	10.09	79	11.02
37	10.11	80	11.04
38	10.13	81	11.06
39	10.15	82	11.08
40	10.17	83	11.10
41	10.20	84	11.12
42	10.22	85	11.15
43	10.24	86	11.17
44	10.26	87	11.19
45	10.28	88	11.21
46	10.30	89	11.23
47	10.33	90	11.25
48	10.35	91	11.28
49	10.37	92	11.30
50	10.39	93	11.32
51	10.41	94	11.34
52	10.43	95	11.36
53	10.46	96	11.38
54	10.48	97	11.40
55	10.50	98	11.43
56	10.52	99	11.45
57	10.54	100	11.47
58	10.56	101	11.49
59	10.59	102	11.51
60	10.61	103	11.53
61	10.63	104	11.55
62	10.65	105	11.58
63	10.67	106	11.60
64	10.69	107	11.62
65	10.72	108	11.64
66	10.74	109	11.66
67	10.76	110	11.66
68	10.78	111	11.68
69	10.80	112	11.70
70	10.82	113	11.73
71	10.84	114	11.75
72	10.87	115	11.77
73	10.89	116	11.79
74	10.91	117	11.81

RESISTANCE VS TEMPERATURE TABLE

10 Ω Platinum RTD
Alpha = 0.00385 $\Omega/\Omega/^{\circ}\text{C}$

Temperature $^{\circ}\text{F}$	Resistance Ohms
118	11.83
119	11.88
120	11.90
121	11.92
122	11.94
123	11.96
124	11.98
125	12.00
126	12.03
127	12.05
128	12.07
129	12.09
130	12.11

ATTACHMENT 5

Page 1 of 2

CIRC WATER RTD LIFTED LEAD CONTROL FORM

36R TYP	D- CABINET	DESC	LEAD NO.	T.B.	TERM #	LEAD LABELED AND TAGGED (Steps 8.2.2.A and 8.2.2.B)		LEAD DISCONNECTED (Step 8.2.2.C)		*LEAD RECONNECTED AND TAG REMOVED (Steps 8.9.3.A and 8.9.3.B)	
						PERFORMED BY	INDEPENDENT VERIFICATION	PERFORMED BY	CONCURRENT DUAL VERIFICATION	PERFORMED BY	INDEPENDENT VERIFICATION
						Signature	Signature	Signature	Signature	Signature	Signature
105 100 PLA INUM	2	SCREENWELL INTAKE TEMP 09DAS-14	T083 +	1R18	13						
			T083 -	1R18	14						
			T083 P	1R18	15						
105 100 PLA INUM	2	SCREENWELL INTAKE TEMP 09DAS-14	T082 +	1R18	18						
			T082 -	1R18	19						
			T082 P	1R18	20						
103 10 PLA INUM	1B	CW INLET TEMP CND SR 33C-10A 09DAS-15	F128 +	1R18	4						
			F128 -	1R18	5						
			F128 P	1R18	6						
103 10 PLA INUM	2A	CW INLET TEMP CND SR 33C-10A 09DAS-15	F130 +	1R19	1						
			F130 -	1R19	2						
			F130 P	1R19	3						
103 10 PLATINUM	1A	CW INLET TEMP CND SR 33C-10B 09DAS-15	F133 +	1R19	10						
			F133 -	1R19	11						
			F133 P	1R19	12						

* Connection of leads only required after final set of temperature readings

ATTACHMENT 5

Page 2 of 2

CIRC WATER RTD LIFTED LEAD CONTROL FORM

36RT TYPE	DESC CABINET	LEAD NO.	T.B.	TERM #	LEAD LABELED AND TAGGED (Steps 8.2.2.A and 8.2.2.B)	LEAD DISCONNECTED (Step 8.2.2.C)	*LEAD RECONNECTED AND TAG REMOVED (Steps 8.9.3.A and 8.9.3.B)			
					PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature	PERFORMED BY Signature	CONCURRENT DUAL VERIFICATION Signature	PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature
103B A	CW INLET	F136 +	1R18	18						
100	TEMP CND SR	F136 -	1R18	19						
PLAT NUM	09DAS-15	F136 P	1R18	20						
106A	PLANT	T100 +	1R17	1						
100	DISCHARGE	T100 -	1R17	2						
PLAT NUM	WATER A	T100 P	1R17	3						
106B	TEMP	T101 +	1R17	4						
100	DISCHARGE	T101 -	1R17	5						
PLAT NUM	WATER B	T101 P	1R17	6						
106C	TEMP	T102 +	1R17	7						
100	DISCHARGE	T102 -	1R17	8						
PLAT NUM	WATER C	T102 P	1R17	9						
106D	TEMP	T103 +	1R17	10						
100	DISCHARGE	T103 -	1R17	11						
PLATINUM	WATER D	T103 P	1R17	12						

* Connection of leads only required after final set of temperature readings

ATTACHMENT 6

Page 1 of 3

DRYWELL RTD LIFTED LEAD CONTROL FORM

D.W. AREA	16-1RTD-	DESCRIPTION	LEAD NO.	TERM BD	TERM NO.	LEAD LABEL AND TAGGED (Steps 8.3.2.A and 8.3.2.B)		LEAD DISCONNECTED (Step 8.3.2.C)		*LEAD RECONNECTED AND LABEL REMOVED (Steps 8.9.4.A and 8.9.4.B)	
						PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature	PERFORMED BY Signature	CONCURRENT DUAL VERIF. Signature	PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature
0	101	LRT DRYWELL D.W. AREA 0 RESISTANCE TEMP DETECTOR 09DAS-12	M103+	1R10	7						
			M103-		8						
			M103P		9						
	120	DRYWELL LEAK RATE TESTING D.W. AREA 0 RESIST TEMP DETECTOR 09DAS-14	M116+	13							
			M116-	14							
			M116P	15							
1	102	LRT DRYWELL D.W. AREA 1 RESIST TEMP DETECTOR 09DAS-12	M084+	1R9	7						
			M084-		8						
			M084P		9						
	119	LRT DRYWELL D.W. AREA 1 RESIST TEMP DETECTOR 09DAS-14	M115+	10							
			M115-	11							
			M115P	12							
2	103	LRT DRYWELL D.W. AREA 2 RESIST TEMP DETECTOR 09DAS-14	M085+	1R18	1						
			M085-		2						
			M085P		3						
	104	LRT DRYWELL D.W. AREA 2 RESIST TEMP DETECTOR 09DAS-12	M086+	10							
			M086-	11							
			M086P	12							

* Connection of leads only required after final set of temperature readings

ATTACHMENT 6

Page 2 of 3

DRYWELL RTD LIFTED LEAD CONTROL FORM

D.W. AREA	16-1RTD-	DESCRIPTION	LEAD NO.	TERM BD	TERM NO.	LEAD LABEL AND TAGGED (Steps 8.3.2.A and 8.3.2.B)		LEAD DISCONNECTED (Step 8.3.2.C)		*LEAD RECONNECTED AND LABEL REMOVED (Steps 8.9.4.A and 8.9.4.B)	
						PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature	PERFORMED BY Signature	CONCURRENT DUAL VERIF. Signature	PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature
3	105	LRT DRYWELL D.W. AREA 3 RESIST TEMP DETECTOR 09DAS-14	MO87+	1R18	4						
			MO87-		5						
			MO87P		6						
	106	LRT DRYWELL D.W. AREA 3 RESIST TEMP DETECTOR 09DAS-12	MO88+	1R9	13						
			MO88-		14						
			MO88P		15						
4	107	LRT DRYWELL D.W. AREA 4 RESIST TEMP DETECTOR 09-24	1 (O)	16-1R/V107	1 (O)						
			1 (-)		1 (-)						
			1 (P)		1 (P)						
	108	LRT DRYWELL D.W. AREA 4 RESIST TEMP DETECTOR 09-25	1 (O)	16-1R/V108	1 (O)						
			1 (-)		1 (-)						
			1 (P)		1 (P)						
5	109	LRT DRYWELL D.W. AREA 5 RESIST TEMP DETECTOR 09DAS-14	MO91+	1R18	10						
			MO91-		11						
			MO91P		12						
	117	LRT DRYWELL D.W. AREA 5 RESIST TEMP DETECTOR 09DAS-14	M113+	1R15	4						
			M113-		5						
			M113P		6						

* Connection of leads only required after final set of temperature readings

ATTACHMENT 6

Page 3 of 3

DRYWELL RTD LIFTED LEAD CONTROL FORM

D.W. AREA	16-1RTD-	DESCRIPTION	LEAD NO.	TERM BD	TERM NO.	LEAD LABEL AND TAGGED (Steps 8.3.2.A and 8.3.2.B)		LEAD DISCONNECTED (Step 8.3.2.C)		*LEAD RECONNECTED AND LABEL REMOVED (Steps 8.9.4.A and 8.9.4.B)	
						PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature	PERFORMED BY Signature	CONCURRENT DUAL VERIF. Signature	PERFORMED BY Signature	INDEPENDENT VERIFICATION Signature
6	110	LRT DRYWELL D.W. AREA 6 RESIST TEMP DETECTOR 09DAS-12	M092+	1R9	21						
			M092-		22						
			M092P		23						
	111	LRT DRYWELL D.W. AREA 6 RESIST TEMP DETECTOR 09DAS-12	M093+	1R10	10						
			M093-		11						
			M093P		12						
7	112	LRT DRYWELL D.W. AREA 7 RESIST TEMP DETECTOR 09DAS-14	M094+	1R15	1						
			M094-		2						
			M094P		3						
	118	LRT DRYWELL D.W. AREA 7 RESIST TEMP DETECTOR 09DAS-14	M114+	1R15	7						
			M114-		8						
			M114P		9						

* Connection of leads only required after final set of temperature readings

James A. FitzPatrick Nuclear Power Plant

OPERATIONS TRAINING PROGRAMS

JOB PERFORMANCE MEASURE

RO ONLY

S/RO

NEW

**TASK TITLE: EVALUATE SURVEILLANCE TEST
ACCEPTANCE CRITERIA**

APPL. TO

JPM NUMBER

REV: 0

DATE: 5/23/03

NRC K/A SYSTEM NUMBER: 2.2.12 3.0/3.4

JAF TASK NUMBER: _____

JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: KW Allen

OPERATION REVIEW: _____

APPROVED: _____

CANDIDATE NAME: _____

S.S. NUMBER: _____

JPM Completion: () Simulated () Performed

Location: () Plant () Simulator

DATE PERFORMED: _____

TIME TO COMPLETE: _____ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: _____

PROGRAM ADMINISTER

DOC. COMPLETE: _____

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

S/RO

NEW

TASK TITLE: EVALUATE SURVEILLANCE TEST ACCEPTANCE
CRITERIA

APPL. TO

JPM NUMBER

Current Update: 5/23/03
Date

By: RWD
Int.

Outstanding Items:

☐ Technical Review

☐ Additional Information

☐ Questions and Answers

☐ Validation

☐ Procedural Change Required

☐ None

Comments:

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO

NEW

**TASK TITLE: EVALUATE SURVEILLANCE TEST ACCEPTANCE
CRITERIA**

APPL. TO

JPM NUMBER

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. AP-03.11, OPERABILITY AND REPORTABILITY DETERMINATIONS
- B. AP-19.01, SURVEILLANCE TESTING PROGRAM
- C. ST-01B, MSIV FAST CLOSURE TEST

III. TOOLS AND EQUIPMENT

- A. None

IV. SET UP REQUIREMENTS

- A. Best if conducted in the Control Room or the simulator.
- B. If performed in alternative locations, normal controlled references and prints may need to be available.

V. EVALUATOR NOTES

- A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

- A. Candidate will review a completed ST-01B Surveillance Test containing test failure data that was not recorded by the performer.
- B.

*** - CRITICAL STEP**

S/RO/NLO
TASK TITLE:

VII. INITIATING CUE

You are the Senior Nuclear Operator (SNO). Another SNO has just completed ST-01B, MSIV FAST CLOSURE TEST, and forwards it to you to complete the SNO review.

EVALUATOR

Hand copy of completed Surveillance Test to candidate.

	STEP	STANDARD	EVALUATION / COMMENT
1.	11.1.1 Verify required data has been recorded and is within required tolerances.	Candidate review all data recorded in Surveillance Test. Candidate may determine that step 8.4.3 does not meet acceptance criteria.	SAT / UNSAT
2.	11.1.2 Verify required initials and signatures have been entered.	Candidate review all initial/signature blocks for completion	SAT / UNSAT
3.	11.1.3 IF Level 1 Acceptance Criteria OR Level 2 LLRT valve acceptance criteria was not met, THEN perform the following: A. Sign off ST as unsatisfactory. B. Immediately notify the CRS. C. Initiate a DER. D. If necessary, initiate a PID.	Candidate will recognize that step 8.4.3 does not meet acceptance criteria and therefore check the Unsatisfactory box <u>EVALUATOR</u> When indicated, Acknowledge as the CRS and report PID and CR are being written	SAT / UNSAT
4.	11.1.4 IF only Level 2 Acceptance Criteria was not met, THEN perform the following: A. Sign off ST as satisfactory with corrective actions. B. Initiate either a DER or a PID. PID/DER number	This step is not applicable	SAT / UNSAT
*5.	11.1.5 Identify test results: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Satisfactory with corrective actions <input type="checkbox"/> Unsatisfactory	Candidate will recognize that step 8.4.3 does not meet acceptance criteria and therefore check the Unsatisfactory box	SAT / UNSAT

S/RO/NLO
TASK TITLE:

	STEP	STANDARD	EVALUATION / COMMENT
6.	11.1.6 Sign and record date and time.	Candidate will sign, date and time the surveillance test	SAT / UNSAT
7.	11.1.7 Record results in SNO log.	EVALUATOR When prompted by candidate, indicate that the SNO log entry is being made.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

ENTERGY NUCLEAR OPERATIONS, INC.
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
OPERATIONS SURVEILLANCE TEST PROCEDURE

MSIV FAST CLOSURE TEST (1ST)
ST-1B
REVISION 23

APPROVED BY:


RESPONSIBLE PROCEDURE OWNER

DATE

6/11/02

EFFECTIVE DATE:

6-14-02

FIRST ISSUE ☐

FULL REVISION ☐

LIMITED REVISION ☒

*
* CONTINUOUS USE *
*

*
* TSR *
*

*
* TECHNICAL *
*

REVISION SUMMARY SHEET

REV. NO. CHANGE AND REASON FOR CHANGE

- 23 Added clarification to frequency that valves tested at a cold shutdown frequency may include valves tested while decreasing power to cold shutdown or while increasing power to steady state power operation (NUREG-1482 Section 3.1.1.1 supporting PCR dated 5/16/02)

Revised prerequisites to change plant condition to Rx Pressure < 5psig to allow testing prior to cold shutdown to minimize MSIV dry stroking (PCR dated 5/16/02)

Revised prerequisite on water level to include option of New GE REM Steam line plugs installed and steam lines drained, allows performance earlier in outage (PCR dated 4/19/02)

Revised Section 8 and Section 9 to include provisions for MSIVs remaining closed per OP-65 (PCR dated 5/16/02)

- 22 Revised prerequisite to refer to Reactor Mode for support of ITS.

Made changes to the Operations Department Operating Shift Organization titles per FYI #02-005 throughout. Changes not rev barred.

- 21 Deleted the requirement to record calibration due date in Sections 4 and 5 per ODSO-31.

Revised Section 11 to eliminate SM and Assistant Operations Manager review and replaced with one review by a Management SRO. This change reduces the administrative burden of multiple independent reviews. Change made with Rev. 23 to AP-02.01.

Revised Section 1.2 to include Improved Technical Specification references.

- 20 Deleted Tech Spec frequency of quarterly and updated Tech Spec surveillance references in Subsection 1.2.1 to reflect Tech Spec Amendment 242. (PCR #1 dated 2/24/99)

Full revision to reflect change to IST program to perform MSIV fast closure at Cold Shutdown. Also deleted testing of 29MOV-74 and 29MOV-77 (relocated to ST-1C) and updated procedure title.

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 REQUIREMENTS	4
2.0 PURPOSE	6
3.0 REFERENCES	6
4.0 PREREQUISITES	7
5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS	8
6.0 PRECAUTIONS AND LIMITATIONS	8
7.0 GENERAL TEST METHODS	10
8.0 PROCEDURE	11
8.1 MSIV 29AOV-80A Test	11
8.2 MSIV 29AOV-86A Test	11
8.3 MSIV 29AOV-80B Test	12
8.4 MSIV 29AOV-86B Test	12
8.5 MSIV 29AOV-80C Test	13
8.6 MSIV 29AOV-86C Test	13
8.7 MSIV 29AOV-80D Test	14
8.8 MSIV 29AOV-86D Test	14
9.0 RETURN TO NORMAL	15
10.0 ACCEPTANCE CRITERIA	18
11.0 ACCEPTANCE VERIFICATION	19
12.0 ATTACHMENTS	23
1. <u>TEST SIGNOFF LOG</u>	24

1.0 REQUIREMENTS

1.1 Frequency

?COM1.4.1

IST cold shutdown testing shall be performed as follows:

- Valve exercising shall commence within 48 hours of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power.
- Completion of all cold shutdown testing is not a prerequisite to plant startup, provided testing began within 48 hours of achieving cold shutdown. Any testing not completed during one cold shutdown shall be scheduled first during the next cold shutdown.
- For extended outages, testing need not begin within 48 hours provided all valves that are required to be tested during cold shutdown are tested before plant startup.
- Valves tested at a cold shutdown frequency may include valves tested while decreasing power to cold shutdown or while increasing power to steady state power operation.
- Cold shutdown tests are not required if satisfactorily completed within the past 3 months (92 days).
- Cold shutdown tests shall be completed before startup from a Refueling Outage, unless test has been completed within the past 3 months (92 days).

1.2 Technical Specifications**1.2.1 Surveillance Requirements**

- SR 3.6.1.3.6

NOTE: SR 3.6.1.3.7 is satisfied by completion of ST-1B and ST-1D.

- Partially satisfies SR 3.6.1.3.7

1.2.2 Limiting Conditions for Operation

LCO 3.6.1.3

1.3 Other

ASME Section XI 1989 Edition no addenda

1.4 Commitments

- 1.4.1 JAFNPP Inservice Testing Program for Pumps and Valves, Cold Shutdown Justification CSJ-018 defers testing of MSIVs to cold shutdown.

1.5 Expectations

None

RMU
10/24/07
R/S
10/24/07

2.0 PURPOSE

To test MSIVs as required by the IST Program.

3.0 REFERENCES**3.1 Performance References**

None

3.2 Developmental References

- 3.2.1 ODSO-32, Shutdown Procedure
- 3.2.2 OP-1, Main Steam System
- 3.2.3 ASME Section XI 1989 Edition no addenda
- 3.2.4 Inservice Testing Program For Pumps and Valves, Third Interval
- 3.2.5 AP-19.05, Pump and Valve Inservice Testing
- 3.2.6 ESK-7A, 7B
- 3.2.7 FM-29A
- 3.2.8 1.67-97 thru 98
- 3.2.9 1.70-98 thru 110
- 3.2.10 AP-01.04, Tech Spec Related Requirements, Lists and Tables
- 3.2.11 NUREG-1482 Guidelines for Inservice Testing at Nuclear Power Plants, Section 3.1.1.1
- 3.2.12 JD-01-123, GE REM Light Dryer Wet Transfer System

NOTE: Sections 4 and 5 may be performed in any order or concurrently.

Init**4.0 PREREQUISITES**

4.1 SM has granted permission to perform this test.

4.2 Revision Number of this Working Copy is the same as the revision number listed in the Master Copy of the Index of Operations Surveillance Test Procedures.

4.3 Test personnel have read this procedure and are thoroughly familiar with its contents.

4.4 Start of test recorded. Today / 15 min ago
Date/Time

4.5 Start of test recorded in SNO Log.

4.6 [CTS]

Reactor is shutdown, Reactor Pressure <5 psig.

[ITS]

Reactor is in Mode 3, 4 or Mode 5, Reactor Pressure <5 psig.

4.7 RPV Water Level is **LESS THAN** 270 inches or GE REM Main Steam Line plugs installed with steamlines drained.

4.8 Calibration for each instrument listed in Subsection 5.1 is up-to-date.

4.9 **IF** ST-41D, Remote Valve Position Indication Verification (IST), is in progress,
THEN performance of this test has been coordinated with the performance of ST-41D.

N/A

5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS**5.1 Test Equipment**

Stopwatch

001
Serial Number**5.2 Special Tools**

None

5.3 Materials

None

6.0 PRECAUTIONS AND LIMITATIONS**6.1 Precautions**

None

6.2 Limitations

6.2.1 Test personnel shall immediately notify the SNO or CRS of any failure to meet acceptance criteria.

6.2.2 Test personnel shall print name, sign initials, and enter date on Attachment 1 before performing Section 8 of this test.

6.2.3 When test personnel complete their assigned portion of this test, they shall enter hours worked on Attachment 1.

6.2.4 Once this test has been started, any additional test personnel shall read this procedure and become thoroughly familiar with its contents before performing any portion of this test.

- 6.2.5 Multiple working copies of this test may be used provided the following requirements are satisfied:

NOTE: The work site is defined as the location where work is controlled. The location of the work site is at the discretion of the SNO.

- A. A working copy of this test shall be retained at the work site.
 - B. The work site working copy shall be the legal record for documenting this test.
 - C. Data from all steps performed away from the work site, including signatures, initials, and recorded values, is transcribed into the work site working copy following completion of test.
- 6.2.6 Conditional (**IF, THEN**) steps in this test may be marked "NA" if not applicable.
- 6.2.7 Steps in this test marked "NR" are not required to be initialed.

7.0 GENERAL TEST METHODS

- 7.1 This test consists of eight subsections which test MSIVs as required by the IST Program.
- 7.2 Subsections 8.1 through 8.8 may be performed in any order as necessary to facilitate plant operations or maintenance. Steps within each subsection shall be performed in the order specified.
- 7.3 Valve closing times are measured from when the control switch is placed in close until the red open indicating light goes off. IST limits are listed as (IST:). Tech Spec time limits are listed as (TS:).
- 7.4 This procedure may be used for post-work testing and verification of operability for applicable equipment provided the following actions are performed:
- 7.4.1 The actions and requirements of Sections 1 through 6, 10, and 11 are satisfied.
 - 7.4.2 The applicable portions of Sections 8 and 9 are performed.
 - 7.4.3 Signoffs for non-applicable portions of Sections 8 and 9 are marked "NA". Non-applicable subsections may be marked "NA" by drawing a diagonal line on each page and marking the page "NA".
 - 7.4.4 The reason for partial performance of this test is documented in Subsection 11.4.

8.0 PROCEDURE

Init

8.1 MSIV 29AOV-80A Test

- 8.1.1 Record as-found position of
MSIV 29AOV-80A.

Open
(position)

Q

- 8.1.2 Ensure open MSIV 29AOV-80A.

Q

- 8.1.3 Close and time MSIV 29AOV-80A.

Closing time 4.7 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

Q

- 8.1.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.1.5 Ensure MSIV 29AOV-80A is in the as-found
position recorded in Step 8.1.1.

N/A

8.2 MSIV 29AOV-86A Test

- 8.2.1 Record as-found position of
MSIV 29AOV-86A.

Open
(position)

Q

- 8.2.2 Ensure open MSIV 29AOV-86A.

Q

- 8.2.3 Close and time MSIV 29AOV-86A.

Closing time 4.5 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

Q

- 8.2.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.2.5 Ensure MSIV 29AOV-86A is in the as-found
position recorded in Step 8.2.1.

N/A

8.3 MSIV 29AOV-80B Test

Init

- 8.3.1 Record as-found position of
MSIV 29AOV-80B.

Open
(position)

Q

- 8.3.2 Ensure open MSIV 29AOV-80B.

Q

- 8.3.3 Close and time MSIV 29AOV-80B.

Closing time 3.5 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

Q

- 8.3.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.3.5 Ensure MSIV 29AOV-80B is in the as-found
position recorded in Step 8.3.1.

N/A

8.4 MSIV 29AOV-86B Test

- 8.4.1 Record as-found position of
MSIV 29AOV-86B.

Open
(position)

Q

- 8.4.2 Ensure open MSIV 29AOV-86B.

Q

- 8.4.3 Close and time MSIV 29AOV-86B.

Closing time 5.1 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

Q

- 8.4.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.4.5 Ensure MSIV 29AOV-86B is in the as-found
position recorded in Step 8.4.1.

N/A

8.5	MSIV 29AOV-80C Test	<u>Init</u>
8.5.1	Record as-found position of MSIV 29AOV-80C. <div data-bbox="938 385 1108 463"><u>Open</u> (position)</div>	<u>l</u>
8.5.2	Ensure open MSIV 29AOV-80C.	<u>l</u>
8.5.3	Close and time MSIV 29AOV-80C. Closing time <u>3.9</u> secs (IST: 3 to 5 secs) (TS: 3 to 5 secs)	<u>l</u>
8.5.4	IF desired to have valve remain closed per Section F of OP-65, THEN mark the following step (N/A).	
8.5.5	Ensure MSIV 29AOV-80C is in the as-found position recorded in Step 8.5.1.	<u>N/A</u>
8.6	MSIV 29AOV-86C Test	
8.6.1	Record as-found position of MSIV 29AOV-86C. <div data-bbox="938 1108 1108 1187"><u>Open</u> (position)</div>	<u>l</u>
8.6.2	Ensure open MSIV 29AOV-86C.	<u>l</u>
8.6.3	Close and time MSIV 29AOV-86C. Closing time <u>4.1</u> secs (IST: 3 to 5 secs) (TS: 3 to 5 secs)	<u>l</u>
8.6.4	IF desired to have valve remain closed per Section F of OP-65, THEN mark the following step (N/A).	
8.6.5	Ensure MSIV 29AOV-86C is in the as-found position recorded in Step 8.6.1.	<u>N/A</u>

8.7 MSIV 29AOV-80D Test

Init

- 8.7.1 Record as-found position of
MSIV 29AOV-80D.

Open
(position)

2
2

- 8.7.2 Ensure open MSIV 29AOV-80D.

- 8.7.3 Close and time MSIV 29AOV-80D.

Closing time 3.1 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

2

- 8.7.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.7.5 Ensure MSIV 29AOV-80D is in the as-found
position recorded in Step 8.7.1.

N/A

8.8 MSIV 29AOV-86D Test

- 8.8.1 Record as-found position of
MSIV 29AOV-86D.

Open
(position)

2
2

- 8.8.2 Ensure open MSIV 29AOV-86D.

- 8.8.3 Close and time MSIV 29AOV-86D.

Closing time 44 secs
(IST: 3 to 5 secs)
(TS: 3 to 5 secs)

2

- 8.8.4 IF desired to have valve remain closed per
Section F of OP-65,
THEN mark the following step (N/A).

- 8.8.5 Ensure MSIV 29AOV-86D is in the as-found
position recorded in Step 8.8.1.

N/A

9.0 RETURN TO NORMAL

Init

9.1 System Restoration

- 9.1.1 IF MSIVs remained closed per OP-65 Section F,
THEN each MSIV is closed:

- MSIV 29AOV-80A
- MSIV 29AOV-86A
- MSIV 29AOV-80B
- MSIV 29AOV-86B
- MSIV 29AOV-80C
- MSIV 29AOV-86C
- MSIV 29AOV-80D
- MSIV 29AOV-86D

2000

- 9.1.2 IF MSIVs were not closed per OP-65 Section F, **THEN** each MSIV is in the as-found position recorded in the specified step:

- MSIV 29AOV-80A is in the position recorded in Step 8.1.1 ()
- MSIV 29AOV-86A is in the position recorded in Step 8.2.1 ()
- MSIV 29AOV-80B is in the position recorded in Step 8.3.1 ()
- MSIV 29AOV-86B is in the position recorded in Step 8.4.1 ()
- MSIV 29AOV-80C is in the position recorded in Step 8.5.1 ()
- MSIV 29AOV-86C is in the position recorded in Step 8.6.1 ()
- MSIV 29AOV-80D is in the position recorded in Step 8.7.1 ()
- MSIV 29AOV-86D is in the position recorded in Step 8.8.1 ()

N/A

9.1.3 IF all MSIVs are open,
THEN the following MSIV CLOSURE TRIP relays
are energized

- 5A-K3E at panel 09-15
- 5A-K3A at panel 09-15
- 5A-K3C at panel 09-15
- 5A-K3G at panel 09-15
- 5A-K3F at panel 09-17
- 5A-K3B at panel 09-17
- 5A-K3D at panel 09-17
- 5A-K3H at panel 09-17

()
()
()
()
()
()
()
()

N/A

9.1.4 Steps 9.1.1 through 9.1.3 verified
by Licensed Operator.

R. D. L. Toney
Signature/Date

9.2 Review and Signoff

Init

- 9.2.1 Test completed. Today / 2 min ago
Date/Time
- 9.2.2 Test personnel have recorded hours worked on
Attachment 1.
- 9.2.3 Man-Hours totalled and recorded on
Attachment 1.



10.0 ACCEPTANCE CRITERIA**10.1 Level 1 Acceptance Criteria**

- Each tested valve was cycled and closed within the following stroke time limits:

Valve	IST Stroke Time (secs)	Tech Spec Stroke Time (secs)	Step
29AOV-80A	3 to 5	3 to 5	8.1.3
29AOV-86A	3 to 5	3 to 5	8.2.3
29AOV-80B	3 to 5	3 to 5	8.3.3
29AOV-86B	3 to 5	3 to 5	8.4.3
29AOV-80C	3 to 5	3 to 5	8.5.3
29AOV-86C	3 to 5	3 to 5	8.6.3
29AOV-80D	3 to 5	3 to 5	8.7.3
29AOV-86D	3 to 5	3 to 5	8.8.3

- If a valve stroke time does not meet the IST limit, the valve shall be declared inoperable and applicable LCO actions shall be taken. An IST evaluation which determines that valve operation is acceptable may be used to restore the valve to an operable status if Tech Spec limits are not exceeded.

10.2 Level 2 Acceptance Criteria

None

11.0 ACCEPTANCE VERIFICATION**11.1 SNO Review**

11.1.1 Verify required data has been recorded and is within required tolerances. ()

11.1.2 Verify required initials and signatures have been entered. ()

11.1.3 **IF** Level 1 Acceptance Criteria **OR** Level 2 LLRT valve acceptance criteria was not met, **THEN** perform the following:

A. Sign off ST as unsatisfactory.

B. Immediately notify the CRS.

C. Initiate a DER.

DER number

D. If necessary, initiate a PID.

PID number

NOTE: A DER is required for instruments that exceed As Found tolerances for tracking purposes.

11.1.4 **IF** only Level 2 Acceptance Criteria was not met, **THEN** perform the following:

A. Sign off ST as satisfactory with corrective actions.

B. Initiate either a DER or a PID.

PID/DER number

11.1.5 Identify test results:

() Satisfactory
() Satisfactory with corrective actions
() Unsatisfactory

11.1.6 Sign and record date and time.

SNO

Date/Time

11.1.7 Record results in SNO log. ()

11.2 Management SRO Review

- 11.2.1 Verify data is within required tolerances. ()
- 11.2.2 Verify data attachments, such as recorder printouts and calibration sheets are included as required. ()
- 11.2.3 Verify required initials and signatures have been entered. ()
- 11.2.4 Review test to determine if test results satisfy acceptance criteria:
- () Satisfactory
 - () Satisfactory with corrective actions
 - () Unsatisfactory
- 11.2.5 IF Level 1 acceptance criteria is not satisfied, **THEN** immediately notify Operations Manager or alternate. Record name of person notified.
- _____
Person Notified
- 11.2.6 Initiate required corrective and compensatory actions.
- () Not required
 - () Required
- 11.2.7 Sign and record date and time.

Management SRO_____
Date/Time

11.3 IST Coordinator Review

11.3.1 Review test results. ()

11.3.2 Update records as required. ()

IST Coordinator

Date/Time

11.4 Remarks

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

12.0 ATTACHMENTS

1. TEST SIGNOFF LOG





Entergy
Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

**OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE**

RD ONLY

S/RO _____
APPL. TO

NEW _____
JPM NUMBER

TASK TITLE: ST-5D

REV: 0

DATE: 5/26/03

NRC K/A SYSTEM NUMBER: 2.1.7 3.7/4.4

JAF TASK NUMBER: _____

JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: *[Signature]*

OPERATION REVIEW: _____

APPROVED: _____

~~~~~  
CANDIDATE NAME: \_\_\_\_\_

S.S. NUMBER: \_\_\_\_\_

JPM Completion: ( ) Simulated (X) Performed

Location: ( ) Plant (X) Simulator

DATE PERFORMED: \_\_\_\_\_

TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ( ) Satisfactory ( ) Unsatisfactory

~~~~~  
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: _____

PROGRAM ADMINISTER

DOC. COMPLETE: _____

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

S/RO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: ST-5D

Current Update: 5/26/03
Date

By: RWD
Int.

Outstanding Items:

☐ Technical Review

☐ Additional Information

☐ Questions and Answers

☐ Validation

☐ Procedural Change Required

☐ None

Comments:

Simulator validated 5/24/03. IC-133

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: ST-5D

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. ST-5D, APRM CALIBRATION, Rev. 2
- B. OP-16, NEUTRON MONITORING, Rev. 24

III. TOOLS AND EQUIPMENT

- A. Small Screwdriver

IV. SET UP REQUIREMENTS

- A. >25% CTP IC with 2 loops in service, EPIC available and plant conditions stable.
- B. Adjust all APRM's to an acceptable value per ST-5D.
- C. Adjust desired APRM's to >2% above or below desired value of ST-5D.

V. EVALUATOR NOTES

- A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.
- C. This JPM performance data based upon E and D APRM's initially 3-4% low at ~98% CTP

VI. TASK CONDITIONS

- A. Plant returning to 100% CTP following rod pattern exchange. Currently at ~98 % CTP.
- B. ST-5D required prior to continuing to 100% CTP.

*** - CRITICAL STEP**

S/RO/NLO NEW
 TASK TITLE: ST-5D
VII. INITIATING CUE

You are the SNO. The plant is currently operating at ~98% CTP following a rod pattern exchange with no equipment out of service. The plant has been stable for several minutes. ST-5D, APRM CALIBRATION is required prior to continuing to 100% CTP. Perform ST-5D.

EVALUATOR

Hand partially completed ST-5D to candidate

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain and review procedure	Candidate obtains and reviews a current copy of ST-5D	SAT / UNSAT
*2.	8.1 Procedure Performance Determine the applicable procedure subsection to perform as follows: () IF reactor power is LESS THAN 25%, THEN perform Subsection 8.2. () IF reactor power is GREATER THAN OR EQUAL TO 25%, AND the MONICORE programs are operable, THEN perform Subsection 8.3. () IF reactor power is GREATER THAN OR EQUAL TO 25%, AND the MONICORE programs are not operable, THEN have Reactor Engineering perform Subsection 8.4.	Candidate selects subsection 8.3	SAT / UNSAT
3.	8.3.1 IF core power has changed GREATER THAN 2%, OR the control rod pattern has changed since the last core performance program was executed, THEN demand an Official 3D Program.	Candidate demands Official 3D at 3D keyboard by selecting: <ul style="list-style-type: none"> • Option 4, Run Official 3D • Tab to Execute • Select 2 on the number pad 	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*4.	8.3.2 Determine APRM DR from the higher of the following values: <ul style="list-style-type: none"> • Largest MFLPD x 100 • Percent core thermal power 8.3.3 [ITS] Adjust APRMs per Subsection 8.5.	Candidate selects Percent Core Thermal Power with a value of ~95%.	SAT / UNSAT
5.	8.5.1 Record initial APRM readings in Table 1.	Candidate records values from Official 3D	SAT / UNSAT
6.	8.5.2 Record DR in Table 1.	Candidate records value selected in 8.3.2	SAT / UNSAT
*7.	8.5.3 [ITS] Identify any APRM(s) requiring adjustment in Table 1. APRM shall be adjusted to indicate within $\pm 2\%$ of the DR.	Candidate identifies D APRM as requiring adjustment.	SAT / UNSAT
8.	8.5.4 IF APRM adjustment is required, THEN perform the following for each APRM requiring adjustment: NOTE: Bypassing APRM may be omitted per SM.	EVALUATOR The Shift Manager desires that the APRM's be bypassed for adjustments.	SAT / UNSAT
9.	A. Bypass the APRM channel requiring calibration per Section E of OP-16.	N/A	SAT / UNSAT
10.	Obtain and review OP-16	Candidate obtains and review OP-16 noting any cautions that may be applicable	SAT / UNSAT
11.	Select proper procedure section	Candidate selects section E. 16	SAT / UNSAT
12.	E.16.1 Place APRM BYP switch in (*).	At 09-5 panel, candidate selects 'B' division joystick to D.	SAT / UNSAT
13.	E.16.2 Verify APRM (*) is bypassed using one or both of the following: APRM (*) BYPASS indicating light is on APRM (*) EPIC alarm indicates bypassed	At 09-5 panel, candidate observes white bypass lamp for APRM D. OR Candidate notes EPIC alarm typer indicates selected APRM bypass is ON	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
14.	E.16.3 Verify the other two APRM channels associated with the same APRM BYP switch are in service using one or both of the following: APRM BYPASS indicating lights are off for the other two APRMs No EPIC bypassed alarms for the other two APRMs	Candidate notes the absence of the same indications for the remaining APRM's in that RPS division (B and F).	SAT / UNSAT
15.	ST-5D, 8.5.4 continued: B. Ensure METER FUNCTION switch is set to AVERAGE.	At panel 09-14, candidate selects 'D' APRM and confirms Meter Function switch is in average.	SAT / UNSAT
16.	C. Ensure APRM MODE switch is in the OPERATE position.	At panel 09-14, candidate selects 'D' APRM and confirms Mode switch is in operate.	SAT / UNSAT
*17.	NOTE: Clockwise turn raises meter reading; counterclockwise turn lowers meter reading. D. [ITS] Turn gain adjustment control (R16) on LPRM card Z-31 to obtain a meter reading within $\pm 2\%$ of DR.	At panel 09-14, candidate inserts small screwdriver into upper left simulated rheostat for the 'D' APRM. Candidate turns clockwise to raise indication to ~95%. EVALUATOR In the simulator, Z-31 card can be identified but the photo's do not support reading R-16	SAT / UNSAT
18.	E. Unbypass APRM per Section E of OP-16.	N/A	SAT / UNSAT
19.	Candidate obtains OP-16 and selects section E.17	Candidate obtains procedure.	SAT / UNSAT
20.	E.17.1 Verify the following lights for APRM (*) are off at panel 09-14: INOP UPSCL NEUT TRIP UPSCL THERM TRIP	At top of panel 09-14, candidate identifies lamps for the 'D' APRM.	SAT / UNSAT
21.	E.17.2 Place APRM BYP switch for APRM (*) in center position.	At panel 09-5, candidate selects 'B' division APRM joystick to center position.	SAT / UNSAT

S/RO/NLO NEW
TASK TITLE: ST-5D

	STEP	STANDARD	EVALUATION / COMMENT
22.	E.17.3 Verify APRM (*) is returned to service using one or both of the following: APRM (*) BYPASS indicating light is off No EPIC bypassed alarm for APRM (*)	At 09-5 panel, candidate observes bypass lamp extinguished OR Candidate notes alarm typer indicates APRM bypass is OFF	SAT / UNSAT
23.	E.17.4 Verify all three APRM channels associated with the same APRM BYP switch are in service using one or both of the following: APRM BYPASS indicating lights are off for the three APRMs No EPIC bypassed alarms for the three APRMs	Candidates notes above indications for the 'B and 'F' APRM's.	SAT / UNSAT
24.	8.5.5 Record final APRM readings for adjusted APRMs in Table 1.	Candidate record final reading.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

ENTERGY NUCLEAR OPERATIONS, INC.
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
OPERATIONS SURVEILLANCE TEST PROCEDURE

APRM CALIBRATION
ST-5D
REVISION 2

APPROVED BY:

[Signature]
RESPONSIBLE PROCEDURE OWNER

DATE 11/29/01

EFFECTIVE DATE:

12.10.01

FIRST ISSUE ☐

FULL REVISION ☐

LIMITED REVISION ☒

*
* CONTINUOUS USE *
*

*
* TSR *
*

*
* TECHNICAL *
*

REVISION SUMMARY SHEET

REV. NO. CHANGE AND REASON FOR CHANGE

- 2 Revised Step 8.5.5 to require final APRM readings to be recorded only for APRMs that were adjusted. (PCR #1 dated 8/9/00, EC #1 dated 9/5/00)

Updated subsection 1.1, Frequency and revised section 1.2 in accordance with improved Technical Specifications (ITS). Added subsection 1.3 Technical Requirements Manual (TRM) and applicable reference.

Revised Steps 8.2.1.c, 8.2.3.C, 8.3.3, 8.4.4 to "Adjust APRM(s) per subsection 8.5". Revised steps 8.5.3 and 8.5.4.D, which adjust APRM(s), to obtain a meter reading within $\pm 2\%$ of desired reading (DR).

Marked Step 6.2.7 as CTS. The step implies that APRM can be adjusted to greater than 2% above desired reading, which is not allowed per ITS SR 3.3.1.1.2.

Added note to step 8.5.5 to state tech spec acceptance criteria and updated section 10.0, Acceptance Criteria.

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 REQUIREMENTS	4
2.0 PURPOSE	5
3.0 REFERENCES	5
4.0 PREREQUISITES	6
5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS	6
6.0 PRECAUTIONS AND LIMITATIONS	7
7.0 GENERAL TEST METHODS	9
8.0 PROCEDURE	10
8.1 Procedure Performance	10
8.2 APRM Calibration Less Than 25% of Rated Power	11
8.3 APRM Calibration Greater Than or Equal to 25%	15
8.4 Manual Calculation by Reactor Analyst Group When Greater Than or Equal to 25%	16
8.5 APRM Gain Adjustments	17
10.0 ACCEPTANCE CRITERIA	19
11.0 ACCEPTANCE VERIFICATION	20
12.0 ATTACHMENTS	23
1. <u>TEST SIGNOFF LOG</u>	24

1.0 REQUIREMENTS**1.1 Frequency****[CTS]**

- Once daily while in the Run Mode

[ITS]

NOTE: Not required to be performed until 12 hours after
THERMAL POWER $\geq 25\%$ RTP.

[ITS]

- Once every 7 days

1.2 Technical Specifications**1.2.1 Surveillance Requirements**

- [CTS]**
- 4.1.A
 - 4.1.B

- [ITS]**
- SR 3.3.1.1.2 (Table 3.3.1.1-1, Functions 2.b and 2.c)
 - SR 3.2.4.2

1.2.2 Limiting Conditions for Operation

[CTS] None

- [ITS]**
- LCO 3.2.4
 - LCO 3.3.1.1

[ITS]**1.3 Technical Requirements Manual (TRM)**

1.3.1 TRO 3.3.B

1.3.2 TRS 3.3.B.2 (Table T3.3.B-1, Function 1.b)

1.4 Other

None

1.5 Commitments

- 1.5.1** LER 90-003, requires implementation of alternate method of calculating core power below 20% of rated.

1.6 Expectations

- 1.6.1 OER 940119, Compare heat balance results to calculated power levels to ensure no reactor overpower due to feed flow input errors.
- 1.6.2 DER-98-02032, ACT-98-35526, Revised procedure for APRM gain adjustment to improve human factors.
- 1.6.3 JAF-SE-00-028, Added precaution to describe required compensatory actions for a failed or unreliable feedwater temperature input to the 3D Monicore.

2.0 PURPOSE

To calibrate Average Power Range Monitor (APRM) System.

3.0 REFERENCES**3.1 Performance References**

- 3.1.1 OP-16, Neutron Monitoring
- 3.1.2 RAP-7.3.3, Core Thermal Power Evaluation

3.2 Developmental References

RAP-7.4.5, APRM Calibration

NOTE: Sections 4 and 5 may be performed in any order or concurrently.

Init

4.0 PREREQUISITES

4.1 SM has granted permission to perform this test.

4.2 Revision Number of this Working Copy is the same as the revision number listed in the Master Copy of the Index of Operations Surveillance Test Procedures.

4.3 Test personnel have read this procedure and are thoroughly familiar with its contents.

4.4 Start of test recorded. Today/10 min ago
Date/Time

4.5 Start of test recorded in NCO Log Book.

4.6 No control rod movement or recirculation flow changes are in progress.

5.0 TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS

5.1 Test Equipment

None

5.2 Special Tools

A very small flathead screwdriver

5.3 Materials

None

6.0 PRECAUTIONS AND LIMITATIONS

6.1 Precautions

↓EXP1.6.3

If one of the four feedwater temperature inputs to the 3D Monicore (02TE-140A, 02TE-140B, 02TE-140C, or 02TE-140D) fails or becomes unreliable, then one of the following compensatory actions is required:

- Procedure changes (such as ST-40D) to require that a substitute value is inserted for the associated EPIC point. The substitute value shall be equal to the lowest reading operable feedwater temperature indication from EPIC-A-407, 408, 410, or 411. This value shall be adjusted daily before performing ST-5D and ST-5E, and as soon as practicable after changes in reactor power.
- Temporary modification to provide an alternate feedwater temperature input to the plant process computer. This modification shall use the redundant temperature element on the same feedwater line as the sole value for that feedwater line. This method is preferred over operator inserted substitute values.

6.2 Limitations

- 6.2.1 Test personnel shall immediately notify the NCO or CRS of any failure to meet acceptance criteria.
- 6.2.2 Test personnel shall print name, sign initials, and enter date on Attachment 1 before performing Section 8 of this test.
- 6.2.3 When test personnel complete their assigned portion of this test, they shall enter hours worked on Attachment 1.
- 6.2.4 Once this test has been started, any additional test personnel shall read this procedure and become thoroughly familiar with its contents before performing any portion of this test.

- 6.2.5 Multiple working copies of this test may be used provided the following requirements are satisfied:

NOTE: The work site is defined as the location where work is controlled. The location of the work site is at the discretion of the NCO/SNO.

- A. A working copy of this test shall be retained at the work site.
 - B. The work site working copy shall be the legal record for documenting this test.
 - C. Data from all steps performed away from the work site, including signatures, initials, and recorded values, is transcribed into the work site working copy following completion of the test.
- 6.2.6 If the ratio of MFLPD/FRP is greater than 1.0, then compliance with Tech Specs is accomplished by making the APRM read greater than or equal to MFLPD instead of lowering APRM trip setpoints.

[CTS]

- 6.2.7 If an APRM gain adjustment results in nuisance rod block alarms, then the preferred action is to request a rod pattern adjustment from the reactor engineer. As an alternate, the APRM gain may be adjusted with SM permission to bring the alarm in solid. This option should be minimized to prevent masking the alarm.
- 6.2.8 Conditional (**IF, THEN**) steps in this test may be marked "NA" if not applicable.
- 6.2.9 Steps in this test marked "NR" are not required to be initialed.

7.0 GENERAL TEST METHODS

7.1 This test consists of five subsections which determines the method used for calibrating the Average Power Range Monitor (APRM) System.

7.2 This test contains the following subsections:

7.2.1 Determine procedure subsection to perform per the criteria provided in Subsection 8.1.

7.2.2 Determine APRM desired reading (DR).

7.2.3 Calibrate APRMs per Subsection 8.5.

8.0 PROCEDURE

Init

8.1 Procedure Performance

Determine the applicable procedure subsection to perform as follows:

- (_) IF reactor power is **LESS THAN** 25%,
THEN perform Subsection 8.2.
- (_) IF reactor power is **GREATER THAN OR EQUAL TO** 25%,
AND the MONICORE programs are operable,
THEN perform Subsection 8.3.
- (_) IF reactor power is **GREATER THAN OR EQUAL TO** 25%,
AND the MONICORE programs are not operable,
THEN have Reactor Engineering perform
Subsection 8.4.

↓COM1.5.1

Init

8.2 APRM Calibration Less Than 25% of Rated Power

NOTE 1: APRM calibration per OP-65 is performed per Steps 8.2.1 and 8.2.2.

NOTE 2: Core Thermal Power and Flow Log will abort if feedwater flow rate is too low.

8.2.1 **IF** both of the following conditions exist:

- Reactor pressure
GREATER THAN 970 psig ()
- BPV-1 near full open **AND** all
other bypass valves full closed ()

THEN perform the following:

A. Demand Core Power and Flow Log. _____

B. Determine APRM DR as follows:

- () **IF** result of Core Power and Flow Log program is **BETWEEN** 9 and 14% power, **THEN** DR equals the power level determined per Step 8.2.1.A.
- () **IF** result of Core Power and Flow Log program is not **BETWEEN** 9 and 14% power, **THEN** DR equals 10% power.
- () **IF** Core Power and Flow Log aborted, **THEN** DR equals 10% power.

DR = _____%

C. [CTS]

Adjust APRMs to read **GREATER THAN OR EQUAL TO** DR per Subsection 8.5.

[ITS]

Adjust APRMs per Subsection 8.5.

NR

Init

↓EXP1.6.1

8.2.2 IF both of the following conditions exist:

- Reactor pressure
GREATER THAN 970 psig ()
- BPV-1 full open ()
- BPV-2 near full open ()
- All other bypass valves full closed ()

THEN perform the following:

A. Demand Core Power And Flow Log. _____

B. IF Core Power and Flow Log program aborts
due to low feedwater flow rate,
THEN issue a PID for I&C Department to
investigate and perform necessary repairs. _____

NOTE: While I&C is troubleshooting, APRMs
may be calibrated per Steps 8.2.2.C
through 8.2.2.E.

C. Determine APRM DR as follows:

- () IF result of Core Power and Flow Log
program is BETWEEN 17 and 22% power,
THEN DR equals the power level
determined per Step 8.2.2.A.
- () IF result of Core Power and Flow Log
program is not BETWEEN 17 and 22% power,
THEN DR equals 17% power.
- () IF Core Power and Flow Log aborted,
THEN DR equals 17% power.

DR = _____%

D. IF Core Power And Flow Log result is not
BETWEEN 17 and 22% power,
THEN investigate cause of discrepancy
before raising power above 20% of rated. _____

Init

E. [CTS]

Adjust APRMs to read **GREATER THAN OR
EQUAL TO** DR per Subsection 8.5.

[ITS]

Adjust APRMs per Subsection 8.5.

NR

8.2.3 IF both of the following conditions exist:

- Reactor pressure
GREATER THAN 970 psig ()
- Conditions other than specified in
Steps 8.2.1 and 8.2.2 exists (such as
a different combination of bypass
valves open, or main generator in
service) ()

THEN perform the following:

A. Demand Core Power and Flow Log. _____

B. Determine APRM DR as follows:

1. IF both of the following conditions
exist:

- BPV-1 full open

AND

- BPV-2 is not near full open

THEN determine DR as follows:

- () IF result of Core Power and Flow
Log program is **BETWEEN** 10 and 17%
power,
THEN DR equals the power level
determined per Step 8.2.3.A.
- () IF result of Core Power and Flow Log
program is not **BETWEEN** 10 and 17% power,
THEN DR equals 15% power.
- () IF Core Power and Flow Log aborted,
THEN DR equals 15% power.

DR = _____ %

(Step 8.2.3.B continued on next page)

8.2.3.B (Cont)

Init

2. IF all of the following conditions exist:

- BPV-1 full open ()
- BPV-2 full open ()
- BPV-3 is not near full open ()

THEN determine DR as follows:

- () IF result of Core Power and Flow Log program is **BETWEEN** 17 and 24% power,
THEN DR equals the power level determined per Step 8.2.3.A.
- () IF result of Core Power and Flow Log program is not **BETWEEN** 17 and 24% power,
THEN DR equals 22% power.
- () IF Core Power and Flow Log aborted,
THEN DR equals 22% power.

DR = _____%

3. IF the main generator is in service,
THEN DR is the power level determined per Step 8.2.3.A.

DR = _____%

C. [CTS]

Adjust APRMs to read **GREATER THAN OR EQUAL TO** DR per Subsection 8.5.

[ITS]

Adjust APRMs per Subsection 8.5.

NR

8.3 APRM Calibration Greater Than or Equal to 25%

Init

8.3.1 IF core power has changed **GREATER THAN** 2%,
OR the control rod pattern has changed since
the last core performance program was executed,
THEN demand an Official 3D Program. _____

8.3.2 Determine APRM DR from the higher of the following
values:

- Largest MFLPD x 100

$$\frac{\text{Largest MFLPD}}{\text{Largest MFLPD}} \times 100 = \text{_____} \quad (_)$$

- Percent core thermal power

$$\text{Thermal power} = \text{_____} \% \quad (_)$$

$$\text{DR} = \text{_____} \% \quad \text{_____}$$

8.3.3 [CTS]
Adjust APRMs to read **GREATER THAN OR
EQUAL TO** DR per Subsection 8.5.

[ITS]
Adjust APRMs per Subsection 8.5.

NR

Init**8.4 Manual Calculation by Reactor Analyst Group
When Greater Than or Equal to 25%**

8.4.1 Calculate core thermal power per RAP-7.3.3.

RE8.4.2 Use the Manual Monitor Menu to run an
Official 3D Program.RE8.4.3 Determine the APRM DR from the higher of the
following values:

- Largest MFLPD x 100

$$\frac{\text{Largest MFLPD}}{\text{Largest MFLPD}} \times 100 = \text{ } (\text{ })$$

- FRP x 100

$$\frac{\text{FRP}}{\text{FRP}} \times 100 = \text{ } (\text{ })$$

$$\text{DR} = \text{ } \%$$

RE8.4.4 **[CTS]**
Adjust APRMs to read **GREATER THAN OR
EQUAL TO** DR per Subsection 8.5.**[ITS]**
Adjust APRMs per Subsection 8.5.NR

↓EXP1.6.2

Init

8.5 APRM Gain Adjustments

8.5.1 Record initial APRM readings in Table 1. 8.5.2 Record DR in Table 1.

8.5.3 [CTS]

Identify any APRM(s) requiring adjustment in Table 1. APRM shall be adjusted to indicate **GREATER THAN OR EQUAL TO** the DR.

[ITS]

Identify any APRM(s) requiring adjustment in Table 1. APRM shall be adjusted to indicate within $\pm 2\%$ of the DR.

8.5.4 IF APRM adjustment is required,
THEN perform the following for each APRM
requiring adjustment:

NOTE: Bypassing APRM may be omitted per SM.

A. Bypass the APRM channel requiring
calibration per Section E of OP-16. NR

B. Ensure METER FUNCTION switch is set to
AVERAGE. NR

C. Ensure APRM MODE switch is in the OPERATE
position. NR

NOTE: Clockwise turn raises meter reading;
counterclockwise turn lowers meter
reading.

D. [CTS]

Turn gain adjustment control (R16) on LPRM
card Z-31 to obtain a meter reading **GREATER
THAN OR EQUAL TO** DR.

[ITS]

Turn gain adjustment control (R16) on LPRM
card Z-31 to obtain a meter reading within
 $\pm 2\%$ of DR. NR

E. Unbypass APRM per Section E of OP-16. NR

Init**[ITS]**

NOTE: Tech spec acceptance criteria for "Final Reading" shall be within $\pm 2\%$ of DR.

8.5.5 Record final APRM readings for adjusted APRMs in Table 1.

TABLE 1
APRM GAIN ADJUSTMENTS

APRM	A	B	C	D	E	F
INITIAL READING (%)						
DESIRED READING (%)						
REQUIRES ADJUSTMENT (✓)						
FINAL READING (%)						

9.0 RETURN TO NORMAL Init**9.1 System Restoration**

9.1.1 Operable APRMs are unbypassed. _____

9.1.2 Step 9.1.1 verified by
Licensed Operator._____
Signature/Date**9.2 Review and Signoff**9.2.1 Test completed. _____
Date/Time9.2.2 Calculations performed in the following steps have
been independently verified:

- 8.3.2 ()
- 8.4.3 ()

Independent verification _____/
Signature/Date9.2.3 Test personnel have recorded hours worked on
Attachment 1. _____9.2.4 Man-Hours totalled and recorded on
Attachment 1. _____

9.2.5 Completion of test recorded in NCO Log Book. _____

10.0 ACCEPTANCE CRITERIA**[CTS]**

Operable APRMs are reading greater than or equal to DR.

[ITS]Operable APRMs are reading within $\pm 2\%$ of DR.

11.0 ACCEPTANCE VERIFICATION**11.1 NCO/SNO Review**

- 11.1.1 Verify required data has been recorded and is within required tolerances.
- 11.1.2 Verify required initials and signatures have been entered.
- 11.1.3 Review test to determine if test acceptance criteria has been satisfied.
- 11.1.4 Check one of the following as appropriate for test results:
- () Acceptance criteria satisfied, no corrective action required.
 - () Acceptance criteria satisfied, corrective action required.
 - () Acceptance criteria not satisfied.
- 11.1.5 **IF** acceptance criteria is satisfied **AND** corrective action is required, **THEN** perform the following:
- A. Describe in Subsection 11.3, Remarks.
 - B. Initiate a PID and record PID number.
- _____
PID Number
- 11.1.6 **IF** acceptance criteria is not satisfied, **THEN** perform the following:
- A. Immediately notify SM.
 - B. Initiate a PID and record PID number.
- _____
PID Number
- 11.1.7 Sign and record date and time.

SNO or NCO_____
Date/Time

11.2 Management SRO Review

- 11.2.1 Verify current revision of surveillance test procedure was used.
- 11.2.2 Verify surveillance test was completed within required test frequency.
- 11.2.3 Verify data tables and attachments have been properly completed.
- 11.2.4 Verify required data has been recorded and is within required tolerances.
- 11.2.5 Verify required initials and signatures have been entered.
- 11.2.6 Review test to determine if test results satisfy acceptance criteria.
- 11.2.7 Check one of the following as appropriate for test results:
- ☐ Acceptance criteria satisfied.
- ☐ Acceptance criteria not satisfied.
- 11.2.8 **IF** acceptance criteria is not satisfied, **THEN** perform the following:
- A. Immediately notify Operations Manager or alternate.
- B. Record name of person notified.
- _____
Person Notified
- C. Initiate required corrective and compensatory actions.
- 11.2.9 Sign and record date and time.

Management SRO_____
Date/Time

11.3 Remarks

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

12.0 ATTACHMENTS

1. TEST SIGNOFF LOG

[illegible]Page 24 of 24



Entergy
Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

**OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE**

RO ONLY

S/RO _____
APPL. TO

NEW _____
JPM NUMBER

TASK TITLE: OP-63 WEEKLY ALARM TEST

REV: 0

DATE: 5/25/03

NRC K/A SYSTEM NUMBER: 2.1.16 2.9

JAF TASK NUMBER: _____

JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: *[Signature]*

OPERATION REVIEW: _____

APPROVED: _____

~~~~~  
CANDIDATE NAME: \_\_\_\_\_

S.S. NUMBER: \_\_\_\_\_

JPM Completion:    ( ) Simulated        ( X ) Performed

Location:            ( ) Plant                ( X ) Simulator

DATE PERFORMED: \_\_\_\_\_

TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION:    ( ) Satisfactory        ( ) Unsatisfactory

~~~~~  
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: _____

PROGRAM ADMINISTER

DOC. COMPLETE: _____

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

S/RO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: OP-63 WEEKLY ALARM TEST

Current Update: 5/25/03
Date

By: RWD
Int.

Outstanding Items:

☐ Technical Review

☐ Additional Information

☐ Questions and Answers

☐ Validation

☐ Procedural Change Required

☐ None

Comments:

Simulator validated 5/25/03. Any IC

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO
APPL. TO

NEW
JPM NUMBER

TASK TITLE: OP-63 WEEKLY ALARM TEST

I. SAFETY CONSIDERATIONS

- A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

- A. OP-63, INTRA-PLANT COMMUNICATIONS SYSTEM, Rev. 6

III. TOOLS AND EQUIPMENT

- A. None

IV. SET UP REQUIREMENTS

- A.
B.

V. EVALUATOR NOTES

- A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

- A. Candidate will be ordered to conduct a routine weekly test of the plant communication system.

*** - CRITICAL STEP**

S/RO/NLO

TASK TITLE:

VII. INITIATING CUE

Perform OP-63 Weekly Alarm Testing

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain procedure	Candidate obtains OP-63 and selects section E.3	SAT / UNSAT
2.	E.3.1 Make the following announcement over the Gai-Tronics: "Attention, Attention, the following is a test of the plant alarms. Attention, Attention, the following is a test of the plant alarms."	Candidate selects any Gai-Tronics push to talk handset and makes the announcement.	SAT / UNSAT
3.	E.3.2 Announce: "The first alarm is the Station Alarm. The first alarm is the Station Alarm."	Candidate selects any Gai-Tronics push to talk handset and makes the announcement.	SAT / UNSAT
*4.	E.3.3 Depress STA pushbutton and allow the alarm to sound for approximately 10 seconds.	Candidate depress STA pushbutton and allow audible alarm for approximately 10 seconds	SAT / UNSAT
5.	E.3.4 Silence the alarm by depressing the OFF pushbutton.	Candidate depresses the OFF pushbutton	SAT / UNSAT
6.	E.3.5 Announce: "The next alarm is the Evacuation Alarm. The next alarm is the Evacuation Alarm."	Candidate selects any Gai-Tronics push to talk handset and makes the announcement.	SAT / UNSAT

S/RO/NLO
TASK TITLE:

	STEP	STANDARD	EVALUATION / COMMENT
*7.	E.3.6 Depress EVAC pushbutton and allow the alarm to sound for approximately 10 seconds.	Candidate depress EVAC pushbutton and allow audible alarm for approximately 10 seconds	SAT / UNSAT
8.	E.3.7 Silence the alarm by depressing the OFF pushbutton.	Candidate depresses the OFF pushbutton	SAT / UNSAT
9.	E.3.8 Announce: "The next alarm is the Fire Alarm. The next alarm is the Fire Alarm"	Candidate selects any Gai-Tronics push to talk handset and makes the announcement.	SAT / UNSAT
*10.	E.3.9 Depress FIRE pushbutton and allow the alarm to sound for approximately 10 seconds.	Candidate depress FIRE pushbutton and allow audible alarm for approximately 10 seconds	SAT / UNSAT
11.	E.3.10 Silence the alarm by depressing the OFF pushbutton.	Candidate depresses the OFF pushbutton	SAT / UNSAT
12.	E.3.11 Announce: "This completes the test of the plant alarms."	Candidate selects any Gai-Tronics push to talk handset and makes the announcement.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			