Final Submittal

(Blue Paper)

BROWNS FERRY EXAM 2007-301

FINAL JPMS

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

O DRE
MS word

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-1a

TITLE: DETERMINATION OF OVERTIME ELIGIBILITY

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	8/28/05	All	New
1	2/16/06	All	Procedure Revision
2	6/15/07	All	Procedure Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: JPM 540

TASK NUMBER: Administrative

TASK TITLE: Determination of Overtime Eligibility

K/A NUMBER: 2.1.1 K/A RATING: RO 3.7 SRO:3.8

****

TASK STANDARD: Given appropriate information, determine operator overtime eligibility.

LOCATION OF PERFORMANCE: SIMULATOR _ PLANT _ CONTROL ROOM _

REFERENCES/PROCEDURES NEEDED: OSIL 25 8-29, SPP-1.5 rev 5

VALIDATION TIME: CONTROL ROOM: ____ LOCAL: ____15___

MAX. TIME ALLOWED: ____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM ___ LOCAL ___

COMMENTS:_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ___ UNSATISFACTORY _____

EXAMINER SIGNATURE:_____ DATE: _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-PLANT: I will explain the initial conditions and state the task to be performed. All steps shall be simulated. I will provide initiating cues and indicate any steps to be discussed. Ensure that you observe electrical safety precautions when working near energized equipment. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task and when you have completed the assigned task.

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

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

INITIATING CUES: Evaluate the work history for all 5 operators. Determine for each Operator if;

A. If they can be held over for two hours WITHOUT a waiver, AND;

B. If they can be held over for two hours WITH a waiver.

****

Performance Step: Critical__ Not Critical X_

PERFORMER demonstrated the use of 3-WAY COMMUNICATION and Touch Star during the performance of this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION and Touch-Star during the performance of this JPM to ensure proper understanding of directives given and ensure proper component manipulations. If UNSAT, note in comments section of JPM.

SAT___ UNSAT___ N/A ___ COMMENTS:_____

_____

_____

EVALUATOR'S SOLUTION

DO NOT GIVE TO STUDENT

Step	Description	Standard	SAT/UNSAT
	Reference SPP-1.5, OSIL 25	Current Revision SPP-1.5 and OSIL 25 (If requested)	
1	Evaluate Operator 1	Determine Operator #1 would exceed 24 hours in a 48 hour period and would exceed 72 hours in a 7 day period and would require overtime authorization	A - NO B - YES
2	Evaluate Operator 2	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization	A - NO B - YES
3	Evaluate Operator 3	Determine Operator #3 is already on waiver for greater than 72 in 7 days and would exceed 85 hours in a 7 day period which cannot be waivered per OSIL-25	A - NO B - NO
4	Evaluate Operator 4	Determine that Operator #4 would not exceed any overtime guidelines	A - YES B – Any Answer (doesn't really apply)
5	Evaluate Operator 5	Determine Operator #5 would exceed 72 hours in a 7 day period and would require overtime authorization	A - NO B - YES

ALL STEPS ARE CRITICAL - 4 of 5 CORRECT TO PASS JPM (80%).

Operator 4 can work without a waiver, therefore, the column "can work with waiver" is meaningless and any answer is acceptable.

Evaluator's Copy

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

DAY	1	2	3	4	5	6	7	8 (Today)	can work without waiver		can work with waiver	
Operator #1	0	0	14	10	14	10	14	10	yes	**no**	**yes**	no
Operator #2	0	3	10	12	12	12	8	14	yes	**no**	**yes**	no
Operator #3	0	12	12	12	12	12	10	14	yes	**no**	yes	**no**
Operator #4	0	8	12	10	10	8	10	12	**yes**	no	**yes**	**no**
Operator #5	0	4	12	10	10	14	10	12	yes	**no**	**yes**	no

INITIATING CUES: Evaluate the work history for all 5 operators. Determine for each Operator if;

A. If they can be held over for two hours WITHOUT a waiver, AND;

B. If they can be held over for two hours WITH a waiver.

ALL STEPS ARE CRITICAL - 4 of 5 CORRECT TO PASS JPM (80%).

Operator 4 can work without a waiver, therefore, the column "can work with waiver" is meaningless and any answer is acceptable.

STUDENT HANDOUT

TASK CONDITIONS:

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

DAY	1	2	3	4	5	6	7	8 (Today)	can work without waiver		can work with waiver	
Operator #1	0	0	14	10	14	10	14	10	yes	no	yes	no
Operator #2	0	3	10	12	12	12	8	14	yes	no	yes	no
Operator #3	0	12	12	12	12	12	10	14	yes	no	yes	no
Operator #4	0	8	12	10	10	8	10	12	yes	no	yes	no
Operator #5	0	4	12	10	10	14	10	12	yes	no	yes	no

INITIATING CUES: Evaluate the work history for all 5 operators. Determine for each Operator if;

A. If they can be held over for two hours WITHOUT a waiver, AND;

B. If they can be held over for two hours WITH a waiver.

Circle the correct responses above for each operator

Browns Ferry Nuclear Plant

Unit 1

Surveillance Procedure

1-SR-2

Instrument Checks and Observations

Revision 0007

Quality Related

Level of Use: Continuous Use

Effective Date: 05-22-2007

Responsible Organization: OPS, Operations

Prepared By: William Fuller

Approved By: James A. McCrary

Current Revision Description

Type of Change: Enhancements Tracking Number: 008

PCR's 07002157, 07002161, 07002177

PER

TRM 3.5.4, Maintenance of Filled Discharge Pipe, is revised (Revision 28), as follows:

The OPERABLE pressure indicators on the discharge of the RHR and CS pumps shall indicate not less than listed below:

PI-74-51 35 psig (was 48 psig)

PI-74-65 48 psig (was 35 psig)

The corresponding changes are made in 1-SR-2, Tables 1.19, 2.19, 3.9 and 4.9, on Pages 42, 92,127, & 152

Thermal Limit, MFDLRX is removed from the procedure per Reactor Engineering Request. Unit 1 process computer is using 3D MONICORE instead of the PowerPlex used by Units 2 and 3. MFDLRX is a PowerPlex output that is not calculated by 3D MONICORE. This change is affects Tables 1.1 and 2.1 on Pages 20, 21, 70 & 71.

Page 115, Table 2.47, RESERVOIR WATER TEMP DOWNSTREAM AVERAGE reading times were corrected from 0800 and 1400 to 2000 and 0200.

1.0 INTRODUCTION

1.1 Purpose

This Procedure ensures most instrument checks and observations, as required by the Technical Specifications (TS), are performed. This Procedure also ensures performance of some instrument checks and observations required by the Technical Requirements Manual (TRM), Offsite Dose Calculation Manual (ODCM), and Final Safety Analysis Report (FSAR). The majority of the instrument checks and observations are required on a 12 hour, 24 hour, or 7 day frequency and a separate Procedure is not warranted to govern their performance.

SR-2 fulfills specific requirements, but may contain instrumentation which serves multiple purposes and the related functional requirements. Therefore, regarding the Surveillance Requirements and Applicability statements (rows) at the top of the tables, these listed Surveillance Requirements are for operator information and cross-reference use. They are listings, or aids, which tell the operator where in Tech Specs, TRM, ODCM, and if applicable, Fire Protection Report, the associated instrument may have functional requirements. Should a specific instrument indicate abnormally, each of these reference areas should be referred to. Using this and other pertinent information will ensure all applicable LCOs are addressed. Note however, these listings are not to be construed as either the only or the all-inclusive LCOs if there is a problem with the instrument. Rather, these listings provide the recognized references which need to be looked at if there is a problem with the instrumentation to verify the applicability, or possibility, of an LCO. On-shift, licensed Operations personnel maintain the ultimate responsibility for ensuring all Technical Specification, TRM, ODCM, and Appendix R LCOs are addressed for inoperable equipment.

1.2 Scope

This procedure fulfills most 12 hour, 24 hour, and 7 day instrument checks and observations required by the Technical Specifications. This procedure also fulfills some instrument checks and observations required by the TRM, ODCM, and FSAR. Attachment 5 provides a cross reference of TS, TRM, ODCM, and FSAR which implements the requirement and the section of this Surveillance Procedure.

1.3 Frequency

This Procedure will be performed once per week. The required frequency for individual surveillance items are addressed within this procedure to fulfill Technical Specification, Technical Requirements Manual, and Regulatory Commitment Requirements.

1.4 Applicability

The applicability requirements for individual surveillance items are listed in the surveillance tables in Attachment 6. The applicability listed in the table for a surveillance item is based on the combination of applicability's of all TS Surveillance Requirements and Criteria Sources addressed by the table.

2.0 REFERENCES

2.1 Technical Specifications

Unit 1

2.2 Technical Requirements Manual

Unit 1

2.3 Offsite Dose Calculation Manual

Sections 1/2.1.1 and 1/2.2.2

2.4 Final Safety Analysis Report

Sections 1.6, 3.3, 3.4, 3.6, 3.7, 3.8, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 5.2, 5.3, 6.4, 6.5, 6.6, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 7.12, 7.14, 7.16, 7.18, 7.19, 8.4, 8.5, 9.5, 10.3, 10.5, 10.7, 10.9, 10.12, 11.5, 13.6,13.9, 14.5, 14.6, Appendix F.6, F.7, and Appendix H

2.5 Site Standard Practices

SPP-6.1, Work Order Process Initiation

SPP-8.1, Conduct of Testing

2.6 Technical Instructions

1-TI-18, Enriched Sodium Pentaborate (SPB) Solution Preparation Procedure for the Standby Liquid Control (SLC) System

1-TI-82, Drywell Atmospheric Cooling System

1-TI-149, Reactor Water Level Measurement

2.7 Operating Instructions

1-OI-64, Primary Containment System

1-OI-85, Control Rod Drive System

1-OI-92, Source Range Monitors

OPDP-1, Conduct of Operations

2.8 Abnormal Operating Instructions

1-AOI-74-1, Loss of Shutdown Cooling

1-AOI-78-1, Fuel Pool Cleanup System Failure

2.9 Surveillances

1-SR-3.1.6.1, BPWS Compliance Verification

1-SR-3.1.7.1, Conditional for Standby Liquid Control (SLC) Solution Level Check

1-SR-3.3.1.2.4, Source Range Monitor System Count Rate and Signal to Noise Ratio Check

1-SR-3.4.5.B.1, Coolant Leakage-Drywell Air Sampling System Inoperable (1-RM-90-256)

1-SR-3.4.2.1, Jet Pump Mismatch and Operability

1-SR-3.4.4.1, Manual Calculation of Identified and Unidentified Leakage

1-SR-3.4.4.1-a, Calculation of Drywell Leakage Rates with Equipment Sump Overflowing into the Floor Drain Sump

1-SR-3.4.9.5-7, RPV Head Temperature Monitoring

1-SR-3.6.2.1.1, Suppression Chamber Water Check

1-SR-3.6.3.2.1, Primary Containment Atmosphere Oxygen Concentration Determination when Drywell and / or Torus Sensors are Inoperable

1-SR-3.10.6, Verification of Surveillance Requirements for Multiple Control Rod Withdrawal-Refueling

1-SI-4.6.B.1-4, Reactor Coolant Chemistry

1-SI-4.7.A.2.a, Primary Containment Nitrogen Consumption and Leakage

1-SI-4.7.F.2, Primary Containment Purge System In-Place Leak Test

1-SI-4.7.F.3, Primary Containment Purge System Halogenated Hydrocarbon Test

1-SI-4.7.F.4, Primary Containment Purge System Iodine Removal Efficiency

1-SI-4.7.F.5, Primary Containment Purge System Flow Rate Test

2.10 Mechanical Drawings

47W605-1, Mechanical Layout of Control Boards

47W605-1A, Mechanical Layout of Control Boards

47W600-0, Mechanical Instruments and Controls

47W600-0A, Mechanical Instruments and Controls

47W600-0B, Mechanical Instruments and Controls

2.11 Other Documents

Unit 1 Current Cycle Core Operating Limits Report (COLR)

NRC/C RPT 50-260/85-15, Reactor Water Level Instrument Checks Shall Include Instrument Agreement Criteria and Comparison of Instruments Which are Independent

BFPER 951914

SEOPR 96-0-075-2, CS Sparger Line Break Detection

GE SIL No. 106, Suppression Pool Temperature Monitoring and Control

GE SIL No. 251, Control of RPV Bottom Head Temperatures

GE SIL No. 430, Reactor Pressure Vessel Temperature Monitoring

IE Circular 81-11, Inadequate Decay Heat Removal During Reactor Shutdown

3.0 PRECAUTIONS AND LIMITATIONS

3.1 General Precautions

A. If the performance of this Surveillance Procedure indicates a need for instrument maintenance, a Work Order (WO) will be generated in accordance with SPP-6.1.

B. Attachment 2 and 3 consists of two data packages; one for each shift.

1. Some data is required to be recorded at specified times. These times are listed next to the day in the tables. Time specific data should be recorded as close to the specified time as plant conditions/operators ability will allow. The remainder of the data packages for each shift must be completed as indicated below in order to meet the frequency requirements for the specific requirements.

2. DAY SHIFT data package must be completed daily between 0700-1100 hours.

3. NIGHT SHIFT data package must be completed daily between 1900-2300 hours.

C. The night shifts and day shifts are defined by the day on which the shift begins. (i.e., Friday dayshift is Friday 0700-1900, Friday night shift is Friday 1900 to Saturday 0700.). Actual starting times for Operations may vary based upon turnovers, but the time periods for obtaining data are as listed above

D. The data packages contain surveillance item tables which are identified by table numbers. These table numbers are cross referenced to the Tech Specs and/or Technical Requirements AND applicability in attachments 5 and 6.

E. An Independent Review (STA or SRO) is performed "once per shift" and does not require a separate Review after the completion of the Procedure. If an independent SRO is used, then he/she shall not be the same SRO that signed for the Unit Supervisor review in the Data Packages for that shift. If a qualified STA is used, then he/she will perform the IQR on a "once per shift" basis. This will ensure an independent review of the shift's Data.

3.2 Operability and LCO's

A. If readings for inoperable instruments are marked as "INOP," the required channel checks must be performed prior to declaring the instruments OPERABLE.

B. SR-2 fulfills specific requirements, but may contain instrumentation which serves multiple purposes and the related functional requirements. Therefore, regarding the Surveillance Requirements and Applicability statements (rows) at the top of the tables, these listed Surveillance Requirements are for operator information and cross-reference use. They are listings, or aids, which tell the operator where in Tech Specs, TRM, ODCM, and if applicable, Fire Protection Report, the associated instrument may have functional requirements. Should a specific instrument indicate abnormally, each of these reference areas should be referred to. Using this and other pertinent information will ensure all applicable LCOs are addressed. Note however, these listings are not to be construed as either the only or the all-inclusive LCOs if there is a problem with the instrument. Rather, these listings provide the recognized references which need to be looked at if there is a problem with the instrumentation to verify the applicability, or possibility, of an LCO. On-shift, licensed Operations personnel maintain the ultimate responsibility for ensuring all Technical Specification, TRM, ODCM, and Appendix R LCOs are addressed for inoperable equipment.

3.3 Equipment

A. Parameter Limits are denoted by the annotation "LIMITS". Channel check criteria are denoted by "MIN," "MAX," and "MAX DEV". If the agreement criteria between channels (MAX DEV) is not satisfied, it may be an indication of excessive instrument drift in one of the channels or something more serious. When MAX DEV criteria cannot be met during required applicability, instrument operability must be evaluated.

B. For the Post Accident Range Reactor Water Level Instrumentation, 1-LIS-3-62A (52), 1-LI-3-62A (52), 1-LR-3-62, the failure modes for the instrument, electrical, reference leg failure or variable leg failure, will be readily apparent by either their indication or other instruments fed from the same reference leg.

1. Electrical - Downscale
2. Variable Leg - Downscale
3. Reference Leg - Upscale along with other indication on the same reference leg changing

C. The Channel Checks for IRMs is satisfied by maintaining the IRMs onscale and within 2 ranges of each other and does not determine the operability of the IRMs. The following are some things the Unit Supervisor should address prior to declaring operability. This is not an all inclusive list.

1. Proper Overlap
2. All appropriate surveillances performed
3. IRM's must be full in and onscale (i.e., $25 \leq$ IRM value ≤ 75) excluding downscale (i.e., IRM value < 25) on range 1
4. IRM unbypassed

3.4 Initiation/Isolation/Trips

None

3.5 Interlocks

None

3.6 Performance Testing

A. Data for all of the parameters shall be taken at all times for Modes 1, 2, & 3 regardless of applicability. Even though the parameter may not be applicable for the current Mode, the readings shall be recorded to ensure when the Mode is entered, the readings will exist and the associated channel checks required by Tech Specs for that mode are complied with.

1. In cases where there is more than one way to obtain the required parameter reading, at least one of the parameters readings shall be recorded, the others may be marked as N/A.

2. LCO 3.0.4 is only applicable when entering Mode 3 from 4, Mode 2 from Mode 3 or 4, or Mode 1 from Mode 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the applicability only when in Mode 1, 2, or 3. LCO 3.0.4 is not applied in Modes 4 or 5. (Refer To Attachment 5 and TS SR 3.0.4.)

3. Parameters that have "ALL DATA SAT/UNSAT" columns will be marked for the current plant condition. If the parameters are UNSAT, then log in Post Test Remarks the reason for being UNSAT.

   SAT/UNSAT Data Applies to Surveillance Requirements listed in 1-SR-2. Instruments may be Tech Spec operable, but UNSAT for the "SAT/UNSAT" column in SR-2. Example would be one instrument or channel in by-passed or removed from service as allowed by Tech Specs, but UNSAT in the "ALL DATA SAT/UNSAT" column(with a note in Remarks) for 1-SR-2.

4. Do not N/A parameters that allows the use of N/A's until the end of the shift. This will ensure plant conditions did not change requiring the readings or tests to be performed.

B. Readings for inoperable instruments may be marked "INOP" and the reason for inoperability condition noted in the data package with the following exceptions.

1. At least two instruments in the comparison group must remain available for readings evaluated against "MAX DEV" criteria during required applicability.

2. At least one instrument must remain available for determination of the parameter for readings with "LIMITS" criteria during required applicability. This limitation does not apply to the SRM readings with "LIMITS" criteria since in this case each SRM is evaluated against the "LIMITS" criteria to determine the SRM's OPERABILITY.

4.0 PREREQUISITES

This copy of 1-SR-2 is verified the most current revision.

5.0 SPECIAL TOOLS AND EQUIPMENT RECOMMENDED

5.1 Recommended Tools

Calculator

5.2 Recommended Measuring And Test Equipment (M&TE)

None

6.0 ACCEPTANCE CRITERIA

A. The Acceptance Criteria for each surveillance item is designated by (AC) in the applicable surveillance item table(s) of Attachments 2 & 3.

B. The Acceptance Criteria for a surveillance item is only required to be satisfied during the indicated applicability denoted on the associated table.

C. Corrective Actions

Failure of any surveillance item to meet its acceptance criteria during its applicability shall constitute a Corrective Action which shall be documented as described by SPP-8.1. The Unit Operator will immediately notify the Unit Supervisor if any acceptance criteria are not satisfied.

7.0 PROCEDURE STEPS

7.1 Initial Requirements and Notifications

[1] **CHECK** that the following initial conditions are satisfied and **INITIAL** in the table below at the beginning of each shift:

A. Precautions and Limitations in Section 3.0 have been reviewed.

B. Prerequisites listed in Section 4.0 are met.

C. **VERIFY** that the correct data package from Attachment 2 or 3 is being used for the current shift. (**REFERENCE** Step 3.1B).

D. **VERIFY** that each page of the data package displays the correct beginning and end dates for the week.

	DAY SHIFT		NIGHT SHIFT	
DAY	**UO Initial**	**Time**	**UO Initial**	**Time**
FRIDAY	DH	0700		
SATURDAY				
SUNDAY				
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				

[2] **RECORD** the date and time started, reason for test, and plant conditions on Attachment 1, Surveillance Procedure Review Form.

DH

7.2 Data Package Completion

[1] **COMPLETE** each surveillance item contained in each data package. There is no specific order in which the items must be completed within a data package.

[2] **CHECK** the value or status of each surveillance item against its requirement as delineated in the data package. Items are clarified as required by numbered footnotes appearing at the bottom of the data sheet in which the surveillance item is recorded.

[3] The Unit Operator and Unit Supervisor shall review the Surveillance Procedure data package for completeness and satisfaction of Technical Specification requirements. This review shall be documented by initialing each data sheet of the package in the space designated.

7.3 Shift Review

A. An Independent Review (STA or SRO) shall be performed by a qualified Shift Technical Advisor (STA) or an independent SRO separate from the one signing as the Unit Supervisor for the data taken in the procedure, on each shift completed data package. This review shall be documented by initialing the Surveillance Procedure Review Form in the space delineated. The review should be performed as soon as practical after the current shift data package is complete.

B. The Review of the completed Shift Data Package shall be checked for completeness, technical accuracy, regulatory compliance, and overall component operability (i.e., Acceptance Criteria, LCO's ...).

C. After completion of the weekly data packages for all shifts, the surveillance package is sent to the Work Control Group, who should route the original package to Site Engineering.

7.4 Weekly Data Carryover

Upon completion of the weekly data package, all necessary data shall be carried forward to the corresponding data packages for the following week. (e.g. previous days Drywell Sump discharge totalizer readings, etc.)

7.5 Completion and Notifications

[1] **RECORD** date and time of completion on Attachment 1, Surveillance Procedure Review Form, and **COMPLETE** the form up to Unit Supervisor Review Section.

8.0 ILLUSTRATION/ATTACHMENTS

Attachment 1: Surveillance Procedure Review Form

Attachment 2: Surveillance Procedure Data Package-Modes 1, 2, & 3

Attachment 3: Surveillance Procedure Data Package-Modes 4 & 5

Attachment 4: Reactor Water Level Indication Correction

Attachment 5: Criteria Source Reference Table

Attachment 6: Surveillance Item Applicability Reference Table

Attachment 1
(Page 1 of 4)

Surveillance Procedure Review Form

REASON FOR TEST:
- ☒ Scheduled Surveillance
- ☐ System Inoperable (Explain in Remarks)
- ☐ Maintenance (WO No. _____)
- ☐ Other (Explain in Remarks)

DATE/TIME STARTED Today 0700
DATE/TIME COMPLETED _____
PLANT CONDITIONS Mode 1

PRE-TEST REMARKS: _____

PERFORMED BY:

Initials	Name (Print)	Name (Signature)
DH	Dan Huggims	Dan Huggims
TS	Tim Silver	Tim Silver

Attachment 1
(Page 2 of 4)

Surveillance Procedure Review Form

Delays or Problems (If yes, explain in POST-TEST REMARKS)? ☐Yes ☐No
Acceptance Criteria Satisfied? ☐Yes ☐No
If the above answer is no, the Unit Supervisor shall determine if an LCO exists. LCO ☐Yes ☐No

UNIT SUPERVISOR _____ Date _____

WORK CONTROL (SI) _____ Date _____

Independent Review (STA or SRO) performed for each shift.

	DAY SHIFT		NIGHT SHIFT	
DAY	**Initial**	**Time**	**Initial**	**Time**
FRIDAY	TS	1800		
SATURDAY				
SUNDAY				
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				

SCHEDULING COORDINATOR _____ Date _____

POST-TEST REMARKS: _____

Attachment 1
(Page 3 of 4)

Surveillance Procedure Review Form

POST-TEST REMARKS: (Continued)

Attachment 1
(Page 4 of 4)

Surveillance Procedure Review Form

REMARKS:

Attachment 2
(Page 1 of 98)

Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.1 CORE THERMAL POWER AND CORE POWER DISTRIBUTION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 when ≥ 25% RTP **RECORD** the readings as soon as possible after the generator breaker has been closed.
Criteria Source:	3.2.1.1; 3.2.2.1; 3.2.3.1; DEFINITIONS SECTION 1.1 - FSAR 3.7.7
LOCATION:	ICS Computer (Case Summary - CSUM)

DAY	TIME Note 2	Core Thermal Power (MWt)	Percent Power (% RTP)	LIMIT (AC)	MFLCPR Note 3	MAPRAT Note 3		MFLPD Note 3	LIMIT (AC)	Review Initials: Unit Operator	Review Initials: Unit Supvr
Friday	0800	N/A	N/A	Notes 1 & 2	N/A	N/A		N/A	Notes 3, 4, & 5	DH	
	1000	N/A	N/A		N/A	N/A		N/A		DH	
	1200	N/A	N/A		N/A	N/A		N/A		DH	
	1400	N/A	N/A		N/A	N/A		N/A		DH	
	1600										
	1800										
Saturday	0800										
	1000										
	1200										
	1400										
	1600										
	1800										
Sunday	0800										
	1000										
	1200										
	1400										
	1600										
	1800										
Monday	0800										
	1000										
	1200										
	1400										
	1600										
	1800										

NOTES ARE FOLLOWING THE TABLE!

Deleted: MFDLRX

TABLE 1.1 CORE THERMAL POWER AND CORE POWER DISTRIBUTION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 when ≥ 25% RTP **RECORD** the readings as soon as possible after the generator breaker has been closed.										
Criteria Source:	3.2.1.1; 3.2.2.1; 3.2.3.1; DEFINITIONS SECTION 1.1 - FSAR 3.7.7										
LOCATION:	ICS Computer (Case Summary - CSUM)									Review Initials	
DAY	TIME Note 2	Core Thermal Power (MWt)	Percent Power (% RTP)	LIMIT (AC)	MFLCPR Note 3	MAPRAT Note 3		MFLPD Note 3	LIMIT (AC)	Unit Operator	Unit Supvr
Tuesday	0800			Notes 1 & 2					Notes 3, 4, & 5		
	1000										
	1200										
	1400										
	1600										
	1800										
Wednesday	0800										
	1000										
	1200										
	1400										
	1600										
	1800										
Thursday	0800										
	1000										
	1200										
	1400										
	1600										
	1800										

Deleted: MFDLRX

NOTES ARE ON THE FOLLOWING PAGE!

DAY SHIFT WEEK: _This Week_ to _Next Week__

(1) Maximum steady-state power averaged over 8 hours is 3458 MWt. However, the reactor should not be operated such that the steady-state power (as indicated by 30 min, 1 hr avg, or 2hr avg) is above 3458 MWt. Minor variations in process parameter inputs may result in individual edits or indications above 3458 MWt while true steady-state thermal power is ≤ 3458 MWt. Normal variation is within 5 MWt of steady-state core thermal power. Running averages (from core thermal power summary on the Nuclear Heat Balance display) are not as sensitive. The following guidance is provided:

A. If power is > 3463, reduce power.

B. If power is 3458 to 3463 MWt after allowing time for recent perturbations to settle, reduce power and evaluate the trend.

C. If ANY running average is > 3458 MWt, reduce power.

(2) Core Thermal Power is normally recorded every 2 hours when required. However, these readings may be marked N/A during TIP trace runs, control rod pattern adjustments, or anytime Core Monitoring System is blocked and/or < 25% power. The Reactor Engineer is responsible for monitoring Core Thermal Limits. Monitoring of Core Thermal Power and other Core Thermal Limits is recommended following completion of planned rise in power and following any unexpected power change. If core monitoring software becomes unavailable, the Shift Manager and Reactor Engineer shall determine the appropriate frequency for monitoring Core Thermal Power but should not exceed 24 hours, using backup core monitoring computer, and taking into consideration current core conditions and margin to thermal limits. Power changes should not normally be made without the core monitoring software being available.

(3) Consult Reactor Engineer when value ≥ 0.985.

(4) If any Turbine Bypass valve(s) are inoperable or a Recirculation Loop is out of service, contact the Reactor Engineer and refer to the COLR for Turbine Bypass Out of Service (TBOOS) or Single Loop Operation (SLO) limits which must be applied.

(5) MAPRAT within limits is used to verify that all APLHGRs are within the limits specified within the COLR.
MFLPD and MFDLRX within limits are used to verify that all LHGRs are within the limits specified within the COLR.
MFLCPR within limits is used to verify that all MCPRs are within the limits specified within the COLR.

TABLE 1.2 DRYWELL UNIDENTIFIED LEAKAGE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-6

Preferred reading times are 0800, 1200 and 1600	Col. A.1 Current Point 3 (1-FQ-77-6) Reading (gals) Notes 1, 2	Col. B.1 Previous Days 1-FQ-77-6 Reading from Col. A.1 (gals) Note 2	Col. C.1 Gallons Pumped Col. A.1 - Col. B.1 Note 2	Col. D.1 Current Time Note 2	Col. E.1 Previous Days Time from Col. D.1 Note 2	Col. F.1 Elapsed Time Col. D.1 - Col. E.1 (min) Note 2	Col. G.1 Current Leakrate Col. C.1 ÷ Col. F.1 (gpm) Note 2	Col. H.1 Previous Days Leakrate from Col. G.1 (gpm) Note 2	Col. I.1 Change in Leakrate Col. G.1 - Col. H.1 (gpm) Note 2, 3	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 4
Friday	57410	57410	0	0800	0800	1440	0	0	0	Col. G.1 ≤ 5.0 gpm AND Col. I.1 ≤ 2 gpm (Note 3)	DH	
	57410	57410	0	0800	0800	1440	0	0	0		DH	
Saturday												
Sunday												
Monday												

NOTES ARE ON THE FOLLOWING PAGE!

TABLE 1.2 DRYWELL UNIDENTIFIED LEAKAGE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-6

Preferred reading times are 0800, 1200 and 1600	Col. A.1 Current Point 3 (1-FQ-77-6) Reading (gals) Notes 1, 2	Col. B.1 Previous Days 1-FQ-77-6 Reading from Col. A.1 (gals) Note 2	Col. C.1 Gallons Pumped Col. A.1 - Col. B.1 Note 2	Col. D.1 Current Time Note 2	Col. E.1 Previous Days Time from Col. D.1 Note 2	Col. F.1 Elapsed Time Col. D.1 - Col. E.1 (min) Note 2	Col. G.1 Current Leakrate Col. C.1 ÷ Col. F.1 (gpm) Note 2	Col. H.1 Previous Days Leakrate from Col. G.1 (gpm) Note 2	Col. I.1 Change in Leakrate Col. G.1 - Col. H.1 (gpm) Note 2, 3	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 4
Tuesday												
Wednesday												
Thursday												

(1) Manually pump down sump per 1-OI-64 prior to reading. To record gallons, disregard any decimal point on recorder point 3 indication. Record right most five digits as gallons of flow. Example: Record 0065432.1 as 54321.

(2) May be N/A'd if Surveillance Requirement is being met with the performance of 1-SR-3.4.4.1 or 1-SR-3.4.4.1-A and a note stating such shall be made in the remarks section of this SR. When initial TOTALIZE reading is taken and no previous reading exists, all other entries except for Col. A.1 and D.1 should be N/A'd.

(3) Acceptance Criteria for Col. I.1 is only applicable when in Mode 1 for > 24 hours.

(4) Unit Supervisor shall Independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

TABLE 1.3 DRYWELL IDENTIFIED LEAKAGE AND TOTAL LEAKAGE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-16

Preferred reading times are 0800, 1200 and 1600	Col. A.2 Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Col. B.2 Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Col. C.2 Gallons Pumped Col. A.2 - Col. B.2 Note 2	Col. D.2 Current Time Note 2	Col. E.2 Previous Days Time from Col. D.2 Note 2	Col. F.2 Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Col. G.2 Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Col. H.2 Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Col. I.2 Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 4
Friday	06504	05025	1479	0800	0800	1440	1.03	0	1.03	Col. I.2 ≤ 30.0 gpm	DH	
	06657	05507	1150	0800	0800	1440	.80	0	.80		DH	
Saturday												
Sunday												
Monday												

NOTES ARE ON THE FOLLOWING PAGE!

TABLE 1.3 DRYWELL IDENTIFIED LEAKAGE AND TOTAL LEAKAGE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-16

Preferred reading times are 0800, 1200 and 1600	Col. A.2 Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Col. B.2 Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Col. C.2 Gallons Pumped Col. A.2 - Col. B.2 Note 2	Col. D.2 Current Time Note 2	Col. E.2 Previous Days Time from Col. D.2 Note 2	Col. F.2 Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Col. G.2 Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Col. H.2 Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Col. I.2 Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 4
Tuesday										Col. I.2 ≤ 30.0 gpm		
Wednesday												
Thursday												

(1) Manually pump down sump per 1-OI-64 prior to reading. To record gallons, disregard any decimal point on recorder point 4 indication. Record only right most five digits as gallons of flow. Example: Record 0065432.1 as 54321.

(2) May be N/A'd if Surveillance Requirement is being met with the performance of 1-SR-3.4.4.1 or 1-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial TOTALIZE reading is taken and no previous reading exists, all other entries except for Col. A.2 and D.2 should be N/A'd.

(3) G.1 reading is from Drywell Unidentified Leakage Col. G.1 on previous page.

(4) Unit Supervisor shall independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

TABLE 1.4 12 HOUR AVERAGE DRYWELL UNIDENTIFIED LEAKAGE (5 gpm) **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.
Surveillance Requirements:	3.4.4.1
LOCATION:	Panel 1-9-4, 1-FR-77-6

	Col. A.3	Col. B.3	Col. C.3	Col. D.3	Col. E.3	Col. F.3	Col. G.3	Col. H.3	Col. I.3		Review Init	
Preferred reading times are 1200	Current Point 3 (1-FQ-77-6) Reading (gals) Notes 1, 2, 4	Previous Shift 2400 HOURS 1-FQ-77-6 Reading from Col. A.3 (gals) Note 2	Gallons Pumped Col. A.3 - Col. B.3 Note 2	Current Time Note 2	Previous Shift Time from Col. D.3 Note 2	Elapsed Time Col. D.3 - Col. E.3 (min) Note 2	Current Leakrate Col. C.3 ÷ Col. F.3 (gpm) Note 2	Previous Shift Leakrate from Col. G.3 (gpm) Note 2	Change in Leakrate Col. G.3 - Col. H.3 (gpm) Note 2	LIMITS (AC)	UO	Unit Supvr Note 5
Friday	57410	57410	0	1200	2400	720	0	0	0	≤ 5.0 gpm	DH	
Saturday												
Sunday												
Monday												
Tuesday												
Wednesday												
Thursday												

(1) Manually pump down sump per 1-OI-64 prior to reading. To record gallons, disregard any decimal position on recorder Point 3 indication. Record only right most five digits as gallons of flow. Example: Record 0065432.1 as 54321.

(2) May be N/A'd if Surveillance Requirement is being met with the performance of 1-SR-3.4.4.1 or 1-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial TOTALIZE reading is taken and no previous reading exists, all other entries except for Col. A.3 and D.3 should be N/A'd.

(3) Acceptance Criteria for ≤ 5 gpm for 12 hours per Tech Specs 3.4.4.1.

(4) Record "Current" reading (Column A.3) on the following shift's "Previous Shift" reading (Column B.3).

(5) Unit Supervisor shall Independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

TABLE 1.5 DRYWELL AIR SAMPLING SYSTEM INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.5.1 LOCATION: Panel 1-9-2, 1-MON-90-50 - (1-RM-90-256) Note 4

		Air Sample Flow			Drywell Noble Gas		Drywell Particulate		Review Initials	
DAY	TIME	(LPM)	MIN (AC)	MAX (AC)	(µci/cc) Note 2 & 3	MAX (AC)	(µci/cc) Note 2 & 3	MAX (AC)	UO	Unit Supvr
Friday	0800	55.4			4.9 E-6		3.9 E-8		DH	
	1200									
	1600									
Saturday	0800									
	1200									
	1600									
Sunday	0800									
	1200									
	1600									
Monday	0800									
	1200		45 lpm	60 lpm		Note 1		Note 1		
	1600									
Tuesday	0800									
	1200									
	1600									
Wednesday	0800									
	1200									
	1600									
Thursday	0800									
	1200									
	1600									

(1) If the detector is not in ALERT, then the reading is below the MAX.

(2) If the equipment and floor drain sump flow measurements indicate a high leakage rate, the air sampling system will normally show a corresponding high activity. A low sump flow rate indication will normally be corroborated by a low activity indication by the air sampling system. Unexpected deviations from this relationship should be investigated.

(3) If both the Drywell Noble Gas and the Drywell Particulate Channels are inoperable, initiate 1-SR-3.4.5.B.1 as required by TS 3.4.5.

(4) If the Control Room Console 1-CONS-90-50A becomes unavailable, then obtain local readings per 1-OI-90. Note reason in the Post Test Remarks.

TABLE 1.6 HEAT BALANCE RELATED ICS ALARM SETPOINTS (Note 1) **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Mode 1 when ≥ 25% RTP - **RECORD** the readings as soon as possible after the generator breaker has been closed.

Criteria Source: BFPER951914

LOCATION: ICS Computer

	ICS Points					MAX DEV Note 2	Verify HI and HI HI alarm setpoints listed in Table 1.B.1 & 1.B.2 are NOT exceeded. (Note 3) SAT / UNSAT / N/A	Review Initials	
	3-48A (°F)	3-48B (°F)	3-50A (°F)	3-50B (°F)	NSS0017 (°F)			UO	Unit Supvr
Friday	253.1	253.5	253.9	253.4	253.0	2°F	SAT	DH	
Saturday									
Sunday									
Monday									
Tuesday									
Wednesday									
Thursday									

(1) The computer points listed in Table 1.B.1 and 1.B.2 are inputs to the ICS Core Thermal Power Heat Balance calculations. The points are monitored to ensure the inputs are in agreement and to ensure the license limits for thermal power are maintained. In addition to the above, these points should be monitored any time reactor power changes are performed.

(2) A difference between Feedwater temperature points 3-48A, 3-48B, 3-50A, 3-50B, and NSS0017 of greater than 2 degrees will require the notification of Site Engineering and suspending any rise in power until the discrepancy is resolved.

(3) An alarm setpoint being exceeded will require notifying the Unit Supervisor immediately and, if action cannot be taken immediately to return the value to within limits, Site Engineering will be notified for assistance.

TABLE 1.B.1

ICS POINT	DESCRIPTION	HI ALARM	HI HI ALARM
CALCO20	Rx Power 30 Min Avg.	3458	3463
CALCO21	Rx Power 1 Hr. Avg.	3458	3461
CALCO83	Rx Power 2 Hr. Avg.	3458	3459
CALCO98	Generator Power	1185	1190
CALCO26	Efficiency	35	36
CALCO27	Load Line	N/A	113.6
CALCO24	Rx Power %	100.2	100.5

TABLE 1.B.2

ICS POINT	DESCRIPTION	HI ALARM	HI HI ALARM
3-48A	FW Temp	382	386
3-48B	FW Temp	382	386
3-50A	FW Temp	382	386
3-50B	FW Temp	382	386
NSS0017	Avg. FW Temp.	382	386
96-14A	Recirc Pmp Power	5.5	5.7
96-14B	Recirc Pmp Power	5.5	5.7
CONS0400	Total RWCU Flow	0.15	N/A

TABLE 1.7 CONTROL ROD POSITIONS **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2 Readings are required at all times.			
Surveillance Requirements:	3.1.3.1; TSRs: 3.3.5.2			
LOCATION:	Panel 1-9-5 - ICS/RWM, Full Core Display And/Or Four Rod Display with Applicable Control Rod Selected		Review Initials	
DAY	All Operable Control Rod Positions (Note 1, 2 & 3) SAT / UNSAT	LIMITS (AC)	UO	Unit Supvr
Friday	SAT	All Operable Control Rod Positions Verified Satisfactory	DH	
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Control rod position may be determined by the use of OPERABLE position indicators or by moving control rods to a position with an OPERABLE indicator. Refer To 1-OI-85 for control rod withdrawal and insertion.

(2) If the full core display and four rod display is not available due to the failure of one or both of the RPIS 6 volt power supplies, then Control Rod Position may be determined using an alternate method as described in 1-AOI-85-4 and attaching the AOI documentation to this procedure.

(3) If an individual rod position is lost due to a missing digit in the TEN's place on the full core and four rod displays, then that control rod position may be determined using an alternate method as described in 1-AOI-85-4.

(4) Data will be taken in Modes 1, 2 or 3. If UNSAT, log the reason in Post Test Remarks.

TABLE 1.8 CONTROL ROD SCRAM ACCUMULATORS **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2 Readings are required at all times.			
Surveillance Requirements:	3.1.5.1			
LOCATION:	Panel 1-9-5 - Full Core Display And/Or Local HCU Accumulator Pressure Indicators (Reactor Building Elevation 565)		Review Initials	
DAY	HCU Scram Accumulator Pressures ≥ 940 psig for All Operable Control Rods (Notes 1 & 2) SAT / UNSAT	LIMITS (AC)	UO	Unit Supvr
Friday	SAT	HCU Scram Accumulator Pressure for All Operable Control Rods Satisfactory (≥ 940 psig)	DH	
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Verification of HCU Scram Accumulator Pressures ≥ 940 psig may be accomplished by verifying OPERABLE amber accumulator status lights on the full core display are not in the alarmed condition (i.e., not Illuminated) or by observation of local HCU Accumulator Pressure Indicators. Since the amber accumulator status lights on the full core display receive signals from another parameter in addition to accumulator pressure, local HCU Accumulator Pressure Indicators shall be used for control rods with amber accumulator status lights on the full core display in alarm (i.e., Illuminated).

(2) Data will be taken in Modes 1, 2 or 3. If UNSAT, log the reason in Post Test Remarks.

TABLE 1.9 REACTOR WATER LEVEL INSTRUMENTATION - NARROW RANGE (COMPENSATED) **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Readings are required at all times. (Note 2)							
Criteria Source:	FSAR 7.10.4							
LOCATION:	Panel 1-9-5						Review Initials	
Reference Leg	A 1-LI-3-53 (in.)	B 1-LI-3-60 (in.)	C 1-LI-3-206 (in.)	D 1-LI-3-253 (in.)	MAX DEV Note 1	All Data is SAT/UNSAT	UO	Unit Supvr
Friday	34	33	33	33	3.0 inches	SAT	DH	
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Refer To Attachment 4 during off-normal operating conditions.

(2) Reactor vessel water level indications from the four water level channels can be compared during operation (and are compared automatically by the RFWCS) to detect instrument malfunctions.

TABLE 1.10 STANDBY LIQUID CONTROL TANK VOLUME **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.						
Surveillance Requirements:	3.1.7.1						
LOCATION:	Panel 1-9-5	1-LPNL-925-0019	Local (Top of Tank)	LIMITS (AC) Notes 2, 3, 4	All Data is SAT/UNSAT	Review Initials	
	1-LI-63-1A (%) Notes 1, 2	1-LI-063-0001B (%) Notes 1, 2	Dipstick (inches) Note 1, 2			UO	Unit Supvr
Friday	90	N/A	N/A	≥ 82.5 percent OR ≥ 109.4 inches	SAT	DH	
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

(1) The required observation may be obtained from Panel 1-9-5, 1-LPNL-925-0019 or Dipstick method (1-SR-3.1.7.1). Only one of the three methods is required to be logged and the other two may be N/A'd.

(2) If tank level percentages indicate less than 85%, then the dipstick method should be used to verify proper volume requirements due to instrument loop inaccuracies which could exist.

(3) If the Tank level observations indicate any significant drift in level, then the reason for this observation should be investigated.

(4) Limits equate to a net injectable volume of ≥ 4000 gallons.

(5) For additional information relative to tank volume conversions Refer To 1-18.

TABLE 1.11 IRM INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 2, Readings are required at all times.											
Surveillance Requirements:	3.3.1.1.1 (f1.a)								Technical Requirements Manual TSRs:	3.3.5.4(f2.b) & 3.3.4.1 (f2.a, 2.b)		
LOCATION:	Panel 1-9-5										Review Initials	
	IRM RANGE (ENTER 1 THROUGH 10) Note 1								MAX DEV (AC)	All Data SAT/UNSAT Note 2	UO	Unit Supvr
	A	C	E	G	B	D	F	H				
Friday	7	7	7	7	7	7	7	7	2 Ranges with conditions of Note 1 satisfied	SAT	DH	
Saturday												
Sunday												
Monday												
Tuesday												
Wednesday												
Thursday												

(1) Maintain IRM's onscale (i.e., 25 ≤ IRM value ≤ 75) excluding downscale (i.e., IRM value < 25) on range 1.

(2) All Data SAT/UNSAT applies to the listed Channel Check Surveillances for the IRMs ONLY. If an IRM is Bypassed (Joy Stick), the "SAT/UNSAT" is marked as UNSAT (due to all the data taken not meeting the satisfactory requirements) with a note in the remarks explaining the reason the IRM is bypassed. For the column to be considered SAT, the Channel Checks have to be satisfactory, regardless of Mode or Condition. The term "Channel Check" is described in Tech Specs and the TRM as being, "A Channel Check shall be the qualitative assessment, by observation, of channel behavior during Operation. This determination shall include where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter." This holds true for performing channel checks for the IRMs. However, if an IRM is bypassed, it does not meet the channel check criteria and the column is UNSAT.

TABLE 1.12 SRM INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 2 with IRM's on range 2 or below, Mode 3	Readings are required at all times.												
Surveillance Requirements:	3.3.1.2.1, 3.3.1.2.3, 3.3.1.2.4, 3.3.1.2.5&6										TSR's 3.3.4.1 & 3.3.5.3			
LOCATION:	Panel 1-9-5 - 1-XR-92-7/45												Review Initials	
		SRM Count Rate (cps) Note 1				LIMITS (AC)	MAX (AC) Note 2	SRM System Signal to Noise Ratio 1-SR-3.3.1.2.4 SAT / INOP (Note 3 & 4)				All Data SAT/UNSAT (Note 5)		
	TIME	A	C	B	D			A	C	B	D		UO	Unit Supvr
Friday	0800	$3X10^3$	$5X10^3$	$9X10^3$	$2X10^3$	OPERABLE SRMs count rate must be ≥ 3 cps	OPERABLE SRMs count rate must be < 1 E6 cps	INOP	INOP	INOP	INOP	UNSAT	DH	
Saturday	0800													
Sunday	0800													
Monday	0800													
Tuesday	0800													
Wednesday	0800													
Thursday	0800													

(1) Count Rate should be recorded at all times. The SRM's will not be operable unless they are fully inserted or are partially withdrawn with the IRM's onscale. In either case, the operable detectors shall have their Surveillances performed including channel checks.

(2) IRM/SRM overlap should occur before SRMs > 1 E5 cps (should occur between 1 E4 cps & 1 E5 cps). Unexpected deviations from this relationship and excessive noise spikes shall be investigated.

(3) If any SRM's are being carried as INOP on LCO Tracking, Refer To table 3.3.1.2-1 to determine operability requirements.

(4) Signal to Noise Ratio is required to be determined by performing 1-SR-3.3.1.2.4 as follows: (SRM's will become INOP after the Surveillance time Frequency has been exceeded.)

- SAT
  - A. MODE 1 1-SR-3.3.1.2.4 is not required to be performed in Mode 1, therefore the operable SRMs will become "INOP" 24 Hours after the last satisfactory performance of 1-SR-3.3.1.2.4
  - B. MODE 2 Every 24 Hours after IRM's are on range 2 or below.
  - C. MODE 3 Every 24 hours
- INOP An SRM fails its Signal to Noise Ratio section of 1-SR-3.3.1.2.4.

(5) The All Data UNSAT column is UNSAT, if one or more SRM's are inoperable. Refer To Tech Spec 3.3.1.2.

TABLE 1.13 REACTOR COOLANT CONDUCTIVITY **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.			
Criteria Source:	Technical Requirements Manual TSR-3.4.1.1			
LOCATION:	Panel 1-9-4 - 1-CR-43-11A/12A		Review Initials	
	1-CE-43-11 (Point 1) (μmho) Note 1	MAX (AC)	UO	Unit Supvr
Friday	.12	1.0 μmho	DH	
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Whenever there is fuel in the reactor vessel and the continuous conductivity monitor is inoperable, periodic analysis of reactor coolant samples are required by the Technical Requirements Manual. If the reactor coolant continuous conductivity monitor becomes inoperable, notify Chemistry to sample according to 1-SI-4.6.B.1-4.

TABLE 1.14 SUPPRESSION POOL WATER LEVEL **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.			
Surveillance Requirements:	3.6.2.2.1				
LOCATION:	Panel 1-9-3			Review Initials	
	1-LI-64-54A (inches) Note 1	1-LI-64-66 (inches) Note 1	LIMITS (AC)	UO	Unit Supvr
Friday	-3.8	-3.2	≥-5.5 inches and ≤ -2.0 inches (Note 2)	DH	
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) The difference between readings of 1-LI-64-54A and 1-LI-64-66 should not exceed 2 inches. Deviations greater than 2 inches should be investigated.

(2) The Technical Specification requirements for Suppression Pool Water Level are ≥-6.25" and ≤ -1.0" with DW to Torus DP established AND ≥ -7.25" and ≤ -1.0" without DW to Torus DP established.

TABLE 1.15 BULK VOLUMETRIC AVERAGE DRYWELL AIR TEMPERATURE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.				
Surveillance Requirements:	3.6.1.4.1					
LOCATION:	ICS Computer or 1-TI-82				Review Initials	
	TIME	ICS Pt (CALC608) (°F) Note 1	1-TI-82 Value (°F) Note 1	LIMITS (AC)	UO	Unit Supvr
Friday	0800	104.28	N/A	≤ 150°F	DH	
Saturday	0800					
Sunday	0800					
Monday	0800					
Tuesday	0800					
Wednesday	0800					
Thursday	0800					

(1) The required observation of Bulk Volumetric Average Drywell Air Temperature may be obtained from ICS Pt (CALC608) OR 1-TI-82 Value. Only one of the two methods is required to be logged and the other method may be N/A'd.

TABLE 1.16 SUPPRESSION CHAMBER AIR TEMPERATURE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.				
Criteria Source:	Technical Requirements Manual TSR 3.3.5.1				
LOCATION:	Panel 1-9-3			Review Initials	
	TIME	1-XR-64-52 TE-64-52B (Point 1) (Note 1)	MAX (AC)	UO	Unit Supvr
Friday	0800	94.6	150°F (Note 2)	DH	
Saturday	0800				
Sunday	0800				
Monday	0800				
Tuesday	0800				
Wednesday	0800				
Thursday	0800				

(1) The digital reading from the recorder is the preferred reading to log. If the digital reading is not available, log the corresponding pen reading from the chart.

(2) This is the only instrument that measures the suppression chamber air temperature. The instrument check will consist of observing that the instrument exhibits an expected reading for the given operation of the suppression chamber.

TABLE 1.17 DRYWELL - SUPPRESSION CHAMBER DIFFERENTIAL PRESSURE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 (FROM 24 hours after THERMAL POWER is > 15% RTP following startup, TO 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to the next scheduled reactor shutdown.) Readings are required at all times.						
Surveillance Requirements:	3.6.2.6.1		Technical Requirements Manual TSRs: 3.3.5.1				
LOCATION:	Panel 1-9-3					Review Initials	
	TIME	1-PDI-64-137 (psid) ≤ 1.33 psid (Note 1)	1-PDI-64-138 (psid) ≤ 1.33 psid (Note 1)	LIMITS (AC)	MAX DEV (AC)	UO	Unit Supvr
Friday	0800	1.32	1.25	≥ 1.1 psid & ≤ 1.33 psid	0.10 psid	DH	
Saturday	0800						
Sunday	0800						
Monday	0800						
Tuesday	0800						
Wednesday	0800						
Thursday	0800						

(1) The Drywell-Suppression Chamber Differential Pressure should not exceed 1.33 psid.

TABLE 1.18 SUPPRESSION POOL BULK WATER TEMPERATURE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.						
Surveillance Requirements:	3.6.2.1.1							
LOCATION:	Panel 1-9-3					Panel 1-25-32	Review Initials	
	1-TI-64-161 (°F) Notes 1,3, & 4 (AC)	1-TR-64-161 1-TE-64-161L (°F) Notes 1,3, & 4 (AC)	1-TI-64-162 (°F) Notes 1,3, & 4 (AC)	1-TR-64-162 1-TE-64-162L (°F) Notes 1,3, & 4 (AC)	MAX DELTA TEMP between instruments (Note 2)	1-TI-64-55B Notes 1,3, & 4 < 95°F	UO	Unit Supvr
Friday	90.0	90.8	91	91.0	CR Instruments within 5°F of each other and < 95°F	92.6	DH	
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Limits:
A. ≤ 95°F when any OPERABLE intermediate range monitor (IRM) channel is > 70 on Range 7 and no testing that adds heat to the suppression pool is being performed.
B. ≤ 105°F when any OPERABLE IRM channel is > 70 on Range 7 and testing that adds heat to the suppression pool is being performed; and
C. ≤ 110°F when all OPERABLE IRM channels are ≤ 70 on Range 7

(2) This value is recorded to further validate the Suppression Pool Bulk Water Temperature indications when RHR Suppression Pool Cooling is not in service. If the Control Room Suppression Pool Bulk Water Temperature indications deviate more than 5°F from one another or if 1-TI-64-55B is greater than or equal to 95 deg F, RHR Suppression Pool Cooling may be required to be placed in service to obtain valid Suppression Pool Bulk Water Temperature readings (may indicate a potential thermal stratification problem, Refer To site response to GE SIL 106). Deviations in excess of 5°F for the MCR instruments is also an indication of a potential inoperable instrument; the Suppression Pool Bulk Water Temperature instruments affect LCO 3.3.3.1, "PAM Instruments" (CHANNEL CHECK surveillance requirement) and 1-TI-64-55B affects LCO 3.3.3.2, "Backup Control System.

(3) Suppression pool average temperature must be verified within the applicable limits and logged every 5 minutes when performing testing that adds heat to the suppression pool, accomplished by 1-SR-3.6.2.1.1.

(4) If both the primary and secondary indication of any SRV tailpipe is inoperable, per Technical Requirements Manual 3.2.F, the Suppression Pool Water Temperature must be monitored at least once per shift to observe any unexplained temperature rise which might be indicative of an open SRV.

TABLE 1.19 RHR DISCHARGE FILL PRESSURE / CORE SPRAY DISCHARGE FILL PRESSURE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.							
Criteria Source:	Technical Requirements Manual TSR 3.3.3.1.1 & 3.5.4.1							
LOCATION:	Panel 1-9-3						Review Initials	
	CS Loop I 1-PI-75-20 (psig)	RHR Loop I 1-PI-74-51 (psig)	RHR Loop II 1-PI-74-65 (psig)	CS Loop II 1-PI-75-48 (psig)	MIN (AC) Note 2	MAX Note 3	UO	Unit Supvr
Friday	50	50	60	45	For each OPERABLE subsystem:	For each OPERABLE subsystem: 100 psig	DH	
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Each pressure indicator provides indication of the discharge pressure for one RHR or Core Spray Loop. The instrument check will consist of observing that the instrument exhibits an expected reading for the given plant conditions.

(2) The Technical Requirements Manual requires a minimum discharge pressure for OPERABLE subsystems. Refer To TRM Section 3.5.4.

CS Loop I	1-PI-75-20	39 psig
CS Loop II	1-PI-75-48	39 psig
RHR Loop I	1-PI-74-51	~~35~~ psig
RHR Loop II	1-PI-74-65	~~48~~ psig

Deleted: 48

Deleted: 35

(3) MAX criteria is N/A for RHR/Core Spray subsystems in service or if keep fill aligned to CS & S. When a RHR/Core Spray subsystem is in a standby readiness condition the maximum discharge pressure is 100 psig. High discharge pressures with pumps secured may be indication of primary valve leakage.

TABLE 1.20 RHR SHUTDOWN COOLING SUBSYSTEM AND RECIRCULATION PUMP OPERATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	MODE 3, with reactor steam dome pressure less than the RHR low pressure permissive pressure. (Note 1) Readings are required at all times.
Surveillance Requirements:	3.4.7.1
LOCATION:	Panel 1-9-3 & Panel 1-9-4

		Recirc Pump Note 2		RHR Shutdown Cooling Subsystem Note 2 & 3				LIMITS (AC)	AIII Data SAT/UNSAT	Review Initials	
	TIME	A I/S	B I/S	A I/S	B I/S	C I/S	D I/S			UO	Unit Supvr
Friday	0800	X	X					≥ One RHR Shutdown Cooling Subsystem OR ≥ One Recirc Pump In Service	SAT	DH	
Saturday	0800										
Sunday	0800										
Monday	0800										
Tuesday	0800										
Wednesday	0800										
Thursday	0800										

(1) Technical Specification LCO 3.4.7 requires that two RHR Shutdown Cooling Subsystems be operable during this applicability. An operable Shutdown Cooling Subsystem consists of one RHR pump, associated heat exchanger, RHRSW pump capable of providing cooling water to its associated heat exchanger, associated piping and valves, all of which can be aligned in the Shutdown Cooling Mode for the removal of decay heat.

(2) An "X" shall be placed in the associated Column for the In Service Pump or Subsystem.

(3) To be considered as In Service, RHR System and its associated Shutdown Cooling Subsystems must be in the Shutdown Cooling Mode alignment with RHR SD CLG FLOW LOW annunciator (1-XA-55-3D, Window 11) RESET.

TABLE 1.21 REACTOR BUILDING VENTILATION RADIATION MONITORING **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.				
Surveillance Requirements:	3.3.6.2.1(f3, 4) and 3.3.7.1.1(f3,4)				
LOCATION:	Panel 1-9-2 - 1-RR-90-144			Review Initials	
	REACTOR ZONE EXHAUST RADIATION MONITOR		MAX DEV (AC)		
	RE-90-142A (Point 1)	RE-90-143A (Point 2)		UO	Unit Supvr
Friday	.423	.520	14 mr/hr	DH	
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
	REFUEL ZONE EXHAUST RADIATION MONITOR		20 mr/hr		
	RE-90-140A (Point 3)	RE-90-141A (Point 4)		UO	Unit Supvr
Friday	25.8	31.4		DH	
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

TABLE 1.22 RHRSW RADIATION MONITORS **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	During RHRSW Loop Operation Readings are required at all times.					
Criteria Source:	ODCM Section 1/2.1.1, Surveillance 2.1.1					
LOCATION:	Panel 1-9-2				Review Initials	
	1-RR-90-134					
	RHRSW SYS I HX OUTL (Point 1) 1-RE-90-133A (cpm)	RHRSW SYS I HX OUTL (Point 2) 1-RE-90-134A (cpm)	MAX (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday	152	206	Note 1	SAT	DH	
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

TABLE 1.23 RCW RADIATION MONITOR

APPLICABILITY:	During RCW releases				
Criteria Source:	ODCM Section 1/2.1.1, Surveillance 2.1.1				
LOCATION:	Panel 1-9-2			Review Initials	
	1-RR-90-134				
	RCW EFFLUENT (Point 4) 1-RE-90-132A (cpm)	MAX (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday	206	Note 1	SAT	DH	
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) The instrument check will consist of observing that the instruments exhibit an expected reading for the given plant conditions. MAX will be the alarm (RHRSW/RCW EFFLUENT RADIATION HIGH 1-RA-90-132 (Panel 1-9-3, 1-XA-55-3A, Window 3)) setpoint for the respective monitor. Instrument Shop should be contacted for most current setpoints as required.

TABLE 1.24 APRM/OPRM INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2 (Flow Bias Mode 1 only)	Readings are required at all times.												Review Initials	
Surveillance Requirements:	3.3.1.1.1 (f2a, 2b, 2c, 2e, 2f)				Technical Requirements Manual TSRs: 3.3.4.1 (f1a, 1b, 1c, 1d)										
LOCATION:	Panel 1-9-5 or Panel 1-9-14														
	APRM Flow Note 2				APRM (% FLUX) NOTE 1								Limit		
	1	3	2	4	Channel 1	OPRM/ VOTER (Note 3)	Channel 3	OPRM/ VOTER (Note 3)	Channel 2	OPRM/ VOTER (Note 3)	Channel 4	OPRM/ VOTER (Note 3)	MAX DEV	UO	Unit Supvr
Friday	27	31	30	29	1	SAT	1	SAT	1	SAT	1	SAT	5 %	DH	
Saturday													5 %		
Sunday													5 %		
Monday													5 %		
Tuesday													5 %		
Wednesday													5 %		
Thursday													5 %		

(1) MAX DEV of 5% means the difference between the highest and lowest of the four APRMs is no more than 5%.

(2) The flow bias signal to each APRM channel is read from the APRM displays on Panel 1-9-5 or Panel 1-9-14. Compare and record these readings. This constitutes the daily instrument check of the flow bias signal.

(3) An OPRM and APRM 2-out-of-4 VOTER channel check shall consist of the following:

A. The OPRM/VOTER channel being checked shall have its associated APRM chassis display placed in SELF-TEST mode and the "BROADCASTER" status checked for at least one cycle to ensure that no critical fault is present. Additionally, no critical fault detected during this cycle indicates the OPRM channel check is complete SAT. The APRM chassis display should be returned to the DISPLAY OFF mode when this check is complete.

B. No voter LED lamps shall be illuminated except for the green "ONLINE LED" lamps associated with each "UNBYPASS" APRM channel. The blue "BYPASSED LED" lamps and the green "ONLINE LED" lamps will be illuminated for any BYPASSED APRM for each of the voters.

C. The TRIP RELAY keylock switch shall be checked to be in the NORMAL position.

D. Place "SAT" or "UNSAT" in the space provided. If "UNSAT", contact System Engineering for support.

E. If a channel is INOP or in Test, then the associated indicating light on each 2/4 Voter Logic Chassis will be extinguished. The other remaining channels can still be successfully tested SELF-TEST (Refer To Note: 3a above) if their remaining three channels indicating lights are illuminated and TRIP RELAY keylock switches are in NORMAL positions.

TABLE 1.25 LPRM INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2 Readings are required at all times.													
Criteria Source:	Technical Requirements Manual TSR 3.3.5.3													
LOCATION:	Panel 1-9-14 and ICS Computer												Review Initials	
		# LPRMs BYPASSED (Note 1)								Total # LPRMs Bypassed (Note 2)	# LPRMs reading ≤ 3% on ICS (Note 3)	MAX DEV (AC) (Note 4)	All Data SAT/UNSAT		
DAY	TIME	APRM #2	LPRM #2	APRM #4	LPRM #4	APRM #3	LPRM #3	APRM #1	LPRM #1					UO	Unit Supvr
Friday	0800	0	0	2	0	2	1	2	0	7	7		SAT	DH	
Saturday	0800														
Sunday	0800														
Monday	0800											0			
Tuesday	0800														
Wednesday	0800														
Thursday	0800														

(1) Record number of LPRMs bypassed in the four APRM and LPRM cabinets as observed at Panel 1-9-14. Add these values together and record as Total # LPRMs Bypassed.

(2) Less than 20 LPRMs in OPERATE or Less than 3 per level for any APRM will result in a Rod Block and a trouble alarm on the display panel. This does not yield an automatic APRM trip, but does, however, make the associated APRM INOP.

(3) Record number of LPRMs reading less than 3% on the LPRM printout or display on ICS.

(4) MAX DEV is not required to be met when the APRMs are downscale; however, unexpected inconsistencies should be reported to the Reactor Engineer. The total number of LPRM's bypassed shall equal the number of LPRM's reading less than 3% on ICS.

TABLE 1.26 CHARCOAL BED BYPASS VALVE POSITION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 when > 25% RTP Readings are required at all times.								
Criteria Source:	ODCM, Section 1/2.2.2, Surveillance 2.2.2.4.1								
LOCATION:	Panel 1-9-53							Review Initials	
	1-FCV-66-117		1-FCV-66-113B		1-FCV-66-118		All Data SAT/UNSAT	UO	Unit Supvr
	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)			
Friday	OPEN	Valve is required to be OPEN (Note 1)	CLOSED	Valve is required to be CLOSED (Note 1)	OPEN	Valve is required to be OPEN (Note 1)	SAT	DH	
Saturday									
Sunday									
Monday									
Tuesday									
Wednesday									
Thursday									

(1) The ODCM requires the SJAE discharge to be routed through the charcoal absorbers when operating above 25% RTP. Notify the Unit Supervisor for Off-Gas valves not in the required position when required.

TABLE 1.27 SPENT FUEL POOL WATER LEVEL **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	During movement of Irradiated Fuel Assemblies in the Spent Fuel Pool Readings are required at all times.				
Surveillance Requirements:	3.7.6.1				
LOCATION:	Panel 1-9-4 and / or Reactor Building Elevation 639 local observation			Review Initials	
DAY	Spent Fuel Storage Pool Water Level. (Note 1) SAT / UNSAT	LIMITS (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday	SAT	The spent fuel storage pool water level shall be ≥ 21.5 ft over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.	SAT	DH	
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) Spent Fuel Storage Pool water level shall be verified to be above the low level alarm setpoint (FUEL POOL SYSTEM ABNORMAL (1-XA-55-4C, Window 1) for 1-LS-78-2B is reset) or verified by local observation to be ≥ 21.5' above the top of the stored irradiated fuel.

TABLE 1.28 SPENT FUEL POOL TEMPERATURE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Whenever irradiated fuel is in the Spent Fuel Pool Readings are required at all times.			
Criteria Source:	Technical Requirements Manual TSR-3.9.2.1			
LOCATION:	Panel 1-9-21		Review Initials	
	1-TRS-74-80 Point 21 (TE-78-8) Note 1, 4	LIMITS (AC)	UO	Unit Supvr
Friday	96.4	Spent Fuel Pool Temperature ≥ 72°F AND ≤ 125°F (Notes 2, 3)	DH	
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) The temperature displayed by 1-TR-78-80 is actually the temperature measured in the skimmer surge tank.

(2) Spent Fuel Pool Temperature greater than or equal to 72°F but less than or equal to 125°F is the Administrative LIMITS. Minimum pool temperature of 68°F will assure criticality analysis remains valid and the Technical Requirements Manual requires the Spent Fuel Pool water temperature to be less than or equal to 150°F.

(3) If it appears that the Spent Fuel Pool Temperature will exceed 125°F, Refer To 1-AOI-78-1.

(4) A temporary temperature monitoring device can be used to determine Spent Fuel Pool Temperature when 1-TRS-74-80-Point 21 becomes unavailable.

TABLE 1.29 MAIN STEAM LINE FLOWS **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times. Surveillance Requirements: 3.3.6.1.1 (f1c)

LOCATION:		1-PNLA-009-0086		1-PNLA-009-0085		1-PNLA-009-0084		1-PNLA-009-0083		MAX DEV	Review Initials	
DAY	STEAM LINE	INSTRUMENT	VALUE (psid)	INSTRUMENT	VALUE (psid)	INSTRUMENT	VALUE (psid)	INSTRUMENT	VALUE (psid)		UO	UNIT SUPVR
Friday	A	1-PDIS-001-0013D	5	1-PDIS-001-0013C	5	1-PDIS-001-0013B	5	1-PDIS-001-0013A	5		DH	
	B	1-PDIS-001-0025D	5	1-PDIS-001-0025C	5	1-PDIS-001-0025B	5	1-PDIS-001-0025A	5		DH	
	C	1-PDIS-001-0036D	5	1-PDIS-001-0036C	5	1-PDIS-001-0036B	5	1-PDIS-001-0036A	5		DH	
	D	1-PDIS-001-0050D	5	1-PDIS-001-0050C	5	1-PDIS-001-0050B	5	1-PDIS-001-0050A	5		DH	
Saturday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Sunday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Monday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Tuesday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Wednesday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Thursday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				

Notes 1 & 2

NOTES ARE ON THE FOLLOWING PAGE!

DAY SHIFT WEEK: _This Week_ to _Next Week__

The following notes are for the Main Steam Line Flow reading on the previous page:

(1) For the four (4) PDIS instruments on the same steam line the MAX DEV is 10 psid. As an additional check, to detect a faulty Flow Element, the maximum deviation between the highest and lowest reading of the sixteen (16) PDIS instruments in the four (4) Main Steam Lines is 35 psid (readings for PDIS instruments on steam lines C and D are on the following page).

(2) The Primary Containment Isolation setpoint for these instruments is 112.5 psid.

TABLE 1.30 REACTOR VESSEL STEAM DOME PRESSURE INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1 & 2 Readings are required at all times.

Surveillance Requirements: 3.3.1.1.1(f3), 3.3.3.1.1, 3.4.10.1

LOCATION:		ICS (Notes 1 & 4)		MAX DEV (AC)	1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083	MAX DEV (AC)	MAX LIMIT	All Data SAT/UNSAT	Review Initials	
					D	C	B	A					
Reference Leg	TIME (Note 4)	3-74A	3-74B		1-PIS-003-0022D	1-PIS-003-0022C	1-PIS-003-0022BB	1-PIS-003-0022AA				UO	Unit Supvr
Friday	0800	779	780	40 psig (Note 2)	940	940	940	930	60 psig (Note 2)	Note 3	SAT	DH	
Saturday	0800												
Sunday	0800												
Monday	0800												
Tuesday	0800												
Wednesday	0800												
Thursday	0800												

(1) These readings may be obtained from ICS using the Single Value Display or from the ATU output voltage translated into a PRESSURE Signal for the specific instruments. For ICS, type in "SVD" for Single Value Display, enter the point desired as "3-74A", record reading, select F4, enter "3-74B", record the second reading.

(2) 3-74A and 3-74B have a Maximum allowable deviation of 40 psig, AND 1-PIS-003-0022D, 1-PIS-003-0022C, 1-PIS-003-0022BB, & 1-PIS-003-0022AA, have a Maximum allowable deviation of 60 psig. No comparison is required between the 3-74A(B) and 1-PIS-3-22D(C)(BB)(AA).

(3) 3-74A and 3-74B SHALL be ≤ 1050 psig. 1-PIS-003-0022D, 1-PIS-003-0022C, 1-PIS-003-0022BB, & 1-PIS-003-0022AA SHALL be ≤ 1090 psig.

(4) 3-74A and 3-74B are to be recorded at 0800. The Auxiliary Instrument Room readings are not required to be taken at precisely 0800.

TABLE 1.31 REACTOR WATER LEVEL INSTRUMENTATION -WIDE RANGE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

Part 1 - APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.
Surveillance Requirements: 3.3.6.1.1(f1a)

LOCATION:	1-PNLA-009-0083	1-PNLA-009-0084	1-PNLA-009-0085	1-PNLA-009-0086	MAX DEV Note 4 (AC)	Review Initials	
Ref. Leg	A	B	C	D			
	1-LIS-003-0056A (in.)	1-LIS-003-0056B (in.)	1-LIS-003-0056C (in.)	1-LIS-003-0056D (in.)		UO	Unit Supvr
Friday	33	31	30	33	7.5 inch Deviation Between All Instruments	DH	
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

Part 2 - APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.
Surveillance Requirements: 3.3.4.2.1, 3.3.5.1.1(f1a,2a,3a, 4a,5a), 3.3.5.2.1(f1)

LOCATION:	1-PNLA-009-0081		1-PNLA-009-0082		1-9-5 (Note 3)				
Ref. Leg	A	B	C	D	A	D			
	1-LIS-003-0058A (in.)	1-LIS-003-0058B (in.)	1-LIS-003-0058C (in.)	1-LIS-003-0058D (in.)	1-LI-3-58A (in.)	1-LI-3-58B (in.)		UO	Unit Supvr
Friday	31	34	32	36	35	35		DH	
Saturday									
Sunday									
Monday									
Tuesday									
Wednesday									
Thursday									

(1) Refer To Attachment 4 during off-normal operating conditions.
(2) ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination.
(3) Failure of 1-LI-3-58A or 1-LI-3-58B to meet MAX DEV in Modes 1 & 2 also affects LCO 3.3.3.1, "PAM Instrumentation."
(4) Due to variable leg tap locations, during single Recirculation loop operation MAX DEV may be applied separately to comparison of 1-LIS-003-0056A to 1-LIS-003-0056B; 1-LIS-003-0056D to 1-LIS-003-0056C; 1-LI-3-58B, 1-LIS-003-0058C, and 1-LIS-003-0058D and comparison of 1-LI-3-58A, 1-LIS-003-0058A, and 1-LIS-003-0058B.

TABLE 1.32 REACTOR WATER LEVEL INSTRUMENTATION - NARROW RANGE (UNCOMPENSATED) **DAY SHIFT** WEEK: _This Week_ to _Next Week__

Part 1 - APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.				Mode 3 Readings are required at all times.			
Surveillance Requirements:	3.3.1.1.1(f4), 3.3.6.1.1(f2a,5h), 3.3.6.2.1(f1), 3.3.7.1.1(f1)				3.3.6.1.1(f6b)			
LOCATION:	1-PNLA-009-0083	1-PNLA-009-0084	1-PNLA-009-0085	1-PNLA-009-0086			Review Initials	
Reference Leg	Leg A/B Instruments		Leg C/D Instruments		MAX DEV (AC) Note 3	All Data SAT/UNSAT	UO	Unit Supvr
	A	B	C	D				
	1-LIS-003-0203A (in.)	1-LIS-003-0203B (in.)	1-LIS-003-0203C (in.)	1-LIS-003-0203D (in.)				
Friday	32	32	32	32	5.0 inch Deviation Between All Instruments AND 3.5 inch Deviation Between All Instruments on the A/B Leg AND 3.5 inch Deviation Between All Instruments on the C/D Leg	SAT	DH	
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

Part 2 - APPLICABILITY:	Mode 1 and Modes 2 & 3 when Reactor steam dome pressure > 150 psig Readings are required at all times.								
Surveillance Requirements:	1-LIS-003-0208A-D = 3.3.2.2.1, 3.3.5.1.1(f3c), 3.3.5.2.1(f2) 1-LIS-003-0184 & 185 = 3.3.5.1.1(f4d,5d)								
LOCATION:	1-PNLA-009-0081			1-PNLA-009-0082					
Reference Leg	Leg A/B Instruments			Leg C/D Instruments					
	A	B	B	C	C	D			
	1-LIS-003-0208A (in.)	1-LIS-003-0208B (in.)	1-LIS-003-0184 (in.)	1-LIS-003-0185 (in.)	1-LIS-003-0208C (in.)	1-LIS-003-0208D (in.)		All Data SAT/UNSAT	UO	Unit Supvr
Friday	31	30	29	35	34	33		SAT	DH	
Saturday										
Sunday										
Monday										
Tuesday										
Wednesday										
Thursday										

(1) Refer To Attachment 4 during off-normal operating conditions.
(2) ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination.
(3) All instruments on the A/B(C/D) Leg should read within 3.5 inches of each other AND within 5.0 inches of C/D(A/B) Leg instruments.

TABLE 1.33 REACTOR WATER LEVEL INSTRUMENTATION - POST ACCIDENT RANGE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.								
Surveillance Requirements: 3.3.5.1.1(f2e)								
LOCATION:	1-PNLA-009-0082	1-PNLA-009-0081	1-9-3 (Notes 3, 4)			MAX DEV (AC) Note 5	Review Initials	
Reference Leg	C	B	B	C	C		UO	Unit Supvr
	1-LIS-003-0062A (in.)	1-LIS-003-0052 (in.)	1-LI-3-52 (in.)	1-LI-3-62A (in.)	1-LR-3-62 (in.)			
Friday	>32	>32	>32	>32	>32	10.0 inches (When on scale)	DH	
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Refer To Attachment 4 during off-normal operating conditions.

(2) ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination.

(3) Failure of 1-LI-3-52 or 1-LI-3-62A to meet MAX DEV in Modes 1 & 2 also affects LCO 3.3.3.1, "PAM Instrumentation."

(4) 1-LR-3-62 comparison is valid only in the -168 to +32 inch range.

(5) Due to variable leg tap locations, during single loop Recirculation pump operation MAX DEV may be applied separately to comparison of 1-LIS-003-0052 to 1-LI-3-52 and comparison of 1-LIS-003-0062A, 1-LI-3-62A, and 1-LR-3-62. These indicators are calibrated for POST ACCIDENT condition (Recirculation Pumps off). Therefore, a reading of > 32 inches or full scale, is acceptable at Normal Operating Conditions. (Refer To P&L 3.3B)

TABLE 1.34 DRYWELL PRESSURE INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.							
Surveillance Requirements: 3.3.6.2.2							
LOCATION:	1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083		Review Initials	
	1-PIS-064-0056D (psig)	1-PIS-064-0056C (psig)	1-PIS-064-0056B (psig)	1-PIS-064-0056A (psig)	MAX DEV	UO	Unit Supvr
Friday	1.4	1.4	1.35	1.4		DH	
Saturday							
Sunday							
Monday					0.2 psig		
Tuesday							
Wednesday							
Thursday							

TABLE 1.35 CORE SPRAY SPARGER DIFFERENTIAL PRESSURE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.					
Criteria Source:	Technical Requirements Manual TSR 3.3.3.3.1					
LOCATION:	1-LPNL-925-0057				Review Initials	
	1-PDIS-075-0028 (psid) Note 1	1-PDIS-075-0056 (psid) Note 1	MIN (AC) Note 2	All Data SAT/UNSAT	UO	Unit Supvr
Friday	3.3	3.4	For each OPERABLE subsystem: DP > 2.0 psid when > 2% RTP OR DP within ± 0.2 psid of Chart Value when ≤ 2% RTP	SAT	DH	
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

(1) There is one core spray sparger to reactor pressure differential pressure indicating switch for each core spray subsystem. Each instrument indicates the pressure between its respective core spray loop and the reactor vessel pressure. The Technical Requirements Manual requires the instruments to alarm at 2.0 ± 0.4 psid.

(2) During reactor operation at greater than 2% rated thermal power, indicated differential pressure for each OPERABLE subsystem shall be greater than 2.0 psid. During normal reactor operation at greater than 2% rated thermal power, with core spray in standby readiness, 1-PDIS-075-0028 should read between 3.0 to 4.0 psid and 1-PDIS-075-0056 should read between 3.0 to 6.0 psid. When the Reactor is operating at less than or equal to 2% rated thermal reactor power, the instrument readings should be within ± 0.2 psid of the reading on chart below, based on Reactor water temperature. To determine the correct expected d/p reading, use the chart temperature closest to the actual temperature of the reactor water (i.e. if reactor water temperature is 175°-200°, use 200°). Since no independent instruments measuring the same variable exist, the instrument check will consist of observing that the instrument exhibits an expected reading for the given plant conditions.

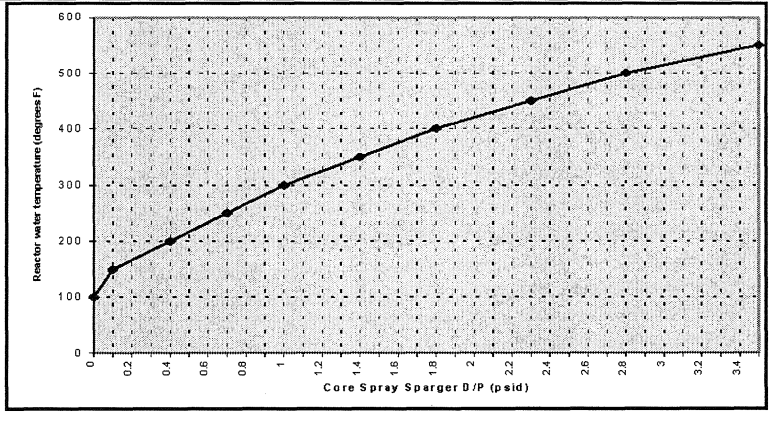

TABLE 1.37 NITROGEN MAKEUP REQUIREMENTS **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Whenever Containment is Inerted			
Criteria Source:	TSR 3.6.5.1 & FSAR 5.2.3.8 & 5.2.4.7			
	Primary Containment Nitrogen Consumption and Leakage 1-SI-4.7.A.2.a		Review Initials	
	When Containment is Inerted, Verify the SI is in progress for associated day and initial performed column. (N/A the "PERFORMED" column when SI performance is not required.)	Performed	UO	Unit Supvr
Friday		DH	DH	
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

DAY SHIFT WEEK: _This Week_ to _Next Week__

TABLE 1.38 ROD PATTERN CONTROL 1-SR-3.1.6.1 TABLE 1.39 JET PUMP MISMATCH AND OPERABILITY 1-SR-3.4.2.1

APPLICABILITY:	Modes 1 & 2 when ≤ 10% RTP Readings are required at all times	Modes 1 & 2 Readings are required at all times with both Recirculation Pumps inservice.	Modes 1 & 2 Readings are required at all times.	Review Initials	
Surveillance Requirements:	3.1.6.1	3.4.1.1	3.4.2.1		
DAY	Rod Pattern Control 1-SR-3.1.6.1 (Note 1) SAT / UNSAT / N/A	Recirculation Loop Jet Pump Flow Mismatch 1-SR-3.4.2.1 (Note 2 & 3) SAT / UNSAT / N/A	Jet Pump Mismatch and Operability 1-SR-3.4.2.1 (Note 2 & 3) SAT / UNSAT / N/A	UO	Unit Supvr
Friday	SAT	SAT	N/A	DH	
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) Verify 1-SR-3.1.6.1 completed SAT for the associated day when ≤ 10% RTP in Modes 1 & 2. (SR should be performed between 0700-1100 hrs, to ensure specific frequency interval is met.)

(2) 1-SR-3.4.2.1 is divided into 2 sections, Recirculation Loop Jet Pump Flow Mismatch and Jet Pump Operability. SR should be performed between 0700-1100 hrs, to ensure specific frequency interval is met or when the conditions are met.

A. Recirculation Loop Jet Pump Flow Mismatch — Verify the applicable SR section is completed SAT within 24 hours after BOTH Recirc Pumps are placed in service.

B. Jet Pump Operability — Verify the applicable SR section is completed SAT for the associated day when ≥ 25% RTP.

(3) N/A requirements at the end of the shift, if the SR is not performed during the shift due to the plant conditions not being met.

TABLE 1.40 PRIMARY CONTAINMENT O_2 CONCENTRATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 (FROM 24 hours after THERMAL POWER is > 15% RTP following startup, TO 24 hours prior to reducing THERMAL POWER to< 15% RTP prior to the next scheduled reactor shutdown.) Readings are required at all times.						
Surveillance Requirements:	3.6.3.2.1 & TRM 3.6.2						
LOCATION:	Panel 1-9-55					Review Initials	
	IN SERVICE	1-XR-76-110 (%) Notes 1, 2, 3			LIMITS (AC) Note 4		
	Time Note 1	Note 2	Drywell	Suppr Chamber		UO	Unit Supvr
Monday		Time readings taken			≤ 3.5% O_2 (Note 4)		
		Reading					

(1) Verify or place O2 Analyzer in service per 1-OI-76 section for "Placing in Service H2/O2 analyzer for 1-SR-2 Readings" and record time.

(2) Record the time that the Drywell and Suppr Chamber readings are taken. After all data is taken, place O2 Analyzer in standby per 1-OI-76 section for "Placing in Service H2/O2 analyzer for 1-SR-2 Readings".

(3) When monitors fail to provide adequate oxygen concentration monitoring, 1-SR-3.6.3.2.1 provides an alternate method for oxygen concentration monitoring.

(4) The Technical Specification requirements for Primary Containment O_2 Concentration is < 4.0 %.

TABLE 1.42 CONTROL ROOM AIR SUPPLY RADIATION MONITORS **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Any Unit in MODES 1, 2 OR 3, OR operations with a potential for draining the reactor vessel (OPDRVs).									
Criteria Source:	3.3.7.1.1									
LOCATION:	Note 1								Review Initials	
	RM-90-259A (cpm) Note 2			RM-90-259B (cpm) Note 2			MAX (AC)	MAX DEV (AC)		
	Beta	Gamma	Beta + Gamma	Beta	Gamma	Beta + Gamma			UO	Unit Supvr
Friday	60.0	37.0	138.0	32.1	31.1	97.0	250 cpm (Note 3)	100 cpm (Note 3)	DH	
Saturday										
Sunday										
Monday										
Tuesday										
Wednesday										
Thursday										

(1) The control room air supply radiation monitors are located in the mechanical equipment rooms on elevation 3C.

(2) Use the touch pad's up arrow to scroll thru the screens to obtain reading of each detector.

(3) The "MAX" and "MAX DEV" requirements are compared with the associated channel between each detector. (i.e. compare the beta channel of RM-90-259A with the beta channel of 0-RM-90-259B).

TABLE 1.43 CONTROL ROOM EMERGENCY VENTILATION TIME IN SERVICE RECORD **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	ANY UNIT IN MODES 1 OR 2 OR During Operations with a Potential for Draining the Reactor Vessel (OPDRVs)					
Criteria Source:	3.7.3.2, 5.5.7					
LOCATION:	N/A				Review Initials	
	COL A CREV Time in Service during shift (hours) Note 1	COL B Previous Shift Running Total of CREV Time in Service (hours) Note 2	COL C.1 RUNNING TOTAL of CREV Time in Service COL A + COL B (hours) Note 3	LIMITS Note 4	UO	Unit Supvr
CREV A						
Friday	0	448.06	448.06	650 Total Inservice hours	DH	SF
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
CREV B						
Friday	0	86.66	86.66	650 Total Inservice hours	DH	SF
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

(1) At end of shift, record under Column A the shift inservice time the CREV was in service.

(2) Record under Column B the previous shift's RUNNING TOTAL of CREV Time in Service as indicated for previous NIGHT SHIFT under Column C.2 of Attachment 2.

(3) Record under Column B Previous Shifts Running Total of CREV Time in Service for next night shift.

(4) RUNNING TOTAL of CREV Time in Service is zeroed after completion of required testing. Ventilation Filter Testing Program requires CREV system testing after 720 hours service and following significant fire, painting, or chemical release in the ventilation zone. The Administrative limit is 650 inservice hours.

TABLE 1.44 STANDBY GAS TREATMENT SYSTEM (SBGT) TIME IN SERVICE RECORD **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	ANY UNIT IN MODES 1 OR 2 OR During Operations with a Potential for Draining the Reactor Vessel (OPDRVs)
Criteria Source:	3.6.4.3.2, 5.5.7

LOCATION: N/A					Review Initials	
	COL A	COL B	COL C.1			
SBGT A	SBGT Time in Service during shift (hours) Note 1	Previous Shift Running Total of SBGT Time in Service (hours) Note 2	RUNNING TOTAL of SBGT Time in Service COL A + COL B (hours)Note 3	LIMITS Note 4	UO	Unit Supvr
Friday	3.55	419.46	423.01	650 Total Inservice hours	DH	SF
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
SBGT B						
Friday	0	396.07	396.07	650 Total Inservice hours	DH	SF
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
SBGT C						
Friday	0	492.15	492.15	650 Total Inservice hours	DH	SF
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

NOTES ARE ON NEXT PAGE

DAY SHIFT WEEK: _This Week_ to _Next Week__

The following notes are for the SBGT reading on the previous page:

(1) At end of shift, record under Column A the shift inservice time the SBGT was in service.

(2) Record under Column B, the previous shift's RUNNING TOTAL of SBGT Time in Service as indicated for previous NIGHT SHIFT under Column C.2 of Attachment 2.

(3) Record in Column B, Previous Shifts Running Total of SBGT Time in Service for next night shift.

(4) RUNNING TOTAL of SBGT Time in Service is zeroed after completion of required testing. Ventilation Filter Testing Program requires SBGT system testing after 720 hours service and following significant fire, painting, or chemical release in the ventilation zone. The Administrative limit is 650 inservice hours.

TABLE 1.45 RESERVOIR WATER LEVEL **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	ANY UNIT IN MODES 1, 2, OR 3						
Criteria Source:	TSR 3.3.6.3, FSAR 5.3.3.5						
LOCATION:	ICS COMPUTER					Review Initials	
	Time	NOTES 1 AND 3	MIN / MAX (AC)	12 HOUR DIFFERENCE	Maximum Difference	UO	Unit Supvr
Friday	0800	. 555.08	≥ 550 Ft. AND ≤ 558 Ft. (Notes 2, 3, & 4)	.25	± 0.75 Ft (9 INCHES) (Note 5)	DH	
	1400	555.02		.09		DH	
Saturday	0800						
	1400						
Sunday	0800						
	1400						
Monday	0800						
	1400						
Tuesday	0800						
	1400						
Wednesday	0800						
	1400						
Thursday	0800						
	1400						

(1) Whenever 0-LS-23-75A or 0-LS-23-75B is declared inoperable, and alternate manual surveillance program using plant personnel to monitor reservoir level once per 8 hours may be used in lieu of restoring the inoperable instrumentation to OPERABLE status.

(2) [NRC/C] Notify SM, Unit 2/3 Operator if reservoir level is ≥558 ft. RHRSW/EECW flood doors, manholes, and access hatches are required to be closed or associated pumps declared inoperable. REFER TO 0-AOI-100-3.[Inspection Report 86-25]

(3) [QA/C] Phone Wheeler Dam (9-1-256-314-4800/4811/4812) or River System Operations (5-632-7063 or 9-1-865-632-7063) or go to the TVA Reservoir water level web page and record reservoir level. If the level reaches 558 ft. or if flood water enters the Service Building Corridor, the doors and hatches listed in Att. 1/2, of 0-AOI-100-3 must be closed.[CAQR BF 890330]

(4) Reservoir level is verified above 550' once every eight hours. This level verifies Secondary Containment integrity is met for the Raw Cooling Water System discharge piping. Notify Shift Manager/Unit Supervisor and Unit 2/3 Operators if reservoir level is ≤550 ft. IF Reservoir Level is verified, via Wheeler Dam, to be below 550 ft, VERIFY RCW is in service on all three units in accordance with OI-24. If the reservoir level cannot be restored to ≥550 ft within 12 hours, Secondary Containment integrity may not be assured and LCO 3.6.4.1.A shall be entered. A Narrative Log entry shall be made (at the time of discovery) to this effect and carried as an open item until reservoir level is restored.

(5) If the 6 hour or the 12 hour difference is greater than ± .75ft (± 9 inches) change, then dispatch personnel to verify gate level and adjust Gate 3 as required per 3-OI-27.

TABLE 1.46 RESERVOIR WATER TEMP DOWNSTREAM AVERAGE **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	At All Times								
Criteria Source:	NPDES, DSN101, Area Plan 0800								
LOCATION:	ICS Computer, OR TSC Computer							Review Initials	
	Time	Hourly Downstream Average	MAX	24-Hour Downstream Average	MAX	24-Hour River Temperature Rise	MAX	UO	Unit Supvr
Friday	0800	87.3	Note 1	86.9	90°F	4.2	10°F	DH	
	1400	87.0		87.0		4.1		DH	
Saturday	0800								
	1400								
Sunday	0800								
	1400								
Monday	0800								
	1400								
Tuesday	0800								
	1400								
Wednesday	0800								
	1400								
Thursday	0800								
	1400								

(1) Each shift, the ICS Computer, or the TSC Computer shall be reviewed to ensure the limits are not exceeded and no trends are apparent which might cause the limits to be exceeded before the next shift reading.
(2) Any violation of these limits requires consulting SPP-5.5 "Environmental Control" and notification of the Shift Manager / Unit Supervisor.
(3) The 1-Hour average downstream plant-induced water temperature should not exceed 93°F. The 1-Hour Average downstream plant-induced water temperature should not exceed 92°F for more than 6 hours during any 24 hour period.

TABLE 1.47 LIQUID NITROGEN TANK (CAD) **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	When Any Unit is in MODES 1 or 2						
Criteria Source:	3.6.3.1, FSAR 5.2						
LOCATION:	Panel 1-9-54 and Panel 1-9-55					Review Initials	
	Panel 1-9-54		Panel 1-9-55				
	0-LI-84-2A (%) Note 1	0-PI-84-3A	0-LI-84-13A (%) Note 1	0-PI-84-14A		UO	Unit Supvr
Friday	100	114	100	113	Level ≥ 75 Percent Pressure ≥ 100 psig	DH	
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

(1) A level indication of 75% corresponds to a tank volume of 2,500 gallons.

TABLE 1.48 METEOROLOGICAL INSTRUMENTATION **DAY SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	AT ALL TIMES (Note 2)							
Criteria Source:	TSR 3.3.7.1							
LOCATION:	ICS Computer (Note 1)						Review Initials	
	WIND DIRECTION			WIND SPEED				
	91M	46M	10M	91M	46M	10M	UO	Unit Supvr
Friday	347	257	335	2.1	2.6	1.0	DH	
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

	AMBIENT AIR Δ TEMPERATURE			
	10VS46	10VS91		
Friday	-7.25	-10.33	DH	
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Back up MET data can be obtained from the Met. Station recorders and printers, or TSC line printer.

(2) [NRC/C] Daily readings of the wind speed, wind direction and ambient air temperature gradient will be logged on 1-SR-2 only. Wind speed and direction will be recorded for elevations 10M, 46M, and 91M. Ambient air temperature gradient will be determined for elevation difference between 10M to 46M, and 10M to 91M.

END OF DAY SHIFT

TABLE 2.1 CORE THERMAL POWER AND CORE POWER DISTRIBUTION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 when ≥ 25% RTP Record the readings as soon as possible after the generator breaker has been closed.										
Criteria Source:	3.2.1.1; 3.2.2.1; 3.2.3.1; DEFINITIONS SECTION 1.1 - FSAR 3.7.7										
LOCATION:	ICS Computer (Case Summary - CSUM)									Review Initials	
DAY	TIME Note 2	Core Thermal Power (MWt)	Percent Power (% RTP)	LIMIT (AC)	MFLCPR Note 3	MAPRAT Note 3		MFLPD Note 3	LIMIT (AC)	Unit Operator	Unit Supvr
Friday	2000			Notes 1 & 2					Notes 3, 4, & 5		
	2200										
	0000										
	0200										
	0400										
	0600										
Saturday	2000										
	2200										
	0000										
	0200										
	0400										
	0600										
Sunday	2000										
	2200										
	0000										
	0200										
	0400										
	0600										
Monday	2000										
	2200										
	0000										
	0200										
	0400										
	0600										

NOTES ARE FOLLOWING THE TABLE!

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TABLE 2.1 CORE THERMAL POWER AND CORE POWER DISTRIBUTION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Mode 1 when ≥ 25% RTP
Record the readings as soon as possible after the generator breaker has been closed.

Criteria Source: 3.2.1.1; 3.2.2.1; 3.2.3.1; DEFINITIONS SECTION 1.1 - FSAR 3.7.7

LOCATION: ICS Computer (Case Summary - CSUM)

DAY	TIME Note 2	Core Thermal Power (MWt)	Percent Power (% RTP)	LIMIT (AC)	MFLCPR Note 3	MAPRAT Note 3		MFLPD Note 3	LIMIT (AC)	Review Initials Unit Operator	Unit Supvr
Tuesday	2000			Notes 1 & 2					Notes 3, 4, & 5		
	2200										
	0000										
	0200										
	0400										
	0600										
Wednesday	2000										
	2200										
	0000										
	0200										
	0400										
	0600										
Thursday	2000										
	2200										
	0000										
	0200										
	0400										
	0600										

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NOTES ARE ON THE FOLLOWING PAGE!

NIGHT SHIFT WEEK: _This Week_ to _Next Week__

(1) Maximum steady-state power averaged over 8 hours is 3458 MWt. However, the reactor should not be operated such that the steady-state power (as indicated by 30 min, 1 hr avg, or 2hr avg) is above 3458 MWt. Minor variations in process parameter inputs may result in individual edits or indications above 3458 MWt while true steady-state thermal power is ≤ 3458 MWt. Normal variation is within 5 MWt of steady-state core thermal power. Running averages (from core thermal power summary on the Nuclear Heat Balance display) are not as sensitive. The following guidance is provided:

A. If power is > 3463, reduce power.

B. If power is 3458 to 3463 MWt after allowing time for recent perturbations to settle, reduce power and evaluate the trend.

C. If ANY running average is > 3458 MWt, reduce power.

(2) Core Thermal Power is normally recorded every 2 hours when required. However, these readings may be marked N/A during TIP trace runs, control rod pattern adjustments, or anytime Core Monitoring System is blocked and/or < 25% power. The Reactor Engineer is responsible for monitoring Core Thermal Limits. Monitoring of Core Thermal Power and other Core Thermal Limits is recommended following completion of planned rise in power and following any unexpected power change. If core monitoring software becomes unavailable, the Shift Manager and Reactor Engineer shall determine the appropriate frequency for monitoring Core Thermal Power but should not exceed 24 hours, using backup core monitoring computer, and taking into consideration current core conditions and margin to thermal limits. Power changes should not normally be made without the core monitoring software being available.

(3) Consult Reactor Engineer when value ≥ 0.985.

(4) If any Turbine Bypass valve(s) are inoperable or a Recirculation Loop is out of service, contact the Reactor Engineer and Refer To the COLR for Turbine Bypass Out of Service (TBOOS) or Single Loop Operation (SLO) limits which must be applied.

(5) MAPRAT within limits is used to verify that all APLHGRs are within the limits specified within the COLR.

MFLPD and MFDLRX within limits are used to verify that all LHGRs are within the limits specified within the COLR.

MFLCPR within limits is used to verify that all MCPRs are within the limits specified within the COLR.

TABLE 2.2 DRYWELL UNIDENTIFIED LEAKAGE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-6

Preferred reading times are 2000, 0000 and 0400	Col. A.1 Current Point 3 (1-FQ-77-6) Reading (gals) Notes 1, 2	Col. B.1 Previous Days 1-FQ-77-6 Reading from Col. A.1 (gals) Note 2	Col. C.1 Gallons Pumped Col. A.1 - Col. B.1 Note 2	Col. D.1 Current Time Note 2	Col. E.1 Previous Days Time from Col. D.1 Note 2	Col. F.1 Elapsed Time Col. D.1 - Col. E.1 (min) Note 2	Col. G.1 Current Leakrate Col. C.1 ÷ Col. F.1 (gpm) Note 2	Col. H.1 Previous Days Leakrate from Col. G.1 (gpm) Note 2	Col. I.1 Change in Leakrate Col. G.1 - Col. H.1 (gpm) Note 2, 3	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 4
Friday										Col. G.1 ≤ 5.0 gpm AND Col. I.1 ≤ 2 gpm (Note 3)		
Saturday												
Sunday												
Monday												

NOTES ARE ON THE FOLLOWING PAGE!

Tuesday												

TABLE 2.2 DRYWELL UNIDENTIFIED LEAKAGE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-6

Preferred reading times are 2000, 0000 and 0400	Col. A.1	Col. B.1	Col. C.1	Col. D.1	Col. E.1	Col. F.1	Col. G.1	Col. H.1	Col. I.1		Review Init	
	Current Point 3 (1-FQ-77-6) Reading (gals) Notes 1, 2	Previous Days 1-FQ-77-6 Reading from Col. A.1 (gals) Note 2	Gallons Pumped Col. A.1 - Col. B.1 Note 2	Current Time Note 2	Previous Days Time from Col. D.1 Note 2	Elapsed Time Col. D.1 - Col. E.1 (min) Note 2	Current Leakrate Col. C.1 ÷ Col. F.1 (gpm) Note 2	Previous Days Leakrate from Col. G.1 (gpm) Note 2	Change in Leakrate Col. G.1 - Col. H.1 (gpm) Note 2, 3	LIMITS (AC)	UO	Unit Supvr Note 4
Wednesday												
Thursday												

(1) Manually pump down sump per 1-OI-64 prior to reading. To record gallons, disregard any decimal point on recorder point 3 indication. Record right most five digits as gallons of flow. Example: Record 0065432.1 as 54321.

(2) May be N/A'd if Surveillance Requirement is being met with the performance of 1-SR-3.4.4.1 or 1-SR-3.4.4.1-A and a note stating such shall be made in the remarks section of this SR. When initial TOTALIZE reading is taken and no previous reading exists, all other entries except for Col. A.1 and D.1 should be N/A'd.

(3) Acceptance Criteria for Col. I.1 is only applicable when in Mode 1 for > 24 hours.

(4) Unit Supervisor shall Independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

TABLE 2.3 DRYWELL IDENTIFIED LEAKAGE AND TOTAL LEAKAGE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-16

Preferred reading times are 2000, 0000 and 0400	Col. A.2 Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Col. B.2 Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Col. C.2 Gallons Pumped Col. A.2 - Col. B.2 Note 2	Col. D.2 Current Time Note 2	Col. E.2 Previous Days Time from Col. D.2 Note 2	Col. F.2 Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Col. G.2 Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Col. H.2 Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Col. I.2 Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 4
Friday										Col. I.2 ≤ 30.0 gpm		
Saturday												
Sunday												
Monday												

NOTES ARE ON THE FOLLOWING PAGE!

Tuesday										Col. I.2 ≤ 30.0 gpm		
Wednesday												

TABLE 2.3 DRYWELL IDENTIFIED LEAKAGE AND TOTAL LEAKAGE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 1-9-4, 1-FR-77-16

Preferred reading times are 2000, 0000 and 0400	Col. A.2 Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Col. B.2 Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Col. C.2 Gallons Pumped Col. A.2 - Col. B.2 Note 2	Col. D.2 Current Time Note 2	Col. E.2 Previous Days Time from Col. D.2 Note 2	Col. F.2 Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Col. G.2 Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Col. H.2 Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Col. I.2 Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 4
Thursday												

(1) Manually pump down sump per 1-OI-64 prior to reading. To record gallons, disregard any decimal point on recorder point 4 indication. Record only right most five digits as gallons of flow. Example: Record 0065432.1 as 54321.

(2) May be N/A'd if Surveillance Requirement is being met with the performance of 1-SR-3.4.4.1 or 1-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial TOTALIZE reading is taken and no previous reading exists, all other entries except for Col. A.2 and D.2 should be N/A'd.

(3) G.1 reading is from Drywell Unidentified Leakage Col. G.1 on previous page.

(4) Unit Supervisor shall independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

TABLE 2.4 12 HOUR AVERAGE DRYWELL UNIDENTIFIED LEAKAGE (5 gpm) **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.
Surveillance Requirements:	3.4.4.1
LOCATION:	Panel 1-9-4, 1-FR-77-6

Preferred reading times are 0000	Col. A.3 Current Point 3 (1-FQ-77-6) Reading (gals) Notes 1, 2, 4	Col. B.3 Previous Shift 1200 HOURS 1-FQ-77-6 Reading from Col. A.3 (gals) Note 2	Col. C.3 Gallons Pumped Col. A.3 - Col. B.3 Note 2	Col. D.3 Current Time Note 2	Col. E.3 Previous Shift Time from Col. D.3 Note 2	Col. F.3 Elapsed Time Col. D.3 - Col. E.3 (min) Note 2	Col. G.3 Current Leakrate Col. C.3 ÷ Col. F.3 (gpm) Note 2	Col. H.3 Previous Shift Leakrate from Col. G.3 (gpm) Note 2	Col. I.3 Change in Leakrate Col. G.3 - Col. H.3 (gpm) Note 2	LIMITS (AC)	Review Init UO	Review Init Unit Supvr Note 5
Friday										≤ 5.0 gpm		
Saturday												
Sunday												
Monday												
Tuesday												
Wednesday												
Thursday												

(1) Manually pump down sump per 1-OI-64 prior to reading. To record gallons, disregard any decimal position on recorder Point 3 indication. Record only right most five digits as gallons of flow. Example: Record 0065432.1 as 54321.

(2) May be N/A'd if Surveillance Requirement is being met with the performance of 1-SR-3.4.4.1 or 1-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial TOTALIZE reading is taken and no previous reading exists, all other entries except for Col. A.3 and D.3 should be N/A'd.

(3) Acceptance Criteria for ≤ 5 gpm for 12 hours per Tech Specs 3.4.4.1.

(4) Record "Current" reading (Column A.3) on the following shift's "Previous Shift" reading (Column B.3).

(5) Unit Supervisor shall Independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

TABLE 2.5 DRYWELL AIR SAMPLING SYSTEM INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.5.1 LOCATION: Panel 1-9-2, 1-MON-90-50 - (1-RM-90-256) Note 4

DAY	TIME	Air Sample Flow (LPM)	MIN (AC)	MAX (AC)	Drywell Noble Gas (µci/cc) Note 2 & 3	MAX (AC)	Drywell Particulate (µci/cc) Note 2 & 3	MAX (AC)	Review Initials UO	Unit Supvr
Friday	2000									
	0000									
	0400									
Saturday	2000									
	0000									
	0400									
Sunday	2000									
	0000									
	0400									
Monday	2000									
	0000		45 lpm	60 lpm		Note 1		Note 1		
	0400									
Tuesday	2000									
	0000									
	0400									
Wednesday	2000									
	0000									
	0400									
Thursday	2000									
	0000									
	0400									

(1) If the detector is not in ALERT, then the reading is below the MAX.

(2) If the equipment and floor drain sump flow measurements indicate a high leakage rate, the air sampling system will normally show a corresponding high activity. A low sump flow rate indication will normally be corroborated by a low activity indication by the air sampling system. Unexpected deviations from this relationship should be investigated.

(3) If both the Drywell Noble Gas and the Drywell Particulate Channels are inoperable, initiate 1-SR-3.4.5.B.1 as required by TS 3.4.5.

(4) If the Control Room Console 1-CONS-90-50A becomes unavailable, then obtain local readings per 1-OI-90. Note reason in the Post Test Remarks.

TABLE 2.6 HEAT BALANCE RELATED ICS ALARM SETPOINTS (Note 1) **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Mode 1 when ≥ 25% RTP Record the readings as soon as possible after the generator breaker has been closed.

Criteria Source: BFPER951914

LOCATION: ICS Computer

	ICS Points						Verify HI and HI HI alarm setpoints listed in Table 2.B.1 & 2.B.2 are NOT exceeded. (Note 3) SAT / UNSAT / N/A	Review Initials	
	3-48A (°F)	3-48B (°F)	3-50A (°F)	3-50B (°F)	NSS0017 (°F)	MAX DEV Note 2		UO	Unit Supvr
Friday						2°F			
Saturday									
Sunday									
Monday									
Tuesday									
Wednesday									
Thursday									

(1) The computer points listed in Table 2.B.1 and 2.B.2 are inputs to the ICS Core Thermal Power Heat Balance calculations. The points are monitored to ensure the inputs are in agreement and to ensure the license limits for thermal power are maintained. In addition to the above, these points should be monitored any time reactor power changes are performed.

(2) A difference between Feedwater temperature points 3-48A, 3-48B, 3-50A, 3-50B, and NSS0017 of greater than 2 degrees will require the notification of Site Engineering and suspending any rise in power until the discrepancy is resolved.

(3) An alarm setpoint being exceeded will require notifying the Unit Supervisor immediately and, if action cannot be taken immediately to return the value to within limits, Site Engineering will be notified for assistance.

TABLE 2.B.1

ICS POINT	DESCRIPTION	HI ALARM	HI HI ALARM
CALCO20	Rx Power 30 Min Avg.	3458	3463
CALCO21	Rx Power 1 Hr. Avg.	3458	3461
CALCO83	Rx Power 2 Hr. Avg.	3458	3459
CALCO98	Generator Power	1185	1190
CALCO26	Efficiency	35	36
CALCO27	Load Line	N/A	113.6
CALCO24	Rx Power %	100.2	100.5

TABLE 2.B.2

ICS POINT	DESCRIPTION	HI ALARM	HI HI ALARM
3-48A	FW Temp	382	386
3-48B	FW Temp	382	386
3-50A	FW Temp	382	386
3-50B	FW Temp	382	386
NSS0017	Avg. FW Temp.	382	386
96-14A	Recirc Pmp Power	5.5	5.7
96-14B	Recirc Pmp Power	5.5	5.7
CONS0400	Total RWCU Flow	0.15	N/A

TABLE 2.7 CONTROL ROD POSITIONS **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2, Readings are required at all times,			
Surveillance Requirements:	3.1.3.1; TSRs: 3.3.5.2			
LOCATION:	Panel 1-9-5 ICS/RWM, Full Core Display And/Or Four Rod Display with Applicable Control Rod Selected		Review Initials	
DAY	All Operable Control Rod Positions (Note 1, 2 & 3) SAT / UNSAT	LIMITS (AC)	UO	Unit Supvr
Friday		All Operable Control Rod Positions Verified Satisfactory		
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Control rod position may be determined by the use of OPERABLE position indicators or by moving control rods to a position with an OPERABLE indicator. Refer To 1-OI-85 for control rod withdrawal and insertion.

(2) If the full core display and four rod display is not available due to the failure of one or both of the RPIS 6 volt power supplies, then Control Rod Position may be determined using an alternate method as described in 1-AOI-85-4 and attaching the AOI documentation to this procedure.

(3) If an individual rod position is lost due to a missing digit in the TEN's place on the full core and four rod displays, then that control rod position may be determined using an alternate method as described in 1-AOI-85-4.

(4) Data will be taken in Modes 1, 2 or 3. If UNSAT, log the reason in Post Test Remarks.

TABLE 2.8 CONTROL ROD SCRAM ACCUMULATORS **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2 Readings are required at all times.			
Surveillance Requirements:	3.1.5.1			
LOCATION:	Panel 1-9-5 Full Core Display And/Or Local HCU Accumulator Pressure Indicators (Reactor Building Elevation 565)		Review Initials	
DAY	HCU Scram Accumulator Pressures ≥ 940 psig for All Operable Control Rods (Notes 1 & 2) SAT / UNSAT	LIMITS (AC)	UO	Unit Supvr
Friday		HCU Scram Accumulator Pressure for All Operable Control Rods Satisfactory (≥ 940 psig)		
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Verification of HCU Scram Accumulator Pressures ≥ 940 psig may be accomplished by verifying OPERABLE amber accumulator status lights on the full core display are not in the alarmed condition (i.e., not Illuminated) or by observation of local HCU Accumulator Pressure Indicators. Since the amber accumulator status lights on the full core display receive signals from another parameter in addition to accumulator pressure, local HCU Accumulator Pressure Indicators shall be used for control rods with amber accumulator status lights on the full core display in alarm (i.e., Illuminated).

(2) Data will be taken in Modes 1, 2 or 3. If UNSAT, log the reason in Post Test Remarks.

TABLE 2.9 REACTOR WATER LEVEL INSTRUMENTATION - NARROW RANGE (COMPENSATED) **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Readings are required at all times.							
Criteria Source:	FSAR 7.10.4							
LOCATION:	Panel 1-9-5						Review Initials	
Reference Leg	A 1-LI-3-53 (in.)	B 1-LI-3-60 (in.)	C 1-LI-3-206 (in.)	D 1-LI-3-253 (in.)	MAX DEV Note 1	All Data is SAT/UNSAT	UO	Unit Supvr
Friday					3.0 inches			
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Refer To Attachment 4 during off-normal operating conditions.

(2) Reactor vessel water level indications from the four water level channels can be compared during operation (and are compared automatically by the RFWCS) to detect instrument malfunctions.

TABLE 2.10 STANDBY LIQUID CONTROL TANK VOLUME **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3	Readings are required at all times.					
Surveillance Requirements:	3.1.7.1						
LOCATION:	Panel 1-9-5	1-LPNL-925-0019	Local (Top of Tank)	LIMITS (AC) Notes 2, 3, 4	All Data is SAT/UNSAT	Review Initials	
	1-LI-63-1A (%) Notes 1, 2	1-LI-063-0001B (%) Notes 1, 2	Dipstick (inches) Note 1, 2			UO	Unit Supvr
Friday				≥ 82.5 percent OR ≥ 109.4 inches			
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

(1) The required observation may be obtained from Panel 1-9-5, 1-LPNL-925-0019 or Dipstick method (1-SR-3.1.7.1). Only one of the three methods is required to be logged and the other two may be N/A'd.

(2) If tank level percentages indicate less than 85%, then the dipstick method should be used to verify proper volume requirements due to instrument loop inaccuracies which could exist.

(3) If the Tank level observations indicate any significant drift in level, then the reason for this observation should be investigated.

(4) Limits equate to a net injectable volume of ≥ 4000 gallons.

(5) For additional information relative to tank volume conversions Refer To 1-TI-18.

TABLE 2.11 IRM INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 2 Readings are required at all times.											
Surveillance Requirements:	3.3.1.1.1 (f1.a)								Technical Requirements Manual TSRs:	3.3.5.4(f2.b) & 3.3.4.1 (f2.a, 2.b)		
LOCATION:	Panel 1-9-5										Review Initials	
	IRM RANGE (ENTER 1 THROUGH 10) Note 1								MAX DEV (AC)	All Data SAT/UNSAT Note 2	UO	Unit Supvr
	A	C	E	G	B	D	F	H				
Friday									2 Ranges with conditions of Note 1 satisfied			
Saturday												
Sunday												
Monday												
Tuesday												
Wednesday												
Thursday												

(1) Maintain IRM's onscale (i.e., 25 ≤ IRM value ≤ 75) excluding downscale (i.e., IRM value < 25) on range 1.

(2) All Data SAT/UNSAT applies to the listed Channel Check Surveillances for the IRMs ONLY. If an IRM is Bypassed (Joy Stick), the "SAT/UNSAT" is marked as UNSAT (due to all the data taken not meeting the satisfactory requirements) with a note in the remarks explaining the reason the IRM is bypassed. For the column to be considered SAT, the Channel Checks have to be satisfactory, regardless of Mode or Condition. The term "Channel Check" is described in Tech Specs and the TRM as being, "A Channel Check shall be the qualitative assessment, by observation, of channel behavior during Operation. This determination shall include where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter." This holds true for performing channel checks for the IRMs. However, if an IRM is bypassed, it does not meet the channel check criteria and the column is UNSAT.

TABLE 2.12 SRM INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 2 with IRM's on range 2 or below, Mode 3					Readings are required at all times.									
Surveillance Requirements:	3.3.1.2.1, 3.3.1.2.3, 3.3.1.2.4, 3.3.1.2.5&6										TSR's 3.3.4.1 & 3.3.5.3				
LOCATION:	Panel 1-9-5, 1-XR-92-7/45													Review Initials	
		SRM Count Rate (cps) Note 1				LIMITS (AC)	MAX (AC) Note 2	SRM System Signal to Noise Ratio 1-SR-3.3.1.2.4 SAT / INOP (Note 3 & 4)				All Data SAT/UNSAT (Note 5)			
	TIME	A	C	B	D			A	C	B	D		UO	Unit Supvr	
Friday	2000					OPERABLE SRMs count rate must be ≥ 3 cps	OPERABLE SRMs count rate must be < 1 E6 cps								
Saturday	2000														
Sunday	2000														
Monday	2000														
Tuesday	2000														
Wednesday	2000														
Thursday	2000														

(1) Count Rate should be recorded at all times. The SRM's will not be operable unless they are fully inserted or are partially withdrawn with the IRM's onscale. In either case, the operable detectors shall have their Surveillances performed including channel checks.

(2) IRM/SRM overlap should occur before SRMs > 1 E5 cps (should occur between 1 E4 cps & 1 E5 cps). Unexpected deviations from this relationship and excessive noise spikes shall be investigated.

(3) If any SRM's are being carried as INOP on LCO Tracking, Refer To table 3.3.1.2-1 to determine operability requirements.

(4) Signal to Noise Ratio is required to be determined by performing 1-SR-3.3.1.2.4 as follows: (SRM's will become INOP after the Surveillance time Frequency has been exceeded.)

- SAT
  - A. MODE 1 1-SR-3.3.1.2.4 is not required to be performed in Mode 1, therefore the operable SRMs will become "INOP" 24 Hours after the last satisfactory performance of 1-SR-3.3.1.2.4
  - B. MODE 2 Every 24 Hours after IRM's are on range 2 or below.
  - C. MODE 3 Every 24 hours
- INOP An SRM fails its Signal to Noise Ratio section of 1-SR-3.3.1.2.4.

(5) The All Data UNSAT column is UNSAT, if one or more SRM's are inoperable. Refer To Tech Spec 3.3.1.2.

TABLE 2.13 REACTOR COOLANT CONDUCTIVITY **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.			
Criteria Source:	Technical Requirements Manual TSR-3.4.1.1			
LOCATION:	Panel 1-9-4 - 1-CR-43-11A/12A		Review Initials	
	1-CE-43-11 (Point 1) (μmho) Note 1	MAX (AC)	UO	Unit Supvr
Friday		1.0 μmho		
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Whenever there is fuel in the reactor vessel and the continuous conductivity monitor is inoperable, periodic analysis of reactor coolant samples are required by the Technical Requirements Manual. If the reactor coolant continuous conductivity monitor becomes inoperable, notify Chemistry to sample according to 1-SI-4.6.B.1-4.

TABLE 2.14 SUPPRESSION POOL WATER LEVEL **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.			
Surveillance Requirements:	3.6.2.2.1				
LOCATION:	Panel 1-9-3			Review Initials	
	1-LI-64-54A (inches) Note 1	1-LI-64-66 (inches) Note 1	LIMITS (AC)	UO	Unit Supvr
Friday			≥-5.5 inches and ≤ -2.0 inches (Note 2)		
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) The difference between readings of 1-LI-64-54A and 1-LI-64-66 should not exceed 2 inches. Deviations greater than 2 inches should be investigated.

(2) The Technical Specification requirements for Suppression Pool Water Level are ≥-6.25" and ≤ -1.0" with DW to Torus DP established AND ≥ -7.25" and ≤ -1.0" without DW to Torus DP established.

TABLE 2.15 BULK VOLUMETRIC AVERAGE DRYWELL AIR TEMPERATURE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.				
Surveillance Requirements:	3.6.1.4.1					
LOCATION:	ICS Computer or 1-TI-82				Review Initials	
	TIME	ICS Pt (CALC608) (°F) Note 1	1-TI-82 Value (°F) Note 1	LIMITS (AC)	UO	Unit Supvr
Friday	2000			≤ 150°F		
Saturday	2000					
Sunday	2000					
Monday	2000					
Tuesday	2000					
Wednesday	2000					
Thursday	2000					

(1) The required observation of Bulk Volumetric Average Drywell Air Temperature may be obtained from ICS Pt (CALC608) OR 1-TI-82 Value. Only one of the two methods is required to be logged and the other method may be N/A'd.

TABLE 2.16 SUPPRESSION CHAMBER AIR TEMPERATURE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.				
Criteria Source:	Technical Requirements Manual TSR 3.3.5.1				
LOCATION:	Panel 1-9-3			Review Initials	
	TIME	1-XR-64-52 1-TE-64-52B (Ch 1) (Note 1)	MAX (AC)	UO	Unit Supvr
Friday	2000		150°F		
Saturday	2000				
Sunday	2000				
Monday	2000				
Tuesday	2000				
Wednesday	2000				
Thursday	2000				

(1) The digital reading from the recorder is the preferred reading to log. If the digital reading is not available, log the corresponding pen reading from the chart.

(2) This is the only instrument that measures the suppression chamber air temperature. The instrument check will consist of observing that the instrument exhibits an expected reading for the given operation of the suppression chamber.

TABLE 2.17 DRYWELL - SUPPRESSION CHAMBER DIFFERENTIAL PRESSURE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 (FROM 24 hours after THERMAL POWER is > 15% RTP following startup, TO 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to the next scheduled reactor shutdown.) Readings are required at all times.		
Surveillance Requirements:	3.6.2.6.1	Technical Requirements Manual TSRs:	3.3.5.1

LOCATION:	Panel 1-9-3					Review Initials	
	TIME	1-PDI-64-137 (psid) ≤ 1.33 psid (Note 1)	1-PDI-64-138 (psid) ≤ 1.33 psid (Note 1)	LIMITS (AC)	MAX DEV (AC)	UO	Unit Supvr
Friday	2000			≥ 1.1 psid & ≤ 1.33 psid (Note 1)	0.10 psid		
Saturday	2000						
Sunday	2000						
Monday	2000						
Tuesday	2000						
Wednesday	2000						
Thursday	2000						

(1) The Drywell-Suppression Chamber Differential Pressure should not exceed 1.33 psid.

TABLE 2.18 SUPPRESSION POOL BULK WATER TEMPERATURE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.						
Surveillance Requirements:	3.6.2.1.1							
LOCATION:	Panel 1-9-3					Panel 1-25-32	Review Initials	
	1-TI-64-161 (°F) Notes 1,3, & 4 (AC)	1-TR-64-161 1-TE-64-161L (°F) Notes 1,3, & 4 (AC)	1-TI-64-162 (°F) Notes 1,3, & 4 (AC)	1-TR-64-162 1-TE-64-162L (°F) Notes 1,3, & 4 (AC)	MAX DELTA TEMP between instruments (Note 2)	1-TI-64-55B < 95°F Notes 1,3, & 4	UO	Unit Supvr
Friday					CR Instruments within 5°F of each other and < 95°F			
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Limits:
A. ≤ 95°F when any OPERABLE intermediate range monitor (IRM) channel is > 70 on Range 7 and no testing that adds heat to the suppression pool is being performed;
B. ≤ 105°F when any OPERABLE IRM channel is > 70 on Range 7 and testing that adds heat to the suppression pool is being performed; and
C. ≤ 110°F when all OPERABLE IRM channels are ≤ 70 on Range 7

(2) This value is recorded to further validate the Suppression Pool Bulk Water Temperature indications when RHR Suppression Pool Cooling is not in service. If the Control Room Suppression Pool Bulk Water Temperature indications deviate more than 5°F from one another or if 1-TI-64-55B is greater than or equal to 95 deg F, RHR Suppression Pool Cooling may be required to be placed in service to obtain valid Suppression Pool Bulk Water Temperature readings (may indicate a potential thermal stratification problem, Refer To site response to GE SIL 106). Deviations in excess of 5°F for the MCR instruments is also an indication of a potential inoperable instrument; the Suppression Pool Bulk Water Temperature instruments affect LCO 3.3.3.1, "PAM Instruments" (CHANNEL CHECK surveillance requirement) and 1-TI-64-55B affects LCO 3.3.3.2, "Backup Control System.

(3) Suppression pool average temperature must be verified within the applicable limits and logged every 5 minutes when performing testing that adds heat to the suppression pool, accomplished by 1-SR-3.6.2.1.1.

(4) If both the primary and secondary indication of any SRV tailpipe is inoperable, per Technical Requirements Manual 3.2.F, the Suppression Pool Water Temperature must be monitored at least once per shift to observe any unexplained temperature rise which might be indicative of an open SRV.

TABLE 2.19 RHR DISCHARGE FILL PRESSURE / CORE SPRAY DISCHARGE FILL PRESSURE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.							
Criteria Source:	Technical Requirements Manual TSR 3.3.3.1.1 & 3.5.4.1							
LOCATION:	Panel 1-9-3						Review Initials	
	CS Loop I 1-PI-75-20 (psig)	RHR Loop I 1-PI-74-51 (psig)	RHR Loop II 1-PI-74-65 (psig)	CS Loop II 1-PI-75-48 (psig)	MIN (AC) Note 2	MAX Note 3	UO	Unit Supvr
Friday					For each OPERABLE subsystem:	For each OPERABLE subsystem: 100 psig		
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Each pressure indicator provides indication of the discharge pressure for one RHR or Core Spray Loop. The instrument check will consist of observing that the instrument exhibits an expected reading for the given plant conditions.

(2) The Technical Requirements Manual requires a minimum discharge pressure for OPERABLE subsystems. Refer To TRM Section 3.5.4.

CS Loop I	1-PI-75-20	39 psig
CS Loop II	1-PI-75-48	39 psig
RHR Loop I	1-PI-74-51	~~35~~ psig
RHR Loop II	1-PI-74-65	~~48~~ psig

Deleted: 48

Deleted: 35

(3) MAX criteria is N/A for RHR/Core Spray subsystems in service or if keep fill aligned to CS & S. When a RHR/Core Spray subsystem is in a standby readiness condition the maximum discharge pressure is 100 psig. High discharge pressures with pumps secured may be indication of primary valve leakage.

TABLE 2.20 RHR SHUTDOWN COOLING SUBSYSTEM AND RECIRCULATION PUMP OPERATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	MODE 3, with reactor steam dome pressure less than the RHR low pressure permissive pressure. (Note 1) Readings are required at all times.
Surveillance Requirements:	3.4.7.1
LOCATION:	Panel 1-9-3 & Panel 1-9-4

		Recirc Pump Note 2		RHR Shutdown Cooling Subsystem Note 2 & 3						Review Initials	
	TIME	A I/S	B I/S	A I/S	B I/S	C I/S	D I/S	LIMITS (AC)	AIII Data SAT/UNSAT	UO	Unit Supvr
Friday	2000							≥ One RHR Shutdown Cooling Subsystem OR ≥ One Recirc Pump In Service			
Saturday	2000										
Sunday	2000										
Monday	2000										
Tuesday	2000										
Wednesday	2000										
Thursday	2000										

(1) Technical Specification LCO 3.4.7 requires that two RHR Shutdown Cooling Subsystems be operable during this applicability. An operable Shutdown Cooling Subsystem consists of one RHR pump, associated heat exchanger, RHRSW pump capable of providing cooling water to its associated heat exchanger, associated piping and valves, all of which can be aligned in the Shutdown Cooling Mode for the removal of decay heat.

(2) An "X" shall be placed in the associated Column for the In Service Pump or Subsystem.

(3) To be considered as In Service, RHR System and its associated Shutdown Cooling Subsystems must be in the Shutdown Cooling Mode alignment with RHR SD CLG FLOW LOW annunciator (1-XA-55-3D, Window 11) RESET.

TABLE 2.21 REACTOR BUILDING VENTILATION RADIATION MONITORING **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.				
Surveillance Requirements:	3.3.6.2.1(f3, 4) and 3.3.7.1.1(f3,4)				
LOCATION:	Panel 1-9-2 - 1-RR-90-144			Review Initials	
	REACTOR ZONE EXHAUST RADIATION MONITOR		MAX DEV (AC)		
	RE-90-142A (Point 1)	RE-90-143A (Point 2)		UO	Unit Supvr
Friday			14 mr/hr		
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
	REFUEL ZONE EXHAUST RADIATION MONITOR				
	RE-90-140A (Point 3)	RE-90-141A (Point 4)		UO	Unit Supvr
Friday			20 mr/hr		
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

TABLE 2.22 RHRSW RADIATION MONITORS **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	During RHRSW Loop Operation Readings are required at all times.					
Criteria Source:	ODCM Section 1/2.1.1, Surveillance 2.1.1					
LOCATION:	Panel 1-9-2				Review Initials	
	1-RR-90-134					
	RHRSW SYS I HX OUTL (Point 1) 1-RE-90-133A (cpm)	RHRSW SYS I HX OUTL (Point 2) 1-RE-90-134A (cpm)	MAX (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday			Note 1			
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

TABLE 2.23 RCW RADIATION MONITOR

APPLICABILITY:	During RCW releases				
Criteria Source:	ODCM Section 1/2.1.1, Surveillance 2.1.1				
LOCATION:	Panel 1-9-2			Review Initials	
	1-RR-90-134				
	RCW EFFLUENT (Point 4) 1-RE-90-132A (cpm)	MAX (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday		Note 1			
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) The instrument check will consist of observing that the instruments exhibit an expected reading for the given plant conditions. MAX will be the alarm (RHRSW/RCW EFFLUENT RADIATION HIGH 1-RA-90-132 (Panel 1-9-3, 1-XA-55-3A, Window 3)) setpoint for the respective monitor. Instrument Shop should be contacted for most current setpoints as required.

TABLE 2.24 APRM/OPRM INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2 (Flow Bias Mode 1 only)	Readings are required at all times.												
Surveillance Requirements:	3.3.1.1.1 (f2a, 2b, 2c, 2e, 2f)				Technical Requirements Manual TSRs: 3.3.4.1 (f1a, 1b, 1c, 1d)									
LOCATION:	Panel 1-9-5 or Panel 1-9-14												Review Initials	
	APRM Flow Note 2				APRM (% FLUX) NOTE 1								Limit	
	1	3	2	4	Channel 1	OPRM/ VOTER (Note 3)	Channel 3	OPRM/ VOTER (Note 3)	Channel 2	OPRM/ VOTER (Note 3)	Channel 4	OPRM/ VOTER (Note 3)	MAX DEV	UO / Unit Supvr
Friday													5 %	
Saturday													5 %	
Sunday													5 %	
Monday													5 %	
Tuesday													5 %	
Wednesday													5 %	
Thursday													5 %	

(1) MAX DEV of 5% means the difference between the highest and lowest of the four APRMs is no more than 5%.

(2) The flow bias signal to each APRM channel is read from the APRM displays on Panel 1-9-5 or Panel 1-9-14. Compare and record these readings. This constitutes the daily instrument check of the flow bias signal.

(3) An OPRM and APRM 2-out-of-4 VOTER channel check shall consist of the following:

A. The OPRM/VOTER channel being checked shall have its associated APRM chassis display placed in SELF-TEST mode and the "BROADCASTER" status checked for at least one cycle to ensure that no critical fault is present. Additionally, no critical fault detected during this cycle indicates the OPRM channel check is complete SAT. The APRM chassis display should be returned to the DISPLAY OFF mode when this check is complete.

B. No voter LED lamps shall be illuminated except for the green "ONLINE LED" lamps associated with each "UNBYPASS" APRM channel. The blue "BYPASSED LED" lamps and the green "ONLINE LED" lamps will be illuminated for any BYPASSED APRM for each of the voters.

C. The TRIP RELAY keylock switch shall be checked to be in the NORMAL position.

D. Place "SAT" or "UNSAT" in the space provided. If "UNSAT", contact System Engineering for support.

E. If a channel is INOP or in Test, then the associated indicating light on each 2/4 Voter Logic Chassis will be extinguished. The other remaining channels can still be successfully tested SELF-TEST (Refer To Note: 3a above) if their remaining three channels indicating lights are illuminated and TRIP RELAY keylock switches are in NORMAL positions.

TABLE 2.25 LPRM INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1 & 2 Readings are required at all times.

Criteria Source: Technical Requirements Manual TSR 3.3.5.3

LOCATION: Panel 1-9-14 and ICS Computer

DAY	TIME	# LPRMs BYPASSED (Note 1)								Total # LPRMs Bypassed (Note 2)	# LPRMs reading ≤ 3% on ICS (Note 3)	MAX DEV (AC) (Note 4)	All Data SAT/UNSAT	Review Initials	
		APRM #2	LPRM #2	APRM #4	LPRM #4	APRM #3	LPRM #3	APRM #1	LPRM #1					UO	Unit Supvr
Friday	2000														
Saturday	2000														
Sunday	2000														
Monday	2000											0			
Tuesday	2000														
Wednesday	2000														
Thursday	2000														

(1) Record number of LPRMs bypassed in the four APRM and LPRM cabinets as observed at Panel 1-9-14. Add these values together and record as Total # LPRMs Bypassed.

(2) Less than 20 LPRMs in OPERATE or Less than 3 per level for any APRM will result in a Rod Block and a trouble alarm on the display panel. This does not yield an automatic APRM trip, but does, however, make the associated APRM INOP.

(3) Record number of LPRMs reading less than 3% on the LPRM printout or display on ICS.

(4) MAX DEV is not required to be met when the APRMs are downscale; however, unexpected inconsistencies should be reported to the Reactor Engineer. The total number of LPRM's bypassed shall equal the number of LPRM's reading less than 3% on ICS.

TABLE 2.26 CHARCOAL BED BYPASS VALVE POSITION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Mode 1 when > 25% RTP Readings are required at all times.								
Criteria Source:	ODCM, Section 1/2.2.2, Surveillance 2.2.2.4.1								
LOCATION:	Panel 1-9-53							Review Initials	
	1-FCV-66-117		1-FCV-66-113B		1-FCV-66-118		All Data SAT/UNSAT	UO	Unit Supvr
	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)			
Friday		Valve is required to be OPEN (Note 1)		Valve is required to be CLOSED (Note 1)		Valve is required to be OPEN (Note 1)			
Saturday									
Sunday									
Monday									
Tuesday									
Wednesday									
Thursday									

(1) The ODCM requires the SJAE discharge to be routed through the charcoal absorbers when operating above 25% RTP. Notify the Unit Supervisor for Off-Gas valves not in the required position when required.

TABLE 2.27 SPENT FUEL POOL WATER LEVEL **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	During movement of Irradiated Fuel Assemblies in the Spent Fuel Pool Readings are required at all times.				
Surveillance Requirements:	3.7.6.1				
LOCATION:	Panel 1-9-4 and / or Reactor Building Elevation 639 Local Observation			Review Initials	
DAY	Spent Fuel Storage Pool Water Level. (Note 1) SAT / UNSAT	LIMITS (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday		The spent fuel storage pool water level shall be ≥ 21.5 ft over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.			
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) Spent Fuel Storage Pool water level shall be verified to be above the low level alarm setpoint (FUEL POOL SYSTEM ABNORMAL (1-XA-55-4C, Window 1) for 1-LS-78-2B is reset) or verified by local observation to be ≥ 21.5' above the top of the irradiated stored fuel.

TABLE 2.28 SPENT FUEL POOL TEMPERATURE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Whenever irradiated fuel is in the Spent Fuel Pool (Readings are required at all times.)			
Criteria Source:	Technical Requirements Manual TSR-3.9.2.1			
LOCATION:	Panel 1-9-21		Review Initials	
	1-TRS-74-80 Point 21 (TE-78-8) Note 1, 4	LIMITS (AC)	UO	Unit Supvr
Friday		Spent Fuel Pool Temperature ≥ 72°F AND ≤ 125°F (Notes 2, 3)		
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) The temperature displayed by 1-TRS-78-80 is actually the temperature measured in the skimmer surge tank.

(2) Spent Fuel Pool Temperature greater than or equal to 72°F but less than or equal to 125°F is the Administrative LIMITS. Minimum pool temperature of 68°F will assure criticality analysis remains valid and the Technical Requirements Manual requires the Spent Fuel Pool water temperature to be less than or equal to 150°F.

(3) If it appears that the Spent Fuel Pool Temperature will exceed 125°F, Refer To 1-AOI-78-1.

(4) A temporary temperature monitoring device can be used to determine Spent Fuel Pool Temperature when 1-TRS-74-80-Point 21 becomes unavailable.

TABLE 2.29 MAIN STEAM LINE FLOWS **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times. Surveillance Requirements: 3.3.6.1.1 (f1c)

LOCATION:		1-PNLA-009-0086		1-PNLA-009-0085		1-PNLA-009-0084		1-PNLA-009-0083			Review Initials	
DAY	STEAM LINE	INSTRUMENT	VALUE (psid)	INSTRUMENT	VALUE (psid)	INSTRUMENT	VALUE (psid)	INSTRUMENT	VALUE (psid)	MAX DEV	UO	UNIT SUPVR
Friday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Saturday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Sunday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Monday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A		Notes 1 & 2 (Next Page)		
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Tuesday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Wednesday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
Thursday	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
	B	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	C	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				

NOTES ARE ON THE FOLLOWING PAGE!

The following notes are for the Main Steam Line Flow reading on the previous page:

(1) For the four (4) PDIS instruments on the same steam line the MAX DEV is 10 psid. As an additional check, to detect a faulty Flow Element, the maximum deviation between the highest and lowest reading of the sixteen (16) PDIS instruments in the four (4) Main Steam Lines is 35 psid (readings for PDIS instruments on steam lines C and D are on the following page).

(2) The Primary Containment Isolation setpoint for these instruments is 112.5 psid.

TABLE 2.30 REACTOR VESSEL STEAM DOME PRESSURE INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1 & 2	Readings are required at all times.
Surveillance Requirements:	3.3.1.1.1(f3), 3.3.3.1.1, 3.4.10.1	

LOCATION:		ICS (Notes 1 & 4)		MAX DEV (AC)	1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083	MAX DEV (AC)	MAX LIMIT	All Data SAT/UNSAT	Review Initials	
					D	C	B	A					
Reference Leg	TIME (Note 4)	3-74A	3-74B		1-PIS-003-0022D	1-PIS-003-0022C	1-PIS-003-0022BB	1-PIS-003-0022AA				UO	Unit Supvr
Friday	0800			40 psig (Note 2)					60 psig (Note 2)	Note 3			
Saturday	0800												
Sunday	0800												
Monday	0800												
Tuesday	0800												
Wednesday	0800												
Thursday	0800												

(1) These readings may be obtained from ICS using the Single Value Display or from the ATU output voltage translated into a PRESSURE Signal for the specific instruments. For ICS, type in "SVD" for Single Value Display, enter the point desired as "3-74A", record reading, select F4, enter "3-74B", record the second reading.

(2) 3-74A and 3-74B have a Maximum allowable deviation of 40 psig, AND 1-PIS-003-0022D, 1-PIS-003-0022C, 1-PIS-003-0022BB, & 1-PIS-003-0022AA, have a Maximum allowable deviation of 60 psig. No comparison is required between the 3-74A(B) and 1-PIS-3-22D(C)(BB)(AA).

(3) 3-74A and 3-74B SHALL be ≤ 1050 psig. 1-PIS-003-0022D, 1-PIS-003-0022C, 1-PIS-003-0022BB, & 1-PIS-003-0022AA SHALL be ≤ 1090 psig.

(4) 3-74A and 3-74B are to be recorded at 0800. The Auxiliary Instrument Room readings are not required to be taken at precisely 0800.

TABLE 2.31 REACTOR WATER LEVEL INSTRUMENTATION -WIDE RANGE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

Part 1 - APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.							
Surveillance Requirements: 3.3.6.1.1(f1a)							
LOCATION:	1-PNLA-009-0083	1-PNLA-009-0084	1-PNLA-009-0085	1-PNLA-009-0086	MAX DEV (AC) Note 4	Review Initials	
Ref. Leg	A	B	C	D			
	1-LIS-003-0056A (in.)	1-LIS-003-0056B (in.)	1-LIS-003-0056C (in.)	1-LIS-003-0056D (in.)		UO	Unit Supvr
Friday					7.5 inch Deviation Between All Instruments		
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

Part 2 - APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.								
Surveillance Requirements: 3.3.4.2.1, 3.3.5.1.1(f1a,2a,3a, 4a,5a), 3.3.5.2.1(f1)								
LOCATION:	1-PNLA-009-0081		1-PNLA-009-0082		1-9-5 (Note 3)			
Ref. Leg	A	B	C	D	A	D		
	1-LIS-003-0058A (in.)	1-LIS-003-0058B (in.)	1-LIS-003-0058C (in.)	1-LIS-003-0058D (in.)	1-LI-3-58A (in.)	1-LI-3-58B (in.)	UO	Unit Supvr
Friday								
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Refer To Attachment 4 during off-normal operating conditions.
(2) ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination.
(3) Failure of 1-LI-3-58A or 1-LI-3-58B to meet MAX DEV in Modes 1 & 2 also affects LCO 3.3.3.1, "PAM Instrumentation."
(4) Due to variable leg tap locations, during single Recirculation loop operation MAX DEV may be applied separately to comparison of 1-LIS-003-0056A to 1-LIS-003-0056B; 1-LIS-003-0056D to 1-LIS-003-0056C; 1-LI-3-58B, 1-LIS-003-0058C, and 1-LIS-003-0058D and comparison of 1-LI-3-58A, 1-LIS-003-0058A, 1-LIS-003-0058B.

TABLE 2.32 REACTOR WATER LEVEL INSTRUMENTATION - NARROW RANGE (UNCOMPENSATED) **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

Part 1 - APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.	Mode 3 Readings are required at all times.
Surveillance Requirements:	3.3.1.1.1(f4), 3.3.6.1.1(f2a,5h), 3.3.6.2.1(f1), 3.3.7.1.1(f1)	3.3.6.1.1(f6b)

LOCATION:	1-PNLA-009-0083	1-PNLA-009-0084	1-PNLA-009-0085	1-PNLA-009-0086	MAX DEV (AC) Note 3	All Data SAT/UNSAT	Review Initials	
Reference Leg	LegA/B Instruments		Leg C/D Instruments					
	A	B	C	D			UO	Unit Supvr
	1-LIS-003-0203A (in.)	1-LIS-003-0203B (in.)	1-LIS-003-0203C (in.)	1-LIS-003-0203D (in.)				
Friday					5.0 inch Deviation Between All Instruments AND 3.5 inch Deviation Between All Instruments on the A/B Leg AND 3.5 inch Deviation Between All Instruments on the C/D Leg			
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

Part 2 - APPLICABILITY:	Mode 1 and Modes 2 & 3 when Reactor steam dome pressure > 150 psig Readings are required at all times.
Surveillance Requirements:	1-LIS-003-0208A-D = 3.3.2.2.1, 3.3.5.1.1(f3c), 3.3.5.2.1(f2) 1-LIS-003-0184 & 185 = 3.3.5.1.1(f4d,5d)

LOCATION:	1-PNLA-009-0081			1-PNLA-009-0082			All Data SAT/UNSAT	Review Initials	
Reference Leg	Leg A/B Instruments			Leg C/D Instruments					
	A	B	B	C	C	D		UO	Unit Supvr
	1-LIS-003-0208A (in.)	1-LIS-003-0208B (in.)	1-LIS-003-0184 (in.)	1-LIS-003-0185 (in.)	1-LIS-003-0208C (in.)	1-LIS-003-0208D (in.)			
Friday									
Saturday									
Sunday									
Monday									
Tuesday									
Wednesday									
Thursday									

(1) Refer To Attachment 4 during off-normal operating conditions.
(2) ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination.
(3) All instruments on the A/B(C/D) Leg should read within 3.5 inches of each other AND within 5.0 inches of C/D(A/B) Leg instruments.

TABLE 2.33 REACTOR WATER LEVEL INSTRUMENTATION - POST ACCIDENT RANGE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.						
Surveillance Requirements:	3.3.5.1.1(f2e)							
LOCATION:	1-PNLA-009-0082	1-PNLA-009-0081	1-9-3 (Notes 3, 4)			MAX DEV (AC)	Review Initials	
Reference Leg	C	B	B	C	C		UO	Unit Supvr
	1-LIS-003-0062A (in.)	1-LIS-003-0052 (in.)	1-LI-3-52 (in.)	1-LI-3-62A (in.)	1-LR-3-62 (in.)			
Friday						10.0 inches (When on scale) Note 5		
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Refer To Attachment 4 during off-normal operating conditions.

(2) ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination.

(3) Failure of 1-LI-3-52 or 1-LI-3-62A to meet MAX DEV in Modes 1 & 2 also affects LCO 3.3.3.1, "PAM Instrumentation."

(4) 1-LR-3-62 comparison is valid only in the -168 to +32 inch range.

(5) Due to variable leg tap locations, during single loop Recirculation pump operation MAX DEV may be applied separately to comparison of 1-LIS-003-0052 to 1-LI-3-52 and comparison of 1-LIS-003-0062A, 1-LI-3-62A, and 1-LR-3-62. These indicators are calibrated for POST ACCIDENT condition (Recirculation Pumps off). Therefore, a reading of > 32 inches or full scale, is acceptable at Normal Operating Conditions. Refer To P&L 3.3B.

TABLE 2.34 DRYWELL PRESSURE INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.							
Surveillance Requirements: 3.3.6.2.2							
LOCATION:	1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083		Review Initials	
	1-PIS-064-0056D (psig)	1-PIS-064-0056C (psig)	1-PIS-064-0056B (psig)	1-PIS-064-0056A (psig)	MAX DEV	UO	Unit Supvr
Friday					0.2 psig		
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

TABLE 2.35 CORE SPRAY SPARGER DIFFERENTIAL PRESSURE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.					
Criteria Source:	Technical Requirements Manual TSR 3.3.3.3.1					
LOCATION:	1-LPNL-925-0057				Review Initials	
	1-PDIS-075-0028 (psid) Note 1	1-PDIS-075-0056 (psid) Note 1	MIN Note 2 (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday			For each OPERABLE subsystem: DP > 2.0 psid when > 2% RTP OR DP within ± 0.2 psid of Chart Value when ≤ 2% RTP			
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

(1) There is one core spray sparger to reactor pressure differential pressure indicating switch for each core spray subsystem. Each instrument indicates the pressure between its respective core spray loop and the reactor vessel pressure. The Technical Requirements Manual requires the instruments to alarm at 2.0 ± 0.4 psid.

(2) During reactor operation at greater than 2% rated thermal power, indicated differential pressure for each OPERABLE subsystem shall be greater than 2.0 psid. During normal reactor operation at greater than 2% rated thermal power, with core spray in standby readiness, 1-PDIS-075-0028 should read between 3.0 to 4.0 psid and 1-PDIS-075-0056 should read between 3.0 to 6.0 psid. When the Reactor is operating at less than or equal to 2% rated thermal reactor power, the instrument readings should be within ± 0.2 psid of the reading on chart below, based on Reactor water temperature. To determine the correct expected d/p reading, use the chart temperature closest to the actual temperature of the reactor water (i.e. if reactor water temperature is 175°-200°, use 200°). Since no independent instruments measuring the same variable exist, the instrument check will consist of observing that the instrument exhibits an expected reading for the given plant conditions.

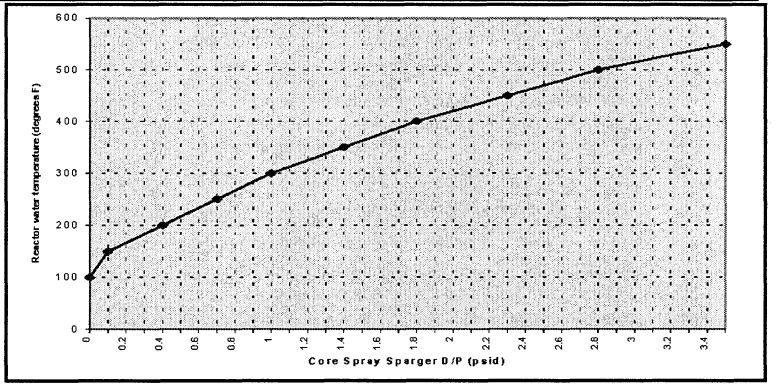


TABLE 2.37 NITROGEN MAKEUP REQUIREMENTS **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Whenever Containment is Inerted			
Criteria Source:	TSR 3.6.5.1 & FSAR 5.2.3.8 & 5.2.4.7			
	Primary Containment Nitrogen Consumption and Leakage 1-SI-4.7.A.2.a		Review Initials	
	When Containment is Inerted, Verify SI is in progress for associated day and initial performed column. (N/A performed column when SI performance is not required.)	Performed	UO	Unit Supvr
Friday				
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

TABLE 2.42 CO2 STORAGE TANK **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	AT ALL TIMES (Note 2)				
Criteria Source:	FIRE PROTECTION REPORT-- FPP Section 9.4.11.D.1.a				
LOCATION:	LOCAL			Review Initials	
	PRESSURE 1-PI-039-0034	LEVEL 1-LIS-039-0033	MAX (AC)	UO	Unit Supvr
Friday			Pressure greater than 275 psig. Level greater than 50% (3 tons) Note 1		
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) Fire Protection Report FPP requires tank level to be greater than 50% (3 tons) full and pressure to be greater than 275 psig.

(2) The CO_2 system pressure and level are required to be recorded once per week but will be recorded daily to monitor for trends which might indicate needed maintenance. Minor fluctuations in tank pressure and level may occur due to the cycling of the compressor.

TABLE 2.43 CONTROL ROOM AIR SUPPLY RADIATION MONITORS **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	Any Unit in MODES 1, 2 OR 3, OR operations with a potential for draining the reactor vessel (OPDRVs).									
Criteria Source:	3.3.7.1.1									
LOCATION:	Note 1								Review Initials	
	RM-90-259A (cpm) Note 2			RM-90-259B (cpm) Note 2			MAX (AC)	MAX DEV (AC)		
	Beta	Gamma	Beta + Gamma	Beta	Gamma	Beta + Gamma			UO	Unit Supvr
Friday							250 cpm (Note 3)	100 cpm (Note 3)		
Saturday										
Sunday										
Monday										
Tuesday										
Wednesday										
Thursday										

(1) The control room air supply radiation monitors are located in the mechanical equipment rooms on elevation 3C.

(2) Use the touch pad's up arrow to scroll thru the screens to obtain reading of each detector.

(3) The "MAX" and "MAX DEV" requirements are compared with the associated channel between each detector. (i.e. compare the beta channel of RM-90-259A with the beta channel of 0-RM-90-259B).

TABLE 2.44 CONTROL ROOM EMERGENCY VENTILATION TIME IN SERVICE RECORD **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	ANY UNIT IN MODES 1 OR 2 OR During Operations with a Potential for Draining the Reactor Vessel (OPDRVs)					
Criteria Source:	3.7.3.2, 5.5.7					
LOCATION:	N/A				Review Initials	
	COL A CREV Time in Service during shift (hours) Note 1	COL B Previous Shift Running Total of CREV Time in Service (hours) Note 2	COL C.2 RUNNING TOTAL of CREV Time in Service COL A + COL B (hours) Note 3	LIMITS Note 4	UO	Unit Supvr
CREV A						
Friday				650 Total Inservice hours		
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
CREV B						
Friday				650 Total Inservice hours		
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

(1) At end of shift, record under Column A the shift inservice time the CREV was in service.

(2) Record under Column B, the previous shift's RUNNING TOTAL of CREV Time in Service as indicated for previous DAY SHIFT under Column C.1 of Attachment 2.

(3) Record under Column B, Previous Shifts Running Total of CREV Time in Service for next DAY SHIFT. Thursday Night, record Column C.2 into next weeks DAY SHIFT Column B, Previous Shifts Running Total of CREV Time in Service.

(4) RUNNING TOTAL of CREV Time in Service is zeroed after completion of required testing. Ventilation Filter Testing Program requires CREV system testing after 720 hours service and following significant fire, painting, or chemical release in the ventilation zone. The Administrative limit is 650 inservice hours.

TABLE 2.45 STANDBY GAS TREATMENT SYSTEM (SBGT) TIME IN SERVICE RECORD **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	ANY UNIT IN MODES 1 OR 2 OR During Operations with a Potential for Draining the Reactor Vessel (OPDRVs)	
Criteria Source:	3.6.4.3.2, 5.5.7	
LOCATION:	N/A	Review Initials

TABLE 2.45 STANDBY GAS TREATMENT SYSTEM (SBGT) TIME IN SERVICE RECORD **NIGHT SHIFT** WEEK: _This Week_ to _Next Week_

APPLICABILITY:	ANY UNIT IN MODES 1 OR 2 OR During Operations with a Potential for Draining the Reactor Vessel (OPDRVs)					
Criteria Source:	3.6.4.3.2, 5.5.7					
LOCATION:	N/A				Review Initials	
	COL A SBGT Time in Service during shift (hours) Note 1	COL B Previous Shift Running Total of SBGT Time in Service (hours) Note 2	COL C.2 RUNNING TOTAL of SBGT Time in Service COL A + COL B (hours)Note 3	LIMITS Note 4	UO	Unit Supvr
SBGT A						
Friday				650 Total Inservice hours		
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
SBGT B						
Friday				650 Total Inservice hours		
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
SBGT C						
Friday				650 Total Inservice hours		
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

NOTES ON FOLLOWING PAGE

NIGHT SHIFT WEEK: _This Week_ to _Next Week__

The following notes are for the SBGT reading on the previous page:

(1) At end of shift, record under Column A the shift inservice time the SBGT was in service.

(2) Record under Column B, the previous shift's RUNNING TOTAL of SBGT Time in Service as indicated for previous DAY SHIFT under Column C.1 of Attachment 2.

(3) Record under Column B, Previous Shifts Running Total of SBGT Time in Service for next DAY SHIFT. Thursday Night, record Column C.2 into next weeks DAY SHIFT Column B, Previous Shifts Running Total of SBGT Time in Service.

(4) RUNNING TOTAL of SBGT Time in Service is zeroed after completion of required testing. Ventilation Filter Testing Program requires SBGT system testing after 720 hours service and following significant fire, painting, or chemical release in the ventilation zone. The Administrative limit is 650 inservice hours.

TABLE 2.46 RESERVOIR WATER LEVEL **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	ANY UNIT IN MODES 1, 2, OR 3						
Criteria Source:	TSR 3.3.6.3, FSAR 5.3.3.5						
LOCATION:	ICS COMPUTER					Review Initials	
	Time	NOTES 1 AND 3	MIN / MAX (AC)	12 HOUR DIFFERENCE	Maximum Difference	UO	Unit Supvr
Friday	2000		≥ 550 Ft. AND ≤ 558 Ft. (Notes 2, 3, & 4)		± 0.75 Ft (9 INCHES) (Note 5)		
	0200						
Saturday	2000						
	0200						
Sunday	2000						
	0200						
Monday	2000						
	0200						
Tuesday	2000						
	0200						
Wednesday	2000						
	0200						
Thursday	2000						
	0200						

(1) Whenever 0-LS-23-75A or 0-LS-23-75B is declared inoperable, and alternate manual surveillance program using plant personnel to monitor reservoir level once per 8 hours may be used in lieu of restoring the inoperable instrumentation to OPERABLE status.

(2) [NRC/C] Notify SM, Unit 2/3 Operator if reservoir level is ≥558 ft. RHRSW/EECW flood doors, manholes, and access hatches are required to be closed or associated pumps declared inoperable. REFER TO 0-AOI-100-3.[Inspection Report 86-25]

(3) [QA/C] Phone Wheeler Dam (9-1-256-314-4800/4811/4812) or River System Operations (5-632-7063 or 9-1-865-632-7063) or go to the TVA Reservoir water level web page and record reservoir level. If the level reaches 558 ft. or if flood water enters the Service Building Corridor, the doors and hatches listed in Att. 1/2, of 0-AOI-100-3 must be closed.[CAQR BF 890330]

(4) Reservoir level is verified above 550' once every eight hours. This level verifies Secondary Containment integrity is met for the Raw Cooling Water System discharge piping. Notify Shift Manager/Unit Supervisor and Unit 2/3 Operators if reservoir level is ≤550 ft. IF Reservoir Level is verified, via Wheeler Dam, to be below 550 ft, VERIFY RCW is in service on all three units in accordance with OI-24. If the reservoir level cannot be restored to ≥550 ft within 12 hours, Secondary Containment integrity may not be assured and LCO 3.6.4.1.A shall be entered. A Narrative Log entry shall be made (at the time of discovery) to this effect and carried as an open item until reservoir level is restored.

(5) If the 6 hour or the 12 hour difference is greater than ± .75ft (± 9 inches) change, then dispatch personnel to verify gate level and adjust Gate 3 as required per 3-OI-27.

TABLE 2.47 RESERVOIR WATER TEMP DOWNSTREAM AVERAGE **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	At All Times								
Criteria Source:	NPDES, DSN101, Area Plan 0800								
LOCATION:	ICS Computer, OR TSC Computer							Review Initials	
	Time	Hourly Downstream Average	MAX	24-Hour Downstream Average	MAX	24-Hour River Temperature Rise	MAX	UO	Unit Supvr
Friday	2000		Note 1		90°F		10°F		
	0200								
Saturday	2000								
	0200								
Sunday	2000								
	0200								
Monday	2000								
	0200								
Tuesday	2000								
	0200								
Wednesday	2000								
	0200								
Thursday	2000								
	0200								

(1) Each shift, the ICS Computer, or the TSC Computer shall be reviewed to ensure the limits are not exceeded and no trends are apparent which might cause the limits to be exceeded before the next shift reading.

(2) Any violation of these limits requires consulting SPP-5.5 "Environmental Control" and notification of the Shift Manager / Unit Supervisor.

(3) The 1-Hour average downstream plant-induced water temperature should not exceed 93°F. The 1-Hour Average downstream plant-induced water temperature should not exceed 92°F for more than 6 hours during any 24 hour period.

TABLE 2.48 METEOROLOGICAL INSTRUMENTATION **NIGHT SHIFT** WEEK: _This Week_ to _Next Week__

APPLICABILITY:	AT ALL TIMES (Note 2)							
Criteria Source:	TSR 3.3.7.1							
LOCATION:	ICS Computer (Note 1)						Review Initials	
	WIND DIRECTION			WIND SPEED			UO	Unit Supvr
	91M	46M	10M	91M	46M	10M		
Friday								
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								
	AMBIENT AIR Δ TEMPERATURE							
	10VS46	10VS91						
Friday								
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Back up MET data can be obtained from the Met. Station recorders and printers, or TSC line printer.

(2) [NRC/C] Daily readings of the wind speed, wind direction and ambient air temperature gradient will be logged on 1-SR-2 only. Wind speed and direction will be recorded for elevations 10M, 46M, and 91M. Ambient air temperature gradient will be determined for elevation difference between 10M to 46M, and 10M to 91M.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-1b

TITLE: COMPLETE 1-SR-2 REVIEW PRIOR TO A MODE CHANGE

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	6/30/07	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 0606 AJPM 2-1b

JPM TITLE: COMPLETE 1-SR-2 REVIEW PRIOR TO A MODE CHANGE

TASK NUMBER: x-XXX-xx-xx

TASK TITLE: Perform 1-SR-2 REVIEW PRIOR TO A MODE CHANGE
K/A NUMBER: 2.1.2 K/A RATING: RO 3.0 SRO: 4.0

TASK STANDARD: Review 1-SR-2 prior to a mode change

LOCATION OF PERFORMANCE: SIMULATOR _x_ PLANT _ CONTROL ROOM __

REFERENCES/PROCEDURES NEEDED: 1-SR-2 REV 7

VALIDATION TIME: CONTROL ROOM: ____ LOCAL: ____

PERFORMANCE TIME: _____ CONTROL ROOM ___ LOCAL __

COMMENTS: **FOR THIS JPM, INSTRUCTOR NEEDS 0606 AJPM 2-1b HANDOUT (1-SR-2)(Print pgs 1 - 69 - Day Shift only) have TS 3.0 and 3.3 availible if requested.**

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ___ UNSATISFACTORY ___

EXAMINER SIGNATURE:_____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are the Unit supervisor on Unit 1. A RX Startup is in progress, Unit 1 in Mode 2 at 950 psig and has 2 Bypass Valves full open. Unit 1 is expected to go to MODE 1 around 1600 today. 1-SR-2 Data has been taken for your shift and needs to be reviewed prior to taking the MODE SWITCH to Mode 1,

INITIATING CUES: The Shift Manager directs you to review 1-SR-2, identify any problem(s) that may prevent going to Mode 1, address related Tech Specs (if any), and to make the determination if RX Startup can continue to MODE 1.

FOR THE EXAMINER ONLY

Instructor Note: If candidate says they would check ICS or have IM's obtain voltage readings per SII-1-XX-03-100 (Note 2), REPORT: ICS and IM readings indicate readings are correct.

The SRO is to Review 1-SR-2 to ensure RX Startup can continue to MODE 1.

During the Review HE/SHE should find :

1-LIS-003-0184 reading 29" page 55 of 117

1-LIS-003-0185 reading 35" page 55 of 117

CRITICAL STEP: MAKES DETERMINATION THAT INSTRUMENTS ARE 6.0" APART AND MAX DEVIATION is 5.0"

AND

CRITICAL STEP: Refers to Tech Specs. And Enters T.S. 3.3.5.1 Action (F) Declare Automatic Depressurization System (ADS) Inoperable Within 1 Hour from Discovery of Loss of ADS initiation capability in both trip systems.

AND

THESE instruments input to ADS system and RX MODE CANNOT Proceed to MODE 1.

OR

CRITICAL STEP: Refers to Tech Specs. And Enters T.S. 3.3.5.1Action (F) Declare Automatic Depressurization System (ADS) Inoperable Within 1 Hour from Discovery of Loss of ADS initiation capability in both trip systems.

AND

Has a risk assessment performed addressing inoperable systems and components and enters LCO 3.0.4b allowing entry into a MODE or other specified condition in the Applicability with the LCO not met.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are the Unit supervisor on Unit 1. A RX Startup is in progress, Unit 1 in Mode 2 at 950 psig and has 2 Bypass Valves full open. Unit 1 is expected to go to MODE 1 around 1600 today. 1-SR-2 Data has been taken for your shift and needs to be reviewed prior to taking the MODE SWITCH to Mode 1,

INITIATING CUES: The Shift Manager directs you to review 1-SR-2, identify any problem(s) that may prevent going to Mode 1, address related Tech Specs (if any), and to make the determination if RX Startup can continue to MODE 1.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-2

TITLE: PERFORM 2-SR-3.4.2.1 JET MISMATCH AND OPERABILITY (OPERATION)

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	06/03/07	All	New Procedure

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 0606 AJPM 2-2
TASK NUMBER: U-068-SU-05

TASK TITLE: PERFORM JET PUMP MISMATCH AND OPERABILITY SR OPERATION)

K/A NUMBER: 202001G13 K/A RATING: RO 3.6 SRO: 3.4

****

TASK STANDARD: COMPLETE AN IN-PROGRESS SURVEILLANCE REQUIREMENT ON REACTOR RECIRCULATION SYSTEM JET PUMP MISMATCH AND OPERABILITY

LOCATION OF PERFORMANCE: SIMULATOR X PLANT _ CONTROL ROOM _

REFERENCES/PROCEDURES NEEDED: 2-SR-3.4.2.1, REVISION 21

VALIDATION TIME: CONTROL ROOM: 30:00 LOCAL: ____

MAX. TIME ALLOWED: ____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM ___ LOCAL ___

COMMENTS: **THE SR SHOULD BE COMPLETED UP TO STEP 7.2 BEFORE IT IS GIVEN TO THE PERFORMER.**

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ___ UNSATISFACTORY ___

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task and when you have completed the assigned task.

****

INITIAL CONDITIONS: You are a Unit 2 Operator. Unit 2 is operating at 100% power for 280 Days on line,. 2-SR-3.4.2.1, Jet Pump Mismatch and Operability, is in progress and complete up to Step 7.2[1]. Applicant should contact Evaluator for any necessary feedback or info and or to indicate task completion.

INITIATING CUES: The Unit Supervisor directs you to continue with 2-SR-3.4.2.1. starting with Step 7.2[1].

START TIME_____

NOTE FOR EXAMINER , Data Sheet for Student is the Last Sheet in the JPM and is to be given to the Student with a copy of the SR with all Steps signed off thru Step 7.2.

****

NOTE: ALL OF THE FOLLOWING STEPS WILL REQUIRE DATING EACH PAGE OF THE SR AND INITIALING/"N/A"ING AS APPROPRIATE.

****

Performance Step: Critical___ Not Critical_X_

7.2 Data Collections

7.2.1 Core Power and Flow Readings

[1] **RECORD** the Core thermal power from Core Power and Flow Log. (N/A if ICS is not available) Point CALC002 **3456** CMWT.

Standard:

RECORDS ICS point CALC002 (From Data Sheet).

SAT_UNSAT_N/A_ COMMENTS:_____

_____

****

****

Performance Step: Critical__ Not Critical X__

[2] **RECORD** the Core plate differential pressure from ICS point 68-52 or 2-XR-68-50 (Green Pen). (N/A if not available).
Core Press Drop 68-52 **14.4** PSID

Standard:

RECORDS Core plate differential pressure from ICS point 68-52 or 2 XR-68-50 (From Data Sheet).

SAT__UNSAT__N/A__ COMMENTS:_____

_____

****

Performance Step: Critical__ Not Critical__X__

[3] **RECORD** the Total Core flow.

Total Core Flow (Red Pen) 2-XR-68-50
87.0 Mlb/hr

Standard:

RECORDS Total Core Flow 2-XA-68-50 (From Data Sheet).

SAT__UNSAT__N/A__ COMMENTS:_____

_____

****

****

NOTES

1) If 2-SIT-68-59/71 (RB. El 565 R-9 S-line - Local Panel) is used log the reason in post test Remarks.

2) Use the 2-SI-96-61 (or ICS PT 96-61) if both 2-SI-68-59 and 2-SIT-68-59 are not available for the2A Pump Motor and log the reason in post test Remarks.

3) Use the 2-SI-96-73 (or ICS PT 96-73) if both 2-SI-68-71 and 2-SIT-68-71 are not available for the 2B Pump Motor and log the reason in post test Remarks.

4) If a Recirculation Pump is not in service then the associated instrumentations can be marked as N/A.

****

****

Performance Step: Critical__ Not Critical_X__

7.2.2 Recirculation Pump Loops

[1] **RECORD** the Recirc Pump 2A and 2B Mtr Speeds for operating Recirc Pumps and circle instrumentation used.

Pump Mtr 2A	Pump Mtr 2B
2-SI-68-59 or 2-SIT-068-0059 or 2-SI-96-61	2-SI-68-71 or 2-SIT-068-0071 or 2-SI-96-73
1313 RPM	**1313** RPM

[2] **RECORD** the Recirc Pump Discharge flows.

Loop 2A 2-FI-68-5	Loop 2B 2-FI-68-81
41.0 gpm X 1000	**44.0** gpm X 1000

[3] **RECORD** the Recirc loop 2A and 2B Jet Pump Flow.

Loop 2A 2-FI-68-46	Loop 2B 2-FI-68-48
46 Mlb/hr	**45** Mlb/hr

Standard:

RECORDS Data in steps [1],[2], and [3] (From Data Sheet).

SAT_UNSAT_N/A_ COMMENTS:_____

_____

****

NOTE
If a Recirculation Pump is not in service then the associated instrumentations can be marked as N/A.

****

Performance Step: Critical_ Not Critical X__

7.2.3 Jet Pump Loops

[1] **RECORD** the following Differential Pressure readings below:

Loop 2A			Loop 2B		
INSTRUMENT	JET PUMP	PSID	INSTRUMENT	JET PUMP	PSID
2-PDI-68-38	11	9.0	2-PDI-68-15	1	9.0
2-PDI-68-39	12	9.0	2-PDI-68-18	2	9.5
2-PDI-68-40	13	9.5	2-PDI-68-19	3	9.0
2-PDI-68-42	14	9.0	2-PDI-68-21	4	9.5
2-PDI-68-43	15	8.5	2-PDI-68-22	5	10.0
2-PDI-68-07	16	9.0	2-PDI-68-25	6	9.5
2-PDI-68-08	17	9.0	2-PDI-68-26	7	10.0
2-PDI-68-10	18	9.5	2-PDI-68-28	8	10.5
2-PDI-68-11	19	8.5	2-PDI-68-29	9	9.5
2-PDI-68-13	20	9.5	2-PDI-68-30	10	9.5

Standard:

RECORDS Jet Pump Differential Pressure readings (From Data Sheet)

SAT_UNSAT_N/A_ COMMENTS:_____

_____

****

NOTES

1) Section 7.3 is performed when both Recirculation Pumps are in service. This section should be N/A'ed when in Single Loop Operation.

2) To satisfy procedure Acceptance Criteria, either Step 7.3[3] or Step 7.3[4] must be satisfied.

****

Performance Step: Critical___ Not Critical__X_

7.3 Tech Spec 3.4.1.1 - Recirculation Loop Mismatch Verification With Both Recirculation Loops In Operation Checks

[1] **CALCULATE** percent of rated core flow (%WT) using data obtained in Section 7.2.1[3] as follows.

(Step 7.2.1[3] ÷102.5) X 100=	% Core Flow
(__**87**__ ÷102.5) X 100 =	__**84.88**__

[2] **CALCULATE** the absolute value for Recirculation Loop Jet Mismatch using data obtained in Section 7.2.2[3] as follows.

2-FI-68-46 - 2-FI-68-48 = Mismatch

__**46**__ Mlb/hr - __**45**__ Mlb/hr = __**1**__ Mlb/hr

Standard:

PERFORMS CALCULATION in Steps [1] and [2] (2 Mlb/hr mismatch).

SAT_UNSAT_N/A_ COMMENTS:_____

_____

****

****

Performance Step: Critical___ Not Critical_X_

[3] **IF** %WT is < 70% as recorded in Step 7.3[1], **THEN** **VERIFY** Recirculation Loop Jet Pump Flow Mismatch recorded in Step 7.3[2] is ≤10.25 Mlb/hr. (Otherwise N/A) _____(AC)

[4] **IF** %WT is ≥ 70% as recorded in Step 7.3[1], **THEN** **VERIFY** Recirculation Loop Jet Pump Flow Mismatch recorded in Step 7.3[2] is ≤5.12 Mlb/hr. (Otherwise N/A) _____(AC)

Standard:

MARKS Step [3] **N/A** due to > 70% AND **Initials** steps [4].
SAT_UNSAT_N/A_ COMMENTS:_____

_____

****

NOTES

1) Section 7.4 should be marked as N/A if RTP is ≤25%.
2) Jet Pump Operability is not required to be performed until 4 hours after associated recirculation loop is in operation and then only within 24 hours after RTP is > 25%.

****

****

Performance Step: Critical__X__ Not Critical___

7.4 Tech Spec 3.4.2.1 - Part A -Recirculation Pump and Jet Pump Flow to Recirculation Pump Speed:

7.4.1 Jet Pump Loop 2A

[1] Using the 2A Pump Speed recorded in Step 7.2.2[1] and the 2A Pump Flow recorded in Step 7.2.2[2]:

CHECK that the plot falls between the two bold lines on Illustration 1 and **RECORD** below.

Plot falls between the bold lines	Yes ☒	No ☐

[2] Using the 2A Pump Speed recorded in Step 7.2.2[1] and the 2A Jet Pump Flow in Step7.2.2[3]:

CHECK that the plot falls between the two bold lines on Illustration 2 and **RECORD** below.

Plot falls between the bold lines	Yes ☐	No ☒

[3] Using Steps 7.4.1[1] and 7.4.1[2] from above:

DETERMINE if the Jet Pump Loop 2A criteria is satisfied by marking below if both steps are marked as Yes.

Jet Pump Loop 2A criteria is satisfied	Yes ☐	No ☒

Standard:

MARKS Steps [1] **YES**, [2] and [3] **NO** after verifying CHECKING the plot does **NOT** fall between the bold lines on Illustration 2.

SAT__UNSAT__N/A__ COMMENTS:_____

****

Performance Step: Critical X Not Critical___

7.4.2 Jet Pump Loop 2B

[1] Using the 2A Pump Speed recorded in Step 7.2.2[1] and the 2B Pump Flow recorded in Step 7.2.2[2]:

CHECK that the plot falls between the two bold lines on Illustration 3 and **RECORD** below.

Plot falls between the bold lines Yes ☐No ☒

[2] Using the 2B Pump Speed recorded in Step 7.2.2[1] and the 2B Jet Pump Flow in Step7.2.2[3]:

CHECK that the plot falls between the two bold lines on Illustration 4 and **RECORD** below.

Plot falls between the bold lines Yes ☒No ☐

[3] Using Steps 7.4.2[1] and 7.4.2[2] from above:

DETERMINE if the Jet Pump Loop 2B criteria is satisfied by marking below if both steps are marked as Yes.

Jet Pump Loop 2B criteria is satisfied Yes ☐No ☒

Standard:

MARKS Steps [1] **NO**,[2] **YES,** and [3] **NO** after verifying CHECKING the plot does **NOT** fall between the bold lines on Illustration 3 for step 7.4.2[1].

SAT_UNSAT_N/A_ COMMENTS:_____

_____

****

****

Performance Step: Critical__X__ Not Critical___

7.4.3 Recirculation Jet Pump Diffuser to Lower Plenum Differential Pressure Verification:

[1] Using the individual 2A Jet Pump DP's recorded in Step 7.2.3[1]

CHECK that each individual Jet Pump DP recorded fall between the two bold lines on Illustration 5 for the recorded Total Flow in step 7.2.1[3] and **RECORD** results below.

2A Individual DP's are between the bold lines.	Yes	☒No	☐

[2] Using the individual 2B Jet Pump DP's recorded in Step 7.2.3[1]

CHECK that each individual Jet Pump DP recorded fall between the two bold lines on Illustration 6 for the recorded Total Flow in step 7.2.1[3] and **RECORD** results below.

2B Individual DP's are between the bold lines.	Yes	☐No	☒

[3] Using Steps 7.4.3[1] and 7.4.3[2]

DETERMINE whether the Recirculation Jet Pump Diffuser to Lower Plenum Differential Pressure Verification criteria is satisfied by marking below if both steps are marked as Yes.

Jet Pump Diffuser to Lower Plenum Differential Pressure Verification criteria is satisfied	Yes	☐No	☒

Standard:

MARKS Steps [1] **YES**,[2] **NO**, and [3] **NO** after VERIFING DP is **NOT** between the two lines on Illustration 6 for step 7.4.3[2].

SAT__UNSAT__N/A__ COMMENTS:_____

_____

****

CAUTION

An Engineering Judgment/Review may only be utilized until relationships between core flow, jet pump flow, and Recirculation loop flow have been established following a refueling outage or during the initial weeks of extended single loop operation. Engineering judgment of the daily surveillance results is used to detect significant abnormalities which could indicate a jet pump failure. (Reference SR 3.4.2.1 bases)

****

Performance Step: Critical__X_ Not Critical___

7.4.4 Operability Determination

[1] **IF** any of the following conditions apply:

. ☐Following Refueling Outage. (See Caution above)

OR

. ☐The Reactor is in Single Loop Operation (See Caution above)

OR

. ☒If Steps 7.4.1[3], 7.4.2[3] and 7.4.3[3] fall outside the bolded lines, to determine if the graphs need updating **THEN**

PERFORM Attachment 2, Engineering Judgment/Review: (Otherwise N/A if not required.) _____

Standard:

The UNIT has been running for 280 days , Both recirc loops are I/S but Steps 7.4.2[3] and 7.4.3[3] do not fall within the lines on the graphs, SO this Step should be **initialed** and Attachment 2 completed.

SAT_UNSAT_N/A_ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical___

Attachment 2
Engineering Judgement/Review

Date: _____

CAUTION
Engineering Judgment Evaluation may only be utilized until relationships between core flow, jet pump flow, and Recirculation loop flow have been established following a refueling outage or during the initial weeks of extended single loop operation. Engineering judgment of the daily surveillance results is used to detect significant abnormalities which could indicate a jet pump failure. (Reference SR 3.4.2.1 bases)

[1] Mark the condition that applies:

Following Refueling Outage.	☐
The Reactor is in Single Loop Operation	☐
Steps 7.4.1[3], 7.4.2[3] and 7.4.3[3] fall outside the bolded lines	☒

[2] **REQUEST** System Engineering to perform an Engineering Judgement/Review. _____

[3] **IF** the Engineering Judgment/Review was performed following a Refueling Outage or during Single Loop Operation, **THEN**

DETERMINE if the Jet Pump Criteria is satisfied and no significant abnormalities which could indicate a jet pump failure are indicated and **RECORD** the results below. (Otherwise N/A)

Jet Pump Criteria Satisfied. Yes ☐ No ☐ **N/A**

[4] **IF** the Engineering Judgment/Review was performed to determine if the graphs needs updated, **THEN**

REQUEST a System Engineering to: (Otherwise N/A)

A. **SUPPLY** Operations with new graphs to Operations Procedures. _____

B. **RECORD** below if Jet Pump Criteria is satisfied.

Jet Pump Criteria Satisfied. Yes ☐ No ☐ _____

Standard:

MARKS third box on [1] & signs, Signs [2], N/A's [3], and sends to engineering. **CUE: Engineer N/A's 4A and signs 4B after marking NO (See cue - below)**

SAT_UNSAT_N/A_ COMMENTS:_____

CUE: Attachment 2 has come back from Engineering marked NO

****

Performance Step: Critical_X_ Not Critical___

[2] **MARK** the appropriate criteria results for the following.
(N/A any criteria not performed.)

Steps	Criteria Results	Yes	No	N/A
7.4.1[3] and 7.4.2[3]	Both Jet Pump Loops steps are marked as YES	☐	☒	☐
7.4.3[3]	Jet Pump DP to criteria is marked as YES.	☐	☒	☐
Attachment 2	Engineering Evaluation is marked as YES.	☐	☒	☐

Standard:
MARKS Steps 7.4.1[3] and 7.4.2[3] **NO,** Step 7.4.3[3] **NO** and ATT 2 **NO (after cue).**

SAT_UNSAT_N/A_ COMMENTS:_____

_____
****

Performance Step: Critical_X_ Not Critical___

[3] Using the Criteria Results in Step 7.4.4[2]

VERIFY at least one Criteria Results is satisfied and marked as YES. _____(AC)

Standard:

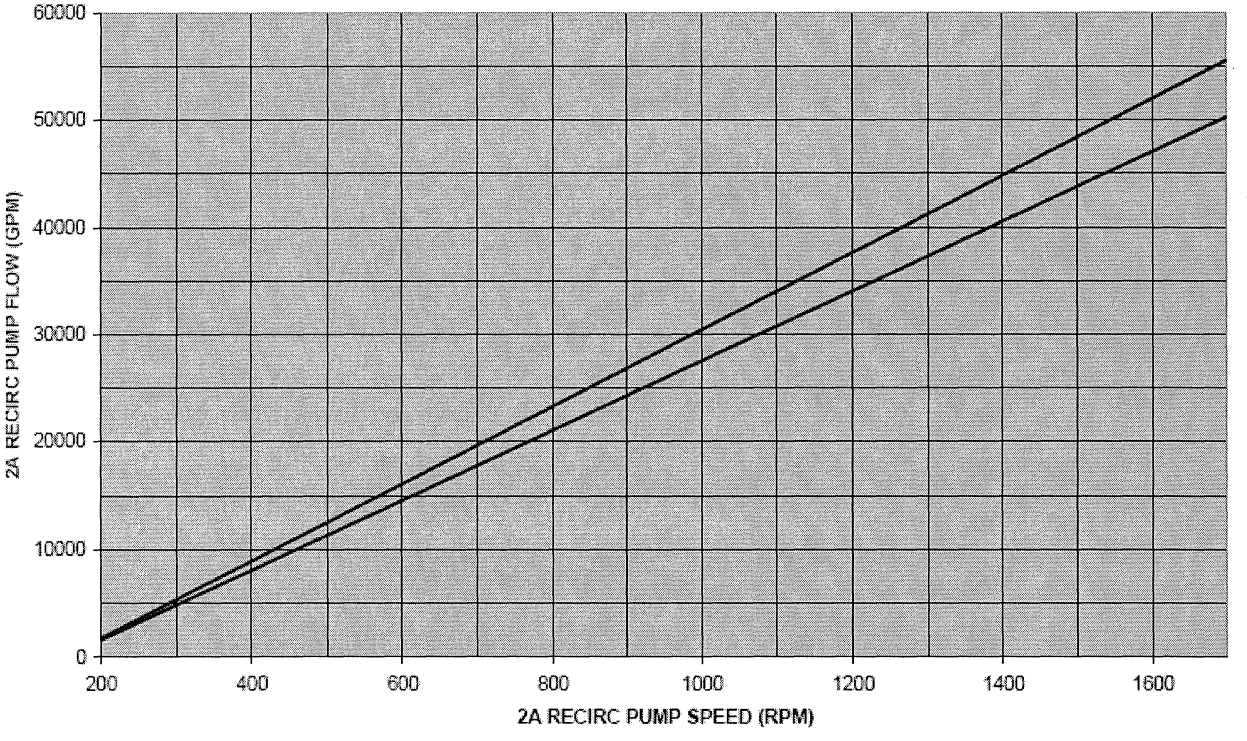
DOES NOT SIGN OFF Step 7.4.4[3] (**Critical**) and NOTIFIES US OF FAILURE (Not Critical)

SAT_UNSAT_N/A_ COMMENTS:_____

_____
****

****

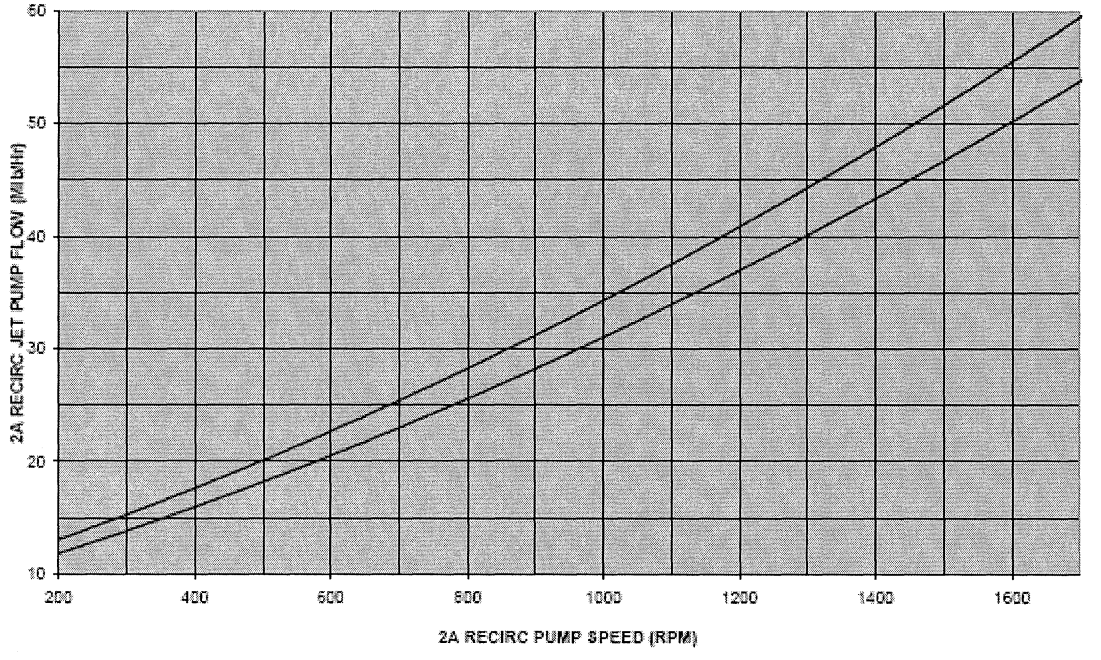
2A RECIRC PUMP SPEED VS PUMP FLOW
TWO LOOP OPERATION



****

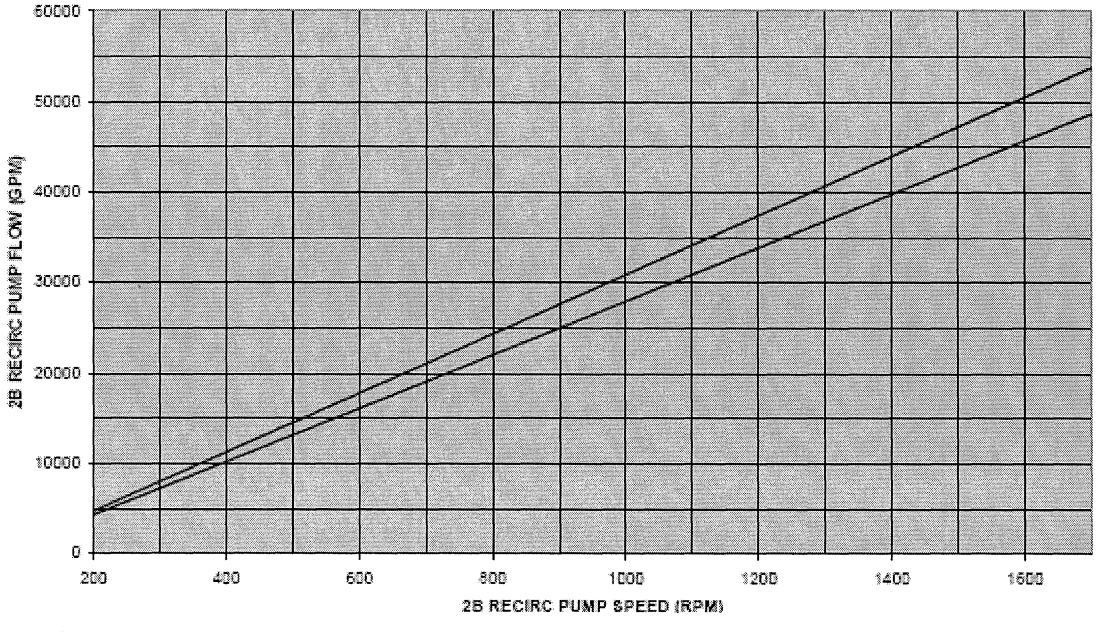
****

2A RECIRC SPEED VS JET PUMP FLOW
TWO LOOP OPERATION



****

2B RECIRC PUMP SPEED VS PUMP FLOW
TWO LOOP OPERATION



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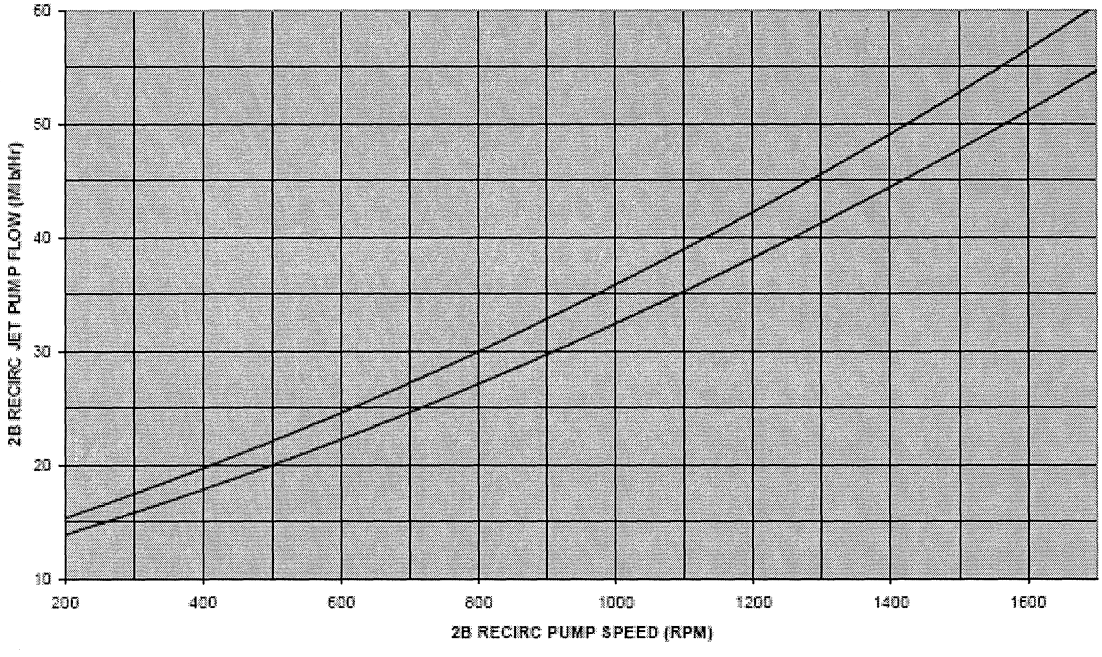
2B RECIRC PUMP SPEED VS JET PUMP FLOW
TWO LOOP OPERATION



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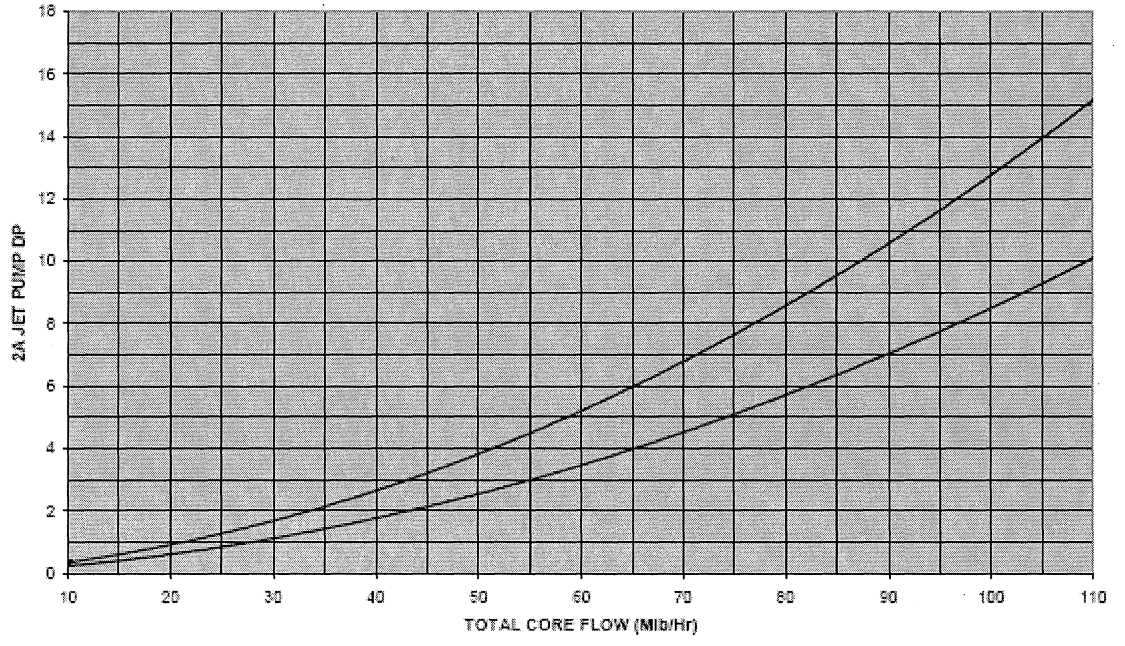
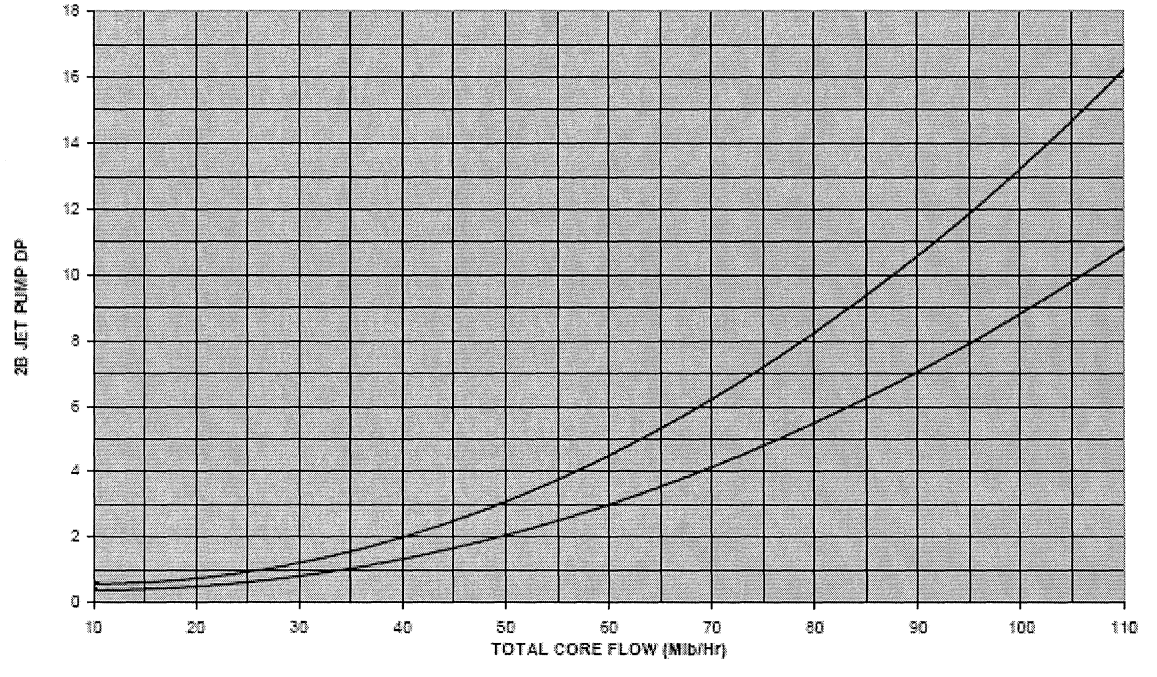
2A TOTAL CORE FLOW VS JET PUMP DP
TWO LOOP OPERATION



****

2B TOTAL CORE FLOW VS JET PUMP DP
TWO LOOP OPERATION



****

Performance Step: Critical___Not Critical X___

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT___UNSAT___N/A___COMMENTS_____
_____
_____

END OF TASK

STOP TIME____

EVALUATOR's Data Sheet

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

INITIAL CONDITIONS: You are a Unit 2 Operator. Unit 2 is operating at 100% power for 280 Days on line,. 2-SR-3.4.1, Jet Pump Mismatch and Operability, is in progress and complete up to Step 7.2[1].

INITIATING CUES: The Unit Supervisor directs you to continue with 2-SR-3.4.2.1. starting with Step 7.2[1].

Point CALC002			3456 CMWT
2-XR-68-50, CORE PRESSURE DROP (Green pen)			14.4 PSID
2-SI-68-59, RECIRC PUMP 2A MOTOR SPEED			1313 RPM
2-SI-68-71, RECIRC PUMP 2B MOTOR SPEED			1313 RPM
2-FI-68-5, RECIRC PUMP 2A DISCHARGE FLOW			41.0 gpm x 1000
2-FI-68-81, RECIRC PUMP 2B DISCHARGE FLOW			44.0 gpm X 1000 **(out of bounds)**
2-FI-68-46, RECIRC LOOP 2A JET PUMP FLOW			46 Mlb/hr (out of bounds)
2-FI-68-48, RECIRC LOOP 2B JET PUMP FLOW			45 Mlb/hr
2-XR-68-50, TOTAL CORE FLOW (Red pen)			87.0 Mlb/hr
2-PDI-68-38	JET PUMP 11	LOOP 2A	9.0 PSID
2-PDI-68-39	JET PUMP 12		9.0 PSID
2-PDI-68-40	JET PUMP 13		9.5 PSID
2-PDI-68-42	JET PUMP 14		9.0 PSID
2-PDI-68-43	JET PUMP 15		8.5 PSID
2-PDI-68-07	JET PUMP 16		9.0 PSID
2-PDI-68-08	JET PUMP 17		9.0 PSID
2-PDI-68-10	JET PUMP 18		9.5 PSID
2-PDI-68-11	JET PUMP 19		8.5 PSID
2-PDI-68-13	JET PUMP 20		9.5 PSID
2-PDI-68-15	JET PUMP 1	LOOP 2B	9.0 PSID
2-PDI-68-18	JET PUMP 2		9.5 PSID
2-PDI-68-19	JET PUMP 3		9.0 PSID
2-PDI-68-21	JET PUMP 4		9.5 PSID
2-PDI-68-22	JET PUMP 5		10.0 PSID
2-PDI-68-25	JET PUMP 6		9.5 PSID
2-PDI-68-26	JET PUMP 7		10.0 PSID
2-PDI-68-28	JET PUMP 8		10.5 PSID **(out of bounds)**
2-PDI-68-29	JET PUMP 9		9.5 PSID
2-PDI-68-30	JET PUMP 10		9.5 PSID

STUDENT HANDOUT

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

INITIAL CONDITIONS: You are a Unit 2 Operator. Unit 2 is operating at 100% power for 280 Days on line,. 2-SR-3.4.1, Jet Pump Mismatch and Operability, is in progress and complete up to Step 7.2[1].

INITIATING CUES: The Unit Supervisor directs you to continue with 2-SR-3.4.2.1. starting with Step 7.2[1].

Point CALC002			3456 CMWT
2-XR-68-50, CORE PRESSURE DROP (Green pen)			14.4 PSID
2-SI-68-59, RECIRC PUMP 2A MOTOR SPEED			1313 RPM
2-SI-68-71, RECIRC PUMP 2B MOTOR SPEED			1313 RPM
2-FI-68-5, RECIRC PUMP 2A DISCHARGE FLOW			41.0 gpm x 1000
2-FI-68-81, RECIRC PUMP 2B DISCHARGE FLOW			44.0 gpm X 1000
2-FI-68-46, RECIRC LOOP 2A JET PUMP FLOW			46 Mlb/hr
2-FI-68-48, RECIRC LOOP 2B JET PUMP FLOW			45 Mlb/hr
2-XR-68-50, TOTAL CORE FLOW (Red pen)			87.0 Mlb/hr
2-PDI-68-38	JET PUMP 11	LOOP 2A	9.0 PSID
2-PDI-68-39	JET PUMP 12		9.0 PSID
2-PDI-68-40	JET PUMP 13		9.5 PSID
2-PDI-68-42	JET PUMP 14		9.0 PSID
2-PDI-68-43	JET PUMP 15		8.5 PSID
2-PDI-68-07	JET PUMP 16		9.0 PSID
2-PDI-68-08	JET PUMP 17		9.0 PSID
2-PDI-68-10	JET PUMP 18		9.5 PSID
2-PDI-68-11	JET PUMP 19		8.5 PSID
2-PDI-68-13	JET PUMP 20		9.5 PSID
2-PDI-68-15	JET PUMP 1	LOOP 2B	9.0 PSID
2-PDI-68-18	JET PUMP 2		9.5 PSID
2-PDI-68-19	JET PUMP 3		9.0 PSID
2-PDI-68-21	JET PUMP 4		9.5 PSID
2-PDI-68-22	JET PUMP 5		10.0 PSID
2-PDI-68-25	JET PUMP 6		9.5 PSID
2-PDI-68-26	JET PUMP 7		10.0 PSID
2-PDI-68-28	JET PUMP 8		10.5 PSID
2-PDI-68-29	JET PUMP 9		9.5 PSID
2-PDI-68-30	JET PUMP 10		9.5 PSID

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-3

TITLE: REVIEW A RADIOLOGICAL SURVEY MAP

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	06/07/07	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 0606 AJPM 2-3

TASK NUMBER: ADMIN

TASK TITLE: N/A

K/A NUMBER: 2.3.10 K/A RATING: RO 2.9 SRO: 3.3

****

TASK STANDARD: REVIEW A RADIOLOGICAL SURVEY MAP TO DETERMINE IF A TASK CAN BE COMPLETED WITHOUT EXCEEDING EXPOSURE LIMITS.

LOCATION OF PERFORMANCE: SIMULATOR __ PLANT _ CONTROL ROOM _

REFERENCES/PROCEDURES NEEDED: Handout - Survey Map

VALIDATION TIME: CONTROL ROOM:_____LOCAL: _____

MAX. TIME ALLOWED: ____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: ____ CONTROL ROOM ___ LOCAL ___

COMMENTS: **0606AJPM2-3Survey.DOC is required to accompany this JPM PRINT IN COLOR**

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ___ UNSATISFACTORY ___

EXAMINER SIGNATURE:_____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

EXAMINER'S KEY

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Browns Ferry employee who has obtained an accumulative yearly dose of 850 mrem.

INITIATING CUES: Given the following survey map, DETERMINE the dressout requirements and if you can complete the assigned task in the area without exceeding your TVA administrative yearly dose limit or RWP entry limits.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 30 minutes for venting. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require 10 minutes to close the valve and another 10 minutes to install the mechanical restraining device. The map of the room has radiological survey information you must interpret to successfully complete this JPM. Assume the 30cm reading will be the whole body dose received at each location.

Key Continued on next page

ANSWER

Dressout requirements;

1. Shoe covers, one pair
2. No personal outer clothing
3. Coveralls, one pair
4. Face Shield
5. Gloves, rubber, two pair **(Critical except #2, 7, & 8.)**
6. cloth inserts
7. modesty clothing
8. Surgeon's cap
9. Booties, plastic, 2 pair
10. Rain suit
11. Hood
12. Safety Belt & Lifeline

2 Hx's at 30 min
30/60 = .5 hrs
.5 x 250 = 125 mrem to vent Hx

10 min to close valve + 10 min to install device = 20 min
20/60 = .33 hrs
.33 x 100 = 33.3mrem to close vlv & install device

125 + 33.3 = 158.3

158.3 + 850 = 1008.3 (**NO** - not within TVA annual limit of 1R) **(Critical)**

158.3 < 200 dose alarm limit of RWP but not within remaining rad margin
work areas at 30cm dose rate 250 & 100 are both < 500mrem rate alarm
Therefore (**NO** - not within the limits of the RWP) **(Critical)**
i.e. DO NOT EXCEED 250 mrem PER ENTRY OR DOSE MARGIN (RAD-REMAINING ALLOWABLE DOSE)

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

INITIAL CONDITIONS: You are a Browns Ferry employee who has obtained an accumulative yearly dose of 850 mrem.

INITIATING CUES: Given the following survey map, DETERMINE the dressout requirements and if you can complete the assigned task in the area without exceeding your TVA administrative yearly dose limit or RWP entry limits.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 30 minutes for venting. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require 10 minutes to close the valve and another 10 minutes to install the mechanical restraining device. The map of the room has radiological survey information you must interpret to successfully complete this JPM. Assume the 30cm reading will be the whole body dose received at each location.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-3

TITLE: REVIEW A RADIOLOGICAL SURVEY MAP

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	06/07/07	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 0606 AJPM 2-3

TASK NUMBER: ADMIN

TASK TITLE: N/A

K/A NUMBER: 2.3.10 K/A RATING: RO 2.9 SRO: 3.3

****

TASK STANDARD: REVIEW A RADIOLOGICAL SURVEY MAP TO DETERMINE IF A TASK CAN BE COMPLETED WITHOUT EXCEEDING EXPOSURE LIMITS.

LOCATION OF PERFORMANCE: SIMULATOR __ PLANT _ CONTROL ROOM _

REFERENCES/PROCEDURES NEEDED: Handout - Survey Map

VALIDATION TIME: CONTROL ROOM:_____LOCAL: _____

MAX. TIME ALLOWED: ____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM ___ LOCAL ___

COMMENTS: **0606AJPM2-3Survey.DOC is required to accompany this JPM PRINT IN COLOR**

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ___ UNSATISFACTORY ___

EXAMINER SIGNATURE:_____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

EXAMINER'S KEY

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Browns Ferry employee who has obtained an accumulative yearly dose of 850 mrem.

INITIATING CUES: Given the following survey map, DETERMINE the dressout requirements and if you can complete the assigned task in the area without exceeding your TVA administrative yearly dose limit or RWP entry limits.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 30 minutes for venting. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require 10 minutes to close the valve and another 10 minutes to install the mechanical restraining device. The map of the room has radiological survey information you must interpret to successfully complete this JPM. Assume the 30cm reading will be the whole body dose received at each location.

Key Continued on next page

ANSWER

Dressout requirements;

1. Shoe covers, one pair
2. No personal outer clothing
3. Coveralls, one pair
4. Face Shield
5. Gloves, rubber, two pair **(Critical except #2, 7, & 8.)**
6. cloth inserts
7. modesty clothing
8. Surgeon's cap
9. Booties, plastic, 2 pair
10. Rain suit
11. Hood
12. Safety Belt & Lifeline

2 Hx's at 30 min
30/60 = .5 hrs
.5 x 250 = 125 mrem to vent Hx

10 min to close valve + 10 min to install device = 20 min
20/60 = .33 hrs
.33 x 100 = 33.3mrem to close vlv & install device

125 + 33.3 = 158.3

158.3 + 850 = 1008.3 (**NO** - not within TVA annual limit of 1R) **(Critical)**

158.3 < 200 dose alarm limit of RWP but not within remaining rad margin
work areas at 30cm dose rate 250 & 100 are both < 500mrem rate alarm
Therefore (**NO** - not within the limits of the RWP) **(Critical)**
i.e. DO NOT EXCEED 250 mrem PER ENTRY OR DOSE MARGIN (RAD-REMAINING ALLOWABLE DOSE)

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

INITIAL CONDITIONS: You are a Browns Ferry employee who has obtained an accumulative yearly dose of 850 mrem.

INITIATING CUES: Given the following survey map, DETERMINE the dressout requirements and if you can complete the assigned task in the area without exceeding your TVA administrative yearly dose limit or RWP entry limits.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 30 minutes for venting. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require 10 minutes to close the valve and another 10 minutes to install the mechanical restraining device. The map of the room has radiological survey information you must interpret to successfully complete this JPM. Assume the 30cm reading will be the whole body dose received at each location.

RADIOLOGICAL WORK PERMIT
BRIEFING REQUIRED EVERY ENTRY

GENERAL DESCRIPTION

Status: Active Start Date: 01-Jan-This year End Date: 01-Jan-Next year
Type: SPECIFIC MAP ID: Outage: Y Name:
Task: ROUTINE PLANT MAINTENANCE PSE: N
HP CONTINUOUS Authorization Type: INDIVIDUAL
ALARA Review Number: 0A-0010 Primary Work Doc:
Person-mrem Estimate: 1904 Person-Hrs Estimate: 1082
Dose Alarm: 200 Dose Rate Alarm: 500
DAC-Hrs Tracked: N
Work Area Description: Unit 3 Areas All Elevations

DESCRIPTION OF WORK TO BE PERFORMED

Unit 3 Maintenance on RWCU (69) Systems (LHRA VARIOUS DRESS) 200 / 250 / 500

ANTI-CONTAMINATION CLOTHING REQUIREMENTS

1	LAB COAT	1,2	BOOTIES, CLOTH, ONE PAIR
1,2	GLOVES, RUBBER, ONE PAIR	1,2,3	CLOTH INSERTS
1,2,3	SHOE COVERS, ONE PAIR	1,2,3	MODESTY CLOTHING
1,2,3	NO PERSONAL OUTER CLOTHING	1,2,3	SURGEON'S CAP
2,3	COVERALLS, ONE PAIR	3	BOOTIES, PLASTIC, TWO PAIR
3	FACE SHIELD	3	RAIN SUIT
3	GLOVES, RUBBER, TWO PAIR	3,4	HOOD

DOSIMETRY REQUIREMENTS

ELECTRONIC DOSIMETER	TLD

BRIEFING REQUIREMENTS

PRE-JOB BRIEFING	

EQUIS

WORK STEPS

1	MANAGEMENT / WO WALKDOWN
2	3-CI-412
3	OPS VALVE LINEUP - 3-OI-69 & HX VENTING
4	07-712928-000
5	06-722560-000
6	06-727133-000
7	06-722556-000
8	06-722559-000
9	06-718308-002
10	06-722558-000

RADIOLOGICAL WORK PERMIT
BRIEFING REQUIRED EVERY ENTRY

WORKER INSTRUCTIONS

1 DRESSOUT CODE APPLICATIONS 1) FLOOR LEVEL INSP, LOW TO MODERATE CONTAMINATION. 2) MINOR MAINTENANCE, NO PRIMARY SYSTEM BREACH. 3) PRIMARY SYSTEM BREACH, HEAT EXCHANGER VENTING. 4) ANY WORK ABOVE FLOOR LEVEL REQUIRES SAFETY BELT W/ LIFELINE. 5) REQUIRED TO WEAR HEADGEAR OTHER THAN PERSONAL HARDHAT.
2 MONITOR YOUR ED (DAD) FREQUENTLY, EXIT THE AREA PRIOR TO REACHING THE DOSE ALARM SET POINT OR UPON RECEIVING ANY UNEXPECTED ALARMS.
3 DO NOT EXCEED 250 mrem PER ENTRY OR DOSE MARGIN (RAD-REMAINING ALLOWABLE DOSE).
4 REMOTE MONITORING , PEA , OR SIMILAR DEVICE REQUIRED.
5 ED (DAD) TO BE BAGGED (WRAPPED) AND WORN OUTSIDE OF C-ZONE CLOTHING.
6 REVIEW PLANNED WORK OR INSPECTIONS WITH RAD PROTECTION PRIOR TO ENTRY.
7 UTILIZE TIME, DISTANCE, AND SHIELDING ALARA PRINCIPLES.
8 REVIEW APPROPRIATE SURVEY DATA PRIOR TO ENTRY. NOTE AND AVOID POSTED HOT SPOTS. LOCATE AND UTILIZE LOW DOSE WAITING AREAS.
9 RADWORKER SHALL ADHERE TO ANY SPECIAL INSTRUCTIONS (APR, ETC) ON WHICH HE/SHE HAS BEEN BRIEFED BY RAD PROTECTION.
10 NOTIFY RADCON PRIOR TO ANY SYSTEM BREACH.
11 RAD PROTECTION COVERAGE MAY BE PROVIDED FROM OUTSIDE THE C-ZONE.
12 SECURE ALL HOSES, ELECTRICAL CORDS, WELDING LEADS AND OTHER SERVICES ENTERING THE C-ZONE AT THE C-ZONE BOUNDRY AND NOTIFY RAD PROTECTION.
13 NOTIFY RAD PROTECTION OF ANY UNUSUAL RADIOLOGICAL CONDITIONS (FOR EXAMPLE: WATER, LEAKS, RADIATION MONITOR ALARMS).
14 RAD PROTECTION PERMISSION REQUIRED PRIOR TO WELDING, GRINDING, BUFFING OR OTHER SURFACE DISTURBING ACTIVITIES.
15 DURING PERIODS WHEN HIS-20 IS IN THE LOCAL MODE, THE DEFAULT SETPOINT FOR THIS RWP IS 100 mrem/hr DOSE RATE ALARM, 50 mrem DOSE ALARM, AND 60 mrem LIMIT PER ENTRY.

APPROVAL

Prepaired by: TJFRANK Approved by: MJHAZEL Final Approval: JWSMITH3

End of RWP

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BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-4a

TITLE: CLASSIFY THE EVENT PER THE REP (UNISOLABLE LEAK OUTSIDE PRIMARY CONTAINMENT)

TASK NUMBER: S-000-EM-21

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____DATE:_____

APPROVED: _____DATE:_____
TRAINING

PLANT CONCURRENCE: _____DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	5/23/96	ALL	INITIAL ISSUE
1	11/7/96	4	CHANGED IN-SIMULATOR COMM. STDS.
2	11/22/96	3,8,10,14	PROCEDURE REVISION
3	09/08/97	ALL	FORMAT AND PROCEDURE REVISION
4	10/28/98	3,7,12,13,14	CORRECTIONS (ACCOUNTABILITY, DESIGNATORS, ETC.)
5	9/22/99	3, 9	PROCEDURE REV., DELETE 1 FROM PHONE NUMBER STEP 3.1.4.
6	10/16/00	ALL	PROCEDURE REVISION
7	10/02/01	ALL	PROCEDURE REVISION
8	9/7/02	ALL	PROCEDURE REVISION
9	11/26/02	ALL	PROCEDURE REVISION
10	06/11/06	All	Procedure Revision
11	06/17/07	All	General Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO _X___ DATE:_____

JPM NUMBER: 0606 AJPM 2-4a TC

TASK NUMBER: S-000-EM-21 (SRO ONLY)

TASK TITLE: CLASSIFY THE EVENT PER THE REP (UNISOLABLE LEAK OUTSIDE PRIMARY CONTAINMENT) AND PERFORM ASSOCIATED ACTIONS

K/A NUMBER: 2.4.38 K/A RATING: RO 2.2 SRO: 4.0

****

TASK STANDARD: THE EVENT IS CLASSIFIED AS AN SITE AREA EMERGENCY BASED ON AN UNISOLABLE PRIMARY SYS LEAK OUTSIDE PRIMARY CONTAINMENT. (TIME ODS NOTIFIED) – (TIME DECLARED) LESS THAN 5 MINUTES AND (TIME NRC NOTIFIED) – (TIME DECLARED) LESS THAN 60 MINUTES.

LOCATION OF PERFORMANCE: SIMULATOR _X_ PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: EPIP 1, REV 40 ; EPIP 4, REV 29

VALIDATION TIME: CONTROL ROOM: _15_ LOCAL: _N/A__

MAX. TIME ALLOWED: _5/60__ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _N/A__

COMMENTS: _____

_____

Additional comment sheets attached? YES ___ NO ____

RESULTS: SATISFACTORY _____ UNSATISFACTORY ____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are the SHIFT MANAGER. Unit 2 was operating at 100% (BOL) when the A Recirculation Pump had a jet pump failure causing A Recirc Pump to be removed from service and entering a 24 hour LCO. A short time later, the B Recirculation Pump had to be tripped due to high vibration and a manual scram was required, all rods inserted to 00. A leak on the Main Steam lines developed. MSIV's isolated on high temperature in main steam tunnel (except B MSL failed to isolate) and is discharging into the Reactor Building side. EOI-1, EOI-3 and EOI-4 have been entered. Unit 3 is at 100% power.

INITIATING CUES: The UNIT SUPERVISOR on Unit 2 has informed you of the unisolable leak in the "B" main steam line causing High Reactor Building Radiation Alarms and High Temperature Alarms. Using the following parameters provided to you by the control room operating crew, **CLASSIFY THE EVENT** according to the EPIPs and perform any required actions. The TSC and CECC are not staffed. **(SOME portions of this JPM are TIME CRITICAL)**

Reactor Level	-40 inches on Emergency Range
Reactor Pressure	885 psig
DW Pressure	1.4 psig
DW Leakage Rate	None
DW Temperature	150 degrees F
Torus Temperature	89 degrees F
Torus Pressure	1.4 psig
Torus Level	15 feet
Unit 2 DW Radiation	7 R/hr
2-RI-90-20A reads	150 mr/hr
2-TIS-1-60A	reads 310 degrees F
Wind speed	10 mph from the SW direction

NOTE: No appreciable offsite release (Stack Noble Gas, WRGERMS reading 140 microcuries/sec.)

START TIME:_____

****

Performance Step : Critical X Not Critical___

Refers to EPIP 1 to classify emergency event.

Standard:

SHIFT MANAGER/UNIT SUPERVISOR refers to EPIP 1, Section 4.0, Radioactivity Release and declares a SITE AREA EMERGENCY(4.2.S) based on an unisolable primary system leak outside primary containment.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

_____

****

Performance Step : Critical X Not Critical____

IMPLEMENTS EPIP-4 SITE AREA EMERGENCY

Standard:

SHIFT MANAGER/UNIT SUPERVISOR recognizes/implements a SITE AREA EMERGENCY per EPIP-4.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

BROWNS FERRY	SITE AREA EMERGENCY	EPIP-4

3.0 EMERGENCY CLASSIFICATION ACTIONS

This section of the procedure is utilized for actions to be taken when the initial Site Area Emergency classification is originating from the Control Room. If the Technical Support Center is operational, utilize the instructions found in Appendix E of this procedure for actions to be taken upon the Site Area Emergency classification being declared.

3.1 **Activation of the Emergency Response Organization (ERO)**

CAUTION

Ongoing or anticipated security events may present a danger to normal staffing of the Emergency Response Organization. Select the "Staging Area" option when events are ongoing or anticipated that may present a danger to normal ERO staffing as determined by the SED and/or Nuclear Security.

NOTE

Normally Appendix B, "Unit Operator Notifications", is conducted by a Unit 1, Unit Operator, Depending upon the affected unit, this action may be delegated to a Unit Operator on an unaffected unit.

TIME EVENT DECLARED _____

****

Performance Step : Critical X_____ Not Critical_____

3.1.1 **NOTIFY**...a Unit Operator of the Site Area Emergency Emergency Classification,

AND

3.1.2 **DIRECT**...the Unit Operator to implement Appendix B, activating the paging system using option.

- o DRILL
- o EMERGENCY
- o STAGING AREA (See caution note above)

Standard:

DIRECTS Unit Operator to make notifications per Appendix B.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

3.2 **Operations Duty Specialist (ODS) Notification / State of Alabama Notification**

NOTE
The ODS should be notified within 5 minutes after the emergency has been declared.

****

Performance Step : Critical X_____ Not Critical_____

3.2.1 **COMPLETE** Appendix A (Initial Notification Form)
See copy of blank form on next page.

Standard:

COMPLETES APPENDIX A with EAL Designator 4.2-S SITE AREA EMERGENCY status due to an Unisolable Main Steam Line break outside Primary Containment. With Rx level at -40 on the Emergency Range, reactor pressure 885 psig, DW pressure 1.4 psig and DW temperature 150 degrees F, Torus Temperature 89 degrees F and Torus Pressure 1.4 psig with a Torus Level of 15 feet. EOI 1, 3 and 4 are in progress. Unit 2 conditions are deteriorating. Wind speed is 10 mph from the SW. (**INFORMATION GIVEN IN INITIAL CONDITIONS & INITIATING CUES EXCEPT EAL DESIGNATOR)**
NOTE: THIS IS GENERIC INFORMATION FOR DESCRIPTION OF EVENT--ALL THIS EXACT INFORMATION IS NOT REQUIRED FOR ACCEPTANCE UNDER BRIEF DESCRIPTION OF EVENT.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

BROWNS FERRY	SITE AREA EMERGENCY	EPIP-4

APPENDIX A
Page 1 of 1
SITE AREA EMERGENCY INITIAL NOTIFICATION FORM

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, **Browns Ferry** has declared a **Site Area Emergency** affecting: ☐ Unit 1 ☐ Unit 2 ☐ Unit 3 ☐ Common

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:**

_____

_____

_____

_____

_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

Airborne Releases Offsite	**Liquid** Releases Offsite
☐ Minor releases within federally approved limits[1]	☐ Minor releases within federally approved limits[1]
☐ Releases above federally approved limits[1]	☐ Releases above federally approved limits[1]
☐ Release information not known	☐ Release information not known
([1]Tech Specs)	([1]Tech Specs)

6. **Event Declared:** Time: _____ Date: _____

7. **Provide Protective Action Recommendation:** ☐ None

8. Please repeat the information you have received to ensure accuracy.

9. Fax to ODS at 5-751-8620 or State of Alabama at 9-1-205-280-2495 per Section 3.2

****

Performance Step : Critical X Not Critical____

3.2.2 **NOTIFY**...the ODS, utilizing the "Direct Ring-Down" telephone or at extension 5-751-1700 or 5-751-2495.

AND

REPORT...to the ODS the information recorded on Appendix A.

AND

FAX...a copy of Appendix A to the ODS for confirmation of information at 5-751-8620.

CUE: FAXING TO THE ODS WILL BE SIMULATED.

Standard:

NOTIFIES the ODS **within 5 minutes** and **provides** the information from Appendix A and **Faxes** a copy of Appendix A. (Only notification within 5 minutes is critical)

SAT__UNSAT__N/A__ COMMENTS:_____

_____

TIME ODS NOTIFIED _____

****

Performance Step : Critical___ Not Critical__X__

3.2.3 IF... the ODS was contacted,

THEN... the State of Alabama notification action is complete.

AND

RE-ENTER at Step 3.3. Otherwise continue.

Standard:

Continues to step 3.3.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

NOTE
The State of Alabama should be contacted within 15 minutes of the emergency classification.

****

Performance Step : Critical___ Not Critical_X__

3.2.4 IF…the ODS cannot be contacted within 10 minutes,

THEN... **NOTIFY** the State of Alabama at:

24 Hours
Primary: 9-1-205-280-2310
Backup: 9-1-800-843-0699
Backup: 9-1-334-324-0076

AND

REPORT… the information recorded on Appendix A.

AND

FAX…a copy of Appendix A to the State of Alabama for confirmation of information at 9-1-205-280-2495.

Standard:

N/A – ODS was contacted.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

****

Performance Step : Critical__ Not Critical X__

3.3 **ODS State of Alabama Notification Confirmation**

Receive a confirmation call from the ODS verifying that the notification of the State of Alabama was completed. Do this concurrently with the implementation of this procedure.

CUE: (3 MINUTES AFTER FAX) REQUEST SIMULATOR CONSOLE OPERATOR TO CALL AND CONFIRM THAT ODS HAS RECEIVED THE FAX AND NOTIFIED THE STATE.

Standard:

Continues in procedure until conformation call is received and acknowledges receipt.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

3.4 **Notification of Site Personnel**

CAUTION
Ongoing or anticipated security events may present a danger to site personnel. Do not conduct the notification of site personnel PA message during an ongoing or anticipated security event. All pertinent site personnel PA messages will be conducted per AOI-100-8 for security events.

****

Performance Step : Critical X____ Not Critical____

CONDUCT a Plant PA announcement similar to the following:
(Dial 687 to obtain the Plant PA)

Let me have your attention please.
This is (name) _____.
A Site Area Emergency, Emergency Classification has been declared.
We are currently implementing EPIP-4.
If you have not already done so, please report to your assigned emergency center at this time.

Standard:

MAKES P. A. announcement giving name, SAE status on Unit 2 and **DIRECTS** Plant Personnel to report to their assigned Emergency Center, if not already done.

SAT__UNSAT__N/A__ COMMENTS:_____
_____
_____

3.5 **Assembly / Accountability**

CAUTION

Do not initiate Assembly / Accountability when:

1. A severe weather condition exists or is projected on-site, such as a Tornado.
2. An on-site security risk condition exists that may present a danger to site personnel during the Assembly / Accountability process as determined by SED/Nuclear Security.

****

Performance Step : Critical_____ Not Critical_X_

3.5.1 IF… Assembly / Accountability has not been conducted,

THEN... **IMPLEMENT** EPIP-8, Appendix C concurrently with this procedure. This action may be delegated.

3.5.2 IF... an order to evacuate non-emergency responders has not been issued,

THEN... upon completion of Assembly / Accountability, **INITIATE** the order to "Evacuate Non-Emergency Responders," through implementation of EPIP-8, Appendix F, concurrently with this procedure.

3.5.3 IF... conditions exist that do not allow for an Assembly / Accountability or Evacuation at this time,

THEN... **CONTINUE** to assess the situation, implementing EPIP-8 as applicable.

CUE: The STA is implementing EPIP-8 as needed.

Standard:

Acknowledges that STA is performing EPIP-8 and continues to step 3.6

SAT__UNSAT__N/A__ COMMENTS:_____

_____

****

Performance Step : Critical_X_ Not Critical_____

3.6 **Dose Assessment**

EVALUATE...the need for dose assessment.

IF...dose assessment is needed,

THEN...**CONTACT**, if operational, the Central Emergency Control Center (CECC) at 5-751-1614.

OR

IF...the CECC is not operational,

THEN...**CONTACT**, the Radiological Protection Shift Supervisor or designee at 7865 and request the implementation of EPIP-13 for dose assessment.

CUE: The CECC is not currently staffed.

Standard:

Examinee acknowledges that the CECC is not staffed and contacts the Radiological Protection Shift Supervisor or designee

SAT__UNSAT__N/A__ COMMENTS:_____

_____

****

Performance Step : Critical X Not Critical__

3.7 **Notification of the Nuclear Regulatory Commission (NRC)**

NOTE

If possible, when making notifications to the NRC, utilize the Emergency Notification System (ENS). Dial the first number listed on the sticker affixed to the ENS telephone by dialing 9-1- "The Ten Digit Number Listed on the ENS Telephones". If the number is busy, then select in order, the alternate numbers until a connection is achieved. No access codes should be required.

NOTIFY...the NRC immediately but no later than one hour after the emergency has been declared.

IF...**REQUESTED** by the NRC to maintain an open and continuous line of communications,

THEN... **MAINTAIN** an open and continuous line of communications as directed by NRC.

Standard:

Notifies the NRC **WITHIN 60 MINUTES** OF EVENT DECLARATION

SAT__UNSAT__N/A__ COMMENTS:_____

_____

TIME NRC NOTIFIED _____

****

Performance Step : Critical__ Not Critical_X_

3.8 **Review of Procedure**

Review this procedure to ensure that all steps and actions have been completed and all place keeping blocks have been checked or denoted as instructed. This action may be delegated.

Instructor Note: If asked, No one is available to delegate this task.

Standard:

Examinee reviews procedure.

SAT__UNSAT__N/A__ COMMENTS:_____

_____

_____

3.9 **Monitor / Re-evaluate the Event**

Monitoring and reevaluation of plant events along with communicating significant changes should be performed continuously as a function of the emergency response. Methods used to communicate significant changes are not formalized and may vary depending upon staffing levels as well as availability of personnel or equipment. Appendix C provides a systematic approach to monitor/reevaluate and communicate significant changes in plant conditions.

Utilize Appendix C to monitor/re-evaluate and communicate plant conditions and significant changes. Significant changes in plant conditions are at a minimum when other EAL conditions exist indicating the current emergency classification.

CUE: THE EMERGENCY CENTERS ARE STAFFED AND THE PLANT MANAGER (SITE EMERGENCY DIRECTOR) IS HERE TO RELIEVE YOU. THAT COMPLETES THIS JPM.

END OF TASK

STOP TIME:_____

****

Performance Step: Critical__ Not Critical X_

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

_____

****

Performance Step: Critical__ Not Critical _X_

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT___ UNSAT___ N/A ___ COMMENTS:_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are the SHIFT MANAGER. Unit 2 was operating at 100% (BOL) when the A Recirculation Pump had a jet pump failure causing A Recirc Pump to be removed from service and entering a 24 hour LCO. A short time later, the B Recirculation Pump had to be tripped due to high vibration and a manual scram was required, all rods inserted to 00. A leak on the Main Steam lines developed. MSIV's isolated on high temperature in main steam tunnel (except B MSL failed to isolate) and is discharging into the Reactor Building side. EOI-1, EOI-3 and EOI-4 have been entered. Unit 3 is at 100% power.

INITIATING CUES: The UNIT SUPERVISOR on Unit 2 has informed you of the unisolable leak in the "B" main steam line causing High Reactor Building Radiation Alarms and High Temperature Alarms. Using the following parameters provided to you by the control room operating crew, **CLASSIFY THE EVENT** according to the EPIPs and perform any required actions. The TSC and CECC are not staffed. **(SOME portions of this JPM are TIME CRITICAL)**

Reactor Level	-40 inches on Emergency Range
Reactor Pressure	885 psig
DW Pressure	1.4 psig
DW Leakage Rate	None
DW Temperature	150 degrees F
Torus Temperature	89 degrees F
Torus Pressure	1.4 psig
Torus Level	15 feet
Unit 2 DW Radiation	7 R/hr
2-RI-90-20A reads	150 mr/hr
2-TIS-1-60A	reads 310 degrees F
Wind speed	10 mph from the SW direction

NOTE: No appreciable offsite release (Stack Noble Gas, WRGERMS reading 140 microcuries/sec.)

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-4b

TITLE: EPIP-3 APPENDIX B, Unit Operator NOTIFICATION

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	07/31/07	ALL	INITIAL ISSUE

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____ SS#_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 AJPM 2-4b

TASK NUMBER: S-000-EM-XXX
R-000-EM-XXX

TASK TITLE: EPIP-3 APPENDIX B, Unit Operator NOTIFICATION

K/A NUMBER: XXXX K/A RATING: RO XXX SRO: XXX

****

TASK STANDARD: Completion of Emergency Call-Out for TSC manning

LOCATION OF PERFORMANCE: SIMULATOR X PLANT _____ CONTROL ROOM X

REFERENCES/PROCEDURES NEEDED: EPIP 3, REV 31

VALIDATION TIME: CONTROL ROOM: 30 Min. LOCAL: _____

MAX. TIME ALLOWED: NA (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____CONTROL ROOM _____ LOCAL _____

COMMENTS: This JPM should be performed on the simulator with the EPS system INOP or unavailable. Will also need Weekly Duty List and Call-Out list.

Additional comment sheets attached? YES ___ NO ___

RESULTS: **SATISFACTORY** _____ **UNSATISFACTORY** _____

SIGNATURE: _____ **DATE:** _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-PLANT: I will explain the initial conditions and state the task to be performed. All steps shall be simulated. I will provide initiating cues and indicate any steps to be discussed. Ensure that you observe electrical safety precautions when working near energized equipment. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task and when you have completed the assigned task.

****

INITIAL CONDITIONS: You are the Unit 1 Operator. Unit 2 was operating at 100% (BOL) when indications of a primary system leak into the Drywell developed. Conditions have continued to the point that the SED has declared an ALERT.

INITIATING CUES: The SHIFT MANAGER has informed you that Unit 2 is in an ALERT status. The SHIFT MANAGER/SED directs you to COMPLETE APPENDIX B, Unit Operator NOTIFICATIONS.

START TIME:_____

****

Performance Step : Critical_____ Not Critical__X____

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of EPIP-3, APPENDIX B

SAT_____UNSAT__N/A_____COMMENTS:_____

_____

Note

- The Emergency Paging System (EPS) consists of a dedicated touch screen CRT. Activation of any screen feature requires the user place their fingertip within the boundary of the select button and leave it there for at least 1 second. The CRT Screen will normally display a large rectangle that indicates that the paging system is available but currently inactive.

- If the EPS fails to operate, contact the SM/SED immediately. Request that the ODS be contacted to initiate the system from his location. If the system fails to operate from the ODS area, then utilize the Weekly Duty List and Call-Out List to manually staff each emergency responder position, implementing this attachment at step E.

****

Performance Step : Critical_____ Not Critical__X___

1. **Activate** the Emergency Paging System (EPS)

   A. **PRESS** the EPS CRT screen once to activate the paging options

CUE: When the Operator attempts to initiate the EPS by touching the screen, REPORT "The Emergency Paging System shows no response." Unless the EPS on the simulator really is INOP, then no cue is required.

Standard

OPERATOR attempts to activate the Emergency Paging System using the touch screen and discovers it is INOP (from the CUE). (Per the note on the previous page), notifies the SM/SED immediately and request the ODS be contacted to initiate the system from his location.

CUE: IF the Operator notifies the SM/SED to contact the ODS, REPORT "The ODS cannot activate the EPS from his location."

Standard

OPERATOR acknowledges the ODS cannot activate the EPS from his location and proceeds to step 1 E from the NOTE on the previous page.

SAT_____UNSAT__N/A_____COMMENTS:_____
_____

****

Performance Step : Critical_____ Not Critical__X___

B. **PRESS** the appropriate option as instructed by the SED

- ☐PAGER TEST
- ☐DRILL
- ☐EMERGENCY
- ☐STAGING AREA
- ☐ABORT

Standard

OPERATOR skips / NA's this step.

SAT_____UNSAT__N/A_____COMMENTS:_____
_____

****

Performance Step : Critical_____ Not Critical__X___

C. **PRESS** the **START** button to initiate the option or **ABORT** to deny the option request

Standard

OPERATOR skips / NA's this step.

SAT_____UNSAT__N/A_____COMMENTS:_____
_____

****

Performance Step : Critical_____ Not Critical__X____

D. **Monitor** the Paging System Terminal Display

Standard

OPERATOR skips / NA's this step.

SAT_____UNSAT__N/A_____COMMENTS:_____
_____

NOTE
Monitor ERO positions through OSC Document Control. Positions below OSC Document Control are courtesy pages and are not subject to call-out.

****

Performance Step : Critical_____ Not Critical__X____

1. **IF**... A "NO" response is observed,

OR

The position being paged has not responded within approximately 20 minutes,

THEN Utilize the Weekly Duty List and attempt to contact the position representative with available information. (No Fitness for Duty question is required.)

Standard

OPERATOR skips / NA's this step.

SAT_____UNSAT__N/A_____COMMENTS:_____

_____

****

Performance Step : Critical_____ Not Critical__X____

2. **IF**... The individual cannot be reached utilizing the Weekly Duty List,

THEN Utilize the Call-Out List and attempt to contact an alternate position representative. (Fitness for Duty question is required when utilizing the Call-Out List.)

Standard

OPERATOR skips / NA's this step.

SAT_____UNSAT__N/A_____COMMENTS:_____

_____

****

Performance Step : Critical___X__ Not Critical_____

E. Manual Call-Out

1. Utilize the current Weekly Duty List and contact positions as listed. (No Fitness for Duty question is required.)

Examiner Note: Either the Examiner or a "booth operator" can respond to the phone calls. The second person called is the Operations Manager (WHO SHOULD ANSWER NO) - then the Examiner can give the following cue.

CUE: When the Operator states that he/she will have to do a manual call-out: Let the Operator simulate calling the first 1 or 2 names on the list and then report that 20 minutes has elapsed and the OPERATIONS MANAGER position answered "NO" and the OSC DIRECTOR has not responded.

Standard

OPERATOR calls the current weekly Duty List manually, no Fitness For Duty question is required and acknowledges a NO from the Ops Mgr and no reply from the OSC Director.

SAT_____UNSAT__N/A_____ COMMENTS:_____

_____

****

Performance Step : Critical___X_ Not Critical_____

2. If a position can not be reached from the current Weekly Duty list, then refer to the Call-out List as applicable to fill all vacant positions. (Fitness for Duty question is required when utilizing the Call-Out List.)

CUE: When the Operator selects individuals using the "Call-Out List," cue the Operator, when called, that he/she will respond to the call-out. If asked the fitness for duty question, respond "I am fit for duty and have not consumed any alcohol."

Standard

OPERATOR uses the "Call-out" List to fill the two vacant positions. Locate the vacant position and call the next person on the list. (**Fitness For Duty question is required**.) The Operator should state the Emergency and ask "Are you fit for duty?" - Statement does not need to be exact.

SAT_____UNSAT__ N/A__ COMMENTS:_____
_____

****

Performance Step : Critical_____ Not Critical__X_____

F. **CONTINUE** until all positions have been filled.

CUE: All positions have been filled, that completes this JPM.

Standard

OPERATOR continues until all positions are filled.

SAT_____UNSAT__ N/A__ COMMENTS:_____
_____

END OF TASK

STOP TIME: _____

Student Handout

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-PLANT: I will explain the initial conditions and state the task to be performed. All steps shall be simulated. I will provide initiating cues and indicate any steps to be discussed. Ensure that you observe electrical safety precautions when working near energized equipment. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task and when you have completed the assigned task.

****

INITIAL CONDITIONS: You are the Unit 1 Operator. Unit 2 was operating at 100% (BOL) when indications of a primary system leak into the Drywell developed. Conditions have continued to the point that the SED has declared an ALERT.

INITIATING CUES: The SHIFT MANAGER has informed you that Unit 2 is in an ALERT status. The SHIFT MANAGER/SED directs you to COMPLETE APPENDIX B, Unit Operator NOTIFICATIONS.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 PJPM-I

TITLE: 1-AOI-57-4 LOSS OF UNIT PREFERRED

ALTERNATE PATH YES____ NO__X__

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	5/13/2007	ALL	INITIAL

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 PJPM-I

TASK NUMBER: U-57C-AB-02

TASK TITLE: LOSS OF UNIT PREFERRED, RESTORATION USING 1-AOI-57-4

K/A NUMBER: 262001A2.07 K/A RATING: RO 3.0 SRO: 3.2

****

TASK STANDARD: PERFORM CORRECT EQUIPMENT MANIPULATIONS REQUIRED TO RESTORE UNIT PREFERRED PER 1-AOI-57-4

LOCATION OF PERFORMANCE: SIMULATOR __ PLANT _X__ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 1-AOI-57-4 REV.21

VALIDATION TIME: CONTROL ROOM: _____ LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE:_____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Unit 1 Operator. UNIT 1 is operating at 100% Power, UNIT 1 has had a loss of 120v unit preferred, All Immediate Actions are complete. The Unit is stable. Hydrogen Water Chemistry is out of service on all units. Unit 2 Unit Preferred is on the Transformer, The Unit Preferred MMG set is still running on the AC motor.

INITIATING CUES: The UNIT SUPERVISOR has directed you to restore Unit preferred per 1-AOI-57-4 starting step 4.2[7].

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 1-AOI-57-4.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

NOTE

Upon reenergization of the Unit Preferred Bus (Battery Board 1 Panel 11) Panel 1-9-9 Cabinet 6 Unit Preferred will auto-transfer back to the normal source.

****

Performance Step: Critical___ Not Critical_X_

[7] **IF** ALTERNATE SOURCE AVAILABLE (P13), 1-IL-252-0001B, is illuminated, **THEN**

SWAP to Alternate Source supply to Unit Preferred (Battery Board 1 Panel 11) as follows:

CUE: When verified, ALTERNATE SOURCE AVAILABLE LIGHT IS ILLUMINATED

Standard:

VERIFIES 1-IL-252-0001B is illuminated.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

****

Performance Step: Critical_x_ Not Critical__

[7.1] **CLOSE** ALT SOURCE AC OUTPUT (B5), 1-BKR-252-0001B.

CUE: WHEN SIMULATING CLOSING THE BKR. (BREAKER IS CLOSED.)

Standard:

CLOSES ALT SOURCE AC OUTPUT (B5), 1-BKR-252-0001B.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

[7.2] **DISPATCH** personnel to Battery Board 2 Sync and Speed Control Panel (Battery Board 2 Panel 11) and **PERFORM** the following:

CUE: NO other operator is available at this time, you are to continue on.

Standard:

Proceeds to Battery Board 2 panel 11.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

****

Performance Step: Critical_x__ Not Critical___

[7.2.1] **PLACE** UNIT 1 PFD SYSTEM TRANSFORMER SOURCE SYNC SW SS-2, 1-HS-252-01/SS-2 in ON.

CUE:When simulating placing the SYNC SW to ON. (the SYNC SW is ON.

Standard:

PLACES 1-HS-252-01/SS-2 in the ON POSITION>

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_x__ Not Critical___

[7.2.2] **OPEN** UNIT PFD INVERTER TIE TO BATTERY BD 1 NORM FDR, 0-BKR-280-001/1001.

CUE: When simulating opening BATTERY BD 1 NORM FDR. (THE BKR IS OPEN).

Standard:

OPENS 0-BKR-280-001/1001.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

****

Performance Step: Critical_x__ Not Critical___

[7.2.3] **CLOSE** UNIT PFD XFMR 1 TIE TO BATTERY BD 1 ALT FDR, 0-BKR-280-001/1002.

CUE: When simulated CLOSING 0-BKR-280-001/1002. (THE BREAKER IS CLOSED.

standard:

CLOSES 0-BKR-280-001/1002

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

[7.2.4] **PLACE** UNIT 1 PFD SYSTEM TRANSFORMER SOURCE SYNC SW SS-2, 1-HS-252-01/SS-2 in OFF.

CUE: When simulated placing 1-HS-252-01/SS-2 in OFF. THE 1-HS-252-01/SS-2 IS IN THE OFF POSITION.

standard:

PLACES 1-HS-252-01/SS-2 in OFF.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

****

Performance Step: Critical___ Not Critical__X_

[8] **IF** upon completion of Step 4.2[7] the Unit preferred bus is **NOT** reenergized, **THEN**

PLACE the Emergency Backup (Unit 2) Unit Preferred MMG in service in accordance with 0-OI-57C.

CUE: THE UNIT PREFERRED BUS IS ENERGIZED.

standard: Acknowledges the Unit Preferred bus is reenergized and does NOT go on to 0-OI-57C.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

CUE: THAT COMPLETES THIS JPM.

Performance Step: Critical___ Not Critical_X___

PERFORMER demonstrated the use of TOUCH STAAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards).

SAT_____ UNSAT_____ N/A _____ COMMENTS:
_____
_____

****

Performance Step:

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT_____ UNSAT_____ N/A _____ COMMENTS:
_____
_____

END OF TASK

STOP TIME _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Unit 1 Operator. UNIT 1 is operating at 100% Power, UNIT 1 has had a loss of 120v unit preferred, All Immediate Actions are complete. The Unit is stable. Hydrogen Water Chemistry is out of service on all units. Unit 2 Unit Preferred is on the Transformer, The Unit Preferred MMG set is still running on the AC motor.

INITIATING CUES: The UNIT SUPERVISOR has directed you to restore Unit preferred per 1-AOI-57-4 starting step 4.2[7].

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 PJPM-J

TITLE: EOI APPENDIX 1F-MANUAL SCRAM/ 2-DEFEATING ARI

ALTERNATE PATH YES____ NO__X__

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	8/6/07	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____ SS#_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 67

TASK NUMBER: U-000-EM-24

TASK TITLE: EOI APPENDIX 1F / MANUAL SCRAM APPENDIX 2 DEFEAT ARI LOGIC

K/A NUMBER: 295015AA1.02 K/A RATING: RO 4.0 SRO: 4.2 ____

****

TASK STANDARD: SIMULATE DEFEATING RPS BY INSTALLING JUMPERS AS DIRECTED BY EOI APPENDIX 1F, DEFEATING ARI LOGIC PER EOI APPENDIX 2

LOCATION OF PERFORMANCE: SIMULATOR ___ PLANT X___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 1-EOI APPENDIX 1F, REV 0, 1-EOI APPENDIX 2, REV 0

VALIDATION TIME: CONTROL ROOM: 11:00 LOCAL: 8:00

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-PLANT: I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are the Outside Unit Supervisor. The Unit 1 reactor has scrammed and all rods failed to insert to position 02. EOI-1 has been entered and followed to RC/Q-23.

INITIATING CUES: The U1 Unit Supervisor has directed you to defeat all RPS logic trips as directed BY EOI Appendix 1F, MANUAL SCRAM AND EOI APPENDIX 2 DEFEATING ARI LOGIC.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME:

****

Performance Step: Critical___ Not Critical X___

WHEN REQUESTED BY EXAMINER identify/obtain copy of required EOI Appendix.

Standard:

IDENTIFIED OR OBTAINED copy of EOI Appendix 1F AND 2.

SAT___ UNSAT___ N/A___ COMMENTS:_____

_____

CUE: Student may perform EOI APPENDIX 2 before performing EOI APPENDIX 1F, IF THIS IS CORRECT START AT PAGE 11 STEP 1.

1. **VERIFY** Rx Scram and ARI reset.

   a. IF.... ARI CANNOT be reset,

      THEN... **EXECUTE** EOI Appendix 2 concurrently with step 1b of this procedure.

   b. IF.....Rx Scram CANNOT be reset,

      THEN...**DISPATCH** personnel to Unit 2 Auxiliary Instrument Room to defeat ALL RPS logic trips as follows:

CUE: THE REACTOR SCRAM AND ARI CAN NOT BE RESET.

****

Performance Step: Critical___ Not Critical X___

1) **REFER** to Attachment 1 and **OBTAIN** four 3-ft banana jack jumpers from EOI Equipment Storage Box.

Standard:

REFERRED to Attachment 1 and **SIMULATED** unlocking the EOI Storage Box and **OBTAINING** four (4) 3 ft banana jack jumpers from EOI equipment storage box.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

_____

CUE: [WHEN SIMULATED] YOU HAVE FOUR 3 FT BANANA JACK JUMPERS.

****

Performance Step: Critical X Not Critical ____

2) **REFER** to Attachment 2 and **JUMPER** the following relay terminals in 1-PNLA-009-0015, Rear:

a) Relay 5A-K10A (DQ) Terminal 2 to Test Terminal 1-TX-099-05A-K12E (Bay 1).

Standard:

REFERRED to Attachment 2 and **SIMULATED JUMPERING** Relay 5A-K10A (DQ) Terminal 2 to test terminal 1-TX-099-05A-K12E in Panel 9-15, Bay 1.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

_____

CUE: [WHEN PROPERLY SIMULATED] THE JUMPER IS INSTALLED FROM TERMINAL 2 ON RELAY 5A-K10 to the TEST TERMINAL 1-TX-099-05A-K12E

****

Performance Step: Critical X Not Critical ___

b) Relay 5A-K10C (AT) Terminal 2 to Test Terminal 1-TX-099-05A-K12G (Bay 3).

Standard:

REFERRED to Attachment 2 and **SIMULATED JUMPERING** Relay 5A-K10C (AT) Terminal 2 to the TEST Terminal 1-TX-099-05A-K12G in Panel 9-15, Bay 3.

SAT ____ UNSAT ____ N/A ____ COMMENTS: _____

_____

_____

CUE: [WHEN PROPERLY SIMULATED] THE JUMPER IS INSTALLED FROM TERMINAL 2 ON RELAY 5A-K10C TO THE TEST TERMINAL 1-TX-099-05A-K12G PANEL 9-15 BAY 3.

****

Performance Step: Critical X Not Critical ___

3) **REFER** to Attachment 3 and **JUMPER** the following relay terminals in 1-PNLA-009-0017, Rear:

a) Relay 5A-K10B (DQ) Terminal 2 to Test Terminal 1-TX-099-05A-K12F (Bay 1).

Standard:

REFERRED to Attachment 3 and **SIMULATED JUMPERING** Relay 5A-K10B (DQ) Terminal 2 to the test terminal 1-TX-099-05A-K12F in Panel 9-17, Bay 1.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: [WHEN PROPERLY SIMULATED] THE JUMPER IS INSTALLED FROM TERMINAL 2 ON RELAY 5A-K10B TO test terminal 1-TX-099-05A-K12F

****

Performance Step: Critical X Not Critical ____

b) Relay 5A-K10D (AT) Terminal 2 to Test Terminal 1-TX-099-05A-K12H (Bay 3).

Standard:

REFERRED to Attachment 3 and **SIMULATED JUMPERING** Relay 5A-K10D (AT) Terminal 2 to Test Terminal 1-TX-099-05A-K12H in Panel 9-17, Bay 3.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: [WHEN PROPERLY SIMULATED] THE JUMPER IS INSTALLED FROM TERMINAL 2 ON RELAY 5A-K10D TO Test Terminal 1-TX-099-05A-K12H

****

Performance Step: Critical___ Not Critical_X__

NOTIFY Unit 2 Control Room that EOI APPENDIX 1F is completed and proceeding to perform EOI APPENDIX 2.

Standard:

NOTIFIED Unit 2 SRO or Unit Operator that Appendix 1F, Step completed.

SAT____UNSAT____N/A____ COMMENTS:_____

CUE: [WHEN SIMULATED] THE US (OR UNIT OPERATOR) ACKNOWLEDGES COMPLETION OF 2-EOI APPENDIX-1F, AND WILL BE PERFORMING EOI APPENDIX 2.
THE OPERATOR MAY WAIT TO CALL THE MAIN CONTROL ROOM UNTIL BOTH APPENDICES ARE COMPLETE.

****

Performance Step: Critical__X_ Not Critical___

1. **REFER** to Attachment 1 and **OBTAIN** two keys

Standard:

REFER to Attachment 1 and **OBTAIN** two keys

SAT____UNSAT____N/A____ COMMENTS:_____

CUE: YOU HAVE TWO KEYS
NOTE TO EXAMINER,KEYS ARE LOCATED IN THE MCR IN THE KEY CABINET BETWEEN THE US AND RO DESK.

****

****

Performance Step: Critical X Not Critical ___

2. **PLACE** 1-HS-068-0118B, ATWS MODE SWITCH, in TEST position on 1-LPNL-925-0613, ATWS CHANNEL B 250 VDC LOGIC CABINET.

Standard:

PLACES 1-HS-068-0118B, ATWS MODE SWITCH, in TEST position on 1-LPNL-925-0613,

SAT ____ UNSAT ____ N/A ____ COMMENTS: _____

_____

CUE; 1-HS-068-118B IS IN THE TEST POSITION

****

Performance Step: Critical X Not Critical ___

3. **PLACE** 1-HS-068-0118A, ATWS MODE SWITCH, in TEST position on 1-LPNL-925-0416, ATWS CHANNEL A 250 VDC LOGIC CABINET.

Standard:

PLACES 1-HS-068-0118A, ATWS MODE SWITCH, in TEST position on 1-LPNL-925-0716.

SAT ____ UNSAT ____ N/A ____ COMMENTS: _____

_____

CUE; 1-HS-068-118A IS IN THE TEST POSITION.

****

****

Performance Step: Critical___ Not Critical_X__

4. **NOTIFY** Unit Operator that ARI logic trips are defeated and ARI is reset.

Standard:

NOTIFY Unit Operator that ARI logic trips are defeated and ARI is Reset.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: WHEN called the UO repeats back ARI LOGIC TRIPS ARE DEFEATED. THAT COMPLETES THIS JPM.

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of TOUCH STAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAR to maintain plant standards).

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

_____

****

Performance Step: Critical___ Not Critical _X_

PERFORMER complied with all safety rules and regulations.

Standard:

PERFORMER complied with all safety rules and regulations (hardhat, safety glasses, sideshields, and hearing protection was worn **AS REQUIRED.**) (INSTRUCTOR determines if N/A due to plant conditions)

ELECTRICAL SAFETY was also adhered to: Exposed conductive articles such as rings, metal wristwatches, bracelets, and metal necklaces shall not be worn by employees within **reaching distance** of exposed energized electrical conductors of 50 volts or greater.

SAT____ UNSAT____ N/A____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical _X_

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT_____ UNSAT_____ N/A _____ COMMENTS: _____

_____

END OF TASK

STOP TIME:_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-PLANT: I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are the Outside Unit Supervisor. The Unit 1 reactor has scrammed and all rods failed to insert to position 02. EOI-1 has been entered and followed to RC/Q-23.

INITIATING CUES: The U1 Unit Supervisor has directed you to defeat all RPS logic trips as directed BY EOI Appendix 1F, MANUAL SCRAM AND EOI APPENDIX 2 DEFEATING ARI LOGIC.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 PJPM-K

TITLE: START RCIC FROM OUTSIDE CONTROL ROOM

ALTERNATE PATH YES___ NO__X__

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
3	12/1/94	1,2,3,4	REVISE TO NEW FORMAT
4	10/24/95	ALL	GENERAL REVISION
5	08/25/98	ALL	PROCEDURE REVISION, FORMAT DOCUMENT
6	11/16/99	2,3,5,6	PROCEDURE REVISION, MOVED START TIME.
7	10/03/01	ALL	PROCEDURE REVISION
8	8/21/03	ALL	FORMAT; EDITORIAL; PROCEDURE REV; chg steps required to make RCIC function to crit and those that will not prevent function to non-crit
9	8/5/07	All	Procedure Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 PJPM-K

TASK NUMBER: U-000-AB-05

TASK TITLE: RESPOND TO CONTROL ROOM ABANDONMENT

K/A NUMBER: 295016AA1.07 K/A RATING: RO 4.2 SRO: 4.3

****

TASK STANDARD: SIMULATE PERFORMING OPERATIONS NECESSARY TO ALIGN RCIC FROM OUTSIDE CONTROL ROOM AS DIRECTED BY 2-AOI-100-2.

LOCATION OF PERFORMANCE: SIMULATOR ___ PLANT X CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-AOI-100-2, REV 51

VALIDATION TIME: CONTROL ROOM: 25:00 LOCAL: 20:00

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-PLANT: I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: Unit 2 Control Room has been abandoned. Pressure control has been established at the backup control panel 2-25-32. The RCIC system is being aligned for injection to the RPV. You are the AUO assigned to the reactor building and you are in radio contact with the operators at the backup control panel.

INITIATING CUES: The Unit Operator directs you to perform Attachment 3, Part A of 2-AOI-100-2, then stand by to perform step 4.2.9.3.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required AOI.

Standard:

IDENTIFIED OR OBTAINED copy of 2-AOI-100-2

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

Reactor Bldg. - RCIC System Aux Panel 2-LPNL-025-0031 El 621'

NOTE:

PAX phone Ext. 2233 is located at Column R-12, P-line near stairs to SLC.

PART A

****

Performance Step: Critical X Not Critical___

2-XS-071-0036B	RCIC PUMP DISCH FLOW EMER TRANS SWITCH	EMERG_____
2-XS-071-0047	RCIC TURB GOV & CPLG END BRG HIGH TEMP EMER TRANS SWITCH	EMERG____
2-XS-071-0024	RCIC OIL CLR OIL OUTLET TEMP EMER TRANS SWITCH	EMERG_____

Standard:

At Panel 2-25-31, **SIMULATED PLACING** 2-XS-071-0036B, 2-XS-071-0047 and 2-XS-071-0024 in EMERG.

CUE: [AS EACH SWITCH IS SIMULATED], THE SWITCH IS IN EMERG.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

Reactor Bldg. - 250VDC Reactor Mov Bd 2C - EL 565

****

CAUTION

Failure to place control switch for each component in the desired position prior to transferring to emergency may result in inadvertent actuation of the component.

****

NOTE:

PAX phone Ext. 2225 is located at Column R-9, R-line between West side HCUs.

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical____ Not Critical__X___

1E 2-BKR-071-0029
RCIC TURB BAROMETRIC CNDR CNDS PUMP BREAKER

2-XS-071-0029, RCIC BAROMETRIC CNDR CNDS PUMP EMER TRANS SWITCH EMERG_____

2-HS-071-0029C, RCIC VAC TANK CNDS PUMP EMER HAND SWITCH START_____

Standard:

At compartment 1E, **SIMULATED PLACING** 2-XS-071-0029 in the EMERG position and 2-HS-071-0029C in the START position.

CUE: [AS 2-XS-071-0029 IS SIMULATED] THE SWITCH IS IN EMERG.

[AS 2-HS-071-0029C IS SIMULATED], THE SWITCH IS IN START.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: *Critical X Not Critical___

3B 2-BKR-071-0037
RCIC PUMP DISCHARGE VALVE BREAKER (GE-13-20):

* 2-XS-071-0037, RCIC PUMP DISCH VALVE EMER TRANS SWITCH EMERG_____

2-HS-071-0037C, RCIC PUMP DISCH VALVE EMER HAND SWITCH OPEN_____

Standard:

At compartment 3B, **SIMULATED PLACING** 2-XS-071-0037 in the EMERG position (**critical**) and 2-HS-071-0037C in the OPEN position.(**NON-CRITICAL**)

CUE:[AS 2-HS-071-0037 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0037C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical_X_ Not Critical____

3D 2-BKR-071-0039
RCIC PUMP INJECTION VALVE BREAKER: (GE-13-21)

2-XS-071-0039, RCIC PUMP INJECTION VALVE
EMER TRANS SWITCH EMERG_____

2-HS-071-0039C, RCIC PUMP INJECTION VALVE
EMER HAND SWITCH OPEN_____

Standard:

At compartment 3D, **SIMULATED PLACING** 2-XS-071-0039 in the EMERG position and 2-HS-071-0039C in the OPEN position.

CUE:[AS 2-XS-071-0039 IS SIMULATED], THE SWITCH IS IN EMERG.
[AS 2-HS-071-0039C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: * Critical X Not Critical____

4B 2-BKR-071-0008, RCIC TURBINE STM SUPPLY VALVE BREAKER (GE-13-131)

* 2-XS-071-0008, RCIC TURB STM SUPPLY EMER TRANS SWITCH EMERG_____

2-HS-071-0008C, RCIC TURB STM SUPPLY VALVE EMER HAND SWITCH NOR_____

Standard:

At compartment 4B, **SIMULATED PLACING** 2-XS-071-0008 in the EMERG position (**CRITICAL)** and 2-HS-071-0008C in the NOR position.(**NON-CRITICAL)**

CUE:[AS 2-XS-071-0008 IS SIMULATED], THE SWITCH IS IN EMERG.
[AS 2-HS-071-0008C IS SIMULATED] THE SWITCH IS IN NORM.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: * Critical___ Not Critical_X__

6D 2-BKR-071-0019, RCIC CST 2 SUCT VALVE BREAKER (GE-13-18)

* 2-XS-071-0019, RCIC CST 2 SUCT VALVE EMER TRANS SWITCH EMERG_____

2-HS-071-0019C, RCIC CST 2 SUCT VALVE EMER HAND SWITCH OPEN_____

Standard:

At compartment 6D, **SIMULATED PLACING** 2-XS-071-0019 in the EMERG position(**CRITICAL)** and 2-HS-071-0019C in the OPEN position.(**NON-CRITICAL)**

CUE:[AS 2-XS-071-0019 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0019C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: * Critical X Not Critical ___

7B 2-BKR-071-0038, RCIC PUMP TEST VALVE BREAKER (GE-13-30)

* 2-XS-071-0038, RCIC PUMP TEST VALVE EMER TRANS SWITCH EMERG_____

2-HS-071-0038C, RCIC PUMP TEST VALVE EMER HAND SWITCH CLOSE_____

Standard:

At compartment 7B, **SIMULATED PLACING** 2-XS-071-0038 in the EMERG position)**CRITICAL)** and 2-HS-071-0038C in the CLOSE position.(**NON-CRITICAL)**

CUE:[AS 2-XS-071-0038 IS SIMULATED], THE SWITCH IS IN EMER. [AS 2-HS-071-0038C IS SIMULATED] THE SWITCH IS IN CLOSE.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical___ Not Critical_X__

7D 2-BKR-071-0018, RCIC SUPPR POOL OUTBD SUCT VALVE BREAKER (GE-13-39)

2-XS-071-0018, RCIC SUPP POOL OUTBD SUCT EMER TRANS SWITCH EMERG_____

2-HS-071-0018C, RCIC SUPP POOL OUTBD SUCT VALVE EMER HAND SWITCH CLOSE_____

Standard:

At compartment 7D, **SIMULATED PLACING** 2-XS-071-0018 in the EMERG position and 2-HS-071-0018C in the CLOSE position.

CUE:[AS 2-XS-071-0018 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0018C IS SIMULATED] THE SWITCH IS IN CLOSE.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: * Critical X Not Critical___

8B 2-BKR-071-0017, RCIC SUPPR POOL INBD SUCT VALVE BREAKER (GE-13-41)

* 2-XS-071-0017, RCIC SUPP POOL INBD SUCT EMER TRANS SWITCH EMERG_____

2-HS-071-0017C, RCIC SUPP POOL INBD SUCT VALVE EMER HAND SWITCH CLOSE_____

Standard:

At compartment 8B, **SIMULATED PLACING** 2-XS-071-0017 in the EMERG position (**CRITICAL**)and 2-HS-071-0017C in the CLOSE position.(**NON-CRITICAL**)

CUE:[AS 2-XS-071-0017 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0017C IS SIMULATED] THE SWITCH IS IN CLOSE.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical X Not Critical____

8D 2-BKR-071-0025, RCIC LUBE OIL COOLING WATER VALVE BREAKER (GE-13-132)

2-XS-071-0025, RCIC LUBE OIL CLR COOLING WATER EMERG TRANS SWITCH EMERG_____

2-HS-071-0025C, RCIC LUBE OIL CLR COOLING WATER VALVE EMER HAND SWITCH OPEN_____

Standard:

At compartment 8D, **SIMULATED PLACING** 2-XS-071-0025 in the EMERG position and 2-HS-071-0025C in the OPEN position.

CUE:[AS 2-XS-071-0025 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0025C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: *Critical___ Not Critical_X_

10E 2-BKR-071-0031, RCIC TURB BAROMETRIC CNDR VAC PUMP BREAKER

* 2-XS-071-0031, RCIC BAROMETRIC CNDR VAC PUMP EMER TRANS SWITCH EMERG_____

2-HS-071-0031C, RCIC BAROMETRIC CNDR VAC PUMP EMER HAND SWITCH START_____

Standard:

At compartment 10E, **SIMULATED PLACING** 2-XS-071-0031 in the EMERG position (**CRITICAL)** and 2-HS-071-0031C in the START position.**(NON-CRITICAL)**

CUE:[AS 2-XS-071-0031 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0031C IS SIMULATED] THE SWITCH IS IN START.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

NOTIFY UO at Panel 2-25-32 upon completion of Part A. STOP here until directed to perform Part B.

Standard:

Using radio, **SIMULATED NOTIFYING** UO of completion of Attachment 3, Part A.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

CUE: PERFORM STEP 4.2.9.3 OF 2-AOI-100-2 AND NOTIFY OPERATOR AT 2-25-32 WHEN COMPLETE.

****

CAUTION

RCIC TURBINE STEAM SUPPLY VALVE, 2-FCV-71-8, transfer switch has been placed in EMERGENCY and will NOT trip on Reactor Water Level High (+51 inches). Failure to maintain level below this value may result in equipment damage.
RCIC will still trip on low suction pressure, high turbine exhaust pressure, mechanical overspeed, and trip push button on pnl 25-32.

****

4.2.8 Upon completion of attachments, RE-ESTABLLISH communication using the best available means and continue procedure.

4.2.9 INITIATE RCIC as follows:

4.2.9.1 At Panel 2-25-32, CHECK OPEN 2-FCV-71-9 (Red Light above switch) RCIC TURB TRIP/THROT VALVE RESET, 2-HS-71-9D.

4.2.9.2 At 250V DC RMOV Bd 2B, compt. 5D, PLACE RCIC PUMP MIN FLOW VALVE EMER HAND SWITCH, 2-HS-071-0034C, IN OPEN. (Unit 2 Turbine Building AUO)

****

Performance Step: Critical_X__ Not Critical____

4.2.9.3 At 250V DC RMOV Bd 2C, compt. 4B, PLACE RCIC TURB STM SUPPLY VALVE EMER HAND SWITCH, 2-HS-071-0008C, in OPEN. (Unit 2 Reactor Building AUO)

Standard:

At compartment 4B, PLACED 2-HS-071-0008C, in OPEN and **VERIFIED** illuminated RED valve position indicating lamp above 2-HS-071-0008C.

CUE:[WHEN INDICATED] THE RED LIGHT IS ON.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

CUE:[WHEN INDICATED] [WHEN STEP 4.2.9.3 REPORTED COMPLETE] THAT COMPLETES THIS JPM.

END OF TASK

STOP TIME:_____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical _X__

PERFORMER complied with all safety rules and regulations.

Standard:

PERFORMER complied with all safety rules and regulations (hardhat, safety glasses, sideshields, and hearing protection was worn **AS REQUIRED.**)

ELECTRICAL SAFETY was also adhered to **AS REQUIRED**: Exposed conductive articles such as rings, metal wristwatches, bracelets, and metal necklaces shall not be worn by employees within **reaching distance** of exposed energized electrical conductors of 50 volts or greater.

SAT____ UNSAT____ N/A____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated proper radiological practices **AS REQUIRED.**

Standard:

PERFORMER applied proper radiological practices, **AS REQUIRED,** during JPM performance.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical _X__

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-PLANT: I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: Unit 2 Control Room has been abandoned. Pressure control has been established at the backup control panel 2-25-32. The RCIC system is being aligned for injection to the RPV. You are the AUO assigned to the reactor building and you are in radio contact with the operators at the backup control panel.

INITIATING CUES: The Unit Operator directs you to perform Attachment 3, Part A of 2-AOI-100-2, then stand by to perform step 4.2.9.3.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-A

TITLE: EOI APPENDIX 3A - SLC INJECTION

ALTERNATE PATH YES__X___ NO_____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	05/05/2007	All	New Procedure

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 SJPM-A

TASK NUMBER: U-063-AL-03

TASK TITLE: INJECT SLC IN ACCORDANCE WITH EOI APPENDIX 3A

K/A NUMBER: 211000A4.07 K/A RATING: RO 3.6 SRO: 3.6

****

TASK STANDARD: PERFORM OPERATION NECESSARY TO START AN SLC PUMP AND INJECT SLC SOLUTION INTO THE RPV AS DIRECTED BY 2-EOI APPENDIX 3A AND STARTS THE ALT PUMP DUE TO NO FLOW INDICATIONS

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 3A, REV 5

VALIDATION TIME: CONTROL ROOM: 10 MINS LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are an operator. The reactor has scrammed and control rods failed to insert. 2-EOI-1 has been entered and followed to RC/Q-12. The reactor is NOT subcritical & suppression pool temp is rising.

INITIATING CUES: The Unit Supervisor has directed you to inject SLC per Appendix 3A.

START TIME_____

****

Performance Step: Critical___ Not Critical_X_

WHEN REQUESTED BY EXAMINER identify/obtain copy of required 2-EOI Appendix.

Standard:

IDENTIFIED OR OBTAINED copy of 2-EOI Appendix 3A.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

1. **UNLOCK** and **PLACE** 2-HS-63-6A, SLC PUMP 2A/2B, control switch in START-A or START-B position.

Standard:

UNLOCKED AND PLACED SLC pump control switch in either START-A or START-B position.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

2. **CHECK** SLC system for injection by observing the following:

   - Selected pump starts, as indicated by red light illuminated above pump control switch.
   - Squib valves fire, as indicated by SQUIB VALVE A and B CONTINUITY blue lights extinguished,
   - SLC SQUIB VALVE CONTINUITY LOST Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 20).
   - 2-PI-63-7A, SLC PUMP DISCH PRESS, indicates above RPV pressure.
   - System flow, as indicated by 2-IL-63-11, SLC FLOW, red light illuminated on Panel 9-5,
   - SLC INJECTION FLOW TO REACTOR Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 14).

Standard:

VERIFIES there is no discharge pressure and no RED flow light.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

3. IF.....Proper system operation CANNOT be verified, THEN...**RETURN** to Step 1 and **START** other SLC pump.

Standard:

VERIFIES THE RED FLOW LIGHT NOT ILLUINATED and no Discharge Pressure, Starts the other Pump, AND RETURNS TO STEP 1.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical__X_ Not Critical__

1. **UNLOCK** and **PLACE** 2-HS-63-6A, SLC PUMP 2A/2B, control switch in START-A or START-B position.

Standard:

UNLOCKED AND PLACED SLC pump control switch in either START-A or START-B position (The opposite pump that was started earlier).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

****

Performance Step: Critical___ Not Critical_X_

2. **CHECK** SLC system for injection by observing the following:

- Selected pump starts, as indicated by red light illuminated above pump control switch.
- Squib valves fire, as indicated by SQUIB VALVE A and B CONTINUITY blue lights extinguished,
- SLC SQUIB VALVE CONTINUITY LOST Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 20).
- 2-PI-63-7A, SLC PUMP DISCH PRESS, indicates above RPV pressure.
- System flow, as indicated by 2-IL-63-11, SLC FLOW, red light illuminated on Panel 9-5,
- SLC INJECTION FLOW TO REACTOR Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 14).

Standard:

VERIFIES THE ABOVE STEPS , THE VALVE CONTINUITY BLUE LIGHTS AND (2-XA-55-5B WIN 20) BE OUT FROM ATTEMPTING TO START THE FIRST PUMP.

SAT___UNSAT___N/A___ COMMENTS:___________________________________

____

****

Performance Step: Critical___ Not Critical_X_

3. IF.....Proper system operation CANNOT be verified, THEN...**RETURN** to Step 1 and **START** other SLC pump.

Standard:

VERIFIED PROPER SYSTEM OPERATION IN STEP 2.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

4. **VERIFY** RWCU isolation by observing the following:

- RWCU Pumps 2A and 2B tripped
- 2-FCV-69-1, RWCU INBD SUCT ISOLATION VALVE closed
- 2-FCV-69-2, RWCU OUTBD SUCT ISOLATION VALVE closed
- 2-FCV-69-12, RWCU RETURN ISOLATION VALVE closed.

Standard:

VERIFIED illuminated GREEN valve position indicating lights above the respective valve handswitches AND **VERIFIED** RWCU pumps tripped by **OBSERVING** illuminated GREEN breaker position indicating lights above pump handswitches.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical____ Not Critical__X

5. **VERIFY** ADS inhibited.

Standard:

VERIFIED 2-XS-1-159A and 2-XS-1-161A, Panel 2-9-3, in the INHIBIT position AND **VERIFIED** Alarm Panel 2-XA-55-3C, Window 18 AND 31, "ADS LOGIC BUS A OR B INHIBITED", in alarm.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

6. **MONITOR** Reactor power for downward trend.

Standard:

MONITORED all available APRMs for downward reactor power trend.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

****

Performance Step: Critical___ Not Critical_X_

7. **MONITOR** 2-LI-63-1A, SLC STORAGE TANK LEVEL, and **CHECK** that level is dropping approximately 1% per minute.

Standard:

OBSERVED 2-LI-63-1A and **VERIFIED** SLC storage tank level decreasing.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

CUE: ANOTHER OPERATOR WILL SECURE SLC WHEN NECESSARY.

****

Performance Step: Critical___ Not Critical_X

PERFORMER demonstrated the use of TOUCH STAAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards.)

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical____Not Critical__X__

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards.)

SAT____UNSAT____N/A____ COMMENTS:_____

_____

END OF TASK

STOP TIME:_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are an operator. The reactor has scrammed and control rods failed to insert. 2-EOI-1 has been entered and followed to RC/Q-12. The reactor is NOT subcritical & suppression pool temp is rising.

INITIATING CUES: The Unit Supervisor has directed you to inject SLC per Appendix 3A.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-B

TITLE: 2-EOI APPENDIX 7D - ALTERNATE RPV INJECTION SYSTEM LINEUP - STANDBY COOLANT

ALTERNATE PATH YES_____ NO__X____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
4	11/29/94	1,2,3,4	REVISE TO NEW FORMAT
5	10/17/95	All	Procedure revision
6	10/23/96	4,12	ADDED NON-CRITICAL STEP ON STAAR, AND CHANGED ASOS TO US
7	09/15/97	ALL	FORMAT, CHANGED MGT EXPECTATIONS TO PLANT WORK EXPECTATIONS, ADDED 3-WAY COMM.
8	09/08/99	2	CHANGED FONT FOR PAGE TO FIT
9	10/03/00	4	DELETED NON-CRITICAL STEPS
10	9/21/02	3	REMOVE SS#, CHANG PROCED REV
11	10/2/05	All	General Revision
12	8/7/07	9	Reflect Appendix 7D revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 SJPM-B

TASK NUMBER: U-000-EM-39

TASK TITLE: LINE UP ALTERNATE RPV INJECTION SYSTEM - STANDBY COOLANT IN ACCORDANCE WITH 2-EOI APPENDIX 7D

K/A NUMBER: 295031EA1.08 K/A RATING: RO 3.8 SRO: 3.9

****

TASK STANDARD: PERFORM CORRECT EQUIPMENT MANIPULATIONS REQUIRED TO INJECT MAKEUP INTO THE RPV AS DIRECTED BY 2-EOI APPENDIX 7D

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 7D, REV 6

VALIDATION TIME: CONTROL ROOM: 10:00 LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____DATE:_____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Unit 2 Operator. The reactor has scrammed. Due to an unisolable leak and several equipment failures, the UNIT SUPERVISOR has determined that RPV water level cannot be maintained above -162".

INITIATING CUES: The UNIT SUPERVISOR has directed you to inject makeup to the RPV using RHR System I as directed by 2-EOI Appendix 7D, Standby Coolant.

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 2-EOI APPENDIX 7D.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

NOTE: Throughout this appendix, all operations are performed at Unit 2, Panel 2-9-3 unless otherwise noted.

1. **IF**.....RHR Loop I is to be used for Standby Coolant,
THEN...**PERFORM** the following:

****

Performance Step: Critical___ Not Critical_X_

a. **VERIFY CLOSED** the following valves:

- 2-FCV-74-61, RHR SYS I DW SPRAY INBD VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-61A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

- 2-FCV-74-60, RHR SYS I DW SPRAY OUTBD VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-60A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

- 2-FCV-74-57, RHR SYS I SUPPR CHBR/POOL ISOL VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-57A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

- 2-FCV-74-58, RHR SYS I SUPPR CHBR SPRAY VALVE

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-58A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

- 2-FCV-74-59, RHR SYS I SUPPR POOL CLG/TEST VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-59A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X_

- 2-FCV-23-52, RHR HX 2D RHRSW OUTLET VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-23-52.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

b. **VERIFY** RHR Pumps 2A and 2C are NOT running.

Standard:

VERIFIED illuminated GREEN control motor breaker position indicating lamps above 2-HS-74-5A and 2-HS-74-16A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical_____

c. **START** RHRSW Pumps D1 and D2.

Standard:

PLACED 0-HS-23-23A and 0-HS-23-27A in the START position and **VERIFIED** illuminated RED motor breaker position indicating lamps above associated control switches.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

NOTE: 2-BKR-074-0100, RHR SYS I U-1 DISCH XTIE breaker compartment is maintained in the OPEN position as an Appendix R requirement.

****

****

Performance Step: Critical X Not Critical_____

d. **NOTIFY** Unit 1 Operator to perform the following (Unit 1, Panel 1-9-3):

- **VERIFY CLOSED** 1-FCV-23-52, RHR HEAT EXCHANGER D COOL WATER OUTLET VLV.
- **OPEN** 1-FCV-23-57, STANDBY COOLANT VALVE FROM RHRSW.

DISPATCH personnel to **CLOSE** 2-BKR-074-0100, RHR SYS I U-1 DISCH XTIE, 480V RMOV Board 1B, Compartment 19A.)

Standard:

SIMULATED NOTIFYING Unit 1 Operator to verify CLOSED FCV-23-52 [NOT CRITICAL] and OPEN FCV-23-57. Dispatch personnel to close 74-100 breaker **Only having the U1 UO opening 1-FCV- 23-57 and dispatching personnel to close BKR -74-100 are critical steps.**

CUE: [SIMULATOR OPERATOR WHEN CONTACTED] UNIT 1 OPERATOR CONFIRMS FCV-23-52 CLOSED AND FCV 23-57 OPEN, personnel dispatched to close 74-100 breaker.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X___

e. **NOTIFY** Unit 3 Operator to **VERIFY CLOSED** 3-FCV-23-52, RHR HX 3D RHRSW OUTLET VLV (Unit 3, Panel 3-9-3).

Standard:

CONTACTED Unit 3 Operator to verify 3-FCV-23-52 closed.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: [WHEN CONTACTED] UNIT 3 OPERATOR VERIFIES RHR HX 3D RHRSW OUTLET VALVE, 3-FCV-23-52, CLOSED.

f. **INJECT** Standby Coolant into RPV as follows:

****

Performance Step : Critical_X_ Not Critical____

1) **CLOSE** 2-FCV-74-52, RHR SYS I LPCI OUTBD INJECT VALVE.

Standard:

PLACED 2-HS-74-52 in the CLOSE position and **VERIFIED** illuminated GREEN valve position indicating lamp

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical_____

2) **OPEN** 2-FCV-74-100, RHR SYSTEM I U-1 DISCH XTIE.

Standard:

PLACED 2-HS-74-100A in the OPEN position and **VERIFIED** illuminated RED valve position indicating lamp [NOT CRITICAL].

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical____

3) **OPEN** 2-FCV-74-53, RHR SYS I LPCI INBD INJECT VALVE.

Standard:

PLACED 2-FCV-74-53 in the OPEN position and **VERIFIED** illuminated RED valve position indicating lamp.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical_____

4) **THROTTLE** 2-FCV-74-52, RHR SYS I LPCI OUTBD INJECT VALVE, to control injection.

Standard:

PLACED 2-HS-74-52A in the OPEN position as required for level control and **VERIFIED** illuminated RED valve position indicating lamp above associated control switch.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

INSTRUCTOR NOTE: Level need not be restored to +2 - +51 inches, level rising is sufficient. WHEN INSTRUCTOR IS SATISFIED THAT LEVEL IS RESTORING, "That completes this JPM".

****

Performance Step: Critical___ Not Critical_X___

PERFORMER demonstrated the use of TOUCH STAAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards).

SAT_____ UNSAT_____ N/A _____ COMMENTS:
_____
_____
_____

****

Performance Step:

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT_____ UNSAT_____ N/A _____ COMMENTS:
_____
_____

END OF TASK

STOP TIME _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Unit 2 Operator. The reactor has scrammed. Due to an unisolable leak and several equipment failures, the UNIT SUPERVISOR has determined that RPV water level cannot be maintained above -162".

INITIATING CUES: The UNIT SUPERVISOR has directed you to inject makeup to the RPV using RHR System I as directed by 2-EOI Appendix 7D, Standby Coolant.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-C

TITLE: LINE UP ALTERNATE RPV PRESSURE CONTROL SYSTEMS - RFPT ON MINIMUM FLOW IN ACCORDANCE WITH 2-EOI APPENDIX 11F

ALTERNATE PATH YES__X___ NO_____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	11/09/99	ALL	NEW JPM
1	10/13/00	4	FORMAT CHANGE
2	8/13/02	All	General Revision
3	9/13/02	11	EDITORIAL
4	8/28/05	8	Added critical step
5	05/27/07	All	Modified faulted & Procedure Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 SJPM-C

TASK NUMBER: U-000-EM-58

TASK TITLE: LINE UP ALTERNATE RPV PRESSURE CONTROL SYSTEMS - RFPT ON MINIMUM FLOW IN ACCORDANCE WITH 2-EOI APPENDIX 11F

K/A NUMBER: 295025G12 K/A RATING: RO 3.9 SRO: 4.5

****

TASK STANDARD: PERFORM OPERATIONS NECESSARY TO PLACE A RFPT IN PRESSURE CONTROL AS DIRECTED BY 2-EOI APPENDIX 11F.

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ____

REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 11F, REV 4

VALIDATION TIME: CONTROL ROOM: 10:00 LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are an Operator. The Unit 2 reactor has scrammed and the turbine bypass valves are not responding properly for pressure control. EOI-1 has been followed to RC/P-11.

INITIATING CUES: The Unit Supervisor directs you to place 2A RFP in alternate pressure control, as directed by 2-EOI Appendix-11F.

START TIME_____

****

Performance Step: Critical___ Not Critical_X___

WHEN REQUESTED BY EXAMINER identify/obtain copy of required EOI Appendix.

Standard:

IDENTIFIED OR OBTAINED copy of 2-EOI Appendix 11F.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

1. IF.....BOTH of the following exist:

   - Emergency RPV Depressurization is required,

   AND

   - Group 1 Isolation Signal exists,

   THEN...**EXIT** this procedure and **ENTER** EOI Appendix 11H.

Standard:

VERIFIED that a Group 1 Isolation Signal DOES NOT exist by observing illuminated RED PCIS Group I lights and/or **VERIFIED** MSIVs are open by observing illuminated RED valve position indicating lights for each valve.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X___

2. **VERIFY** MSIVs open.

Standard:

VERIFIED MSIVs are open by observing illuminated RED valve position indicating lights above each valve handswitch and/or observing illuminated RED valve position indicating lights for MSIVs on PCIS display.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X___

3. **VERIFY** Hotwell Pressure at or below -7 in. Hg.

Standard:

VERIFIED main condenser vacuum at or below -7 in. HG using 2-XR-2-2, HOTWELL TEMP AND PRESS, Panel 9-6, or by computer point D383, D384 or D385.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

4. **PLACE** RFPTs in service as follows:

a. **VERIFY** the following:

1) At least one condensate pump running.

2) At least one condensate booster pump running.

3) Condensate System aligned to supply suction to RFPs.

Standard:

VERIFIED at least one condensate and condensate booster pump running by red lights above handswitches on panel 9-6.
VERIFIED Condensate aligned by Low Pressure heater inlet and outlet valves open and RFP suction valves open.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X___

b. **VERIFY** Main Oil Pump running for EACH RFPT to be started.

Standard:

VERIFIED 2A RFPT Main Oil Pump running by red light above MOP handswitch.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical__X___

c. **VERIFY CLOSED** 2-FCV-3-19(12)(5), RFP 2A(2B)(2C) DISCHARGE VALVE.

Standard:

ATTEMPS TO CLOSE 2-FCV-3-19 using handswitch and recognize valve did not close (Critical). Notifies US that 2-FCV-3-19 will not close (Not Critical).

CUE: US INSTRUCTS OPERATOR TO USE 2B RFP INSTEAD.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

4. **PLACE** RFPTs in service as follows:

a. **VERIFY** the following:

1) At least one condensate pump running.

2) At least one condensate booster pump running.

3) Condensate System aligned to supply suction to RFPs.

Standard:

VERIFIED at least one condensate and condensate booster pump running by red lights above handswitches on panel 9-6. **VERIFIED** Condensate aligned by Low Pressure heater inlet and outlet valves open and RFP suction valves open (for the 2B pump).

SAT___UNSAT___N/A___ COMMENTS:_____

****

Performance Step: Critical___ Not Critical_X___

b. **VERIFY** Main Oil Pump running for EACH RFPT to be started.

Standard:

VERIFIED 2B RFPT Main Oil Pump running by red light above MOP handswitch.

SAT___UNSAT___N/A___ COMMENTS:_____

****

Performance Step: Critical__X__ Not Critical_____

c. **VERIFY CLOSED** 2-FCV-3-19(12)(5), RFP 2A(2B)(2C) DISCHARGE VALVE.

Standard:

CLOSES 2-FCV-3-12 using handswitch and observing valve close.

SAT___UNSAT___N/A___ COMMENTS:_____

****

Performance Step: Critical__X__Not Critical_____

d. **DEPRESS** 2-HS-46-8A(9A)(10A), RFPT 2A(2B)(2C) SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.

Standard:

DEPRESSED 2-HS-46-9A (Critical) and **VERIFIED** amber light illuminated (Not Critical).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical_____

e. **DEPRESS** 2-HS-3-124A(150A)(175A), RFPT 2A(2B)(2C) TRIP RESET.

Standard:

DEPRESSED 2-HS-3-150.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical_____

f. **PLACE** 2-HS-46-112A(138A)(163A), RFPT 2A(2B)(2C) START/LOCAL ENABLE, in START.

Standard:

PLACED 2-HS-46-138A, **RFPT 2B** START/LOCAL ENABLE, in START (Critical) and observed illuminated Red light (Not Critical).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X___

g. **CHECK** RFPT 2A (2B) (2C) Speed accelerates to approximately 600 rpm.

Standard:

CHECKED RFPT 2B Speed accelerating to approximately 600 rpm on 2-SI-46-9A.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical__X__

h. **VERIFY OPEN** 2-FCV-3-20 (13) (6), RFP 2A (2B) (2C) MIN FLOW VALVE.

Standard:

VERIFIED 2-FCV-3-13 RFP 2B MIN FLOW VALVE open by observing illuminated red light.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

CAUTION

RFP discharge pressure is limited to below 1250 psig to avoid system damage.

****

****

Performance Step: Critical_X_ Not Critical_____

i. **PLACE** 2-HS-46-8A(9A)(10A), RFPT 2A(2B)(2C) SPEED CONT RAISE/LOWER in RAISE to raise RFPT speed, maintaining discharge pressure less than 1250 psig.

Standard:

RAISED RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure < 1250 psig as indicated on 2-PI-3-9A, RFP 2B.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

CUE: THAT COMPLETES THIS JPM.

5. **REPEAT** Steps 4.b through 4.i as necessary.

****

Performance Step: Critical____ Not Critical_X___

PERFORMER demonstrated the use of TOUCH STAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards).

SAT____ UNSAT_____N/A_____ COMMENTS: _____

_____

_____

****

Performance Step: Critical_____Not Critical__X____

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT_____UNSAT_____N/A_____COMMENTS_____

_____

_____

END OF TASK

STOP TIME_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are an Operator. The Unit 2 reactor has scrammed and the turbine bypass valves are not responding properly for pressure control. EOI-1 has been followed to RC/P-11.

INITIATING CUES: The Unit Supervisor directs you to place 2A RFP in alternate pressure control, as directed by 2-EOI Appendix-11F.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-D

TITLE: LOSS OF SHUTDOWN COOLING

TASK NUMBER: U-074-NO-11

SUBMITTED BY: _____ DATE: _____

VALIDATED BY: _____ DATE: _____

APPROVED: _____ DATE: _____
TRAINING

PLANT CONCURRENCE: _____ DATE: _____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	05/26/07	ALL	NEW JPM

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____SRO _____ DATE:_____

JPM NUMBER: 0606 SJPM-D

TASK NUMBER: U-074-NO-11

TASK TITLE: LOSS OF SHUTDOWN COOLING

K/A NUMBER: 205000A4.01 K/A RATING: RO 3.7 SRO: 3.7

****

TASK STANDARD: INITIATION OF SHUTDOWN COOLING USING UNIT 2 LOOP 2 RHR

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-OI-74, REV. 133; 2-AOI-74-1, REV. 32

ALT. PATH YES X NO_____

VALIDATION TIME: CONTROL ROOM: 40 MIN LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM X LOCAL _____

COMMENTS: _____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

EXAMINER SIGNATURE:_____DATE: _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: Unit 2 has been shutdown for Refueling Outage. RHR Loop I Pump 2C was in shutdown cooling with moderator temperature approximately 172 degrees Fahrenheit. CS&S has been aligned to Core Spray Loops I & II and RHR Loops I & II for three days and Chem Lab analysis was good for all loops. Inboard MSIV's are open. Both RHR Loops have been vented within the last 12 hours. Reactor level is approximately 85 inches.

INITIATING CUES: 2C RHR pump has tripped. 2-AOI-74-1 has been completed through step 4.2[12.7]. You have been directed to continue in the procedure at step 4.2[12.8].

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: Unit 2 has been shutdown for Refueling Outage. RHR Loop I Pump 2C was in shutdown cooling with moderator temperature approximately 172 degrees Fahrenheit. CS&S has been aligned to Core Spray Loops I & II and RHR Loops I & II for three days and Chem Lab analysis was good for all loops. Inboard MSIV's are open. Both RHR Loops have been vented within the last 12 hours. Reactor level is approximately 85 inches.

INITIATING CUES: 2C RHR pump has tripped. 2-AOI-74-1 has been completed through step 4.2[12.7]. You have been directed to continue in the procedure at step 4.2[12.8].

START TIME_____

****

Performance Step: Critical___ Not Critical_X____

WHEN REQUESTED BY EXAMINER identify/obtain copy of 2-AOI-74-1.

Standard:

IDENTIFIED OR OBTAINED copy of 2-AOI-74-1.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

4.2 Subsequent Actions (continued)

[12.8] **RESTART** tripped RHR pump(s) RHR PUMP 2A(2C)(2B)(2D) using 2-HS-74-5A(16A)(28A)(39A)

Standard:

OPERATOR **ATTEMPTS TO START** RHR PUMP 2C and / or 2A [CRITICAL] and informs SRO THAT 2C and / or 2A RHR PUMP(s) will not start [NOT CRITICAL].

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

CUE: SRO ACKNOWLEDGES, "2C and/or 2A RHR PUMP FAILED TO START--CONTINUE WITH THE AOI. IF "2C" PUMP IS STARTED ALARM RECEIVED XA-55-3D WIN 14 AND XA-55-23B WIN 32. IF "2A" PUMP IS STARTED ALARM RECEIVED XA-55-3D WIN 13 AND XA 23A WIN 32.

Performance Step: Critical____ Not Critical_X__

[12.9] **THROTTLE** RHR SYS I(II) LPCI OUTBD INJECTION VALVE, 2-FCV-74-52(66), to establish and maintain RHR flow as indicated by 2-FI-74-50(64), RHR SYS I(II) FLOW, as follows:

[12.10] **WHEN** time permits after RHR pump is started, **THEN**

VERIFY RHR Pump Breaker charging spring recharged by observing amber breaker spring charged light is on and closing spring target indicates charged.

[12.11] **SLOWLY THROTTLE** RHR HX 2A(2C)(2B)(2D) RHRSW OUTLET VALVE, 2-FCV-23-34(40)(46)(52), to obtain desired cooldown rate.

Standard:

Operator N/A's steps [12.9] - [12.11] since pump did not start.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical____ Not Critical_X_

[13] **IF** necessary, **RAISE** RWCU flow rate to maximum AND maximize RWCU blowdown as required to maintain reactor coolant temperatures less than 200°F on all indications. **REFER TO** 2-OI-69.

CUE: (If student gets sidetracked with RWCU) RWCU adjustments are not required at this time.

Standard:

Determines RWCU adjustments are not required at this time.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

CAUTION

Accurate coolant temperatures will **NOT** be available if all forced circulation is lost.

****

Performance Step: Critical____ Not Critical_X__

[14] [NER/C] **IF** forced circulation has been lost **AND** vessel cavity is less than 80 inches, **THEN** (Otherwise N/A)

PERFORM the following:

[14.1] **RAISE** RPV water level to 80 inches as indicated on RX WTR LEVEL FLOOD-UP, 2-LI-3-55.

[14.2] **MAINTAIN** RPV water level between +70 inches to +90 inches as indicated on RX WTR LEVEL FLOOD-UP, 2-LI-3-55.

[14.3] **RAISE** monitoring frequency of reactor coolant temperature and pressure, using multiple indications.

Standard:

Determines Forced Circulation has not been lost (2A Recirc pump is in service) and continues to step [15].

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

NOTE
IF STUDENT DOES NOT ADDRESS THIS STEP AND A REACTOR MODE CHANGE OCCURS BEFORE SHUTDOWN IS ESTABISHED [THE JPM IS FAILED].

FOR NRC
TEMPERATURE INDICATOR FOR RX COOLANT TEMPS ARE ON PANEL 9-4 RECIRC RECORDER [TR-68-2] [TE-68-2]

****

Performance Step: Critical____ Not Critical_X__

[15] **IF** the affected loop of RHR cannot be placed back in Shutdown Cooling, **THEN**

RESTORE power to affected breakers per 2-POI-74-2 if applicable (Otherwise N/A)

AND

PLACE the alternate loop of RHR in Shutdown Cooling.**REFER TO** 2-OI-74. (Otherwise N/A)

CUE: IF ASKED 2-POI-74-2 is not in effect.

Standard:

Operator **PROCEEDS** to 2-OI-74 SECTION 8.8.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

2-OI-74

8.8 Initiation/Operation of Loop I(II) Shutdown Cooling

CAUTIONS

1) During the early stages of shutdown cooling when high amounts of decay heat are present, every effort should be made to minimize SIs/SRs or maintenance which could isolate shutdown cooling.

2)Care should be exercised when changing the operating mode or any system

parameter while SFSP or reactor cavity operations are in progress. This precludes the possible introduction of sediment/dirt into the SFSP or reactor cavity, thereby reducing water clarity. Contact the refuel floor SRO, if applicable,for permission to alter RHR/SDC System alignment and/or parameters.

NOTES

1) All operations are performed at Panel 2-9-3 unless otherwise noted.

2) When Reactor Vessel Pressure is greater than Atmospheric Pressure RHR SHUTDOWN COOLING SUCT OUTBOARD ISOL VALVE 2-FCV-74-47 is required to remain closed with its breaker OFF except for testing or shutdown cooling operation. This is an Appendix R requirement.

3) Removing the RWCU System from service in Step 8.8[1] prevents a RWCU pump trip due to low flow, which can occur when the RWCU System is in service while placing Shutdown Cooling in service.

4) This Section provides direction for various operations and alignments of the RHR System while in Shutdown Cooling. The following list provides a quick reference to the appropriate step for the desired operation and/or alignment:

- For normal operation of Shutdown Cooling after initiation is complete, **REFER TO** Step 8.8[23].
- For removal of an RHR Pump from service due to reduced decay heat load, **REFER TO** Step 8.8[23.7].
- For termination of RHRSW flow through an RHR Heat Exchanger for a short period AND the subsequent return to service, **REFER TO** Step 8.8[23.8].
- For termination of Shutdown Cooling for a short period, **REFER TO** Step 8.8[23.9]. (This Section removes SDC from service and still maintain it available.)
- For termination of Shutdown Cooling for an extended period, **REFER TO** Section 8.9. (This Section removes SDC from service but, it will not necessarily be maintained available.)

****

8.8 Initiation/Operation of Loop I(II) Shutdown Cooling

Performance Step: Critical___ Not Critical_X_

[1] **VERIFY** the following initial conditions are satisfied:

- RWCU System removed from service. REFER TO 2-OI-69.

CUE: The extra Operator will remove RWCU from service

Standard:

Operator acknowledges the extra operator will remove RWCU from service.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

- **NOTIFY** other units of placing Loop I(II) of RHR in shutdown cooling, the subsequent start of common equipment (i.e., RHRSW pumps) and associated alarms are to be expected.

Standard:

Operator notifies other Units by phone or radio of activities and to expect alarms.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

- Reactor water level established at a desired level of greater than 40".

Standard:

Verified that Reactor water level is greater than +40 inches.

SAT___UNSAT___N/A___ COMMENTS:_____

****

Performance Step: Critical___ Not Critical_X_

[2] **VERIFY** ONE of the following conditions are met:

- RHR Loop I(II) has been flushed and aligned per Section 8.7, OR
- CS&S has been aligned as the keep fill source for 2 days or more and a satisfactory sample has been obtained, OR
- Plant conditions preclude flushing.

Standard:

Given in initial conditions that CS&S has been aligned > 2 days and Chem Lab sample was sat.

SAT___UNSAT___N/A___ COMMENTS:_____

****

Performance Step: Critical___ Not Critical_X_

[2.1] **IF** CS&S has been aligned as the keep fill source for 2 days or more and a satisfactory sample has been obtained, **OR IF** plant conditions preclude flushing,

THEN

ENSURE Shutdown cooling header is filled by performing the following: (N/A if the shutdown cooling header has been previously filled)

CUE: Shutdown Cooling header has been previously filled.

Standard:

Acknowledges that Shutdown Cooling header has been previously filled and skips steps [2.2.1] thru [2.1.7]

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

[3] **VERIFY** MODE SELECTOR SWITCH, 2-HS-74-157, on 480V RMOV Bd 2A, Compartment 5B, in SHUTDOWN to allow closing 2-FCV-74-1 and 12 (RHR Loop I), and opening 2-FCV-74-48 (RHR Loop I & II).

Standard:

Student should realize that 2-HS-74-157 is already in SHUTDOWN since Loop I was in S/D cooling and since 2-FCV-74-48 is already open.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X__ Not Critical___

[4] **IF** RHR Loop II is to be used, **THEN**

PLACE MODE SELECTOR SWITCH, 2-HS-74-158, on 480V RMOV Bd 2B, Compartment 11C, in SHUTDOWN to allow closing 2-FCV-74-24 and 2-FCV-74-35 (RHR Loop II).

CUE: Simulator operator enters mrf rh19 shutdown and reports 2-HS-74-158 is in shutdown.

Standard:

Student should dispatch personnel to place 2-HS-74-158 in SHUTDOWN to allow closing 2-FCV-74-24 and 35 and to open 2-

FCV-74-25 & 36.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X_ Not Critical___

[5] **VERIFY CLOSED** RHR PUMP 2A(2B) and 2C(2D) SUPPR POOL SUCT VLVs, 2-FCV-74-1(24) and 2-FCV-74-12(35).

Standard:

Student closes 2-FCV-74-24 & 35.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

CAUTION

[NER/C] Failure to place RHR SYSTEM I (II) MIN FLOW INHIBIT switch, 2-HS-74-148 (149) in the INHIBIT position may result in inadvertent draining of the reactor vessel when the RHR SHUTDOWN COOLING OUTBD and INBD ISOL VLVs, 2-FCV-74-47 and 2-FCV-74-48 are open. [INPO SOER 87-02]

****

Performance Step: Critical___ Not Critical_X_

[6] [II/C] **VERIFY** a CAUTION ORDER is in place on the SYSTEM I(II) MIN FLOW VALVE, 2-FCV-74-7(30), stating "Operation of this valve can cause inadvertent drainage of the Reactor vessel to the Suppression Pool. DO NOT operate without Shift Manager permission". (Tags should be placed on all points of control.) [BFPER941099]

Instructor Note: When requested, the Extra Operator should place the Caution Order on the handswitch.

Standard:

Student calls SSS and requests a Caution Order be placed on 2-HS-74-30.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X__ Not Critical___

[7] **VERIFY** RHR SYSTEM I(II) MIN FLOW INHIBIT Switch 2-HS-74-148(149) in INHIBIT and **VERIFY CLOSED** SYSTEM I(II) MIN FLOW VALVE 2-FCV-74-7(30).

Standard:

Student places the Minimum Flow Inhibit switch 2-HS-74-149 in INHIBIT (Critical) and verifies that the minimum flow valve goes closed (Not Critical).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X__ Not Critical___

[8] **VERIFY OPEN** RHR PUMP 2A(2B) and 2C(2D) SD COOLING SUCT VLVs 2-FCV-74-2(25) and 2-FCV-74-13(36).

Standard:

Student Opens 2-FCV-74-25 & 36.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X__ Not Critical___

[9] **VERIFY** Recirculation Pump B(A) is stopped.

Standard:

Student stops 2A Recirc pump.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

NOTE
Recirc pump suction and discharge valves may be closed if required for testing or maintenance. The associated Recirc Drive Normal and Alternate Feeder Breakers should be tripped prior to closing the suction valve to prevent forcing the suction valve closure / feeder breakers trip interlock. To prevent overpressurizing Recirc pump casing, ensure CRD seal purge is isolated to the Recirc pump, or being supplied by CS&S, if the suction and discharge valves are both closed.

****

Performance Step: Critical_X__ Not Critical___

[10] **VERIFY CLOSED** one of the following valves:

[10.1] RECIRC PUMP 2B(2A) DISCHARGE VALVE, 2-FCV-68-79(3).

[10.2] **IF** RECIRC PUMP 2B(2A) SUCTION VALVE, 2-FCV-68-77(1) is to be closed, **THEN**

PERFORM the following:

[10.2.1] **VERIFY** TRIPPED, RECIRC DRIVE 2B(2A) NORMAL FEEDER, 2-HS-57-14(17).

[10.2.2] **VERIFY** TRIPPED, RECIRC DRIVE 2B(2A) ALTERNATE FEEDER, 2-HS-57-12(15).

[10.2.3] **CLOSE** tripped recirc pump suction valve using RECIRC PUMP 2B(2A) SUCTION VALVE, 2-HS-68-77(1).

Standard:

Student closes either the discharge or suction valve (preferably the discharge valve) - If the suction valve is to be closed, Steps [10.2.1] thru [10.2.3] must also be performed (and the seal purge isolated - see previous note).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

****

Performance Step: Critical___ Not Critical_X_

[11] **VERIFY** Reactor pressure is less than 55 psig, OR if entering this procedure from RC/P of 2-EOI-1, pressure is less than 100 psig.

Standard:

Student verifies Rx pressure is less than 55 psig.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

[12] **DIRECT** Instrument Mechanics to enable RHR SD CLG FLOW LOW annunciator, 2-XA-55-3D, Window 11 and **VERIFY** setpoint of 3700 gpm by programming recorder 2-FR-74-64, RHR SYS I/II FLOW, for RHR Loop to be placed in Shutdown Cooling.

Standard:

Contacts the IM's and request changing setpoint of annunciator window (Console operator will enter mrf rh46a disable and mrf rh46b enable)

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

[13] **NOTIFY** Chemistry that RHRSW is to be placed in service and Shutdown Cooling is to be started.

CUE: (as Chemistry) Report - Placing RHRSW in service and placing Shutdown Cooling in service.

Standard:

Student notifies Chem Lab RHRSW and Shutdown Cooling is to be placed in service.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

NOTES

1) For closed loop vents, venting is required for 1 minute.
2) Step 8.8[14] may be N/A'd, when the RHR Loop has been vented within 24 hours.

****

Performance Step: Critical___ Not Critical_X_

[14] **OPEN** the following RHR Loop I(II) vent valves until a solid stream of water is observed, **THEN CLOSE**:

A. Head (Containment) Spray Line through RHR SYS I HEAD SPRAY HI POINT (RHR SYS DW SPRAY) TELL-TALE VENT SOV, 2-SHV-074-0746(0747), AND

B. HIGH POINT TELL TALE VENT HEAD SPRAY LINE (CONTAINMENT SPRAY), 2-FSV-74-138(139). [Rx Bldg, El 593' Fuel Pool Cooling Area (Rx Bldg, E, El 621')]

Standard:

Given in initial conditions that both loops have been vented within the last 12 hours - Student should N/A 14A & 14B.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

NOTES

1) If reactor pressure exceeds 100 psig OR a Group II isolation occurs while in Shutdown Cooling, RHR SHUTDOWN COOLING SUCT OUTBD and INBD ISOL VLVs,2-FCV-74-47 and 2-FCV-74-48, close, thus tripping Unit 2 operating RHR pumps.

2) If necessary, 2-BYP-074-0704(0828) may be used to provide reactor vessel makeup.

****

Performance Step: Critical___ Not Critical_X_

[15] **VERIFY CLOSED** CNDS FILL TO HEAD SPRAY BYPASS, 2-BYP-074-0704 (CNDS FLUSH & FILL TO DW SPRAY BYPASS, 2-BYP-074-0828),locally. [Rx Bldg, El 621', Fuel Pool Cooling Area, (Rx Bldg. El 593')]

CUE: Report that 2-BYP-074-0704 and 0828 are closed.

Standard:

Student dispatches an AUO to locally verify 2-BYP-074-0704 and 0828 are closed.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

CAUTION

[INPO] Failure to have the following valves closed may result in inadvertent draining of the reactor vessel when the RHR SHUTDOWN COOLING OUTBD and INBD ISOL VLVs,2-FCV-74-47 and 2-FCV-74-48, are open:

- RHR PUMP 2A(2B) and 2C(2D) SUPPR POOL SUCT VLVs, 2-FCV-74-1(24) and 2-FCV-74-12(35).
- RHR SYS I(II) SUPPR CHBR/POOL ISOL VLV, 2-FCV-74-57(71). [INPO SOER 87-002]

****

Performance Step: Critical___ Not Critical_X_

[16] **VERIFY** in ON, Breaker 2-BKR-074-0047 for 2-FCV-74-47 at the 250 VDC RMOV Bd 2A compartment R1A.

Standard:

Dispatches AUO to verify breaker closed for 2-FCV-74-47.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

[17] **OPEN** RHR SHUTDOWN COOLING SUCT OUTBD and INBD ISOL VLVs, 2-FCV-74-47 and 2-FCV-74-48.

Standard:

Student verifies that 2-FCV-74-47 & 48 are open.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X_ Not Critical___

[18] **CLOSE** RHR SYS I(II) LPCI OUTBD INJECT VALVE, 2-FCV-74-52(66).

Standard:

Student closes 2-FCV-74-66.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X__ Not Critical___

[19] **OPEN** RHR SYS I(II) LPCI INBD INJECT VALVE, 2-FCV-74-53(67).

Standard:

Student opens 2-FCV-74-67.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

[20] **VERIFY** at least one RHRSW Pump is operating on each EECW Header.

Standard:

Student verifies an EECW pump running on each EECW header.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

CAUTIONS

1) To avoid exceeding the qualification temperature limits (150°F) on RHRSW piping and components downstream of the common point, dilute the flow through the RHRSW piping by establishing additional flow through the selected Loop's companion RHR Heat Exchanger not being used for Shutdown Cooling.

2) [II/C] During Shutdown Cooling modes of operation, if RHRSW outlet temperature exceeds 150°F, the following limitations apply

- For temperatures between 150°F and 178°F, flow through the inservice RHR Heat Exchanger is required to be less than or equal to 3000 gpm.
- For temperatures above 178°F, flow through the inservice RHR Heat Exchanger is required to be less than or equal to 1500 gpm.
- Flow through the companion RHR Heat Exchanger is required to be greater than or equal to 1500 gpm. (2-47E858-1) [BFPER961410]

NOTES

1) Step 8.8[21] initiates Shutdown Cooling through RHR Loop I.

2) Step 8.8[22] initiates Shutdown Cooling through RHR Loop II.

****

Performance Step: Critical___ Not Critical_X_

[21] **PLACE** RHR Loop I Pump and Heat Exchanger A(C) in service as follows:

Standard:

Student N/A's section 21 since Loop I is not being placed in service.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical_X__ Not Critical___

[22] **PLACE** RHR Loop II Pump and Heat Exchanger B(D) in service as follows:

[22.1] **START** an RHRSW Pump to establish flow through the loop II COMPANION RHR Heat Exchanger not being used for Shutdown Cooling, RHR Heat Exchanger D(B).

- **WHEN** time permits, **THEN**

  VERIFY Pump Breaker charging spring recharged By observing amber breaker spring charged light is on and closing spring target indicates charged.

Standard:

Student starts a RHRSW pump (B1, 2 or D1, 2) to the companion Hx not being used for Shutdown cooling (Critical) and when time permits, dispatches personnel to check the breaker of the pump started (Not Critical).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

****

Performance Step: Critical X Not Critical ___

[22.2] **THROTTLE** RHR HX 2D(2B) RHRSW OUTLET VLV, 2-FCV-23-52(46), to obtain a flow of 3000 to 4000 gpm.

Standard:

Student throttles associated Hx outlet valve 2-FCV-23-52(46) to obtain 3000 to 4000 gpm dilution flow.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

****

Performance Step: Critical X Not Critical ___

[22.3] **ESTABLISH** RHRSW flow by performing one of the following:

[22.3.1] **REQUEST** another unit START the RHRSW Pump which will be utilized for Shutdown Cooling,RHRSW Pump B(D) and establish minimum flow.REFER TO 0-OI-23

OR

[22.3.2] **START** the RHRSW pump to supply the Loop II RHR heat exchanger which will be utilized for shutdown cooling, RHRSW Pump B(D) and have another unit establish minimum flow. REFER TO 0-OI-23.

[22.3.3] **WHEN** time permits, **THEN**

VERIFY Pump Breaker charging spring recharged by observing amber breaker spring charged light is on and closing spring target indicates charged.

Standard:

Student establishes RHRSW flow to the Hx to be used for Shutdown cooling by starting a pump or having another Unit start the pump and having another Unit pick up minimum flow on the pump (Critical) and as time permits, dispatch personnel to check the breaker of the pump started (Not Critical).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

CAUTIONS

1) To prevent excessive vibration, RHR pumps should not be allowed to operate for more than 3 minutes at no flow.

2) Care should be exercised when changing the operating mode or any system parameter while SFSP or reactor cavity operations are in progress. This precludes the possible introduction of sediment/dirt into the SFSP or reactor cavity, thereby reducing water clarity. The refuel floor SRO, if applicable, is required to be contacted for permission to alter RHR/SDC System alignment and/or parameters.

3) With fuel removed from the vessel, Shutdown Cooling is maintained between 6,000 and 6,500 gpm as depicted in GOI-100-3C.

4) Capacitor bank fuses are subject to clearing when the unit boards are being supplied from the 161kV source and large pumps are started. Unit Supervisors should evaluate placing the Capacitor Banks in Manual prior to starting RHR, CS, CBP, CCW, or COND pumps as referenced in 0-OI-57A.

****

Performance Step: Critical X Not Critical ___

[22.4] **START** RHR PUMP 2B(2D) using 2-HS-74-28A(39A), **THEN**

THROTTLE RHR SYS II LPCI OUTBD INJECT VALVE, 2-FCV-74-66, to establish and maintain RHR flow as indicated by 2-FI-74-64, RHR SYS II FLOW, as follows:

RHR Pumps in Operation	**1**	**2**
Loop Flow	7,000 to 10,000	14,000 to 20,000

Standard:
Student starts the RHR pump(s) to be used for Shutdown Cooling and throttles 2-FCV-74-66 to obtain the required flow.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X

WHEN time permits, **THEN**

VERIFY Pump Breaker charging spring recharged by observing amber breaker spring charged light is on and closing spring target indicates charged.

Standard:

Student dispatches personnel as time permits to check the breaker for the RHR pump(s) started.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

CAUTION

1) When little decay heat is present, RHR Heat Exchanger RHRSW Outlet Valves should be throttled very slowly to prevent excessive cooldown rates.
2) Do not exceed 4500 gpm RHRSW flow through any RHR Heat Exchanger or cooldown rate of 90□F/hr.
3) During RHRSW low flows, such as shutdown cooling split flows, the initial flow rate from any RHRSW heat exchanger is required to exceed 600 gpm. This flow rate ensures operation of the off-line radiation monitor. Upon reaching this flow rate, the flow may be lowered or split as desired to establish a cooldown rate or maintain consistent shutdown temperatures. Off-line monitors receive their start signal from a TDPU relay which is energized by the RHRSW heat exchanger's discharge flow rate.
4) It may be necessary to establish RHRSW flow through another unit's heat exchanger or through EECW to prevent operating the RHRSW pump at less than 1350 gpm. REFER TO 0-OI-23.

****

Performance Step: Critical___ Not Critical_X_

22.5] **IF** reactor cooldown is desired, **THEN**

VERIFY 2-SR-3.4.9.5-7 is in progress.

Standard:

ADDRESSES this step.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

Cue; another operator is performing 2-SR-3.4.9.5-7 (RPV HEAD TEMPERATURE MONITORING)

****

Performance Step: Critical_X_ Not Critical___

[22..6] **SLOWLY THROTTLE** RHR HX 2B(2D) RHRSW OUTLET VALVE, 2-FCV-23-46(52), to obtain desired cooldown rate.

Standard:

SLOWLY THROTTLES open RHRSW OUTLET VALVE TO ESTABISH COOLDOWN OF THE RPV.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

CUE; ANOTHER Operator will complete this task "that completes this JPM"

****

Performance Step: Critical___ Not Critical_X___

PERFORMER demonstrated the use of TOUCH STAAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCHSTAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards).

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

****

Performance Step: Critical_____Not Critical_X_____

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT_____UNSAT_____N/A_____COMMENTS_____

_____

_____

END OF TASK

STOP TIME_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: Unit 2 has been shutdown for Refueling Outage. RHR Loop I Pump 2C was in shutdown cooling with moderator temperature approximately 172 degrees Fahrenheit. CS&S has been aligned to Core Spray Loops I & II and RHR Loops I & II for three days and Chem Lab analysis was good for all loops. Inboard MSIV's are open. Both RHR Loops have been vented within the last 12 hours. Reactor level is approximately 85 inches.

INITIATING CUES: 2C RHR pump has tripped. 2-AOI-74-1 has been completed through step 4.2[12.7]. You have been directed to continue in the procedure at step 4.2[12.8]

/

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-E

TITLE: 2-EOI APPENDIX 14B - CAD OPERATION TO THE DRYWELL

ALTERNATE PATH YES____ NO__X__

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
2	10/18/94	ALL	GENERAL REVISION
3	10/25/94	6,8,9	EDITORIAL CHANGES AND CRIT STEP DESIGNATION
4	10/31/95	ALL	GENERAL REVISION
5	8/2/96	ALL	ADDED CRITICAL STEP ON TOUCH STAAR, UNID, AND CHANGED COMM. STANDARD
6	9/16/99	ALL	PROCEDURE REVISION, CHANGED CRIT. STEPS ON TOUCH STAAR TO NON-CRITICAL AND ADDED 3-WAY COMM.
7	06/02/07	All	General Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____SS#_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 SJPM-E

TASK NUMBER: U-000-EM-64

TASK TITLE: OPERATE CAD SYSTEM IN ACCORDANCE WITH 2-EOI APPENDIX 14B

K/A NUMBER: 223001A4.04 K/A RATING: RO 3.5 SRO: 3.6

****

TASK STANDARD: PERFORM MANIPULATIONS AS DIRECTED BY 2-EOI APPENDIX 14B REQUIRED TO ADMIT NITROGEN TO THE DRYWELL WITH THE CAD SYSTEM

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 14B, REV 6

ALT. PATH YES_____ NO___X___

VALIDATION TIME: CONTROL ROOM: _____LOCAL: 5.0

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____UNSATISFACTORY _____

SIGNATURE: _____DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

NON-CRITICAL STEPS: At the end of this JPM, **PERFORMER** will be evaluated on **PLANT WORK EXPECTATIONS:**

PERFORMER shall demonstrate the use of TOUCH STAAR during this JPM.
PERFORMER shall demonstrate the use of 3-WAY COMMUNICATION during this JPM.

****

INITIAL CONDITIONS: You are an Operator. A LOCA has led to fuel failure and an rising level of hydrogen concentration in the Unit 2 Drywell. EOI-2 has been exited and SAMG-2 entered.

INITIATING CUES: The Unit Supervisor has directed you to align CAD System A to the drywell as directed by SAMG-2 step G-4 using 2-EOI Appendix 14B.

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 2-EOI APPENDIX 14B.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

NOTE: CAD may be initiated using either CAD TRAIN A (Division I) or CAD TRAIN B (Division II). Equipment identifiers for CAD Train B are in parentheses in the steps below.

****

Performance Step: Critical___ Not Critical_X__

1. **VERIFY** containment hydrogen/oxygen analyzer Sample Pumps in service.

Standard:

VERIFIED Sample Pumps in service by observing illuminated RED status lamps above 2-HS-76-59 and 49 on Panels 2-9-54 and 55.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

2. **MONITOR** Drywell and Suppression Chamber hydrogen and oxygen concentrations with the following instruments on Panel 2-9-54(55):

- 2-H2I-76-39/2-H2R-76-39, H2 CONCENTRATION
- 2-O2I-76-43/2-O2R-76-43, O2 CONCENTRATION
- 2-H2I-76-37/2-H2R-76-37, H2 CONCENTRATION
- 2-O2I-76-41/2-O2R-76-41, O2 CONCENTRATION

Standard:

LOCATED the above instrumentation and read off approximate indications.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

3. IF. . . . Drywell or Suppression Chamber hydrogen or oxygen analyzers are or become inoperable,
THEN. . . **NOTIFY** Chem Lab to sample Drywell and Suppression Chamber for hydrogen and oxygen using CI-644.

Standard:

ACKNOWLEDGED the above step and continued.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

4. **NOTIFY** STA to record Post-LOCA Containment Parameters on Attachment 1 of this procedure every 4 hours as required by FSAR.

Standard:

SIMULATED NOTIFYING STA by phone or voice to perform Attachment 1 of this procedure every four (4) hours.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: STA REPEATS--RECORDING POST-LOCA DATA ON ATTACHMENT 1 EVERY 4 HOURS.

****

CAUTION

CAD operation with Primary Containment pressure above 30 psig may result in Containment failure.

The following is outside the CAD system FSAR design basis:

- Venting Primary Containment during CAD addition.
- Adding CAD to Drywell and Suppression Chamber at same time.

****

Performance Step: Critical___ Not Critical_X__

5. IF. . .While executing this procedure for CAD addition per SAMG-2, Step G-4 or G-9,

   - Primary Containment Pressure approaches 30 psig,

   OR

   - Primary Containment is to be vented,

   THEN. .BEFORE:

   - Primary Containment Pressure reaches 30 psig,

   OR

   - Primary Containment venting begins,

   PERFORM Step 7 to **STOP** CAD addition to the Primary Containment.

CUE: Primary Containment is not to be vented at this time.

Standard:

VERIFIED Primary Containment < 30 psig and acknowledges primary containment not being vented.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

6. **PLACE** CAD System in service as follows:

a. IF . . . . .CAD addition is required per SAMG-2, Step G-4 or G-9,

THEN. . . . **VERIFY** all Primary Containment venting is stopped AND Primary Containment Pressure is below 30 psig.

Standard:

VERIFIED Primary Containment < 30 psig and acknowledges primary containment not being vented.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X__ Not Critical___

b. **OPEN** 0-FCV-84-5(16), CAD SYSTEM A(B) N2 SHUTOFF VALVE, on Panel 1-9-54(55).

Instructor Note: The handswitches for Unit 1 9-54 & 55 are situated on the side of Unit 2's panel.

Standard:

PLACED 0-HS-84-5A in the OPEN position (Critical) and verified illuminated RED valve position indicating lamp (Not Critical).

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical ___

c. IF.....CAD addition to Suppression Chamber is required,
THEN...**CONTINUE** in this procedure at Step 6.e.

Standard:

Recognizes that Cad addition to the Suppression Chamber is not required (from Initial Conditions and Initiating Cues) and continues at step d.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical ___

d. **INITIATE** CAD to Drywell as follows:

1) **PLACE** 2-HS-84-8A/B(8C/D), SUPPR CHBR/DW CAD 2A(2B) SPLY SEL, handswitch on Panel 2-9-54(55), in DRYWELL.

Standard:

PLACED 2-HS-84-8A/B in the DRYWELL position.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical____ Not Critical_X__

2) **CONTINUE** in this procedure at Step 6.f.

Standard:

CONTINUED at step 6.f.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

f. **CHECK** CAD operating properly as follows on Unit 1, Panel 1-9-54(55):

- 0-FI-84-7(18), CAD LINE A(B) N2 FLOW, indicates between 90 and 100 scfm.

CUE: OUTSIDE AIR TEMPERATURE IS APPROXIMATELY 80°F.

- 0-TI-84-27(28), N2 VAPORIZER A(B) OUTLET TEMP,indicates approximately 20 degrees below outside air temperature.
- 0-PI-84-6(17), N2 VAPORIZER A(B) OUTLET PRESS, indicates below 150 psig.

Standard:

LOCATED the above instrumentation (on side of Unit 2 Panel)and **VERIFIED** acceptable indications.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

7. WHEN...Directed by SRO or by step 5,
THEN...**STOP** CAD addition to the Drywell or Suppression Chamber as follows:

CUE: [UNIT SUPERVISOR DIRECTS] CAD ADDITION WILL BE CONTINUED, THAT WILL BE ALL FOR NOW.

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of TOUCH STAAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards).

SAT____ UNSAT_____N/A_____ COMMENTS:_____

_____

****

Performance Step: Critical_____Not Critical__X____

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT_____UNSAT_____N/A_____COMMENTS_____

_____

END OF TASK

STOP TIME _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

NON-CRITICAL STEPS: At the end of this JPM, **PERFORMER** will be evaluated on **PLANT WORK EXPECTATIONS:**

PERFORMER shall demonstrate the use of TOUCH STAAR during this JPM.
PERFORMER shall demonstrate the use of 3-WAY COMMUNICATION during this JPM.

****

INITIAL CONDITIONS: You are an Operator. A LOCA has led to fuel failure and an rising level of hydrogen concentration in the Unit 2 Drywell. EOI-2 has been exited and SAMG-2 entered.

INITIATING CUES: The Unit Supervisor has directed you to align CAD System A to the drywell as directed by SAMG-2 step G-4 using 2-EOI Appendix 14B.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-F

TITLE: TIE D/G TO 4kV SHUTDOWN BOARD AT PANEL 9-23

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	9/20/01	All	New faults
1	8/21/03	All	FORMAT; EDITORIAL; PROCEDURE REV
2	10/6/05	All	Procedure Revision
3	06/02/07	All	Procedure Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 SJPM-F

TASK NUMBER: U-082-NO-07

TASK TITLE: PERFORM PARALLEL WITH SYSTEM OPERATION AT PANEL 9-23, DEGRADED GRID

K/A NUMBER: 264000A2.05 K/A RATING: RO 3.6 SRO: 3.6

****

TASK STANDARD: PERFORM OPERATIONS NECESSARY TO PARALLEL A DIESEL GENERATOR WITH OFFSITE POWER AT PANEL 9-23 AS DIRECTED BY 0-OI-82, WITH DEGRADED GRID.

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 0-OI-82, REV. 93

ALT. PATH YES X NO_____

VALIDATION TIME: CONTROL ROOM: 14:00 LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

EXAMINER: _____ DATE: _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Unit Operator. Unit 2 is operating at 100% power. Diesel Generator 'A' is running for special testing in accordance with Section 5.0. of 0-OI-82. Diesel Generator Phase Voltages 1-2, 2-3, and 3-1 at Diesel Generator Protective Relay Cabinet, have been verified to be within 10% of each other. The Operations Superintendent's permission has been received for performing the test. ALL P & L's have been reviewed.

INITIATING CUES: The UNIT SUPERVISOR directs you to parallel Diesel Generator 'A' with the system as directed by 0-OI-82. The diesel generator is to be loaded to 2600 $\pm$ 50 Kw.

START TIME_____

****

Performance Step: Critical___ Not Critical__X___

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 0-OI-82.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

8.1 Parallel with System Operation at Panel 9-23

****

Performance Step: Critical___ Not Critical_X__

[1] **VERIFY** the following initial conditions:

A. All Precautions and Limitations in Section 3.0 have been reviewed.

B. Diesel Generator A (B, C, D) is operating in accordance with Section 5.0.

C. 4-Kv Shutdown Board A (B, C, D) is being supplied power from an offsite power source.

D. Diesel Generator Phase Voltages 1-2, 2-3, and 3-1 at Diesel Generator Protective Relay Cabinet, are within 10% of each other.

Standard:

REVIEWED Precautions and Limitations. **VERIFIED** DG A operating by alarm/red light illuminated on START switch. **VERIFIED** normal supply breaker to 4kV Shutdown Board closed by red light illuminated on breaker control switch. Phase voltages were given in initial conditions.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

CAUTION
A failure of a PT Transformer may cause the associated DG to overspeed when paralleled with the System.

****

Performance Step: Critical X Not Critical_____

[2] **PLACE** the associated Diesel Generator breaker synchronizing switch in **ON**:

Diesel	Instrument Name	Instrument No.	Panel
A	DG A BKR 1818 SYNC	0-25-211-A/22A	0-9-23-7
B	DG B BKR 1822 SYNC	0-25-211-B/4A	0-9-23-7
C	DG C BKR 1812 SYNC	0-25-211-C/4A	0-9-23-8
D	DG D BKR 1816 SYNC	0-25-211-D/20A	0-9-23-8

Standard:

PLACED 0-25-211-A/22A SYNC switch in the ON position.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X___

[3] **CHECK** that 4-Kv Shutdown Board A(B,C,D) voltage is between 3950 VOLTs and 4400 VOLTs and **NOT** undergoing abnormal voltage transients.

Standard:

VERIFIED 4kV Shutdown Bd A voltage 3950-4400 volts and stable.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

[4] **CHECK** SYSTEM SYNC FREQUENCY is between 59 Hertz and 61 Hertz and **NOT** undergoing abnormal frequency transients.

Standard:

VERIFIED SYSTEM SYNC FREQUENCY 59-61 Hz and stable.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

CAUTION

DO NOT parallel the Diesel Generators with an unstable offsite source or during inclement weather (e.g., lightning, heavy winds).

****

Performance Step: Critical___ Not Critical_X___

[5] **IF** 4-Kv Shutdown Board A (B, C, D) is experiencing abnormal voltage/ frequency transients, **THEN**

PERFORM the following:

[5.1] **PLACE** the associated Diesel Generator breaker synchronizing switch to OFF:

Diesel	Instrument Name	Instrument No.	Panel
A	DG A BKR 1818 SYNC	0-25-211-A/22A	0-9-23-7
B	DG B BKR 1822 SYNC	0-25-211-B/4A	0-9-23-7
C	DG C BKR 1812 SYNC	0-25-211-C/4A	0-9-23-8
D	DG D BKR 1816 SYNC	0-25-211-D/20A	0-9-23-8

[5.2] TRANSFER the 4-Kv shutdown board to a stable offsite source in accordance with 0-OI-57A.

[5.3] **WHEN** the 4-Kv shutdown board has been transferred to a stable offsite power source, **THEN**

PLACE the Diesel Generator synchronizing switch to ON.

Standard:

N/A - System is stable at this time.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

CAUTION

Only one Unit 1 and 2 Diesel Generator at a time is allowed to be operated in parallel with system.

****

Performance Step: Critical X Not Critical_____

[6] PULL and **PLACE** the associated Diesel Generator mode selector switch in PARALLEL WITH SYSTEM:

Diesel	Handswitch Name	Handswitch No.	Panel
A	DG A MODE SELECT	0-HS-82-A/5A	0-9-23-7
B	DG B MODE SELECT	0-HS-82-B/5A	0-9-23-7
C	DG C MODE SELECT	0-HS-82-C/5A	0-9-23-8
D	DG D MODE SELECT	0-HS-82-D/5A	0-9-23-8

****

CAUTION

Failure of the PARALLEL WITH SYSTEM light to illuminate in the following step could indicate that the DG is still in SINGLE UNIT operation and result in overload when the DG output breaker is closed.

****

Standard:

PULLED UP on 0-HS-82-A/5A and **PLACED** in PARALLEL WITH SYSTEM.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X___

[7] **RELEASE** the Diesel Generator mode selector switch and **OBSERVE** PARALLELED WITH SYSTEM light illuminated.

Standard:

RELEASED the Operation Mode Selector switch and **VERIFIED** RED Parallel with System light illuminated.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step : Critical_X__ Not Critical_____

[8] **ADJUST** diesel generator frequency using the associated Diesel Generator governor control switch to obtain a synchroscope needle rotation of one revolution every 15 to 20 seconds in the FAST direction.

Diesel	Instrument Name	Instrument No.	Panel
A	DG A GOVERNOR CONTROL	0-HS-82-A/3A	0-9-23-7
B	DG B GOVERNOR CONTROL	0-HS-82-B/3A	0-9-23-7
C	DG C GOVERNOR CONTROL	0-HS-82-C/3A	0-9-23-8
D	DG D GOVERNOR CONTROL	0-HS-82-D/3A	0-9-23-8

Standard:

ADJUSTED frequency using 0-HS-82-A/3A to obtain one revolution every 15-20 seconds in the clockwise direction.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step : Critical X Not Critical_____

[9] USE the associated Diesel Generator voltage regulator control switch to match Diesel Generator and System voltages:

Diesel	Instrument Name	Instrument	Panel
A	DG A VOLT REGULATOR CONT GEN SYNC REF VOLTAGE SYSTEM SYNC REF VOLTAGE	0-HS-82-A/2A 0-EI-82-AB 0-EI-211-AB	0-9-23-7
B	DG B VOLT REGULATOR CONT GEN SYNC REF VOLTAGE SYSTEM SYNC REF VOLTAGE	0-HS-82-B/2A 0-EI-82-AB 0-EI-211-AB	0-9-23-7
C	DG C VOLT REGULATOR CONT GEN SYNC REF VOLTAGE SYSTEM SYNC REF VOLTAGE	0-HS-82-C/2A 0-EI-82-CD 0-EI-211-CD	0-9-23-8
D	DG D VOLT REGULATOR CONT GEN SYNC REF VOLTAGE SYSTEM SYNC REF VOLTAGE	0-HS-82-D/2A 0-EI-82-CD 0-EI-211-CD	0-9-23-8

Standard:

ADJUSTED 0-HS-82-A/2A to match 0-EI-82-AB and 0-EI-211-AB readings.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step : Critical X Not Critical_____

[10] **WHEN** the synchroscope needle is approximately 2 minutes on the left hand side of the 12 o'clock position, **THEN**

PLACE the associated Diesel Generator breaker handswitch to CLOSE:

Diesel	Handswitch Name	Handswitch No.	Panel
A	DG A BKR 1818	0-HS-211-A/22A	0-9-23-7
B	DG B BKR 1822	0-HS-211-B/4A	0-9-23-7
C	DG C BKR 1812	0-HS-211-C/4A	0-9-23-8
D	DG D BKR 1816	0-HS-211-D/20A	0-9-23-8

Standard:

WHEN synchroscope needle approximately 2 minutes to left of 12 0'clock position, **PLACED** 0-HS-211-A/22A in the CLOSE position.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X___

[11] **PLACE** the associated Diesel Generator breaker synchronizing switch to OFF:

Diesel	Instrument Name	Instrument No.	Panel
A	DG A BKR 1818 SYNC	0-25-211-A/22A	0-9-23-7
B	DG B BKR 1822 SYNC	0-25-211-B/4A	0-9-23-7
C	DG C BKR 1812 SYNC	0-25-211-C/4A	0-9-23-8
D	DG D BKR 1816 SYNC	0-25-211-D/20A	0-9-23-8

Standard:

PLACED 0-25-211-A/22A in the OFF position.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

NOTE

Lagging VARS should be maintained when adjusting kW load (rising or lowering). This may require kW load adjustment to be stopped periodically to allow for adjusting kVAR load. Once desired kW load is achieved, Illustration 1 should be referred to for determination of kVAR loading required to obtain a power factor (pf) of 0.8 lagging. Diesel generator kVAR load should then be adjusted to obtain a 0.8 pf lagging. If system conditions will not permit the kVAR loading required to obtain a 0.8 pf lagging, kVAR load should be adjusted to the maximum kVAR lagging the system will allow.

****

Performance Step: Critical X Not Critical_____

[12] USE the associated Diesel Generator's governor control switch and voltage regulator control switch to obtain desired kW and kVAR load:

Diesel	Instrument Name	Instrument No.	Panel
A	DG A GOVERNOR CONTROL DG A VOLT REGULATOR CONT	0-HS-82-A/3A 0-HS-82-A/2A	0-9-23-7
B	DG B GOVERNOR CONTROL DG B VOLT REGULATOR CONT	0-HS-82-B/3A 0-HS-82-B/2A	0-9-23-7
C	DG C GOVERNOR CONTROL DG C VOLT REGULATOR CONT	0-HS-82-C/3A 0-HS-82-C/2A	0-9-23-8
D	DG D GOVERNOR CONTROL DG C VOLT REGULATOR CONT	0-HS-82-D/3A 0-HS-82-D/2A	0-9-23-8

Standard:

ADJUSTED 0-HS-82-A/3A to obtain 2600 ±50 Kw.
DETERMINED KVAR loading to be 1950 ± 50 from ILLUSTRATION 1.
ADJUSTED 0-HS-82-A/2A to obtain 1950 ±50 KVAR.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X___

[13] **RECORD** time/date loaded on Illustration 2.

CUE: Another Operator will record Illustration 2 readings

Standard:

N/A due to another operator will record data on Illustration 2.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

INSERT GRID INSTABILITY NOW, [CAE! jpm104a]

****

Performance Step: Critical_X__ Not Critical____

[14] MONITOR the offsite source that is paralleled with the diesel generator.

Standard:

Monitors offsite source and notices A voltage transient in progress.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical X Not Critical___

[15] IF abnormal voltage or frequency transients are experienced, THEN PERFORM the following:

[15.1] **VERIFY OPEN** DG A(B,C,D) Output Bkr 1818(1822,1812,1816).

[15.2] **PULL UP** and **RELEASE** the associated Diesel Generator control switch in NORMAL to initiate the shutdown sequence:

Diesel	Handswitch Name	Handswitch No.	Panel
A	DG A CONTROL	0-HS-82-A/1A	0-9-23-7
B	DG B CONTROL	0-HS-82-B/1A	0-9-23-7
C	DG C CONTROL	0-HS-82-C/1A	0-9-23-8
D	DG D CONTROL	0-HS-82-D/1A	0-9-23-8

Standard:

Trips DG output Breaker 1818 ***and***, **Pulls up** and releases the DG control switch 0-HS-82-A/1A.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___Not Critical__X___

[15.3] **REFER TO** Section 7.1 and **CONTINUE** with

Deleted: 8.1.15.1

Deleted: 8

Deleted: 2

Shutting down the diesel generator.

Deleted: SEPARATE the 4-kV board from offsite power.

Standard:

Refers to section 7.1 of 0-OI-82 to continue shutdown of diesel generator

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

CUE: Someone else will finish this procedure, you have been relieved and that concludes the JPM

END OF TASK

STOP TIME_____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical _X__

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are a Unit Operator. Unit 2 is operating at 100% power. Diesel Generator 'A' is running for special testing in accordance with Section 5.0. of 0-OI-82. Diesel Generator Phase Voltages 1-2, 2-3, and 3-1 at Diesel Generator Protective Relay Cabinet, have been verified to be within 10% of each other. The Operations Superintendent's permission has been received for performing the test. ALL P & L's have been reviewed.

INITIATING CUES: The UNIT SUPERVISOR directs you to parallel Diesel Generator 'A' with the system as directed by 0-OI-82. The diesel generator is to be loaded to 2600 $\pm$ 50 Kw.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-G

TITLE: RESPOND TO LOSS OF REACTOR BUILDING CLOSED COOLING WATER

ALTERNATE PATH YES____ NO__X__

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	10/23/96	ALL	NEW JPM
1	11/17/97	ALL	FORMAT, CHANGED MGT. EXPECT. TO PLANT WORK EXPECTATION, ADDED 3-WAY COMM.
2	09/01/98	6	PROCEDURE REVISION
3	01/04/99	3	PROCEDURE REVISION
4	10/24/01	ALL	PROCEDURE REVISION
5	11/25/05	All	Procedure Revision
6	06/03/07	All	Procedure Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____ SS#_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 0606 SJPM-G

TASK NUMBER: U-070-AB-01

TASK TITLE: LOSS OF REACTOR BUILDING CLOSED COOLING WATER

K/A NUMBER: 400000K1.02 K/A RATING: RO 3.2 SRO: 3.4

****

TASK STANDARD: PERFORM MANIPULATIONS REQUIRED FOR A LOSS OF REACTOR BUILDING CLOSED COOLING WATER PER 2-AOI-70-1.

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-AOI-70-1, REV 27

ALT. PATH YES X NO_____

VALIDATION TIME: CONTROL ROOM: 6:00 LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____UNSATISFACTORY _____

SIGNATURE: _____DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are an Operator. The Unit 2 reactor is at 80% power.

INITIATING CUES: Respond to the next event.

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 2-AOI-70-1.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

4.0 OPERATOR ACTIONS

4.1 Immediate Actions

****

Performance Step : Critical___ Not Critical_X___

[1] IF RBCCW Pump(s) has tripped, THEN

ATTEMPT to restart tripped pump(s).

Standard:

PERFORMER attempted to **RESTART** 2A RBCCW Pump.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

[2] IF RBCCW Pump(s) cannot be restarted, THEN: (Otherwise N/A)

SHUTDOWN RWCU system pumps.
(Reference TRM 3.4.1)

Standard:

PLACED 2A and 2B RWCU PUMPS IN STOP.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

CAUTION

[NRC/C] Operations outside of the allowable regions shown on the Recirculation System Operating Map could result in thermal-hydraulic power oscillations and subsequent fuel damage. REFER TO 2-GOI-100-12A for required actions and monitoring to be performed during a power reduction. [NCO 940245001]

****

INSTRUCTORS NOTE: CUE THE CONSOLE OPERATOR TO TRIP 2B RBCCW PUMP WHEN THE RWCU PUMPS ARE SECURED.

****
Performance Step : Critical___ Not Critical_X___

[1] IF RBCCW Pump(s) has tripped, THEN

ATTEMPT to restart tripped pump(s).

Standard:

PERFORMER attempted to **RESTART** 2B RBCCW Pump.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****
Performance Step : Critical_X__ Not Critical____

4.2 **Subsequent Actions**

[1] **IF** Reactor is at power AND Drywell Cooling cannot be immediately restored, **THEN**

PERFORM the following (Otherwise N/A)

[1.1] IF core flow is above 60%, THEN

REDUCE core flow to between 50-60%.

Standard:

PERFORMER REDUCED core flow to between 50-60%.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical_X__ Not Critical_____

[1.2] **MANUALLY SCRAM** the Reactor and **PLACE** Mode Switch in SHUTDOWN. **REFER TO** 2-AOI-100-1.

Standard:

PERFORMER MANUALLY SCRAMMED the Reactor and PLACED Mode Switch in SHUTDOWN and referred to 2-AOI-100-1. (Referring to 2-AOI-100-1 is **NOT** CRITICAL).

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: AFTER PERFORMER has scramed the reactor and given the scram report, "Another operator will perform the actions of scram procedure, continue in your current procedure.

****

Performance Step : Critical_X_ Not Critical____

[1.3] **SHUTDOWN** both Recirc Pumps.

- **Depress** Recirc Drive 2A Shutdown, 2-HS-96-19
- **Depress** Recirc Drive 2B Shutdown, 2-HS-96-20

Standard:

PERFORMER Shutdown both Recirc Pumps.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

[1.4] **INITIATE** a 90°F/HR cooldown rate. **REFER TO** 2-AOI-100-1.

Standard:

PERFORMER states he/she would initiate a cooldown at 90 deg per hour.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: ANOTHER OPERATOR WILL PERFORM COOLDOWN RATE.

THAT COMPLETES THIS JPM.

****

Performance Step: Critical___ Not Critical_X___

PERFORMER demonstrated the use of TOUCH STAAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards).

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

****

Performance Step: Critical_____Not Critical__X___

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).

SAT_____UNSAT_____N/A_____COMMENTS_____

END OF TASK

STOP TIME _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

INITIAL CONDITIONS: You are an Operator. The Unit 2 reactor is at 80% power.

INITIATING CUES: Respond to the next event.

/

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-H

TITLE: RESPOND TO OFF-GAS POST-TREATMENT RADIATION HI-HI-HI

ALTERNATE PATH YES__X__ NO____

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	08/11/2005	ALL	New
1	06/03/07	All	Procedure Revision

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____ DATE:_____

RO _____ SRO _____

JPM NUMBER: 0606 SJPM-H

TASK NUMBER: U-066-AB-02

TASK TITLE: RESPOND TO OFF-GAS POST-TREATMENT RADIATION HI-HI-HI

K/A NUMBER: 271000K4.08 K/A RATING: RO 3.1 SRO: 3.3

****

TASK STANDARD: RESPOND TO OFF-GAS POST-TREATMENT RADIATION HI-HI-HI PER 2-ARP-9-4C/35 and 2-AOI-66-2.

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-ARP-9-4C/35 REV 26, 2-AOI-66-2 REV 020

ALT. PATH YES X NO_____

VALIDATION TIME: CONTROL ROOM: 15:00 LOCAL: _____

MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL

COMMENTS: _____
_____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

NON-CRITICAL STEP: At the end of this JPM, **PERFORMER** will be evaluated on **PLANT WORK EXPECTATIONS:**

PERFORMER shall demonstrate the use of TOUCH STAAR during this JPM.

PERFORMER shall demonstrate the use of 3-WAY COMMUNICATION during this JPM.

****

INITIAL CONDITIONS: You are a Unit 2 Operator. Unit 2 is at 100% power.

INITIATING CUES: The Unit Supervisor directs you to respond to a OFF-GAS POST-TREATMENT RADIATION HI-HI-HI annunciator.

START TIME_____

****

Performance Step: Critical____ Not Critical_X_

WHEN REQUESTED BY EXAMINER identify/obtain copy of required ARP 9-4C window 35, or may recognize the annunciator as an entry condition and go directly to 2-AOI-66-2.

Standard:

IDENTIFIED OR OBTAINED copy of 2-ARP-9-4C window 35 or 2-AOI-66-2.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

Examiner Note: If candidate goes directly to 2-AOI-66-2, Skip the following steps - A. B. & C and continue at step 4.1 of 2-AOI-66-2. (Page 7)

****

Performance Step: Critical____ Not Critical_X_

2-ARP-9-4C window 35

A. **VERIFY** alarm condition on the following
- OFFGAS POST-TREATMENT RADIATION recorder, 2-RR-90-265 on Panel 2-9-2.
- OG POST-TREATMENT CHAN A RAD MON RTMR radiation monitor, 2-RM-90-266A on Panel 2-9-10.
- OG POST-TREATMENT CHAN B RAD MON RTMR radiation monitor, 2-RM-90-265A on Panel 2-9-10.

Standard:

VERIFIED alarm condition on 2-RR-90-265 and 2-RM-90-265 & 266

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical_X__ Not Critical___

B. **VERIFY** OFF-GAS SYSTEM ISOLATION VALVE, 2-FCV-66-28 has the Mechanical Restraint **DISENGAGED** and 2-FCV-66-28 is CLOSED.

CUE: THE OffGas Isolation valve 2-FCV-066-0028 is not mechanically restrained.

Standard:

PERFORMER verified that 2-FCV-66-28 failed to automatically close on OFF-GAS POST-TREATMENT HI-HI-HI radiation. Performer places 2-HS-66-28 in close (CRITICAL UNLESS 2-FCV-66-28 ALREADY CLOSED FROM THE ARP) and verifies green lamp illuminated above HS (Not Critical).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

C. REFER to 2-AOI-66-2.

Standard:

REFERS to 2-AOI-66-2.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

4.0 OPERATOR ACTIONS

****

Performance Step : Critical X Not Critical___

4.1 Immediate Actions

[1] **If** scram has NOT occurred, **THEN**

PERFORM the following:

[1.1] **IF** core flow is above 60%, **THEN**

REDUCE core flow to between 50-60%.

Standard:

PERFORMER reduced core flow to between 50-60% with recirc system.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical X Not Critical___

[1.2] **MANUALLY SCRAM** the Reactor (Reference 2-AOI-100-1).

CUE: AFTER PERFORMER has scramed the reactor and given the scram report, "Another operator will perform the actions of scram procedure, continue in your current procedure.

Standard:

PERFORMER MANUALLY SCRAMMED the Reactor and referred to 2-AOI-100-1. (Referring to 2-AOI-100-1 is **NON-CRITICAL**.)

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

4.2 Subsequent Actions

[1] **IF** OFFGAS SYSTEM ISOLATION VALVE, 2-FCV-066-0028 has been mechanically restrained open due to plant conditions **THEN**

DISENGAGE 2-FCV-066-0028 mechanical restraint by rotating the restraining handwheel fully in the counterclockwise direction, locally at the Stack. (Otherwise N/A)

CUE: THE OffGas Isolation valve 2-FCV-066-0028 is not mechanically restrained.

Standard:

N/A, PERFORMER continues to the next step.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical_X_ Not Critical __

[2] **VERIFY CLOSED** OFFGAS SYSTEM ISOLATION VALVE, 2-FCV-66-28 on Panel 9-53 or locally.

Standard:

PERFORMER verified that 2-FCV-66-28 failed to automatically close on OFF-GAS POST-TREATMENT HI-HI-HI radiation. Performer places 2-HS-66-28 in close (CRITICAL UNLESS 2-FCV-66-28 ALREADY CLOSED FROM THE ARP) and verifies green lamp illuminated above HS (Not Critical).

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

[3] **MONITOR** area radiation levels at Panel 9-11.

Standard:

PERFORMER MONITORED radiation levels at Panel 9-11.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

[4] **REFER to** EPIP-1 for emergency classification level and response.

CUE: THE SHIFT MANAGER IS IMPLEMENTING THE EPIP-1 CLASSIFICATION.

Standard:

PERFORMER continued to the next step.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

[5] MONITOR the following parameters:

A MAIN STEAM LINE RADIATION, 2-RR-90-135, Panel 9-2.

B OFF-GAS PRETREATMENT RADIATION, 2-RR-90-157, Panel 9-2.

C OFF-GAS POST-TREATMENT RADIATION, 2-RR-90-265, 266, Panel 9-2.

D STACK GAS RADIATION, 0-RR-90-147, Unit 1 Panel 9-2.

CUE: WHEN PERFORMER CALLS UNIT 1 OPERATOR FOR A READING ON 0-RR-90-147: STACK GAS RADIATION, 0-RR-90-147 IS READING..... 6 x 10^6 cps

Standard:

PERFORMER MONITORED 2-RR-90-135, 157, 265, 266, on Unit 2 Panel 9-2 and called Unit 1 Operator for a reading on 0-RR-90-147, Unit 1 Panel 9-2.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical_X__ Not Critical___

[6] **IF** after five minutes from scram the OffGas Post Treatment activity is not less than 6 x 10^5 cps, **THEN**

CLOSE all Main Steam Isolation Valves and Main Steam Line Drain Valves, 2-FCV-1-55 and 2-FCV-1-56.

CUE: THE UNIT HAS BEEN SCRAMMED FOR 5 MINUTES.

Standard:

PERFORMER RECOGNIZED that the OFF-GAS POST TREATMENT activity is > 6 x 10^5 cps and **CLOSED** ALL Main Steam Isolation Valves and Main Steam Line Drain Valves, 2-FCV-1-55 and 56. (2-FCV-1-55 and 56 are not critical steps)

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: ANOTHER OPERATOR IS HERE TO RELIEVE YOU. THIS COMPLETES THE JPM.

****

Performance Step: Critical____ Not Critical_X__

PERFORMER demonstrated the use of TOUCH STAAR during this JPM.

Standard:

PERFORMER verified applicable components by utilizing TOUCH STAAR (Standard is subjective and instructor must evaluate the need for additional training on TOUCH STAAR to maintain plant standards).

SAT_____ UNSAT_____N/A_____ COMMENTS:

_____

_____

****

Performance Step: Critical____Not Critical__X__

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during this JPM.

Standard:

PERFORMER utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards.

SAT_____ UNSAT_____N/A_____ COMMENTS:

_____

_____

END OF TASK

STOP TIME_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

****

IN-SIMULATOR: I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

****

NON-CRITICAL STEP: At the end of this JPM, **PERFORMER** will be evaluated on **PLANT WORK EXPECTATIONS:**

PERFORMER shall demonstrate the use of TOUCH STAAR during this JPM.

PERFORMER shall demonstrate the use of 3-WAY COMMUNICATION during this JPM.

****

INITIAL CONDITIONS: You are a Unit 2 Operator. Unit 2 is at 100% power.

INITIATING CUES: The Unit Supervisor directs you to respond to a OFF-GAS POST-TREATMENT RADIATION HI-HI-HI annunciator.