Draft Submittal (Pink Paper)

- 1. ADMINISTRATIVE TOPICS OUTLINE (ES-301-1)
- 2. CONTROL ROOM SYSTEMS & FACILITY WALK-THROUGH TEST OUTLINE (ES-301-2)
- -3. ADMINISTRATIVE JPMS
- -4. IN-PLANT JPMS
- -5. CONTROL ROOM JPMS (SIMULATOR JPMS)

# DRAFT

# **IN-PLANT**

JPMs

0606 PJPM-K REV. NO. 9 PAGE 1 OF 20

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER:	0606 PJPM-K
TITLE:	START RCIC FROM OUTSIDE CONTROL ROOM
TASK NUMBER:	U-000-AB-05

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

0606 PJPM-K REV. NO. 9 PAGE 2 OF 20

#### 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	10/7/05	All	Procedure Revision

0606 PJPM-K REV. NO. 9 PAGE 3 OF 20

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:		·	
RO	SRO	DATE:	
JPM NUMBER:	0606 PJPM-K		
TASK NUMBER:	U-000-AB-05		
TASK TITLE:	RESPOND TO CONT	FROL ROOM ABANDOI	NMENT
K/A NUMBER: ***************** TASK STANDARD:	295016AA1.07 ************************************	K/A RATING: R ************************************	0 4.2 SRO: 4.3 ************************************
REFERENCES/PROC	CEDURES NEEDED:	2-AOI-100-2, RE	V 49
VALIDATION TIME	E: CONTROL RO	DOM: 25:00	LOCAL:
MAX. TIME ALLOW	IED: (Co	ompleted for Time	e Critical JPMs only)
PERFORMANCE TIM	1E:	CONTROL ROOM	LOCAL
COMMENTS:			·
Additional comm	nent sheets atta	iched? YES	NO
RESULTS:	SATISFACTORY _	UNSATISFAC	TORY
SIGNATURE:	FYAMINED	DATE:	
	EVENTINER		

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

#### 

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. <u>SELF CHECKING</u> 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!

0606 PJPM-K REV. NO. 9 PAGE 5 OF 20

STARI	TIME	-	
* * * * *	* * * * * * * * * * * * * * * *	******	* * * * * * * * * * * * * * * * * * * *
Perfo	ormance Step:		CriticalNot Critical_X
	WHEN REQUESTE AOI.	D BY EXAMI	<b>NER</b> identify/obtain copy of required
Stand	lard:		
	IDENTIFIED OR	OBTAINED	copy of 2-AOI-100-2
SAT	UNSAT	N/A	COMMENTS:

•

0606 PJPM-K REV. NO. 9 PAGE 6 OF 20

Switch/		
Breaker	Component	Required
Number	Description	Position Initials
Reactor Bldg	- RCIC System Aux Panel 2-LPNI	L-025-0031 El 621'
NOTE:		
PAX phone Ext. to SLC.	2233 is located at Column R-1	12, P-line near stairs
	PART A	
* * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * *
Performance Ste	ep: Critical X N	ot 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	1	UNSA	\T	N/A		COMMENTS	5:					

0606 PJPM-K REV. NO. 9 PAGE 7 OF 20

#### 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	Component	Required	
Number	Description	Position Ir	nitials
*********	********************	*****	*******

Performance Step:

Critical Not Critical X

1E2-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.

0606 PJPM-K REV. NO. 9 PAGE 8 OF 20

Switch/				
Breaker	Component		Required	•
Number	Description		Position	Initials
* * * * * * * * * *	****	* * * * * * * * * * * *	****	* * * * *
Performanc	e Step:	Critical	Not Critical	X
3B	2-BKR-071-0037 RCIC PUMP DISCHARGE	VALVE BREAK	ER (GE-13-20):	
	2-XS-071-0037, RCIC TRANS	PUMP DISCH N 5 SWITCH	JALVE EMER EMER	G
	2-HS-071-0037C, RCIC HANI	C PUMP DISCH D SWITCH	VALVE EMER OPEN	

#### Standard:

.

At compartment 3B, **SIMULATED PLACING** 2-XS-071-0037 in the EMERG position and 2-HS-071-0037C in the OPEN position.

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:

0606 PJPM-K REV. NO. 9 PAGE 9 OF 20

Switch/ Breaker Number	Component Description		Required Position	Initials
* * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * *	* * * * * * * * * * * * *	* * * * *
Performar	nce Step:	Critical X	Not Critical	
3D	2-BKR-071-0039 RCIC PUMP INJECTION	VALVE BREAKE	ER: (GE-13-21)	
	2-XS-071-0039, RCIC EMER	PUMP INJECTI TRANS SWITCH	ION VALVE H EMER	.G
	2-HS-071-0039C, RCI	C PUMP INJECI	TION 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.

0606 PJPM-K REV. NO. 9 PAGE 10 OF 20

Switch/				
Breaker	Component		Required	
Number	Description	n	Position	Initials
******	*****	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * *	* * * * *
Performan	ce Step:	Critical X	Not Critical	
4B	2-BKR-071-0008, (GE-13-131)	RCIC TURBINE STM	SUPPLY VALVE	BREAKER
	2-XS-071-0008,	RCIC TURB STM SUP TRANS SWITCH	PLY EMER EMER	.G
	2-HS-071-0008C,	RCIC TURB STM SU EMER HAND SWITCH	PPLY VALVE I NOR_	

Standard:

At compartment 4B, **SIMULATED PLACING** 2-XS-071-0008 in the EMERG position and 2-HS-071-0008C in the NOR position.

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:\_\_\_\_\_

0606 PJPM-K REV. NO. 9 PAGE 11 OF 20

Switch/				
Breaker	Component		Required	
Number	Descripti	on	Position	Initials
*******	*****	*****	* * * * * * * * * * * * *	* * * * *
Performar	nce Step:	Critical	Not Critical	X
6D	2-BKR-071-0019 (GE-13-18)	, RCIC CST 2 SUCT	VALVE BREAKE	R
	2-XS-071-0019,	RCIC CST 2 SUCT V EMER TRANS SWITCH	/ALVE H EMER	2G
	2-HS-071-0019C	, RCIC CST 2 SUCT EMER HAND SWITCH	VALVE H OPEN	1

#### Standard:

At compartment 6D, **SIMULATED PLACING** 2-XS-071-0019 in the EMERG position and 2-HS-071-0019C in the OPEN position.

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.

0606 PJPM-K REV. NO. 9 PAGE 12 OF 20

Switch/				
Breaker	Component		Required	
Number	Description		Position	Initials
******	* * * * * * * * * * * * * * * * * * * *	*****	******	****
Performanc	e Step:	Critical Not	Critical	X
7B	2-BKR-071-0038, RC	IC PUMP TEST VALV	E BREAKER	(GE-13-30)
	2-XS-071-0038, RCIC EME	C PUMP TEST VALVE R TRANS SWITCH	EMER	G
	2-HS-071-0038C, RCI EM	IC PUMP TEST VALV ER HAND SWITCH	E CLOS	E

#### Standard:

At compartment 7B, **SIMULATED PLACING** 2-XS-071-0038 in the EMERG position and 2-HS-071-0038C in the CLOSE position.

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:\_\_\_\_\_

0606 PJPM-K REV. NO. 9 PAGE 13 OF 20

Switch/				
Breaker	Component		Required	
Number	Descriptic	n	Position	Initials
********	* * * * * * * * * * * * * * * * * *	*****	* * * * * * * * * * * * * * *	* * * * *
Performanc	ce Step:	Critical	Not Critical	X
7D	2-BKR-071-0018, BREAKER (GE-13-	RCIC SUPPR POOL 39)	OUTBD SUCT VA	ALVE
	2-XS-071-0018,	RCIC SUPP POOL OU SUCT EMER TRANS SWITCH	JTBD	2G
	2-HS-071-0018C,	RCIC SUPP POOL ( SUCT VALVE EMER SWITCH	DUTBD HAND CLOS	SE

#### 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.

0606 PJPM-K REV. NO. 9 PAGE 14 OF 20

Breaker Component Required Number Description Position Initials Critical Not Critical X Performance Step: 2-BKR-071-0017, RCIC SUPPR POOL INBD SUCT VALVE BREAKER 8B (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:

Switch/

At compartment 8B, **SIMULATED PLACING** 2-XS-071-0017 in the EMERG position and 2-HS-071-0017C in the CLOSE position.

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.

0606 PJPM-K REV. NO. 9 PAGE 15 OF 20

Switch/ Breaker Component Required Number Description Position Initials Critical X Not Critical Performance Step: 2-BKR-071-0025, RCIC LUBE OIL COOLING WATER VALVE 8D 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:\_\_\_\_\_

0606 PJPM-K REV. NO. 9 PAGE 16 OF 20

Breaker	Component		Required	Tnitiale
******	****	****	*****	*****
Performa	nce Step:	Critical_	Not Critical	X
10E	2-BKR-071-0031, R BREAKER	CIC TURB BARC	DMETRIC CNDR VAC	C PUMP
	2-XS-071-0031, RC PUMP EMER TRANS S	IC BAROMETRIC WITCH	C CNDR VAC EMER	.G
	2-HS-071-0031C, R PUMP EMER HAND SW	CIC BAROMETRI VITCH	C CNDR VAC STAR	.T
Standard	<u>:</u>			
At EME	compartment 10E, <b>SI</b> RG position and 2-H	MULATED PLACI S-071-0031C i	<b>ING</b> 2-XS-071-003 In the START pos	31 in the sition.

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:\_\_\_\_\_

NOTIFY UO at Panel 2-25-32 upon completion of Part A. STOP here until directed to perform Part B.

Standard:

Switch/

Using radio, **SIMULATED NOTIFYING** UO of completion of Attachment 3, Part A.

SAT\_\_\_\_UNSAT\_\_\_\_N/A \_\_\_\_COMMENTS:\_\_\_\_\_

0606 PJPM-K REV. NO. 9 PAGE 17 OF 20

CUE: PERFORM STEP 4.2.9.3 OF 2-AOI-100-2 AND NOTIFY OPERATOR AT 2-25-32 WHEN COMPLETE.

#### 

RCIC TURBINE STEAM SUPPLY VALVE, 2-FCV-71-8, transfer switch has been placed in EMERGENCY and will <u>NOT</u> 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)

0606 PJPM-K REV. NO. 9 PAGE 18 OF 20

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 WILL BE ALL OF 2-AOI-100-2 REQUIRED OF YOU.

END OF TASK

STOP TIME:

0606 PJPM-K REV. NO. 9 PAGE 19 OF 20

#### 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 <u>reaching distance</u> 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:\_\_\_\_\_

0606 PJPM-K REV. NO. 9 PAGE 20 OF 20

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.

0606 PJPM-J REV. NO. 3 PAGE 1 OF 9

{PRIVATE }

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{PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE 1

JPM NUMBER:	0606 PJPM-J
TITLE:	3-EOI APPENDIX 2 - DEFEATING ARI LOGIC TRIPS
TASK NUMBER:	U-000-EM-26

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

0606 PJPM-J REV. NO. 3 PAGE 2 OF 9

### {PRIVATE } BROWNS FERRY NUCLEAR PLANT 2 JOB PERFORMANCE MEASURE

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# REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	10/17/95	ALL	NEW JPM
1	10/6/00	all	PROCEDURE REVISION
2	10/24/01	3	CHANGED PROCEDURE
3	09/18/03	ALL	Format; Editorial

0606 PJPM-J REV. NO. 3 PAGE 3 OF 9

## {PRIVATE } BROWNS FERRY NUCLEAR PLANT 3 JOB PERFORMANCE MEASURE

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OPERATOR:	· · · · · · · · · · · · · · · · · · ·	
RO	SRO	DATE:
JPM NUMBER:	0606 PJPM-J	
TASK NUMBER:	U-000-EM-26	
TASK TITLE:	EOI APPENDIX 2 - DEFEATIN	NG ARI LOGIC TRIPS
K/A NUMBER:	295015AA1.04 K/A RAT	ING: RO_3.4_ SRO: _3.7_
* * * * * * * * * * * * * * * * *	***********************	*********
TASK STANDARD:	SIMULATE DEFEATING ARI I 3-EOI APPENDIX 2	OGIC TRIPS AS DIRECTED BY
LOCATION OF PER	FORMANCE: SIMULATOR F	PLANT X CONTROL ROOM
REFERENCES/PROC	CEDURES NEEDED: 3-EOI APP	ENDIX 2, REV 2
VALIDATION TIME	CONTROL ROOM:	3:00 LOCAL: <u>1:30</u>
MAX. TIME ALLOW	IED: (Completed fo	or Time Critical JPMs only)
PERFORMANCE TIM	IE: CONT	ROL ROOMLOCAL
Additional comm	ent sheets attached? YES	S NO
RESULTS:	SATISFACTORY	UNSATISFACTORY
SIGNATURE:	EXAMINER	DATE:

{PRIVATE }

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

#### 

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. <u>SELF CHECKING</u> 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: You are an operator. The Unit 3 reactor has scrammed and all rods did not insert.

INITIATING CUES: You have been directed to defeat the ARI logic trips as directed by 3-EOI Appendix 2.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

0606 PJPM-J REV. NO. 3 PAGE 5 OF 9

START TIME Critical Not Critical X Performance Step: WHEN REQUESTED BY EXAMINER identify/obtain copy of required EOI Appendix. Standard: IDENTIFIED OR OBTAINED copy of 3-EOI Appendix 2. SAT UNSAT N/A COMMENTS: Critical X Not Critical Performance Step : 1. **REFER** to Attachment 1 and **OBTAIN** two keys. Standard: SIMULATED RETRIEVING keys 42 and 43 from Unit 3 Control Room Key Cabinet, EOI page. SAT\_\_\_\_\_UNSAT\_\_\_\_\_N/A \_\_\_\_\_COMMENTS:\_\_\_\_\_ {PRIVATE }CUE: [WHEN SIMULATED] YOU HAVE THE KEYS TO ATWS

{PRIVATE }CUE: [WHEN SIMULATED] YOU HAVE THE KEYS TO ATWS MODE SWITCHES 3-HS-68-118A AND B. (THE EXAMINEE MUST LOCATE THE CONTROL ROOM KEY CABINET)

0606 PJPM-J REV. NO. 3 PAGE 6 OF 9

Performance Step:

Critical X Not Critical

2. **PLACE** 3-HS-068-0118B, ATWS MODE SWITCH, in TEST position on 3-LPNL-925-0613, ATWS CHANNEL B 250 VDC LOGIC CABINET.

Standard:

LOCATED AND SIMULATED PLACING 3-HS-068-0118B in TEST position. Test panel is located 3A Electric Bd Room, East Wall.

SAT UNSAT N/A COMMENTS:

{PRIVATE }CUE: [WHEN SIMULATED] 3-HS-68-118B IS IN THE TEST POSITION.

Performance Step:

Critical X Not Critical

3. **PLACE** 3-HS-068-0118A, ATWS MODE SWITCH, in TEST position on 3-LPNL-925-0416, ATWS PANEL CHANNEL A 250 VDC LOGIC CABINET.

Standard:

LOCATED AND SIMULATED PLACING 3-HS-068-0118A in TEST position. Location is adjacent to panel B in same room.

SAT UNSAT N/A COMMENTS:

{PRIVATE }CUE: [WHEN SIMULATED] 3-HS-68-118A IS IN THE TEST POSITION.

0606 PJPM-J REV. NO. 3 PAGE 7 OF 9

Performance Step:

Critical Not Critical X

4. **NOTIFY** Unit Operator that ARI logic trips are defeated and ARI is reset.

Standard:

**SIMULATED NOTIFYING** Unit 3 Operator by phone or radio that ARI logic trips are defeated and ARI is reset.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_\_ COMMENTS:\_\_\_\_\_

{PRIVATE }CUE: [WHEN SIMULATED CONTACTING] ARI LOGIC TRIPS DEFEATED AND ARI RESET.

END OF TASK

STOP TIME\_\_\_\_

0606 PJPM-J REV. NO. 3 PAGE 8 OF 9

#### 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 <u>reaching distance</u> 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.

0606 PJPM-J REV. NO. 3 PAGE 9 OF 9

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.

0606 PJPM-I REV. NO. 11 PAGE 1 OF 10

{PRIVATE }

{PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE 1

JPM NUMBER:	0606 PJPM-I				
TITLE:	1-AOI-57-4	LOSS	OF	UNIT	PREFERRED
TASK NUMBER:	U-57C-AB-02				

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

0606 PJPM-I REV. NO. 11 PAGE 2 OF 10

#### {PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE 2

# REVISION LOG

Revision Effective Number Date

Pages Affected

INITIAL

Description

of Revision

0 5/13/2007

ALL

0606 PJPM-I REV. NO. 11 PAGE 3 OF 10

{PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE 3

,

OPERATOR:	· · · · · · · · · · · · · · · · · · ·		
RO	SRO	DATE:	
JPM NUMBER:	0606 PJPM-I		
TASK NUMBER:	U-57C-AB-02		
TASK TITLE:	LOSS OF	UNIT PREFERRED,	RESTORATION USING
K/A NUMBER:	262001A2.07	K/A RATING: RC	3.0 SRO: <u>3.2</u>
* * * * * * * * * * * * * * * *	* * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
TASK STANDARD:	PERFORM CORI TO RESTORE U	RECT EQUIPMENT MAN NIT PREFERRED PER 1	IIPULATIONS REQUIRED -AOI-57-4
LOCATION OF PER	FORMANCE: SI	MULATOR PLANT _X	CONTROL ROOM
REFERENCES/PROC	EDURES NEEDEI	D: 1-AOI-57-4 REV.2	21
VALIDATION TIME	:: CO	NTROL ROOM:]	LOCAL:
MAX. TIME ALLOW	/ED:	(Completed for Time	Critical JPMs only)
PERFORMANCE TIM	IE:	CONTROL ROOM	LOCAL
COMMENTS:			
Additional comm	ent sheets a	ttached? YES	NO
RESULTS: SAT	ISFACTORY _	UNSATISFA	CTORY
SIGNATURE: _	EXAMINER	DATE:	

#### {PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

4

**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 944 of service on all units. Unit 2 Unit Preferred is on the Transformer, The Unit Perferred 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].

0606 PJPM-I REV. NO. 11 PAGE 5 OF 10

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:\_\_\_\_\_
0606 PJPM-I REV. NO. 11 PAGE 6 OF 10

Performance Step:

Critical<u>x</u> 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:\_\_\_\_\_

0606 PJPM-I REV. NO. 11 PAGE 7 OF 10

[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:

> [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:\_\_\_\_\_

0606 PJPM-I REV. NO. 11 PAGE 8 OF 10

## 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:

#### [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:

0606 PJPM-I REV. NO. 11 PAGE 9 OF 10

#### 

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: UNIT PREFERRED BUS IS ENERGIZED,

standard:

SAT UNSAT N/A

N/A COMMENTS:

CUE: THAT WILL ALL FOR NOW.

0606 PJPM-I REV. NO. 11 PAGE 10 OF 10

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

## DRAFT

# SIMULATOR

JPMs

(

Facility: BFN	Date of Examina	tion: 8/27/07		
Exam Level (circle one): RO / SRO-I / SRO-U	Operating Test N	umber:HLT0606		
Control Room Systems (8 for RO; 7 for SRO-I; 2	2 or 3 for SRO-U)			
System / JPM Title	Type	Safety		
	Code*	Function		
a. Inject SLC (0606 SJPM-A)	ANELS	1		
b. Inject with Condensate/feedwater (0606 SJPM	M-B) ADELS	2		
c. Alt Press Cont w/RFP on min flow (0606 SJF (SRO-U)	'M-C) AMELS	3		
d. Loss of Shutdown cooling (0606 SJPM-D)(R	O Only) ANELS	4		
e. CAD operation to drywell (0606 SJPM-E)	DEMS	5		
f. Tie D/G to 4KV S/D bd (0606 SJPM-F)	ADS	6		
g. Respond to loss of RBCCW(0606 SJPM-G)(	SRO-U) DES	8		
h. Respond to Offgas Post Treat HiHiHi Faulter SJPM-H) (SRO-U)	d (0606 ADSP	9		
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)				
i. Loss of Unit Preferred (0606 PJPM-I) (SRO-U	J) EN	6		
j. Defeating ARI Logic trips (0606 PJPM-J)	DEL	1		
k. Start RCIC outside of control room (0606 PJI (SRO-U)	PM-K) DELR	2		
*Type Codes	Criteria for RO / SR	O-I / SRO-U		
(A)Iternate Path	4-6 / 4-	-6 / 2-3		
(C)ontrol Koom (D)irect from bank	<0 / ~	< <u>8</u> / <1		
(E)mergency or abnormal in-plant	>1 / >	<u>~</u> <u>~</u> <u>~</u>   >1 / >1		
(L)ow-Power	$\geq 1$ / $\geq$	$\geq 1$ / $\geq 1$		
(N)ew or (M)odified from bank including 1(A)	$\geq 2$ / $\geq$	<u>≥</u> 2 / ≥1		
(P)revious 2 exams	≤3 / ≤	≤3 / ≤2		
(R)CA	$\geq 1 / \geq$	$\geq 1$ / $\geq 1$		
(S)imulator				

0606 SJPM-A REV. NO. 0 PAGE 1 OF 10

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER:	0606 SJPM-A	
TITLE:	EOI APPENDIX 3A -	SLC INJECTION
TASK NUMBER:	U-063-AL-03	

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

0606 SJPM-A REV. NO. 0 PAGE 2 OF 10

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

## REVISION LOG

Revision	Effective	Pages	Description
Number	Date	Affected	of Revision
0	05/05/2007	All	New Procedure

0606 SJPM-A REV. NO. 0 PAGE 3 OF 10

#### 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 <u>3.6</u> SRO: <u>3.6</u>				
******	***************************************				
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 PER	RFORMANCE: SIMULATOR X PLANT CONTROL ROOM				
REFERENCES/PROC	REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 3A, REV 5				
VALIDATION TIME	E: CONTROL ROOM: LOCAL:				
MAX. TIME ALLOW	NED: (Completed for Time Critical JPMs only)				
PERFORMANCE TIN	ME: CONTROL ROOM LOCAL				
COMMENTS:					
Additional comm	nent sheets attached? YES NO				
RESULTS:	SATISFACTORY UNSATISFACTORY				
SIGNATURE:	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 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.

Do we need to say

0606 SJPM-A REV. NO. 8 PAGE 5 OF 10

START TIME

INSTRUCTOR NOTE:

VERIFY ADS IS NOT INHIBITED. CRITICAL STEP FOR EXAMINEE.

<u>Performance Step:</u> 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 X Not Critical

1. UNLOCK and PLACE 2-HS-63-6A, SLC PUMP 2A/2B, control switch in START-A or START-B position.

<u>Standard:</u>

**UNLOCKED AND PLACED** SLC pump control switch in <u>either</u> START-A or START-B position.

SAT\_\_UNSAT\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-A REV. NO. 8 PAGE 6 OF 10

Performance Step:

Critical X Not Critical

- 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:\_\_\_\_\_

0606 SJPM-A REV. NO. 8 PAGE 7 OF 10

<u>Performance Step:</u>

Critical<u>x</u> Not Critical\_\_\_\_

3. IF....Proper system operation <u>CANNOT</u> 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.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_

<u>Performance Step:</u> 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:\_\_\_\_\_

0606 SJPM-A REV. NO. 8 PAGE 8 OF 10

#### 

Performance Step:

Critical\_\_\_\_ Not Critical\_\_X

5. **VERIFY** ADS inhibited.

<u>Standard:</u>

**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 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.

<u>Standard:</u>

**MONITORED** all available APRMs for downward reactor power trend.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_COMMENTS:\_\_\_\_\_

0606 SJPM-A REV. NO. 8 PAGE 9 OF 10

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.

<u>Performance Step:</u> 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:\_\_\_\_

0606 SJPM-A REV. NO. 8 PAGE 10 OF 10

#### 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:

0606 SJPM-B REV. NO. 4 PAGE 1 OF 17

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER:

#### 0606 SJPM-B

TITLE:

2-EOI APPENDIX 5A - INJECTION SYSTEMS LINEUP - CONDENSATE/FEEDWATER. HP HTRS ISOLATED.

TASK NUMBER:

U-000-EM-29

DLANT CONCLERENCE.		
	TRAINING	
APPROVED:		DATE:
VALIDATED BY:		DATE:
SOBWITTED BY:		DATE:

OPERATIONS

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

0606 SJPM-B REV. NO. 4 PAGE 2 OF 17

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

### REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	10/23/98	ALL	New JPM.
1	10/23/01	3, 4	PROCEDURE CHANGE, FORMAT CHANGE, SETPOINT CHANGE
2	8/14/03	All	Format; Editorial; Procedure Rev; add setup cue
3	08/24/06	All	Procedure Change
4	06/01/07	All	General Revision

0606 SJPM-B REV. NO. 4 PAGE 3 OF 17

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:		SS#			
RO	SRO	DATE:			
JPM NUMBER:	0606 SJPM-B				
TASK NUMBER:	U-000-EM-29				
TASK TITLE:	LINE UP INJECTION SYSTEMS IN ACCORDANCE WITH 2-EOI isolated.	6 - CONDENSATE/FEEDWATER APPENDIX 5A. HP HTRS			
K/A NUMBER:	295031EA1.08 K/A RAT	ING: RO <u>3.8</u> SRO: <u>3.9</u>			
****	* * * * * * * * * * * * * * * * * * * *	*****			
TASK STANDARD:	PERFORM CONTROL ROOM ACT THE CONDENSATE/FEEDWATE INJECTION SYSTEM AS DIREC	IONS REQUIRED TO ESTABLISH R SYSTEM AS AN RPV TED BY 2-EOI APPENDIX 5A			
LOCATION OF PER	RFORMANCE: SIMULATOR <u>X</u> P	LANT CONTROL ROOM			
REFERENCES/PROC	CEDURES NEEDED: 2-EOI APPH	ENDIX 5A, REV 8			
VALIDATION TIM	E: CONTROL ROOM: <u>11:00</u>	) LOCAL:			
MAX. TIME ALLOW	NED: (Completed fo	r Time Critical JPMs only)			
PERFORMANCE TIN	PERFORMANCE TIME: CONTROL ROOM LOCAL				
COMMENTS:					
Additional comm	ment sheets attached? YES	NO			
RESULTS: SATISFACTORY UNSATISFACTORY					
SIGNATURE:	DATE:	· · · · · · · · · · · · · · · · · · ·			

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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 loss of feedwater flow and EOI-1 has been followed through RC/L-3.

**INITIATING CUES:** The problem that caused the loss of RFW has been corrected and the Unit Supervisor has directed you to restore and maintain RPV water level +2" to +51" as directed by 2-EOI Appendix 5A, INJECTION SYSTEMS LINEUP - CONDENSATE/FEEDWATER.

0606 SJPM-B REV. NO. 4 PAGE 5 OF 17

SIMULATOR INSTRUCTOR: JPM REQUIRES RFPTS TRIPPED WITH ALL HP HEATERS ISOLATED AT START.

START TIME

<u>Performance Step:</u> Critical Not Critical X

WHEN REQUESTED BY EXAMINER identify/obtain copy of required EOI Appendix.

Standard:

**IDENTIFIED OR OBTAINED** copy of 2-EOI Appendix 5A.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_ COMMENTS:\_\_\_\_\_

<u>Performance Step:</u> Critical\_\_\_ Not Critical X\_

1. **VERIFY** Condensate system in service supplying, suction to RFPs.

Standard:

**VERIFIED** condensate system in service by observation of valve alignment, condensate and condensate booster pump operation and RFP alignment.

SAT UNSAT N/A COMMENTS:

0606 SJPM-B REV. NO. 4 PAGE 6 OF 17

Performance Step: Critical\_\_\_ Not Critical\_X\_\_\_

2. **VERIFY OPEN** MSIVs, supplying steam to RFPTs.

Standard:

**VERIFIED** MSIVs open by illuminated RED valve position indicating lamps on Panel 2-9-3 (vertical panel or benchboard).

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_COMMENTS:\_\_\_\_\_

<u>Performance Step:</u> Critical\_\_\_ Not Critical\_X\_\_\_

3. **VERIFY** Hotwell Pressure below -7 in. Hq.

Standard:

VERIFIED Hotwell Pressure below -7 inches Hg. as indicated on 2-XR-2-2, Panel 2-9-6 or ICS computer.

SAT\_\_UNSAT\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-B REV. NO. 4 PAGE 7 OF 17

#### 

Performance Step:

Critical\_\_\_ Not Critical\_X\_\_

4. VERIFY CLOSED 2-FCV-1-121(129)(137), RFPT 2A(B)(C) LP STEAM SUPPLY VALVE.

Standard:

**Closes or verifies** LP steam supply valves closed. Student is not required to wait at this step until valves fully close.

SAT\_\_UNSAT\_\_N/A\_\_\_COMMENTS:\_\_\_\_\_

#### 

Performance Step:

Critical\_\_\_\_ Not Critical\_X\_

5. VERIFY OPEN 2-FCV-1-125(133)(141), RFPT 2A(B)(C) HP STEAM SUPPLY VALVE.

Standard:

**VERIFIED** illuminated RED valve position indicating lamp above 2-HS-1-125(133)(141) for selected RFP.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-B REV. NO. 4 PAGE 8 OF 17

Performance Step :

Critical X Not Critical

6. **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-46-8A(9A)(10A), for selected RFP and verifies amber light illuminated.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

<u>Performance Step:</u> Critical\_\_\_ Not Critical\_X\_\_\_

7. **VERIFY** a Main Oil Pump is running for RFPT to be started.

Standard:

**VERIFIED** Main Oil Pumps running for selected RFP.

SAT\_\_UNSAT\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-B REV. NO. 4 PAGE 9 OF 17

#### 

Performance Step:

Critical \_\_\_\_ Not Critical X

8. **VERIFY** for <u>EACH</u> of the following pushbuttons, the green light is illuminated and the red light is extinguished:

2-HS-3-208A, RX WTR LVL CH A HI RFPT/MT TRIP RESET.

2-HS-3-208B, RX WTR LVL CH B HI RFPT/MT TRIP RESET.

<u>Standard:</u>

**VERIFIED** illuminated GREEN LIGHT and RED LIGHT extinguished on 2-HS-3-208A & 208B.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_COMMENTS:\_\_\_

0606 SJPM-B REV. NO. 4 PAGE 10 OF 17

Performance Step: Critical X Not Critical

- 9. **VERIFY OPEN** the following values:
  - 2-FCV-3-75, HP HTR 2A1 FW OUTLET ISOL VLV.
  - 2-FCV-3-76, HP HTR 2B1 FW OUTLET ISOL VLV.
  - 2-FCV-3-77, HP HTR 2C1 FW OUTLET ISOL VLV.

#### Standard:

Recognizes HP heater inlet and outlet valves closed and OPENs a minimum of one set of the following valves.

2-FCV-3-38 and 2-FCV-3-75, A HP HTR Inlet and Outlet 2-FCV-3-31 and 2-FCV-3-76, B HP HTR Inlet and Outlet 2-FCV-3-24 and 2-FCV-3-77, C HP HTR Inlet and Outlet

NOTE: Inlet valve not fully open before the outlet valve is fully opened will cause the outlet valve to close.

SAT UNSAT N/A COMMENTS:

0606 SJPM-B REV. NO. 4 PAGE 11 OF 17

Performance Step:

Critical X Not Critical

- 10. **DEPRESS** 2-HS-3-124A(150A)(175A), RFPT 2A(2B)(2C) TRIP RESET, and **CHECK** the following:
  - Blue light extinguished
  - HP Stop Valve open as indicated by red light above the following:
    - 2-HS-3-108, RFPT 2A HP STOP VLV (2-FCV-1-127) TEST
    - 2-HS-3-134, RFPT 2B HP STOP VLV (2-FCV-1-135) TEST
    - 2-HS-3-159, RFPT 2C HP STOP VLV (2-FCV-1-143) TEST
    - LP Stop Valve open as indicated by red light above the following:
      - 2-HS-3-107, RFPT 2A LP STOP VLV (2-FCV-1-123) TEST 2-HS-3-133, RFPT 2B LP STOP VLV (2-FCV-1-131) TEST 2-HS-3-158, RFPT 2C LP STOP VLV (2-FCV-1-139) TEST

#### Standard:

**DEPRESSED RESET PB** and verified the LP Stop Valve for the selected pump opens.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_

0606 SJPM-B REV. NO. 4 PAGE 12 OF 17

Performance Step: Critical\_\_\_ Not Critical\_X\_

11. **VERIFY OPEN** 2-FCV-3-20(13)(6), RFP 2A(2B)(2C) MIN FLOW VALVE.

Standard:

VERIFIED min flow valve for selected RFP is open.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

<u>Performance Step:</u> Critical X Not Critical

12. **PLACE** 2-HS-46-112A(138A)(163A), RFPT 2A(2B)(2C) START/LOCAL ENABLE, in START.

Standard:

**PLACED START/LOCAL ENABLE** switch for the selected RFP in **START**.

SAT UNSAT N/A COMMENTS:

0606 SJPM-B REV. NO. 4 PAGE 13 OF 17

Performance Step: Critical\_\_\_\_ Not Critical\_X\_\_\_

13. CHECK RFPT 2A (2B) (2C) Speed accelerates to approximately 600 rpm.

Standard:

CHECKED RFPT Speed accelerated to approximately 600 rpm.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_COMMENTS:\_\_\_\_\_

<u>Performance Step:</u> Critical Not Critical X

14. **VERIFY OPEN** 2-FCV-3-19(12)(5), RFP 2A(2B)(2C) DISCHARGE VALVE.

Standard:

**VERIFIED** RFP Discharge valve open for selected RFP.

SAT UNSAT N/A COMMENTS:

0606 SJPM-B REV. NO. 4 PAGE 14 OF 17

#### 

Performance Step:

Critical X Not Critical

- 15. **RAISE** RFPT 2A (2B) (2C) speed <u>UNTIL</u> RFP discharge pressure is approximately equal to RPV pressure using <u>ANY</u> of the following methods on Panel 2-9-5:
  - Using individual 2-HS-46-8A (9A) (10A), RFPT 2A (2B) (2C) SPEED CONT RAISE/LOWER switch in MANUAL GOVERNOR,

OR

Using individual 2-SIC-46-8 (9) (10), RFPT 2A (2B) (2C) SPEED CONTROL PDS in MANUAL,

#### OR

Using 2-LIC-46-5, REACTOR WATER LEVEL CONTROL PDS, in MANUAL with individual 2-SIC-46-8 (9) (10), RFPT 2A (2B) (2C) SPEED CONTROL PDS in AUTO.

Standard:

**RAISED** RFPT speed UNTIL RFP discharge pressure was approximately equal to RPV pressure utilizing one of the methods above on Panel 2-9-5.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_

0606 SJPM-B REV. NO. 4 PAGE 15 OF 17

Performance Step:

Critical<u>X</u>Not Critical\_\_\_\_

16.

**SLOWLY RAISE** speed of RFPT <u>UNTIL</u> RFW flow to the RPV is indicated using <u>ANY</u> of the following methods on Panel 2-9-5:

Using individual 2-HS-46-8A (9A) (10A), RFPT 2A (2B)(2C) SPEED CONT RAISE/LOWER switch in MANUAL GOVERNOR,

OR

Using individual 2-SIC-46-8 (9) (10), RFPT 2A (2B) (2C) SPEED CONTROL PDS in MANUAL,

OR

Using 2-LIC-46-5, REACTOR WATER LEVEL CONTROL PDS, in MANUAL with individual 2-SIC-46-8 (9) (10), RFPT 2A (2B) (2C) SPEED CONTROL PDS in AUTO.

Standard:

**SLOWLY RAISED** speed of RFPT **UNTIL** RFW flow to the RPV is indicated utilizing one of the above methods.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_

0606 SJPM-B REV. NO. 4 PAGE 16 OF 17

- 17. **ADJUST** RFPT speed as necessary using <u>ANY</u> of the following methods on Panel 2-9-5:
  - Using individual 2-HS-46-8A (9A) (10A), RFPT 2A (2B) (2C) SPEED CONT RAISE/LOWER switch in MANUAL GOVERNOR,

OR

Using individual 2-SIC-46-8 (9) (10), RFPT 2A (2B) (2C) SPEED CONTROL PDS in MANUAL,

OR

Using 2-LIC-46-5, REACTOR WATER LEVEL CONTROL PDS, in MANUAL with individual 2-SIC-46-8 (9) (10), RFPT 2A (2B) (2C) SPEED CONTROL PDS in AUTO.

Standard:

**ADJUSTED** speed of RFPT as required utilizing one of the above methods to obtain stable operation.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_COMMENTS:\_\_\_\_\_

WHEN RX WATER LEVEL IS RISING AND EXAMINEE DEMONSTRATES CONTROL OF RX FEED PUMP:

CUE: "ANOTHER OPERATOR WILL RELIEVE YOU OF WATER LEVEL CONTROL, THAT WILL BE ALL FOR NOW."

END OF TASK

STOP TIME

0606 SJPM-B REV. NO. 4 PAGE 17 OF 17

#### 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:\_\_\_\_\_

0606 SJPM-C REV. NO. 5 PAGE 1 OF 13

#### 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

TASK NUMBER:

U-000-EM-58

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

0606 SJPM-C REV. NO. 5 PAGE 2 OF 13

#### 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

J.
0606 SJPM-C REV. NO. 5 PAGE 3 OF 13

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 <u>3.9</u> SRO: <u>4.5</u>
* * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
TASK STANDARD:	PERFORM OPERATIONS NECESSARY TO PLACE A RFPT IN PRESSURE CONTROL AS DIRECTED BY 2-EOI APPENDIX 11F.
LOCATION OF PER	RFORMANCE: SIMULATOR X PLANT CONTROL ROOM
REFERENCES/PROC	CEDURES NEEDED: 2-EOI APPENDIX 11F, REV 4
VALIDATION TIME	E: CONTROL ROOM: <u>10:00</u> LOCAL:
MAX. TIME ALLOW	WED: (Completed for Time Critical JPMs only)
PERFORMANCE TIN	1E: CONTROL ROOM LOCAL
COMMENTS:	
Additional comm	nent sheets attached? YES NO
RESULTS: SAT	IISFACTORYUNSATISFACTORY
SIGNATURE:	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 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.

0606 SJPM-C REV. NO. 5 PAGE 5 OF 13

START TIME

<u>Performance Step:</u> 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:\_\_\_\_\_

<u>Performance Step:</u> Critical Not Critical X

1. IF....<u>BOTH</u> 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 <u>DOES NOT</u> 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.

CUE: EMERGENCY DEPRESSURIZATION IS NOT REQUIRED.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_COMMENTS:\_\_\_\_\_

0606 SJPM-C REV. NO. 5 PAGE 6 OF 13

<u>Performance Step:</u>

Critical\_\_\_\_Not Critical\_X\_\_\_

2. **VERIFY** MSIVs open.

<u>Standard:</u>

**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:\_\_\_\_\_

0606 SJPM-C REV. NO. 5 PAGE 7 OF 13

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:\_\_\_

<u>Performance Step:</u> Critical\_\_\_ Not Critical\_X\_\_\_

b. **VERIFY** Main Oil Pump running for <u>EACH</u> RFPT to be started.

Standard:

**VERIFIED** 2A RFPT Main Oil Pump running by red light above MOP handswitch.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-C REV. NO. 5 PAGE 8 OF 13

Performance Step:

Critical\_X\_\_ Not Critical\_\_\_\_\_

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 value did not close (Critical). <u>Notifies US</u> that 2-FCV-3-19 will not close (Not Critical).

CUE: US INSTRUCTS OPERATOR TO USE 2B RFP INSTEAD.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

<u>Performance Step:</u> 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:

0606 SJPM-C REV. NO. 5 PAGE 9 OF 13

<u>Performance Step:</u> Critical Not Critical X

VERIFY Main Oil Pump running for EACH RFPT to be b. started.

Standard:

VERIFIED 2B RFPT Main Oil Pump running by red light above MOP handswitch.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_COMMENTS:\_\_\_\_\_

<u>Performance Step:</u> Critical\_X\_Not Critical\_\_\_\_

c. **VERIFY CLOSED** 2-FCV-3-19(12)(5), RFP 2A(2B)(2C) DISCHARGE VALVE.

Standard:

ATTEMPS TO CLOSE 2-FCV-3-12 using handswitch and observing valve close.

SAT UNSAT N/A COMMENTS:

0606 SJPM-C REV. NO. 5 PAGE 10 OF 13

<u>Performance Step:</u> Critical<u>X</u>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:\_\_\_\_\_

\*\*\*\*\*\*

<u>Performance Step:</u> 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:

0606 SJPM-C REV. NO. 5 PAGE 11 OF 13

<u>Performance Step:</u> 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:\_\_\_\_

<u>Performance Step:</u> 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:\_\_\_\_\_

0606 SJPM-C REV. NO. 5 PAGE 12 OF 13

Performance Step:

Critical<u>X</u> 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 WILL BE ALL FOR NOW.

5. **REPEAT** Steps 4.b through 4.i as necessary.

<u>Performance Step</u>: 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:

0606 SJPM-C REV. NO. 5 PAGE 13 OF 13

\*\*\*\*\*\*\*

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

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0606 SJPM-D REV. NO. 0 PAGE 1 OF 28

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER:	0606	SJI	PM-D	
TITLE:	LOSS	OF	SHUTDOWN	COOLING
TASK NUMBER:	U-074	1 – NC	D-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

0606 SJPM-D REV. NO. 0 PAGE 2 OF 28

# 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

0606 SJPM-D REV. NO. 0 PAGE 3 OF 28

## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:
ROSRO 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
VALIDATION TIME: CONTROL ROOM: <u>40 MIN</u> 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].

0606 SJPM-D REV. NO. 0 PAGE 5 OF 28

START	TIME					
*****	******	******	******	* * * * * * * * * *	******	********
<u>Perfo</u>	rmance St	ep:		Critical	Not Crit	ical <u>X</u>
. 1	WHEN REQU 1.	ESTED BY E	XAMINER id	entify/obt	ain copy of	2-AOI-74-
Standa	ard:					
	IDENTIFIE	D OR OBTAI	NED copy o	f 2-AOI-74	-1.	
SAT	UNSAT	N/A	COM	MENTS:		
						<u> </u>
*****	*****	****	****	*****	*****	******
<u>Perfo</u> :	rmance St	ep:	Crit	ical <u>X</u> I	Not Critical	
4.2	Subsequen	t Actions	(continued	<b>1</b> )		
	[12.8]	<b>RESTART</b> t 2-HS-74-5A	ripped RHR p (16A)(28A)(3	oump(s) RHR 9A)	PUMP 2A(2C)(	2B)(2D) usin
<u>Standa</u>	ard:		•			
) ; ;	OPERATOR and infor start [NO	<b>ATTEMPTS T</b> ms SRO THA T CRITICAL	O START RH T 2C and / ].	R PUMP 2C or 2A RHF	and / or 2A PUMP(s) wi	[CRITICAL ll not
SAT	_UNSAT	N/A COI	MMENTS:	· · · · · · · · · · · · · · · · · · ·		
		•				
						· · ·
	· · · · ·	· · · · · · · · · · · · · · · · · · ·				
CUE: CONTII	SRO ACKN NUE WITH	OWLEDGES, THE AOI.	"2C and/or	2A RHR PU	MP FAILED TO	) START
****	* * * * * * * * *	* * * * * * * * * *	*****	* * * * * * * * * *	****	* * * * * * *
Perfo	rmance St	ep:	Crit	icall	Not Critical	Х

0606 SJPM-D REV. NO. 0 PAGE 6 OF 28

[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<u>X</u>\_\_

[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.

0606 SJPM-D REV. NO. 0 PAGE 7 OF 28

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:\_\_\_\_\_

Performance Step:

Critical\_\_\_\_ Not Critical\_X\_\_\_

[15] **IF** the affected loop of RHR cannot be placed back in Shutdown Cooling, **THEN** 

0606 SJPM-D REV. NO. 0 PAGE 8 OF 28

**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: 2-POI-74-2 is not in effect.			
Standard:		-	
Operator <b>PROCEEDS</b> to	2-0I-74 SECTION 8.8.		-
SATUNSATN/A	COMMENTS:		

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

0606 SJPM-D REV. NO. 0 PAGE 9 OF 28

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.
- 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

<u>Performance Step:</u>

Critical\_\_\_\_ Not Critical\_X\_

[1] **VERIFY** the following initial conditions are satisfied:

0606 SJPM-D REV. NO. 0 PAGE 10 OF 28

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	TINGAT	N/Z	COMMENTS
SAI	UNSAL	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.

0606 SJPM-D REV. NO. 0 PAGE 11 OF 28

SATUNSATN/A	COMMENTS:
•	
*****	* * * * * * * * * * * * * * * * * * * *
Performance Step:	CriticalNot Critical_X_
[2] VERIFY ON	E of the following conditions are met:
RHR Loc	op I(II) has been flushed and aligned per Section 8.7, OR
<ul> <li>CS&amp;S has a satisfaction</li> </ul>	is been aligned as the keep fill source for 2 days or more and ctory sample has been obtained, OR
Plant cor	nditions preclude flushing.
Standard:	
Given in initia days and Chem I	al conditions that CS&S has been aligned > 2 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
	<b>ENSURE</b> Shutdown cooling header is filled by performing the following: (N/A if the shutdown cooling header has been previously filled)

.1

0606 SJPM-D REV. NO. 0 PAGE 12 OF 28

CUE: Shutdown Cooling header has been previously filled.
<u>Standard:</u>
Acknowledges that Shutdown Cooling header has been previously filled and skips steps [2.2.1] thru [2.1.7]
SATUNSATN/A COMMENTS:
**************************************
[3] <b>VERIFY</b> 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.
SATUNSATN/A COMMENTS:
***************************************
<u>Performance Step:</u> Critical <u>X</u> Not Critical
[4] <b>IF</b> RHR Loop II is to be used, <b>THEN</b>
<b>PLACE</b> 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:

.1

0606 SJPM-D REV. NO. 0 PAGE 13 OF 28

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]

0606 SJPM-D REV. NO. 0 PAGE 14 OF 28

# Instructor Note: When requested, the Extra Operator should place the Caution Order on the handswitch.

<u>Standard:</u>

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).

<u>Standard:</u>

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:\_\_\_\_\_

0606 SJPM-D REV. NO. 0 PAGE 15 OF 28

******	* * * * * * * * * * * * * * * * * * * *
Performance Step:	Critical <u>X</u> Not Critical
[8] <b>VERIFY OPEN</b> RHR PUMP 2A(2 VLVs 2-FCV-74-2(25) and 2-FCV	2B) and 2C(2D) SD COOLING SUCT V-74-13(36).
<u>Standard:</u>	
Student Opens 2-FCV-74-25 & 36	б.
SATUNSATN/ACOMMENTS:	
*****	*****
Performance Step:	Critical <u>X</u> Not Critical
[9] <b>VERIFY</b> Recirculation Pump B(A	A) is stopped.
Standard:	
<b>S</b> tudent stops 2A Recirc pump.	
SAT UNSAT N/A COMMENTS:	
<b>na an a</b>	

0606 SJPM-D REV. NO. 0 PAGE 16 OF 28

# 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).

0606 SJPM-D REV. NO. 0 PAGE 17 OF 28

[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

0606 SJPM-D REV. NO. 0 PAGE 18 OF 28

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:\_\_\_\_\_

0606 SJPM-D REV. NO. 0 PAGE 19 OF 28

# 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**:
  - 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, EI 593' Fuel Pool Cooling Area (Rx Bldg, E, EI 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:\_\_

0606 SJPM-D REV. NO. 0 PAGE 20 OF 28

# 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:\_

0606 SJPM-D REV. NO. 0 PAGE 21 OF 28

# 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]

[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:

0606 SJPM-D REV. NO. 0 PAGE 22 OF 28

Student verifies that 2-FCV-74-47 & 48 are open.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_COMMENTS:\_\_\_\_\_

[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<u>X</u> 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:\_\_\_\_\_

[20] **VERIFY** at least one RHRSW Pump is operating on each EECW Header. Standard:

Student verifies an EECW pump running on each EECW header.

0606 SJPM-D REV. NO. PAGE 23 OF 28

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) III/CI 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:

0606 SJPM-D REV. NO. 0 PAGE 24 OF 28

<u>Performance Step:</u>

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:

[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:\_\_\_

0606 SJPM-D REV. NO. 0 PAGE 25 OF 28

#### 

<u>Performance Step:</u>

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

- [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:\_
0606 SJPM-D REV. NO. 0 PAGE 26 OF 28

### 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:

		/	A second s	1	
RHR Pumps	1			2	
in Operation					
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:\_

0606 SJPM-D REV. NO. 0 PAGE 27 OF 28

<u>Performance Step:</u>

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.

# CUE: Another Operator will complete this task, that will be all for now.

Standard:

Student dispatches personnel as time permits to check the breaker for the RHR pump(s) started.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_COMMENTS:

<u>Performance Step</u>: 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:\_\_\_\_\_

<u>Performance Step:</u> Critical\_\_\_\_Not Critical\_X\_\_\_\_

PERFORMER demonstrated the use of 3-WAY COMMUNICATION during

0606 SJPM-D REV. NO. 0 PAGE 28 OF 28

this JPM.

Standard:

STOP TIME

**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	

0606 SJPM-E REV. NO. 7 PAGE 1 OF 12

### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-E

TITLE: 2-EOI APPENDIX 14B - CAD OPERATION TO THE DRYWELL

TASK NUMBER:

U-000-EM-64

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

0606 SJPM-E REV. NO. 7 PAGE 2 OF 12

# 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

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0606 SJPM-E REV. NO. 7 PAGE 3 OF 12

# 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 I APPENDIX 14B	IN ACCORDANCE W	ITH 2-EOI
K/A NUMBER:	223001A4.04 K/2	A RATING: RO <u>3.</u>	5_ SRO: <u>3.6</u>
* * * * * * * * * * * * * * * *	*****	* * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * *
TASK STANDARD:	PERFORM MANIPULATION APPENDIX 14B REQUIRE DRYWELL WITH THE CAL	IS AS DIRECTED ED TO ADMIT NIT D SYSTEM	BY 2-EOI ROGEN TO THE
LOCATION OF PER	FORMANCE: SIMULATOR	X PLANT (	CONTROL ROOM
REFERENCES/PROC	EDURES NEEDED: 2-EO	I APPENDIX 14B,	REV 6
VALIDATION TIME	CONTROL ROOM: _	LOCAL:	5.0
MAX. TIME ALLOW	ED: (Complet	ed for Time Cr	itical JPMs only)
PERFORMANCE TIM	IE: CONTR	ROL ROOM	LOCAL
COMMENTS:			-
		······	
Additional comm	ent sheets attached?	YES 1	NO
RESULTS: SAT	ISFACTORYUNSA	TISFACTORY	· · · · · · · · · · · · · · · · · · ·
SIGNATURE:	XAMINER	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.

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 increasing 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.

0606 SJPM-E REV. NO. 7 PAGE 5 OF 12

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.

<u>Performance Step:</u> 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:\_\_\_\_\_

0606 SJPM-E REV. NO. 7 PAGE 6 OF 12

* * * * * * * * * * * * * * * * * * * *	************
Performance Step:	Critical Not Critical_X
2. <b>MONITOR</b> oxygen o Panel 2-	Drywell and Suppression Chamber hydrogen and concentrations with the following instruments or -9-54(55):
•	2-H2I-76-39/2-H2R-76-39, H2 CONCENTRATION
. ●.	2-021-76-43/2-02R-76-43, 02 CONCENTRATION
•	2-H2I-76-37/2-H2R-76-37, H2 CONCENTRATION
• <u>Standard:</u>	2-02I-76-41/2-02R-76-41, 02 CONCENTRATION
LOCATED the indications.	above instrumentation and read off approximate
SATN/	A COMMENTS:
**************************************	**************************************
3. IF THEN	<ul> <li>Drywell or Suppression Chamber hydrogen or oxygen analyzers are or become inoperable,</li> <li>NOTIFY Chem Lab to sample Drywell and Suppression Chamber for hydrogen and oxygen using CI-644.</li> </ul>
Standard:	
ACKNOWLEDGED	the above step and continued.
SATUNSATN/	A COMMENTS :

.1

0606 SJPM-E REV. NO. 7 PAGE 7 OF 12

<u>Performance Step:</u>

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.

<u>Standard:</u>

**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.

0606 SJPM-E REV. NO. 7 PAGE 8 OF 12

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. . <u>BEFORE</u>:

• 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:\_\_\_\_\_

0606 SJPM-E REV. NO. 7 PAGE 9 OF 12

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:		
· · ·					
·					

\*\*\*\*\*\*

<u>Performance Step:</u>

Critical<u>X</u> 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:	·		

0606 SJPM-E REV. NO. 7 PAGE 10 OF 12

*****	* * * * * * * * * *	******	****	* * * * * * * *	* * * * * * * * *	*****
Performance Ste	<u>o:</u>	Critical_	X	Not Crit	ical	
c.	IFCAI required, THEN <b>CON</b>	) additior	ı to S this	uppressi procedur	on Chambe	er is p 6.e.
<u>Standard:</u>						
<b>Recognizes</b> not requir and contin	that Cad ed (from I ues at ste	addition nitial Cc p d.	to th mditi	e Suppre ons and	ssion Cha Initiatir	amber is 1g Cues)
SATUNSAT	_N/A	COMMENTS:				-
****	* * * * * * * * * *	* * * * * * * * *	****	*****	* * * * * * * * *	*****
Performance Ste	<u>):</u>	Critical	<u>X</u>	Not Crit	ical	
d.	INITIATE C	AD to Dry	well	as follo	ws:	
	1) <b>PLACE</b> 2A(2E 54(55	2-HS-84- 3) SPLY SP 5), in DRY	-8A/B( EL, ha YWELL.	8C/D), S ndswitch	SUPPR CHB n on Pane	R/DW CAD 1 2-9-
<u>Standard:</u>						
PLACED 2-H	S-84-8A/B	in the DR	YWELL	positic	n.	
SATUNSAT	_N/A	COMMENTS:	,			
					• •	· · · · · · · · · · · · · · · · · · ·

0606 SJPM-E REV. NO. 7 PAGE 11 OF 12

****	******	******	****	* * * * * * * * * * * * * * * * * *	* * * * * * * * * *
Perfo	rmance Ste	p:	Critical	Not Critical_	<u>X</u>
		2) CO	NTINUE in this	procedure at St	ep 6.f.
Stand	ard:				
	CONTINUED	at step	6.f.		
SAT	UNSAT	N/A	COMMENTS:		
		· · · · · · · · · · · · · · · · · · ·			
	••			······································	······
****	* * * * * * * * * *	*****	****	* * * * * * * * * * * * * * * * * * *	* * * * * * * *
<u>Perfo</u>	rmance Ste	<u>p:</u>	Critical	Not Critical X	
	f.	<b>CHECK</b> CA Panel 1-	AD operating p -9-54(55):	roperly as follo	ws on Unit 1
		• 0-1 inc	FI-84-7(18), C dicates betwee	AD LINE A(B) N2 n 90 and 100 scf	FLOW, m.
CU	E: OUTSID	E AIR TEI	MPERATURE IS A	PPROXIMATELY 80°	<b>7 -</b>
		• 0-1 TEN deg	II-84-27(28), MP,indicates a grees below ou	N2 VAPORIZER A(B pproximately 20 tside air temper	) OUTLET ature.
		• 0-1 PRI	PI-84-6(17), N ESS, indicates	2 VAPORIZER A(B) below 150 psig.	OUTLET
Standa	ard:				
	<b>LOCATED</b> th Panel)and	ne above <b>VERIFIEI</b>	instrumentatio Dacceptable i	on (on side of Un .ndications.	nit 2
SAT	UNSAT	N/A	COMMENTS:		

4

\_ \_ \_ \_

0606 SJPM-E REV. NO. 7 PAGE 12 OF 12

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.

<u>Standard</u>:

**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

0606 SJPM-E REV. NO. 7 PAGE 13 OF 12

STOP TIME

.1

JPM NUMBER:	0606 SJPM-F			
TITLE:	TIE D/G TO 4kV SHUTE	OWN BOARD AT	PANEL 9	)-23

BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

TASK NUMBER: U-082-NO-07

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE :
APPROVED:	TRAINING	DATE :
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

0606 SJPM-F REV. NO. 3 PAGE 2 OF 19

### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

REVISION LOG Revision Effective Pages Description Number Date Affected of Revision 0 9/20/01 All New faults FORMAT; EDITORIAL; PROCEDURE REV 1 8/21/03 All 2 10/6/05 A11 Procedure Revision 3 06/02/07 A11 Procedure Revision

0606 SJPM-F REV. NO. 3 PAGE 3 OF 19

# 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 SY 23, DEGRADED GRID	STEM OPERATION AT PANEL 9-
K/A NUMBER:	264000A2.05 K/A	RATING: RO <u>3.6</u> SRO: <u>3.6</u>
*****	*****	*******
TASK STANDARD:	PERFORM OPERATIONS NECES. GENERATOR WITH OFFSITE P DIRECTED BY 0-0I-82, WIT	SARY TO PARALLEL A DIESEL OWER AT PANEL 9-23 AS H DEGRADED GRID.
LOCATION OF PER	FORMANCE: SIMULATOR X I	PLANT CONTROL ROOM
REFERENCES/PROC	EDURES NEEDED: 0-01	-82, REV. 93
VALIDATION TIME	CONTROL ROOM: 14:	00 LOCAL:
MAX. TIME ALLOW	ED: (Completed for	or Time Critical JPMs only)
PERFORMANCE TIM	E: CONTROL R	00M LOCAL
COMMENTS:		
		· · · · · · · · · · · · · · · · · · ·
Additional comm	ent sheets attached? YES	3 NO
RESULTS: SATIS	FACTORYUNSATISFAC	TORY

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.

**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.

0606	SJPM-F		
REV.	N	Σ.	3
PAGE	5	OF	19

STAR	r TIME					
****	*****	******	****	* * * * * * * * * * * * * *	*****	
				*	· · · · ·	
Perfo	ormance Step:		Critical	_ Not Critica	1 <u>    X</u>	
	WHEN REQUESTE procedure.	D BY EXAMI	NER identify,	/obtain copy o	of required	l
Stand	lard:					
	IDENTIFIED OR	OBTAINED	copy of 0-OI	-82.		
SAT	UNSAT	N/A	COMMENTS:_		· · · · · · · · · · · · · · · · · · ·	

0606 SJPM-F REV. NO. 3 PAGE 6 OF 19

### 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.

0606 SJPM-F REV. NO. 3 PAGE 7 OF 19

#### \*\*\*\*\* \*

<u>Performance Step:</u> Critical<u>X</u> 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
В	DG B BKR 1822 SYNC	0-25-211-B/4A	0-9-23-7
С	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:\_\_\_\_\_

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0606	S	JPM-	-F
REV.	N	Э.	3
PAGE	8	OF	19

#### 

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:

 $\ensuremath{\texttt{VERIFIED}}$  4kV Shutdown Bd A voltage 3950-4400 volts and stable.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_\_COMMENTS:\_\_\_\_\_

<u>Performance Step:</u>

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).

\*

0606 SJPM-F REV. NO. 3 PAGE 9 OF 19

### 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
В	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.

WHEN the 4-Kv shutdown board has been [5.3] transferred to a stable offsite power source, THEN

> **PLACE** the Diesel Generator synchronizing switch to ON.

Standard:

ł,

N/A - System is stable at this time.

SAT\_\_\_\_ UNSAT\_\_\_\_ N/A \_\_\_\_COMMENTS:\_\_

0606 SJPM-F REV. NO. 3 PAGE 10 OF 19

### 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

PULL and **PLACE** the associated Diesel Generator mode [6] 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
В	DG B MODE SELECT	0-HS-82-B/5A	0-9-23-7
С	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:\_\_

	0606 SJPM-F REV. NO. 3 PAGE 11 OF 19
* * * * * * * * * * * * * * * * *	******************
Performance Step:	CriticalNot Critical_X
[7] RELEASI OBSERVI	the Diesel Generator mode selector switch and PARALLELED WITH SYSTEM light illuminated.

<u>Standard:</u>

**RELEASED** the Operation Mode Selector switch and **VERIFIED** RED Parallel with System light illuminated.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_\_COMMENTS:\_\_\_\_\_

[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
В	DG B GOVERNOR CONTROL	0-HS-82-B/3A	0-9-23-7
С	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:

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**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:\_\_\_

*******	
PAGE 12 OF 19	
REV. NO. 3	
0606 SJPM-F	

### Performance Step :

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\* \* \*

### 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	<u>0-HS-82-A/2A</u> <u>0-EI-82-AB</u> <u>0-EI-211-AB</u>	0-9-23-7
В	DG B VOLT REGULATOR CONT GEN SYNC REF VOLTAGE SYSTEM SYNC REF VOLTAGE	<u>0-HS-82-B/2A</u> <u>0-EI-82-AB</u> <u>0-EI-211-AB</u>	0-9-23-7
С	<u>DG C VOLT REGULATOR CONT GEN SYNC REF VOLTAGE SYSTEM SYNC REF VOLTAGE</u>	<u>0-HS-82-C/2A</u> <u>0-EI-82-CD</u> <u>0-EI-211-CD</u>	0-9-23-8
D	DG D VOLT REGULATOR CONT GEN SYNC REF VOLTAGE SYSTEM SYNC REF VOLTAGE	<u>0-HS-82-D/2A</u> <u>0-EI-82-CD</u> <u>0-EI-211-CD</u>	0-9-23-8

### Standard:

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 $\ensuremath{\texttt{ADJUSTED}}$  0-HS-82-A/2A to match 0-EI-82-AB and 0-EI-211-AB readings.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_COMMENTS:\_\_\_

0606	SJI	PM-I	7
REV.	NO	. 3	3
PAGE	13	OF	19

#### 

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
А	DG A BKR 1818	0-HS-211-A/22A	0-9-23-7
В	DG B BKR 1822	0-HS-211-B/4A	0-9-23-7
С	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

<u>Standard:</u>

WHEN synchroscope needle approximately 2 minutes to left of 12 0'clock position, <code>PLACED</code> 0-HS-211-A/22A in the CLOSE position.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_\_COMMENTS:\_\_\_\_\_

******	******	
PAGE	14 OF 19	
REV.	NO. 3	
0606	SJPM-F	

#### 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
В	DG B BKR 1822 SYNC	0-25-211-B/4A	0-9-23-7
С	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.

0606	SJI	PM-I	-
REV.	NO	. 3	3
PAGE	15	OF	19

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### 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	<u>0-HS-82-A/3A</u> 0-HS-82-A/2A	0-9-23-7
В	DG B GOVERNOR CONTROL DG B VOLT REGULATOR CONT	<u>0-HS-82-B/3A</u> 0-HS-82-B/2A	0-9-23-7
С	DG C GOVERNOR CONTROL DG C VOLT REGULATOR CONT	<u>0-HS-82-C/3A</u> 0-HS-82-C/2A	0-9-23-8
D	DG D GOVERNOR CONTROL DG C VOLT REGULATOR CONT	<u>0-HS-82-D/3A</u> 0-HS-82-D/2A	0-9-23-8

Standard:

ADJUSTED 0-HS-82-A/3A to obtain 2600  $\pm 50$  Kw. DETERMINED KVAR loading to be 1950  $\pm$  50 from ILLUSTRATION 1. ADJUSTED 0-HS-82-A/2A to obtain 1950  $\pm 50$  KVAR.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_\_COMMENTS:\_\_\_

0606 SJPM-F REV. NO. 3 PAGE 16 OF 19 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 ]

<u>Performance Step:</u> Critical<u>X</u> Not Critical\_\_\_\_

[14] MONITOR the offsite source that is paralleled with the diesel generator.

Standard:

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Monitors offsite source and notices A voltage transient in progress.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_\_COMMENTS:\_\_\_

0606 SJPM-F REV. NO. 3 PAGE 17 OF 19

#### \*\*\*\*\*\*

#### 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] <u>PULL UP and RELEASE the associated Diesel</u> <u>Generator control switch in NORMAL to</u> <u>initiate the shutdown sequence:</u>

Diesel	Handswitch Name	Handswitch No.	Panel
А	DG A CONTROL	0-HS-82-A/1A	0-9-23-7
В	DG B CONTROL	0-HS-82-B/1A	0-9-23-7
Ċ	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:	CriticalNot CriticalX	
[15.3]	REFER TO Section 7.1 and CONTINUE with	

Deleted:	8.1.15.1
Deleted:	8
Deleted:	2
Deleted: Deleted:	8

0606 SJPM-F REV. NO. 3 PAGE 18 OF 19

### Shutting down the diesel generator. ,

**Deleted:** SEPARATE the 4-kV board from offsite power.

Standard:

 ${\tt Refers}$  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

0606 SJPM-F REV. NO. 3 PAGE 19 OF 19

### 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 <u>X</u>\_\_\_

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

Standard:

1

**PERFORMER** utilized 3-WAY COMMUNICATION in accordance with plant standards.

SAT\_\_\_\_\_ UNSAT\_\_\_\_\_ N/A \_\_\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-G REV. NO. 6 PAGE 1 OF 10

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 SJPM-G TITLE: RESPOND TO LOSS OF REACTOR BUILDING CLOSED COOLING WATER TASK NUMBER: U-070-AB-01

SUBMITTED BY:		DATE:
VALIDATED BY:	• .	DATE :
APPROVED:	TRAINING	DATE :
PLANT CONCURRENCE: _	OPERATIONS	DATE:

Examination JPMs Require Operations Training Manager or Designee Approval and Plant Concurrence
0606 SJPM-G REV. NO. 6 PAGE 2 OF 10

#### 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

0606 SJPM-G REV. NO. 6 PAGE 3 OF 10

### 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 <u>3.2</u> SRO: <u>3.4</u>
****	*****	****
TASK STANDARD:	PERFORM MANIPULATIONS REQU REACTOR BUILDING CLOSED CO 2-AOI-70-1.	JIRED FOR A LOSS OF DOLING WATER PER
LOCATION OF PER	RFORMANCE: SIMULATOR <u>X</u> PL	ANT CONTROL ROOM
REFERENCES/PROC	CEDURES NEEDED: 2-AOI-70-1	, REV 27
VALIDATION TIME	E: CONTROL ROOM: <u>6:00</u>	LOCAL:
MAX. TIME ALLOW	NED: (Completed for	Time Critical JPMs only)
PERFORMANCE TIN	ME: CONTROL ROO	OM LOCAL
COMMENTS :		
Additional comm	ment sheets attached? YES	NO
RESULTS: SAT	TISFACTORYUNSATISFA	CTORY
SIGNATURE:	DATE:	

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#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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**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.

0606 SJPM-G REV. NO. 6 PAGE 5 OF 10

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:\_\_\_\_\_

0606 SJPM-G REV. NO. 6 PAGE 6 OF 10

4.0 OPERATOR ACTIONS

4.1 Immediate Actions

<u>Performance Step</u> : 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:\_\_\_\_\_

<u>Performance Step</u> :

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:\_\_\_\_\_

[NRC/C] Operations outside of the allowable regions shown on the Recirculation System Operating Map could result in thermalhydraulic power oscillations and subsequent fuel damage. REFER TO <u>2-GOI-100-12A</u> for required actions and monitoring to be performed during a power reduction. [NCO 940245001]

0606 SJPM-G REV. NO. 6 PAGE 7 OF 10

INSTRUCTORS NOTE: CUE THE CONSOLE OPERATOR TO TRIP 2B RBCCW PUMP WHEN THE RWCU PUMPS ARE SECURED.

[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:\_\_\_\_\_

#### 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:\_\_\_\_\_

0606 SJPM-G REV. NO. 6 PAGE 8 OF 10

#### 

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.

#### 

<u>Performance Step</u> :

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:

0606 SJPM-G REV. NO. 6 PAGE 9 OF 10

<u>Performance Step</u> :

Critical\_\_\_ Not Critical<u>X</u>

[1.4]

**INITIATE** a 90°F/HR cooldown rate. **REFER TO** <u>2-AOI-100-1</u>.

<u>Standard</u>:

**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 WILL BE ALL FOR NOW.

<u>Performance Step</u>: 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:\_\_\_\_\_

0606 SJPM-G REV. NO. 6 PAGE 10 OF 10

<u>Performance Step:</u> 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

0606 SJPM-H REV. NO. 1 PAGE 1 OF 13

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER:

0606 SJPM-H

U-066-AB-02

TITLE:

RESPOND TO OFF-GAS POST-TREATMENT RADIATION HI-HI-HI

TASK NUMBER:

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE :
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

0606 SJPM-H REV. NO. 1 PAGE 2 OF 13

#### 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

0606 SJPM-H REV. NO. 1 PAGE 3 OF 13

## 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 <u>3.1</u> SRO: <u>3.3</u>
* * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
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 PE	RFORMANCE: SIMULATOR X PLANT CONTROL ROOM
REFERENCES/PROG REV 020	CEDURES NEEDED: 2-ARP-9-4C/35 REV 26, 2-AOI-66-2
VALIDATION TIM	E: CONTROL ROOM: <u>15:00</u> LOCAL:
MAX. TIME ALLO	WED: (Completed for Time Critical JPMs only)
PERFORMANCE TI	ME: CONTROL ROOM LOCAL
COMMENTS:	
Additional com	nent sheets attached? YES NO
RESULTS: SAT	ISFACTORYUNSATISFACTORY
SIGNATURE:	DATE:

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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.

0606 SJPM-H REV. NO. 1 PAGE 5 OF 13

## 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.

#### <u>Standard:</u>

VERIFIED alarm condition on 2-RR-90-265 and 2-RM-90-265 & 266

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-H REV. NO. 1 PAGE 6 OF 13

#### 

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).

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:

0606 SJPM-H REV. NO. 1 PAGE 7 OF 13

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:\_\_\_\_\_

0606 SJPM-H REV. NO. 1 PAGE 8 OF 13

#### 

<u>Performance Step</u> : 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:\_\_\_\_

0606 SJPM-H REV. NO. 1 PAGE 9 OF 13

#### 

<u>Performance Step</u> :

Critical\_\_\_\_ Not Critical\_X\_\_

#### 4.2 <u>Subsequent Actions</u>

[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:\_\_\_\_\_

0606 SJPM-H REV. NO. 1 PAGE 10 OF 13

#### 

<u>Performance Step</u> :

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<u>X</u>\_\_\_

[3] MONITOR area radiation levels at Panel 9-11.

Standard:

**PERFORMER** MONITORED radiation levels at Panel 9-11.

SAT\_\_\_UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_

0606 SJPM-H REV. NO. 1 PAGE 11 OF 13

<u>Performance Step</u> :

Critical\_\_\_\_ Not Critical\_X\_\_

[4] **REFER to** <u>EPIP-1</u> 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:\_\_\_\_\_

0606 SJPM-H REV. NO. 1 PAGE 12 OF 13

*******	*****	***************************************
Performan	ce Ste	<u>ep</u> : Critical Not Critical_X
[5]	MONI	FOR 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.
	С	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 0-RR- READI	PERFORMER CALLS UNIT 1 OPERATOR FOR A READING ON 90-147: STACK GAS RADIATION, 0-RR-90-147 IS NG 6 x 10 <sup>6</sup> 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:\_\_\_\_\_

0606 SJPM-H REV. NO. 1 PAGE 13 OF 13

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<sup>5</sup> 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.

0606 SJPM-H REV. NO. 1 PAGE 14 OF 13

#### 

<u>Performance Step</u>:

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\_<u>X</u>

**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

# DRAFT

# ADMIN

ES-301

Facility: BFN   Date of Examination: 8/27/07				
Examination Level (circle one):	RO/SRO	Operating Test Number HLT0606		
Administrative Topic (see Note)	Type Code*	Describe Activity to be performed		
Conduct of Operations 0606 AJPM 2-1a	Р	Determine overtime eligibility RO/SRO		
Conduct of Operations 0606 AJPM 2-1b	N	Determine if Mode Change is allowed SRO		
Equipment Control 0606 AJPM 2-2	Ν	Jet Pump Mismatch and Operability RO/SRO		
Radiation Control 0606 AJPM 2-3	Ν	Review Radiological Survey Map and determine if assigned task can be performed RO/SRO		
Emergency Plan 0606 AJPM 2-4a	D/S	Classify Event – unisolable leak outside primary containment SRO		
Emergency Plan 0606 AJPM 2-4b	N/S	Perform actions required for medical emergency RO		
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.				
*Type Codes & Criteria: (C)ontrol room (D)irect from bank ( $\leq 3$ for ROs; $\leq 4$ for SROs & RO retakes) (N)ew or (M)odified from bank ( $\geq 1$ ) (P)revious 2 exams ( $\leq 1$ ; randomly selected) (S)imulator				

0606 AJPM 2-1a REV. NO. 2 PAGE 1 OF 8

{PRIVATE }

# {PRIVATE }BROWNS FERRY NUCLEAR PLANT1JOB PERFORMANCE MEASURE

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JPM NUMBER:	0606 AJPM 2-1a
TITLE:	DETERMINATION OF OVERTIME ELIGIBILITY

TASK NUMBER: ADMINISTRATIVE

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE: _	OPERATIONS	DATE:

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

0606 AJPM 2-1a REV. NO. 2 PAGE 2 OF 8

# 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

{PRIVATE }

2

0606 AJPM 2-1a REV. NO. 2 PAGE 3 OF 8

#### {PRIVATE } **BROWNS FERRY NUCLEAR PLANT** JOB PERFORMANCE MEASURE

OPERATOR: \_\_\_\_\_

3

RO	SRO	DATE:

JPM NUMBER: JPM 540

TASK NUMBER: Administrative

TASK TITLE: Determination of Overtime Eligibility

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

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 \_\_\_

SATISFACTORY UNSATISFACTORY RESULTS:

EXAMINER SIGNATURE: DATE:

# {PRIVATE }

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#### 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 which operator(s), if any, can be held over for two hours without prior overtime approval, and determine which operators CANNOT be held over for two hours without prior overtime approval.

0606 AJPM 2-1a REV. NO.2 PAGE 5 OF 8

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:\_\_\_\_\_

# **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)
Operator #1	0	0	14	10	14	10	14	10
Operator #2	0	3	10	12	12	12	8	14
Operator #3	0	0	12	12	12	8	8	15
Operator #4	0	8	12	10	10	8	10	12
Operator #5	0	4	12	10	10	14	10	12

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

0606 AJPM 2-1a REV. NO.2 PAGE 7 OF 8

# **EVALUATOR'S SOLUTION**

# **DO NOT GIVE TO STUDENT**

Step	Description	Standard	SAT/UNSAT
1	Reference SPP-1.5	Current Revision SPP-1.5	
2	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	Only Critical if chosen to work
3	Evaluate Operator 2	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization	Only Critical if chosen to work
4	Evaluate Operator 3	Determine Operator #3 would exceed 16 hours in a 24 hour period and 24 hours in a 48 hour period and can not be waivered.	Critical
5	Evaluate Operator 4	Determine that Operator #4 would not exceed any overtime guidelines	Critical
6	Evaluate Operator 5	Determine Operator #5 would exceed 72 hours in a 7 day period and would require overtime authorization	Only Critical if chosen to work

0606 AJPM 2-1a REV. NO.2 PAGE 8 OF 8

# **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)
Operator #1	0	0	14	10	14	10	14	10
Operator #2	0	3	10	12	12	12	8	14
Operator #3	0	0	12	12	12	8	8	15
Operator #4	0	8	12	10	10	8	10	12
Operator #5	0	4	12	10	10	14	10	12

Evaluate the work history for all 5 operators. Determine which operator(s), if any, can be held over for two hours without prior overtime approval, and determine which operators CANNOT be held over for two hours with overtime approval.

0606 AJPM 2-1b REV. NO 0 PAGE 1 OF 5

{PRIVATE }

	{PRIVATE } 1	BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE	
JP	M NUMBER:	0606 AJPM 2-1b	
TI	TLE:	COMPLETE 1-SR-2 REVIEW PRIOR TO A	MODE CHANGE
ТА	SK NUMBER:	x-XXX-xx-xx	
	•		
SU	BMITTED BY:	·	DATE:
VA	LIDATED BY:		DATE:
AP	PROVED:	TRAINING	DATE:
PL	ANT CONCURRE	NCE:OPERATIONS	DATE:

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

0606 AJPM 2-1b REV. NO 0 PAGE 2 OF 5

#### {PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

#### REVISION LOG

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

2

0606 AJPM 2-1b REV. NO 0 PAGE 3 OF 5

#### {PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

3

OPERATOR:			
RO	SRO	DATE	:
JPM NUMBER:	0606 AJPM 2-	1b	
JPM TITLE:	COMPLETE 1-S	R-2 REVIEW PRIOR	TO A MODE CHANGE
TASK NUMBER:	x-XXX-xx-xx		
TASK TITLE:	Perform 1-SR	-2 REVIEW PRIOR T	O A MODE CHANGE
K/A NUMBER:	2.1.2 K/	A RATING: RO <u>3.0</u>	SRO: 4.0
* * * * * * * * * * * * * * * *	* * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
TASK STANDARD:	Review 1-SR-	2 prior to a mode	change
LOCATION OF PER	FORMANCE: SI	MULATOR <u>x</u> PLAN	CONTROL ROOM
REFERENCES/PROC	CEDURES NEEDE	D: 1-SR-2 REV 7	
VALIDATION TIME	I: CC	NTROL ROOM:	LOCAL:
PERFORMANCE TIM	1E:	CONTROL R	LOCAL
COMMENTS: FOR 7 (1-SR-2)	THIS JPM, INS	TRUCTOR NEEDS 060	6 AJPM 2-1b HANDOUT
Additional comm	ent sheets a	ttached? YES	NO
RESULTS: SAT	TISFACTORY	UNSAT	ISFACTORY
EXAMINER SIGNAT	URE:	AMINER	DATE:
{PRIVATE } 4

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, and to make the determination if RX Startup can continue to MODE 1.

# FOR THE EXAMINER ONLY

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 36 of 98

1-LIS-003-0185 reading 35" page 36 of 98

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

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

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

OR

CRITICAL STEP:

**CRITICAL STEP:** Enters LCO 3.0.4b allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and componets.

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



BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 2 of 174

## **Current Revision Description**

Type of Change: Enhancements Tra

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.

BFN	
Unit 1	

## 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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 4 of 174

# 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.

BFN Unit 1	Instrument Checks and Observations	1-SR-2 Rev. 0007 Page 5 of 174
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## 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

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 7 of 174

## 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.
  - 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.

BFN Instrument Checks and Observations 1	1-SR-2
Unit 1	Rev. 0007
F	Page 9 of 174

## 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.

BFN Unit 1	Instrument Checks and Observations	1-SR-2 Rev. 0007 Page 10 of 174
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## 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.,  $25 \le$  IRM value  $\le$  75) excluding downscale (i.e., IRM value < 25) on range 1
  - 4. IRM unbypassed

#### 3.4 Initiation/Isolation/Trips

None

## 3.5 Interlocks

None

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
	· · · · · · · · · · · · · · · · · · ·	Page 11 of 174

## 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.
  - 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.)
  - 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 <u>UNSAT</u> in the "ALL DATA SAT/UNSAT" column(with a note in Remarks) for 1-SR-2.

- 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.
  - 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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 12 of 174

## 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				
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.

## 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

BFN Unit 1	Instrument Checks and Obs	ervations	1-SR-2 Rev. 0007 Page 16 of 174	
	Attachmer (Page 1 of	nt 1 54)		
	Surveillance Procedur	e Review F	orm	
REASON FOR TEST:  DATE/TIME STARTED    Scheduled Surveillance  DATE/TIME COMPLETED    System Inoperable (Explain in Remarks)  PLANT CONDITIONS    Maintenance (WO No. )    Other (Explain in Remarks)  Other (Explain in Remarks)			IE STARTED IE COMPLETED DNDITIONS	
FRE-TEST REIVI	ANNO			
PERFORMED BY	Y: <u>Name</u> (Print)	<u>Nam</u>	<u>e</u> (Signature)	
		,		
· · _	· · · ·	·		
·			· · · · · · · · · · · · · · · · · · ·	

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 17 of 174

# Attachment 1 (Page 2 of 4)

## Surveillance Procedure Review Form

Delays or Problems (If yes, explain in POST-TEST REMAR Acceptance Criteria Satisfied?	KS)?	□Yes □Yes	□ No □ No
determine if an LCO exists.	LCO	□Yes	□No
		Date	
WORK CONTROL (SI)		Date	

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

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

SCHEDULING COORDINATOR

\_\_\_ Date\_\_

POST-TEST REMARKS:

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 18 of 174

# Attachment 1 (Page 3 of 4)

Surveillance Procedure Review Form

\_\_\_\_

# POST-TEST REMARKS: (Continued)

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 19 of 174

# Attachment 1 (Page 4 of 4)

Surveillance Procedure Review Form

**REMARKS**:

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 20 of 174	

## Attachment 2 (Page 1 of 98)

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

#### CORE THERMAL POWER AND CORE POWER DISTRIBUTION DAY SHIFT TABLE 1.1

TABLE 1.1	CORE	THERMAL POWE	ER AND CORE PO	OWER DIS	TRIBUTION	DAY SHIFT		W	EEK:		to	
APPLICABILITY	: Mode RECO	1 when ≥ 25% RT RD the readings a	P s soon as possible	e after the g	generator breaker	has been closed.						
Criteria Source:	3.2.1.1	; 3.2.2.1; 3.2.3.1;	DEFINITIONS SE	CTION 1.1	- FSAR 3.7.7							
LOCATION:	ICS Co	omputer (Case Su	mmary - CSUM)							Review	Initials	
DAY	TIME Note 2	Core Thermal Power (MWt)	Percent Power (% RTP)	LIMIT (AC)	MFLCPR Note 3	MAPRAT Note 3	Ţ	MFLPD Note 3	LIMIT (AC)	Unit Operator	Unit Supvr	Deleted: MFDLRX
	0800	N/A	N/A		N/A	N/A		N/A		DH		
	1000	N/A	N/A		N/A	N/A		N/A		DH		
Friday	1200	N/A	N/A		N/A	N/A		N/A		DH		1
rnaay	1400	N/A	N/A		N/A	<u>N/A</u>		N/A		DH		
	1600											_
	1800								4			-
-	0800								1			- ·
	1000								4			-
Saturday	1200								4			-
	1400					· · · · · · · · · · · · · · · · · · ·						-
	1800	· · · · · · · · · · · · · · · · · · ·		Notoo 1					Notes			-
	0800			Roles 1					3, 4, &			4
	1000			ŭ 2			-		5			-
	1200							· · · · · · · · · · · · · · · · · · ·	-			1
Sunday	1400						-					
	1600								1			
	1800								1			1
	0800								1			1
	1000								1			1
Manufact	1200								1			1
wonday	1400		·						]			]
	1600								]			]
	1800											

NOTES ARE FOLLOWING THE TABLE!

			BFN Unit 1	Instru	ıment C	hecks and C Attachn	bservations	1- Re Pa	SR-2 ev. 0007 age 21 of 17	4				
				Surveilla	ince Pro	(Page 2 ocedure Data	Package - M	ode	s 1. 2. & 3					
	TABLE 1.1	CORE	THERMAL POWE	ER AND CORE PO	OWER DIS	TRIBUTION	DAY SHIFT		WE	EK:		to		
	APPLICABILITY Criteria Source:	Control Mode 2 RECO 3.2.1.1	1 when ≥ 25% RTI <b>RD</b> the readings a ; 3.2.2.1; 3.2.3.1; I	o s soon as possibl DEFINITIONS SE	e after the c CTION 1.1	generator breaker - FSAR 3.7.7	has been closed.							
	LOCATION:	ICS Co	omputer (Case Sur	mmary - CSUM)				•			Review	Initials		
1		TIME	Core Thermal	Percent Power		MFLCPR	MAPRAT		MFLPD		Unit Operator	Unit		
I	DAT	0800		(// KIF)	(AC)	Note 5	INDLE 5	-	Note 5	(AC)	Operator	Supvi		Deleted: MFDLRX
		1000			1			+						
	Tuesday	1200											1	
	Tuesday	1400												
		1600		-				· .						
		1800			-			-						
		1000											4	
		1200			Notes 1			-+-		Notes				
	Wednesday	1400			& 2					3, 4, &				
		1600								5				
		1800											]	
		0800												
		1000												
	Thursday	1200									· · ·		4	
	-	1400												
	10	1800					· · · · · · · · · · · · · · · · · · ·	-+						

NOTES ARE ON THE FOLLOWING PAGE!

BFN Unit 1	Instrument Checks and Observations	1-SR-2 Rev. 0007 Page 22 of 174	
	Attachment 2		

(Page 3 of 98)

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

DAY SHIFT WEEK: \_\_\_\_\_

to

- (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.</p>
- (3) Consult Reactor Engineer when value  $\geq 0.985$ .
- (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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 23 of 174

# Attachment 2 (Page 4 of 98)

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

TABLE 1.2	DRY	WELL UNIDENT	IFIED LEAKAGE	Ξ		DAY	SHIFT	WEEK:		to			
APPLICABILITY:	Mode	es 1, 2 & 3 R	eadings are req	uired at all times									
Surveillance Requir	ements: 3.4.4	.1				LOCA	FION: Panel 1-	9-4, 1-FR-77-6					
	Col. A.1	Col. B.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		Revi	ew Init
Preferred reading times are 0800, 1200 and 1600	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	
	57410	57410	0	0800	0800	1440	0	0	0		DH		
Friday	57410	57410	0	0800	0800	1440	0	0	0		DH		
Saturday										Col. G.1			
										≤ 5.0 gpm			
						~				AND			
Sunday										Col. I.1 ≤ 2 gpm			
										(Note 3)			
Monday	-									1			

NOTES ARE ON THE FOLLOWING PAGE!

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 24 of 174	

## Attachment 2 (Page 5 of 98)

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

TABLE 1.2	DRY	WELL UNIDENTI	IFIED LEAKAG	E		DAY	SHIFT	WEEK:		to			
APPLICABILITY:	Mode	es 1, 2 & 3 R	eadings are rec	uired at all times	S.								
Surveillance Requir	ements: 3.4.4	.1				LOCA	FION: Panel 1-	9-4, 1-FR-77-6					
	Col. A.1 Col. B.1 Col. C.1 Col. D.1 Col. E.1					Col. F.1 Co	Col. G.1	Col. H.1	Col. I.1		Review Init		
Preferred reading times are 0800, 1200 and 1600	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	
Tuesday													
Wednesday								· · · · · · · · · · · · · · · · · · ·					
Thursday													

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. (1)

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. Acceptance Criteria for Col. I.1 is only applicable when in Mode 1 for > 24 hours. Unit Supervisor shall Independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria. (2)

(3) (4)

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 25 of 174	

# Attachment 2 (Page 6 of 98)

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

TABLE 1.3	DRY	WELL IDENTIFI	ED LEAKAGE AI	ND TOTAL LEAP	<age< th=""><th>DAY S</th><th>SHIFT V</th><th>VEEK:</th><th></th><th> to</th><th></th><th></th></age<>	DAY S	SHIFT V	VEEK:		to		
APPLICABILITY:	Mode	es 1, 2 & 3 F	Readings are req	uired at all times								
Surveillance Requir	ements: 3.4.4	.1				LOCA	FION: Panel 1-9	9-4, 1-FR-77-16				
	Col. A.2	Col. B.2	Col. C.2	Col. D.2	Col. E.2	Col. F.2	Col. G.2	Col. H.2	Col. I.2		Revi	ew Init
Preferred reading times are 0800, 1200 and 1600	Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Gallons Pumped Col. A.2 - Col. B.2 Note 2	Current Time Note 2	Previous Days Time from Col. D.2 Note 2	Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	UO	Unit Supvr Note 4
	06504	05025	1479	0800	0800	1440	1.03	0	1.03		DH	
Friday	06657	05507	1150	0800	0800-	1440	.80	0	.80		DH	
Saturday										Col. 1.2		
									×.	≤ 30.0 gpm		
Sunday												
											· · · · · · · · · · · · · · · · · · ·	
Monday												

NOTES ARE ON THE FOLLOWING PAGE!

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 26 of 174	

## Attachment 2 (Page 7 of 98)

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

TABLE 1.3	DRY	WELL IDENTIFI	ED LEAKAGE A	ND TOTAL LEA	KAGE	DAY	SHIFT \	VEEK:		to		
APPLICABILITY:	Mode	es 1, 2 & 3 F	Readings are req	uired at all times	i.		-					
Surveillance Requir	ements: 3.4.4	.1				LOCA	TION: Panel 1-	9-4, 1-FR-77-16				
	Col. A.2	Col. B.2	Col. C.2	Col. D.2	Col. E.2	Col. F.2	Col. G.2	Col. H.2	Col. 1.2		Revi	ew Init
Preferred reading times are 0800, 1200 and 1600	Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Gallons Pumped Col. A.2 - Col. B.2 Note 2	Current Time Note 2	Previous Days Time from Col. D.2 Note 2	Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	UO	Unit Supvr Note 4
Tuesday												
Wednesday							-			Col. I.2 ≤ 30.0 gpm		
Thursday												

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. (1)

Example: Record 0065432.1 as 54321. 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. (2)

G.1 reading is from Drywell Unidentified Leakage Col. G.1 on previous page. Unit Supervisor shall independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria. (3) (4)

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 27 of 174	

#### Attachment 2 (Page 8 of 98)

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

TABLE 1.4	12 HOU	R AVERAGE DRY	WELL UNIDE	NTIFIED LEA	KAGE (5 gpm	) DAY S	SHIFT W	EEK:		to		
APPLICABILIT	-Y:	Modes 1, 2 & 3	Readings are	required at	all times.							
Surveillance R	equirements:	3.4.4.1										
LOCATION:		Panel 1-9-4, 1-F	R-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		Revie	∍w 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 - Co I. B.3 Note 2	Current Time Note 2	Previous Shift Time from Col. D.3 Note 2	Elapsed Time Col. D.3 - C ol. 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 - C ol. H.3 (gpm) Note 2	LIMITS (AC)	UO	Unit Supvr Note 5
Friday	57410	57410	0	1200	2400	720	0	0	0		DH	
Saturday												
Sunday												
Monday										≤ 5.0 gpm		
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  $\leq$  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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 28 of 174

## Attachment 2 (Page 9 of 98)

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

TABLE 1.5	DRY	WELL AIR SAMPLING S	SYSTEM INSTRUM	IENTATION	DAY	Y SHIFT	WEEK:		_ to		
APPLICABILIT	Y:	Modes 1, 2 & 3	Readings are re	quired at all 1	times.						
Surveillance Re	equirements:	3.4.5.1			LOCATION:	LOCATION: Panel 1-9-2, 1-MON-90-50 - (1-RM-90-256) Note 4					
			Sample Flow		Drywell Noble G	as	Drywell Particula	ite	Review Initials		
DAY	ТІМЕ	(LPM)	MIN (AC)	MAX (AC)	(μci/cc) Note 2 & 3	MAX (AC)	(μci/cc) Note 2 & 3	MAX (AC)	UO	Unit Supvr	
	0800	55.4			4.9 E-6		3.9 E-8		DH		
Friday	1200										
	1600										
	0800							]			
Saturday	1200										
	1600										
	0800										
Sunday	1200							_	· ·		
	1600										
	0800					_		4			
Monday	1200		45 lpm	60 lpm		Note 1		Note 1			
	1600										
1.	0800					4		4			
Tuesday	1200				· · · · · · · · · · · · · · · · · · ·	_		_			
	1600					_		4			
	0800				-	_		_			
Wednesday	1200					4		_			
	1600					4		_			
	0800					4		4			
Thursday	1200	·				4		- I			
	1600										

(1)

If the detector is not in ALERT, then the reading is below the MAX. 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 (2) 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. 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. (4)

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 29 of 174	

#### Attachment 2 (Page 10 of 98)

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

TABLE 1.6	HEAT I	BALANCE REL	ATED ICS AL	ARM SETPOIN	NTS (Note 1)	DAY	SHIFT	WEEK:	to		
APPLICABILI	TY: Mode 1	when $\ge 25\%$ F	RTP - RECOR	D the readings	as soon as possil	ole after the ge	enerator bre	eaker has been close	d.		
Criteria Sourc	e: BFPER	951914									
LOCATION:	ICS Co	mputer								Review	v Initials
		ICS Points				Verify	/ HI and HI HI alarm s	setpoints listed in			
	3-48A (°F)	3-48B (°F)	3-50A (°F)	3-50B (°F)	NSS0017 (°F)	MAX DEV Note 2	Table 1.	B.1 & 1.B.2 are NOT SAT / UNSAT	exceeded. (Note 3) / N/A	UO	Unit Supvr
Friday	N/A	N/A	N/A	N/A	N/A			N/A		DH	
Saturday											
Sunday											
Monday						2°F					
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							

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 30 of 174	

#### Attachment 2 (Page 11 of 98)

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

TABLE 1.7	CONTROL ROD POSITIONS	DAY SHIFT WEEK:	to	
APPLICABILITY:	Modes 1 & 2 Readings are required at all times.			
Surveillance Requ	irements: 3.1.3.1; TSRs: 3.3.5.2			
LOCATION:	Panel 1-9-5 - ICS/RWM, Full Core Display And/Or Fou	r Rod Display with Applicable Control Rod Selected	Revie	w Initials
DAY	All Operable Control Rod Positions (Note 1, 2 & 3) SAT / UNSAT	LIMITS (AC)	UO	Unit Supvr
Friday	SAT		DH	
Saturday				
Sunday				
Monday		All Operable Control Rod Positions Verified Satisfactory		
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 31 of 174	

#### Attachment 2 (Page 12 of 98)

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

TABLE 1.8	CONTROL ROD SCRAM ACCUMULATORS	DAY SHIFT	WEEK:	to	
APPLICABILITY:	Modes 1 & 2 Readings are required at all times.				
Surveillance Req	uirements: 3.1.5.1		······································		
LOCATION:	Panel 1-9-5 - Full Core Display And/Or Local HCU Acc	umulator Pressure Indicators	(Reactor Building Elevation 565)	Revie	w 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			DH	
Saturday					
Sunday					
Monday		HCU Scram Accumulator Rods Satis	<sup>-</sup> Pressure for All Operable Control sfactory (≥ 940 psig)		
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 32 of 174	

## Attachment 2 (Page 13 of 98)

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

#### TABLE 1.9 REACTOR WATER LEVEL INSTRUMENTATION - NARROW RANGE DAY SHIFT WEEK: \_\_\_\_\_ \_\_ to \_\_\_\_\_ (COMPENSATED)

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

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 33 of 174

## Attachment 2 (Page 14 of 98)

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

TABLE 1.10 ST	ANDBY LIQUID CONTROL T	ANK VOLUME	DAY	DAY SHIFT WEEK: to					
APPLICABILITY:	Modes 1, 2, & 3 Readings are required	Modes 1, 2, & 3 Readings are required at all times.							
Surveillance Requireme	ents: 3.1.7.1								
LOCATION:	Panel 1-9-5	1-LPNL-925-0019	Local (Top of Tank)	LIMITS	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	(AC) Notes 2, 3, 4		UO	Unit Supvr		
Friday	90	N/A	N/A		SAT	DH			
Saturday									
Sunday				≥ 82.5 percent					
Monday				OR					
Tuesday				$\geq$ 109.4 inches					
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  $\geq$  4000 gallons.

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

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 34 of 174	

#### Attachment 2 (Page 15 of 98)

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

TABLE 1.11	IRM INSTRUMENTATION					DA	AY SHIFT	WEEK:	to	)		
APPLICABILITY:		Mode 2,	Reading	is are requir	red at all times	S.						
Surveillance Requ	uirements:	3.3.1.1.1 (	f1.a)				Technical	Requiremer	nts Manual TSRs: 3	.3.5.4(f2.b) & 3.3.4	.1 (f2.a, 2.b)	
LOCATION:		Panel 1-9-	5								Review	w Initials
			(	IRM F ENTER 1 T No	RANGE HROUGH 10) ote 1	)			MAX DEV	All Data SAT/UNSAT		
	A	С	E	G	В	D	F	н	(AC)	Note 2	UO	Unit Supvr
Friday	7	7	7	7	7	7	7	7		SAT	DH	
Saturday									]			
Sunday									2 Ranges with			
Monday									conditions of			
Tuesday									Note i satisfied			
Wednesday												
Thursday												

(1) Maintain IRM's onscale (i.e.,  $25 \le$  IRM value  $\le 75$ ) excluding downscale (i.e., IRM value  $\le 25$ ) 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.
BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 35 of 174

#### Attachment 2 (Page 16 of 98)

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

TABLE 1.12	SR	M INSTR	UMENTAT	FION				DAY SH	IFT	WEEK:		to		
APPLICABILITY: Mode 2 with IRM's on range 2 or below, Mode 3 Readings are required at all times.														
Surveillance R	equireme	ents: 3.3	.1.2.1, 3.3	3.1.2.3, 3.3	3.1.2.4, 3.3	3.1.2.5&6				TS	R's 3.3.	4.1 & 3.3.5.3		
LOCATION:		Pa	nel 1-9-5 -	1-XR-92-	7/45								Review	/ Initials
SRM Count Rate (cps) Note 1			LIMITS (AC)	MAX (AC) Note 2	SRM S	SRM System Signal to Noise Ratio 1-SR-3.3.1.2.4 All Data SAT / INOP (Note 3 & 4) SAT // INSAT			All Data SAT/UNSAT					
	TIME	А	С	В	D			А	С	В	D	(Note 5)	UO	Unit Supvr
Friday	0800	3X10 <sup>3</sup>	5X10 <sup>3</sup>	9X10 <sup>3</sup>	2X10 <sup>3</sup>			INOP	INOP	INOP	INOP	UNSAT	DH	
Saturday	0800					OPERABLE	OPERABLE							
Sunday	0800					SRMs count	SRMs count							
Monday	0800					rate must be	rate must be							
Tuesday	0800					≥ 3 cps	< I E6 cps							
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.)

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

• SAT

• 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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 36 of 174

## Attachment 2 (Page 17 of 98)

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

TABLE 1.13	REACTOR COOLANT CONDUCTIVITY	DAY SHIFT WEEK:t	0	
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		Reviev	v Initials
	1-CE-43-11 (Point 1) (μmho) Note 1	MAX (AC)	UO	Unit Supvr
Friday	.12		DH	
Saturday				
Sunday				
Monday		1.0 μmho		
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
	、 、	Page 37 of 174

Attachment 2 (Page 18 of 98)

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

TABLE 1.14	SUPPRESSION POOL WATE	ER LEVEL		DAY SHIFT	WEEK:	to	
APPLICABILITY:	Modes 1, 2 & 3	Readings a	re required at all times.				
Surveillance Requir	ements: 3.6.2.2.1						
LOCATION:	Panel 1-9-3					Revie	ew Initials
ţ	1-LI-64-54A (incl Note 1	nes)	1-LI-64-66 (inche Note 1	s)	LIMITS (AC)	UO	Unit Supvr
Friday	-3.8		-3.2			DH	
Saturday							
Sunday							
Monday					$\ge$ -5.5 inches and $\le$ -2.0 inches (Note 2)	3	
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 <u>AND</u> ≥ -7.25" and ≤ -1.0" without DW to Torus DP established.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 38 of 174	

Attachment 2 (Page 19 of 98)

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

TABLE 1.15 BUL	K VOLUMET	RIC AVERAGE DRYWELL AIR TEMP	ERATURE DAY SHIFT	WEEK:	to	
APPLICABILITY:	Modes	1, 2 & 3 Readings are required	at all times.			
Surveillance Requiremen	nts: 3.6.1.4.	.1				
LOCATION:	ICS Co	mputer or 1-TI-82			Revie	w 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		DH	
Saturday	0800		· · · · · · · · · · · · · · · · · · ·			
Sunday	0800					
Monday	0800			≤ 150°F		
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 39 of 174

Attachment 2 (Page 20 of 98)

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

TABLE 1.16	SUPPRESSION	N CHAMBER AIR TEMPERATURE	DAY SHIFT WEEK:	to	
APPLICABILITY:	Modes 1, 2, & 3	Readings are required at all times.			
Criteria Source:	Technical Requ	irements Manual TSR 3.3.5.1	·		
LOCATION:	Panel 1-9-3			Revie	w Initials
	TIME	1-XR-64-52 TE-64-52B (Point 1) (Note 1)	MAX (AC)	UO	Unit Supvr
Friday	0800	94.6		DH	
Saturday	0800				
Sunday	0800				
Monday	0800		150°F (Note 2)		
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 40 of 174	

# Attachment 2 (Page 21 of 98)

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

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#### TABLE 1.17 DRYWELL - SUPPRESSION CHAMBER DIFFERENTIAL PRESSURE DAY SHIFT WEEK: \_\_\_\_\_\_

APPLICABILITY:	Mode prior t Readi	1 (FROM 24 hours after THERMAL o the next scheduled reactor shutdov ngs are required at all times.	POWER is > 15% RTP following wn.)	startup, TO 24 hours pri	or to reducing THER	MAL POWER	to < 15% RTP
Surveillance Requirer	ments: 3.6.2.	5.1	Technical Requ	irements Manual TSRs:	3.3.5.1		
LOCATION:	Panel	1-9-3				Revie	w 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			DH	
Saturday	0800						
Sunday	0800						
Monday	0800			≥ 1.1 psid & ≤ 1.33 psid	0.10 psid		
Tuesday	0800						
Wednesday	0800						
Thursday	0800						

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

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 41 of 174	

#### Attachment 2 (Page 22 of 98)

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

TABLE 1.18	SUPPRESSION POOL	L BULK WATER TEM	PERATURE	DAY SHIFT	WEEK:	to					
APPLICABILITY:	Modes 1, 2 8	& 3 Readings a	re required at all time	S.							
Surveillance Requir	Surveillance Requirements: 3.6.2.1.1										
LOCATION:			Panel 1-9-3			Panel 1-25-32	Revie	w 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		92.6	DH				
Saturday											
Sunday					CR Instruments						
Monday					each other and						
Tuesday					< 95°F						
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.  $\leq$  110°F when all OPERABLE IRM channels are  $\leq$  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 3.3.2, "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.

BFN	Instrument Checks and Observations	1-SR-2	l
Unit 1		Rev. 0007	
		Page 42 of 174	

Attachment 2 (Page 23 of 98)

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

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APPLICABILITY:	Modes 1, 2, & 3	Readings are require	ed at all times.						
Criteria Source:	ce: Technical Requirements Manual TSR 3.3.3.1.1 & 3.5.4.1								
LOCATION:	Panel 1-9-3						Reviev	v 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			DH		
Saturday						For each OPERABLE subsystem: 100 psig			
Sunday					For each				
Monday					OPERABLE subsystem:				
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	<b>.</b> 35 psig	 Deleted: 48
RHR Loop II	1-PI-74-65	<u>48 psig</u>	 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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 43 of 174	

Attachment 2 (Page 24 of 98)

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

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APPLICABILI	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 F	Surveillance Requirements: 3.4.7.1													
LOCATION:		Panel 1-	-9-3 & Panel 1-9	-4						Reviev	v Initials			
		Recirc No	e Pump te 2	F	RHR Shutdown C Note	ooling Subsyste 2 & 3	m	LIMITS	Alll Data					
	TIME	A I/S	B I/S	A I/S	B I/S	C I/S	D I/S	(AC)	(AC)	(AC)	(AC)	SAT/UNSAT	UO	Unit Supvr
Friday	0800	х	х					≥ One RHR	SAT	DH				
Saturday	0800							Shutdown Cooling						
Sunday	0800							Subsystem						
Monday	0800							OR						
Tuesday	0800							≥ One						
Wednesday	0800							Recirc Pump In						
Thursday	0800							Service						

(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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 44 of 174

Attachment 2 (Page 25 of 98)

TABLE 1.21	REACTOR BUILDING VENTILATION RADIATION M	ONITORING DAY SHIFT WEEK: _	t	o		
APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.					
Surveillance Requi	rements: 3.3.6.2.1(f3, 4) and 3.3.7.1.1(f3,4)					
LOCATION:	Panel 1-9-2 - 1-RR-90-144			Revie	w Initials	
	REACTOR ZONE EXHAU	ST RADIATION MONITOR	MAX DEV			
	RE-90-142A (Point 1)	RE-90-143A (Point 2)	(AC)	UO	Unit Supvr	
Friday	.423	.520		DH		
Saturday					1	
Sunday					1	
Monday			14 mr/hr			
Tuesday						
Wednesday						
Thursday						
	REFUEL ZONE EXHAUS	REFUEL ZONE EXHAUST RADIATION MONITOR				
	RE-90-140A (Point 3)	RE-90-141A (Point 4)		UO	Unit Supvr	
Friday	25.8	31.4		DH		
Saturday	· ·					
Sunday			20 mr/hr			
Monday					1	
Tuesday						
Wednesday						
Thursday						

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 45 of 174

## Attachment 2 (Page 26 of 98)

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

TABLE 1.22	RHRSW RADIATION MONITORS	DAY SHIFT	WEEK:	to		
APPLICABILITY:	During RHRSW Loop Operation Read	dings are required at all times.				
Criteria Source:	ODCM Section 1/2.1.1, Surveillance 2.1.	1				
LOCATION:	Panel 1-9-2				Revie	w Initials
	1-1	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		SAT	DH	
Saturday						
Sunday						
Monday			Note 1			
Tuesday						
Wednesday						
Thursday						

TABLE 1.23					
APPLICABILITY:	During RCW releases				
Criteria Source:	ODCM Section 1/2.1.1, Surveillance 2.1.1				
LOCATION:	Panel 1-9-2			Revie	w 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		SAT	DH	
Saturday					
Sunday					
Monday		Note 1			
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 46 of 174

Attachment 2 (Page 27 of 98)

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

TABLE 1.24         APRM/OPRM INSTRUMENTATION						DAY S	HIFT V	VEEK:		to					
APPLICABILIT	Y:		Mode	s1&2	(Flow Bias	Mode 1 only)	Rea	idings are rec	quired at all	times.					
Surveillance R	equiren	nents:	3.3.1.	1.1 (f2a	a, 2b, 2c, 2e	, 2f)		Te	chnical Req	uirements M	anual TSRs	: 3.3.4.1 (f	1a, 1b, 1c, ′	1d)	
LOCATION: Panel 1-9-5 or Panel 1-9-14										Review	w 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	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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 47 of 174

Attachment 2 (Page 28 of 98)

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

TABLE 1.25	L	PRM INS	INSTRUMENTATION DAY SHIFT WEEK: to												
APPLICABILIT	'Y: N	/lodes 1 &	2 F	Readings a	re require	d at all tim	es.								
Criteria Source	Criteria Source: Technical Requirements Manual TSR 3.3.5.3														
LOCATION: Panel 1-9-14 and ICS Computer Review Initials									v Initials						
# LPRMs BYPASSED (Note 1)					Total #	# LPRMs									
DAY	TIME	APRM #2	LPRM #2	APRM #4	LPRM #4	APRM #3	LPRM #3	APRM #1	LPRM #1	LPRMs Bypassed (Note 2)	reading ≤ 3% on ICS (Note 3)	MAX DEV (AC) (Note 4)	All Data SAT/UNSAT	UO	Unit Supvr
Friday	0800	0	0	2	0	3	1	2	0	8	8		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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 48 of 174

Attachment 2 (Page 29 of 98)

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

TABLE 1.26	CHARCOAL BE	D BYPASS VALVE	POSITION		DAY SHIFT WEEK: to				
APPLICABILITY:	Mode 1 when > 2	25% RTP Reading	s are required at all ti	mes.					
Criteria Source:	ODCM, Section	1/2.2.2, Surveilland	ce 2.2.2.4.1						
LOCATION:	Panel 1-9-53					Review Initials			
	1-FCV-6	66-117	1-FCV-66	6-113B	1-FCV-6	6-118			
-	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday	OPEN		CLOSED		OPEN		SAT	DH	
Saturday		]		1					
Sunday		Valve is		Valve is		Valve is			
Monday		required to be OPEN		required to be CLOSED		required to be OPEN		~	
Tuesday		(Note 1)		(Note 1)		(Note 1)			
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 49 of 174	

Attachment 2 (Page 30 of 98)

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

TABLE 1.27	SPENT FUEL POOL WATER LEVEL	DAY SHIFT WEEK:	to					
APPLICABILITY:	During movement of Irradiated Fuel Assemblies	s in the Spent Fuel Pool Readings are required at a	III times.					
Surveillance Requi	rements: 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		SAT	DH				
Saturday								
Sunday		The spent fuel storage pool water level shall be						
Monday		$\geq$ 21.5 ft over the top of irradiated fuel assemblies						
Tuesday		sealed in the spent rule storage poor racks.						
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 50 of 174	

Attachment 2 (Page 31 of 98)

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

TABLE 1.28	SPENT FUEL POOL TEMPERATURE	DAY SHIFT WEE	EK:to	٥					
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	anel 1-9-21							
	1-TRS-74-80 Point 21 (TE-78-8) Note 1, 4	LIM (A	IITS C)	UO	Unit Supvr				
Friday	96.4			DH					
Saturday									
Sunday		Spent Fuel Por	ol Temperature						
Monday		≥ 72°F AN	$ID \le 125^{\circ}F$	-					
Tuesday		(ทั่งเอะ	5 2, 3)						
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 temporary temporature monitoring device can be used to determine Spent Fuel Pool Temperature when 1-TRS-74-80-Point 21 becomes unavailable.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 51 of 174	

# Attachment 2 (Page 32 of 98)

TABLE 1.29	M	AIN STEAM LINE FLO	WS			DAY	SHIFT	WEEK:		t	o	
APPLICABILI	ΓY:	Modes 1, 2 &	3 Rea	dings are required at a	II times.		Surveillance	e Requirements: 3.3.	6.1.1 (f1c)			
LOCATION:		1-PNLA-009-00	086	1-PNLA-009-0	085	1-PNLA-009-0	084	1-PNLA-009-0	083		Revie	w Initials
	STEAM		VALUE		VALUE		VALUE		VALUE	MAX		UNIT
DAY	LINE	INSTRUMENT	(psid)	INSTRUMENT	(psid)	INSTRUMENT	(psid)	INSTRUMENT	(psid)	DEV	UO	SUPVR
	A	1-PDIS-001-0013D	0	1-PDIS-001-0013C	0	1-PDIS-001-0013B	0	1-PDIS-001-0013A	0		DH	
Friday	В	1-PDIS-001-0025D	0	1-PDIS-001-0025C	· 0	1-PDIS-001-0025B	0	1-PDIS-001-0025A	0		DH	
Thuay	С	1-PDIS-001-0036D	0	1-PDIS-001-0036C	0	1-PDIS-001-0036B	0	1-PDIS-001-0036A	0		DH	
	D	1-PDIS-001-0050D	0	1-PDIS-001-0050C	0	1-PDIS-001-0050B	0	1-PDIS-001-0050A	0		DH	
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Saturday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				T
	С	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				
Currdau	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				1
	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
Sunday	С	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				1
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Monday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A		Notes		
monuay	С	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A		1&2		1
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				T
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				T
Tuesday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				T
Tuesuay	С	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				1
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Wedneedey	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B	1	1-PDIS-001-0025A				
weanesday	С	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				1
	А	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Thursday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
muisuay	С	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A				1
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
				NC	DTES ARE	ON THE FOLLOWING	PAGE!					

BFN Unit 1	Instrument Checks and Observations	1-SR-2 Rev. 0007 Page 52 of 174					
		Tage JZ OF Tr					
Attachment 2							

(Page 33 of 98)

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

DAY SHIFT WEEK: \_\_\_\_\_\_\_ to \_\_\_\_\_\_

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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 53 of 174

Attachment 2 (Page 34 of 98)

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

TABLE 1.30	RE	EACTOR VESSEL STEAM DOME PRESSURE INSTRUMENTATION			DAY SHI	FT V	WEEK:		to				
APPLICABILI	APPLICABILITY: Modes 1 & 2 Readings are required at all times.												
Surveillance R	Requirements	3.3	.1.1.1(f3), 3	3.3.3.1.1, 3.	4.10.1								
LOCATI	ION:	ICS (Not	tes 1 & 4)		1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083				Revie	w Initials
				MAX	D	с	В	A	MAX				
Reference Leg	(Note 4)	3-74A	3-74B	(AC)	1-PIS-003-0022D	1-PIS-003-0022C	1-PIS-003-0022BB	1-PIS-003-0022AA	(AC)	LIMIT	SAT/UNSAT	UO	Unit Supvr
Friday	0800	779	780		940	940	940	930			SAT	DH	
Saturday	0800			]									
Sunday	0800												
Monday	0800			40 psig (Note 2)					60 psig (Note 2)	Note 3			
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 54 of 174

Attachment 2 (Page 35 of 98)

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

TABLE 1.31	REACTOR WA	ATER LEVEL INSTR	RUMENTATION -W	IDE RANGE	DAY SHIFT	WEEK:	t	0 0	
Part 1 - APPLIC	ABILITY: Mod	es 1, 2 & 3 Readi	ngs are required at	all times.					
Surveillance Re	quirements: 3.3.6	6.1.1(f1a)							
LOCATION:	1-PNLA-009-	0083 1-PI	NLA-009-0084	1-PNLA-009-0	0085 1-P	NLA-009-0086	MAX DEV	Revie	ew Initials
Ref. Leg	A		В	С		D	Note 4		
	1-LIS-003-0056	SA (in.) 1-LIS	-003-0056B (in.)	1-LIS-003-0056	C (in.) 1-LIS	-003-0056D (in.)	(AC)	UO	Unit Supvr
Friday	33		31	30		33		DH	1
Saturday							]		
Sunday							1		
Monday							1		
Tuesday							1		
Wednesday							1		
Thursday							1		
							]		
Part 2 - APPLIC	ABILITY: Mod	es 1, 2 & 3 Readi	ngs are required at	all times.			7.5 inch		
Surveillance Re	quirements: 3.3.4	.2.1, 3.3.5.1.1(f1a,2	2a,3a, 4a,5a), 3.3.5	.2.1(f1)			Deviation		
LOCATION:	1-PNLA-	009-0081	1-PNLA-	009-0082	1-9-5 (	(Note 3)	Between All		
Ref. Leg	A	В	C	D	A	D	Instruments		
	1-LIS-003-0058A	1-LIS-003-0058B	1-LIS-003-0058C	1-LIS-003-0058D	1-LI-3-58A (in.)	1-LI-3-58B (in.)	]		
	(in.)	(in.)	(in.)	(in.)			4	00	Unit Supvr
Friday	31	34	32	36	35	35	4	DH	
Saturday							4		
Sunday							4		
Monday							4		
Tuesday							1		
Wednesday	a a presa a ser a su con a construction de construction de construction de construction de construction de cons						4		
Thursday									

Refer To Attachment 4 during off-normal operating conditions.

(1) (2) (3) (4) Refer To Attachment 4 during oit-normal operating condutors. ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination. 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." 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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 55 of 174	

# Attachment 2 (Page 36 of 98)

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

TABLE 1.32	REACTOR W	ATER LEVEL INSTR SATED)	UMENTATION - NA	ARROW RANGE	DAY SH	IFT WEEK:		to		
Part 1 - APPLIC	ABILITY: Mo	odes 1, 2 & 3 Rea	adings are required	at all times.		Mode 3 Readings	are required at al	l times.		
Surveillance Re	quirements: 3.3	3.1.1.1(f4), 3.3.6.1.1(f	2a,5h), 3.3.6.2.1(f1)	), 3.3.7.1.1(f1)		3.3.6.1.1(f6b)				
LOCATION:	1-PNLA-009-0	083 1-PN	LA-009-0084	1-PNLA-009-0	085 1-P	NLA-009-0086			Reviev	w Initials
Reference Leg		Leg A/B Instruments			Leg C/D Instruments	6	MAX DEV			
	A		В	С		D	(AC)	All Data		
The constraint for some reaction of the second	1-LIS-003-0203/	A (in.) 1-LIS-0	003-0203B (in.)	1-LIS-003-0203	C (in.) 1-LIS	-003-0203D (in.)	Note 3	SAT/UNSAT	UO	Unit Supvr
Friday	32		32	32		32		SAT	DH	
Saturday							]			
Sunday						•	5.0 inch			
Monday							Deviation			
Tuesday							Between All			
Wednesday							Instruments			
Thursday										
Part 2 - APPLIC	ABILITY: Mo Re quirements: 1-L 1-L	ode 1 and Modes 2 & adings are required a .IS-003-0208A-D = 3 .IS-003-0184 & 185 =	3 when Reactor ste at all times. .3.2.2.1, 3.3.5.1.1(f3 = 3.3.5.1.1(f4d,5d)	eam dome pressure 3c), 3.3.5.2.1(f2)	> 150 psig		3.5 inch Deviation Between All Instruments			
LOCATION:		1-PNLA-009-0081			1-PNLA-009-0082		on the A/B			
Reference Leg		Leg A/B Instruments			Leg C/D Instruments	S	Leg			
	A	В	В	C	С	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.)	2.5 inch	All Data SAT/UNSAT	UO	Unit Supvr
Friday	31	30	29	35	34	33	Deviation	SAT	DH	-
Saturday				NUMBER OF THE OWNER	Construction of the second of the second		Between All		and the second se	1 million and a million and
Sunday						a na kale da da kana da da kana da kan	Instruments			1
Monday							on the C/D		and the second	
Tuesday							Leg	And a second s		
Wednesday							]			
Thursday							]			

Refer To Attachment 4 during off-normal operating conditions. ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination. 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.

(1) (2) (3)

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 56 of 174

Attachment 2 (Page 37 of 98)

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

TABLE 1.33	REACTOR WAT RANGE	FER LEVEL INSTRUME	NTATION - POST AC	CIDENT DAY S	HIFT WEEK:	to	)	
APPLICABILIT	Y: Modes	s 1, 2 & 3 Readir	ngs are required at all	times.				
Surveillance R	equirements: 3.3.5.1	1.1(f2e)						
LOCATION:	1-PNLA-009-0082	1-PNLA-009-0081		1-9-3 (Notes 3, 4)			Revie	w Initials
Reference	С	В	В	С	С	MAX DEV		
Leg	1-LIS-003-0062A (in.)	1-LIS-003-0052 (in.)	1-Ll-3-52 (in.)	1-LI-3-62A (in.)	1-LR-3-62 (in.)	(AC) Note 5	UO	Unit Supvr
Friday	>32	>32	>32	>32	>32		DH	
Saturday								
Sunday								
Monday						10.0 inches (When on scale)		
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)

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 57 of 174	

Attachment 2 (Page 38 of 98)

TABLE 1.34         DRYWELL PRESSURE INSTRUMENTATION		DAY SHIFT WEEK: _	to	0				
APPLICABILIT	APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.							
Surveillance R	equirements: 3.3.6.2.2							
LOCATION:	1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083		Revie	w 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								

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 58 of 174

Attachment 2 (Page 39 of 98)

CORE SPRAY SPARGER DIFFERENTIAL PRESSURE		DAY SHIFT WEEK:	to		
Modes 1, 2, & 3 Readings are require	d at all times.				
Technical Requirements Manual TSR	3.3.3.3.1				
1-LPNL-925-0057	· · · · · · · · · · · · · · · · · · ·			Revie	w 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
3.3	3.4	For each OPERABLE subsystem:	SAT	DH	
		DP > 2.0 psid when > 2% RTP			
		OR			
		DP within ± 0.2 psid of Chart Value when ≲ 2% RTP			
e core spray sparger to reactor pressure ach core spray subsystem. Each instru- respective core spray loop and the reac lequirements Manual requires the instru- tor operation at greater than 2% rated the each OPERABLE subsystem shall be tor operation at greater than 2% rated the -0056 should read between 3.0 to 6.0 p or equal to 2% rated thermal reactor pc rithin ± 0.2 psid of the reading on chart the eclosest to the actual temperature of the sis 175°-200°, use 200°). Since no indea ariable exist, the instrument check will co exhibits an expected reading for the give	e differential pressure indicating ment indicates the pressure ctor vessel pressure. The ments to alarm at $2.0 \pm 0.4$ psid. hermal power, indicated differential greater than 2.0 psid. During hermal power, with core spray in between 3.0 to 4.0 psid and sid. When the Reactor is operating ower, the instrument readings below, based on Reactor water p reading, use the chart e reactor water (i.e. if reactor water ependent instruments measuring consist of observing that the en plant conditions.	B00 500 400 400 400 500 400 500 400 500 400 500 400 500 400 500 400 500 400 500 5			
	Modes 1, 2, & 3 Readings are require         Technical Requirements Manual TSR         1-LPNL-925-0057         1-PDIS-075-0028 (psid) Note 1         3.3         action         ac	Modes 1, 2, & 3 Readings are required at all times.         Technical Requirements Manual TSR 3.3.3.1         1-LPNL-925-0057         1-PDIS-075-0028       1-PDIS-075-0056         (psid)       (psid)         Note 1       Note 1         3.3       3.4	Concernments       Manual TSR 3.3.3.1         1-LPNL-925-0057         1-PDIS-075-0028       1-PDIS-075-0056         (psid)       (psid)         Note 1       Note 1         3.3       3.4         For each OPERABLE subsystem:         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         0E         0CR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         0CR         0DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         0CR         0DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         0CR         0DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         0CR         0DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         0CR         0DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         0DF within ± 0.2 psid of Chart Value when ≤ 2% RTP         0DF within ± 0.2 psid of Chart Value when ≤ 2% RTP         0 or equal to 2% rated thermal power, indicated differential reactor value respective cores pray subsystem shall be greater than 2.0 psid. During tor operation at greater than 2% rated thermal power, with core spray in dicated between 3.0 to 0.0 psid and -0056 should read between 3.0 to 0.0 psid and -0056 should read between 3.0 to 0.0 psid. When the Reactor water is in 175-200°, use 200°). Since no independent instruments measuring ariable exist, the instrument check will consist of observing that the exhibits an expected	Modes 1, 2, & 3 Readings are required at all times.         Technical Requirements Manual TSR 3.3.3.1         1-LPNL-925-0057            1PDIS-075-0028         (psid)         Note 1         Note 1         Note 1         Note 1         SAT/UNSAT          3.3       3.4         For each OPERABLE subsystem:       SAT         DP > 2.0 psid when > 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         OR         DP within ± 0.2 psid of Chart Value when ≤ 2% RTP         Core spray sparger to reactor pressure differential pressure indicating ach core spray should read between 3.0 to 4.0 psid. During tor operation at greater than 2% rated thermal power, with core spray in respective core spray ion at the reactor water (i.e. if reactor water is in 75%-000°, use 200°). Since no independent instrument measuring arable exist, the instrument check will consist of observing that the exhibits an expected reading or the given plant conditions. </td <td>Concernment       Concernment       Concernment</td>	Concernment       Concernment

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 59 of 174	

Attachment 2 (Page 40 of 98)

TABLE 1.37	NITROGEN MAKEUP REQUIREMENTS     DAY SHIFT     WEEK:tototo						
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 ar	nd Leakage 1-SI	-4.7.A.2.a		Review	v Initials	
				Performed	UO	Unit Supvr	
Friday				DH	DH		
Saturday							
Sunday	When Containment is Inerted, Verify the SL is in progress for associated day and initial pe	rformed column					
Monday	(N/A the "PERFORMED" column when SI performance is	(N/A the "PERFORMED" column when SI performance is not required.)					
Tuesday							
Wednesday							
Thursday							

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 60 of 174	

#### Attachment 2 (Page 41 of 98)

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

		DAY SH	IIFT WEEK:to	I	
TABLE 1.38	ROD PATTERN CONTROL 1-SR-3.1.6.1	TABLE 1.39         JET PUMP MISMATO	CH 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.		
Surveillance Requirements:	3.1.6.1	3.4.1.1	3.4.2.1		Initials
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 Supv	
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 <u>BOTH</u> 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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 61 of 174

## Attachment 2 (Page 42 of 98)

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

TABLE 1.40 PRIM	ARY CONTAINMENT O <sub>2</sub> CONCENTRATION D			Y SHIFT	WEEK:	to		
APPLICABILITY:	Mode 1 (FROM 24 hou prior to the next schedu Readings are required a	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	Panel 1-9-55 Review Initials						w Initials
	IN SERVICE	1-XR-76-110 (%) Notes 1, 2, 3			LIMITS			
	Time Note 1	Note 2	Drywell	Suppr Ch	namber	(AC) Note 4	UO	Unit Supvr
Monday		Time readings taken				$\leq 3.5\% \text{ O}_2$		
		Reading				(Note 4)		

(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 %.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 62 of 174

Attachment 2 (Page 43 of 98)

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

TABLE 1.42	CONTROL ROOM AIR SUPPLY RADIATION MONITORS			DAY SH	HIFT WEEK:		to	)		
APPLICABILITY:	Any Unit in M	my 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								Revie	w Initials
	RM-90-259A         RM-90-259B           (cpm) Note 2         (cpm) Note 2		59A ote 2		RM-90-259B (cpm) Note 2		MAX (AC)	MAX DEV		
	Beta	Gamma	Beta + Gamma	Beta	Gamma	Beta + Gamma		(AC)	UO	Unit Supvr
Friday	60.0	37.0	138.0	32.1	31.1	97.0			DH	
Saturday										
Sunday							]			
Monday							250 cpm (Note 3)	250 cpm 100 cpm (Note 3) (Note 3)		
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).

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 63 of 174	

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#### Attachment 2 (Page 44 of 98)

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

TABLE 1.43	CONTROL ROOM EMERGENCY VENTILATION TIME IN SERVICE DAY SHIFT WEEK:									
	RECORD		and and a second s							
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				LOW BOLL WILLING					
LOCATION:	N/A	N/A Review Initials								
	COL A	COL B	COL C.1							
	CREV Time in Service during	Previous Shift Running Total of	RUNNING TOTAL of CREV							
	shift (hours) Note 1	CREV Time in Service (hours)	Time in Service	LIMITS						
		Note 2	COL A + COL B (hours) Note 3	Note 4	00	Unit Supvr				
CREV A						-				
Friday	0	448.06	448.06		DH	SF				
Saturday										
Sunday										
Monday				650 Total Inservice hours						
Tuesday										
Wednesday										
Thursday										
CREV B										
Friday	0	86.66	86.66		DH	SF				
Saturday										
Sunday										
Monday				650 Total Inservice hours						
Tuesday										
Wednesday				1						
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 64 of 174

# Attachment 2 (Page 45 of 98)

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

TABLE 1.44	STANDBY GAS TREATMENT SYST	EM (SBGT) TIME IN SERVICE RECO	RD DAY SHIFT WEEK:	to		
APPLICABILITY:	ANY UNIT IN MODES 1 OR 2 OR D	uring Operations with a Potential for Dr	aining the Reactor Vessel (OPDRVs)			
Criteria Source:	3.6.4.3.2, 5.5.7					
LOCATION:	N/A				Reviev	v Initials
	COL A	COL B	COL C.1			1
	SBGT Time in Service during	Previous Shift Running Total of	RUNNING TOTAL of SBGT			
	shift (hours) Note 1	SBGT Time in Service (hours)	Time in Service	LIMITS		
SBGT A		Note 2	COL A + COL B (hours)Note 3	Note 4	00	Unit Supvr
Friday	3.55	419.46	423.01		DH	SF
Saturday						
Sunday				]		
Monday				650 Total Inservice hours		
Tuesday						
Wednesday						
Thursday	· · · · · ·					
SBGT B						And the second second
Friday	0	396.07	396.07		DH	SF
Saturday				1		
Sunday				1		
Monday				650 Total Inservice hours		
Tuesday				1		
Wednesday				1		
Thursday						
SBGT C						
Friday	0	492.15	492.15		DH	SF
Saturday				1		
Sunday						
Monday				650 Total Inservice hours		<b></b>
Tuesday						<b>İ</b>
Wednesday			n a fe se anti-en e de des las las de las delse entres transmissiones de la companya particular provincia de s			
Thursday						
and a second			A STATE OF A DESCRIPTION OF A DESCRIPTIO			

NOTES ARE ON NEXT PAGE DAY SHIFT

SHIFT WEEK: \_

to

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 65 of 174	

#### Attachment 2 (Page 46 of 98)

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

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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 66 of 174	

Attachment 2 (Page 47 of 98)

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

TABLE 1.45	RESERVO	IR WATER LEVEL	1	DAY SHIFT WEEK:	to	o o	
APPLICABILITY:	ANY UNIT	IN MODES 1, 2, OR 3					
Criteria Source:	TSR 3.3.6.	3, FSAR 5.3.3.5					
LOCATION:	ICS COMP	UTER				Revie	w Initials
	Time	NOTES 1 AND 3	MIN / MAX (AC)	12 HOUR DIFFERENCE	Maximum Difference	UO	Unit Supvr
Friday	0800	555.08		.25		DH	
	1400	555.02		.09		DH	
Saturday	0800				]		
	1400						
Sunday	0800						
	1400						
Monday	0800		$\geq$ 550 Ft. AND $\leq$ 558 Ft.		± 0.75 Ft (9 INCHES)		
	1400		(Notes $2, 3, \& 4$ )		(Note 5)		
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-AQI-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 <u>0-AOI-100-3</u> 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, <u>VERIFY</u> RCW is in service on all three units in accordance with OI-24. If the reservoir level cannot be restored to ≥550 ft within <u>12 hours</u>, 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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 67 of 174

Attachment 2 (Page 48 of 98)

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

TABLE 1.46	RESERVO	DIR WATER TEMP DOWNST	REAM AVE	RAGE D	AY SHIFT	WEEK:	to	)	
APPLICABILITY:	At All Time	es							
Criteria Source:	NPDES, D	OSN101, Area Plan 0800							
LOCATION:	ICS Compu	iter, OR TSC Computer						Revie	w Initials
	Time	Hourly Downstream Average	МАХ	24-Hour Downstream Average	MAX	24-Hour River Temperature Rise	MAX	UO	Unit Supvr
Friday	0800	87.3		86.9		4.2		DH	
	1400	87.0		87.0		4.1		DH	
Saturday	0800				1				
	1400								
Sunday	0800				]				
	1400								
Monday	0800		Note 1		90°F		10°F		
	1400								
Tuesday	0800								
	1400								
Wednesday	0800								
	1400								
Thursday	0800				]				
	1400								

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 (1) exceeded before the next shift reading.

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

(2) (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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 68 of 174	

Attachment 2 (Page 49 of 98)

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

TABLE 1.47	LIQUID NITROGEN TAN	K (CAD)	D	AY SHIFT WEEK:	te	0	
APPLICABILITY:	When Any Unit is in MOD	ES 1 or 2					
Criteria Source:	3.6.3.1, FSAR 5.2						
LOCATION:	Panel 1-9-54 and Panel 1-9-8	55				Reviev	w 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		υo	Unit Supvr
Friday	100	114	100	113		DH	
Saturday					Level ≥ 75 Percent		
Sunday					Pressure ≥ 100 psig		
Monday							
Tuesday		•					
Wednesday							
Thursday							

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

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 69 of 174

Attachment 2 (Page 50 of 98)

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

TABLE 1.48	METEOROLOGICA	AL INSTRUMENTATIO	N	DAY SHIF	T WEEK:	to	<u></u> د		
APPLICABILITY:	AT ALL TIMES (Note 2)								
Criteria Source:	TSR 3.3.7.1								
LOCATION:	ICS Computer (Not	ICS Computer (Note 1)							
		WIND DIRECTION			WIND SPEED			T	
	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	<b>TEMPERATURE</b>						No. of Concession, Name	
and a provide a second s	10VS46	10VS91	1						
Friday	-7.25	-10.33	1				DH		
Saturday								1	
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

		BFN Unit 1	Instru	ument C	hecks and O Attachm (Page 51	bservations nent 2 of 98)	1-  Re  Pa	SR-2 ev. 0007 age 70 of 17	74			
			Surveilla	ance Pro	cedure Data	Package - M	ode	es 1, 2, & 3				
TABLE 2.1	CORE	THERMAL POWE	ER AND CORE PO	OWER DIS	TRIBUTION	NIGHT SHIFT	Г	WE	EK:		to	
APPLICABILITY	C: Mode Record	1 when $\ge 25\%$ RTI the readings as s	P soon as possible a	fter the ger	erator breaker ha	s been closed.						
LOCATION:	3.2.1.1	; 3.2.2.1; 3.2.3.1; 1	DEFINITIONS SE	CTION I.I	- FSAR 3.7.7					Deview	Initiala	4
LOOATION.	TIME	Core Thermal	Percent Power		MELCPR	MAPRAT	ГТ	MELPD	LIMIT		Init	
DAY	Note 2	Power (MWt)	(% RTP)	(AC)	Note 3	Note 3		Note 3	(AC)	Operator	Supvr	
	2000		(/01111/	<u>    (,,,,,)</u>	11010 0	11010 0	+	11010 0		oporator	00071	
	2200			1					1			
End allows	0000			1								
Friday	0200			1					1			
	0400			1					1			
	0600			1					-			ĺ
	2000			1								
	2200			1				· · · · · · · · · · · · · · · · · · ·	1			ļ
0 1 1	0000			1					-1			Í
Saturday	0200			1			$\square$		1			1
	0400			1					1			ł
	0600			Notes					Notes			
	2000			1&2			t t		<b>3</b> , 4, &			1
	2200			1 .				·····	1 °			1
Cumday	0000			1					1			
Sunday	0200			1								1
	0400			1					1			1
	0600			1					1			1
	2000			1					1			1
	2200			1					1			1
Manday	0000			1	· · · · · · · · · · · · · · · · · · ·				1			1
wonday	0200			1					1			1
	0400			1					1			1
	0000			1			1 1		-1			1

Deleted: MFDLRX . Note 3
		BFN Unit 1	Instru	ıment C	hecks and O	bservations	1- R P:	SR-2 ev. 0007 age 71 of 17	<b>′</b> 4			
					Attachn (Page 52	nent 2 : of 98)						
			Surveilla	nce Pro	ocedure Data	Package - M	ode	es 1, 2, & 3				
TABLE 2.1	CORE	THERMAL POWE	ER AND CORE PO	OWER DIS	TRIBUTION	NIGHT SHIFT		WE	EK:		to	
APPLICABILITY Criteria Source:	: Mode Record 3.2.1.1	1 when ≥ 25% RTF I the readings as s ; 3.2.2.1; 3.2.3.1; I	oon as possible a	fter the ger CTION 1.1	nerator breaker ha - FSAR 3.7.7	as been closed.						
OCATION:	ICS Co	omputer (Case Sur	nmary - CSUM)							Review	Initials	
DAY	TIME Note 2	Core Thermal Power (MWt)	Percent Power (% RTP)	LIMIT (AC)	MFLCPR Note 3	MAPRAT Note 3	Ţ	MFLPD Note 3	LIMIT (AC)	Unit Operator	Unit Supvr	
Tuesday	2000 2200 0000 0200 0400 0600								-			
Wednesday	2000 2200 0000 0200 0400 0600			Notes 1 & 2					Notes 3, 4, & 5			
Thursday	2000 2200 0000 0200 0400 0600											

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Note 3

NOTES ARE ON THE FOLLOWING PAGE!

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BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 72 of 174	

#### Attachment 2 (Page 53 of 98)

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

NIGHT SHIFT WEEK: \_\_\_\_\_\_to \_\_\_\_\_to

- (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.</p>
- (3) Consult Reactor Engineer when value  $\geq 0.985$ .
- (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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 73 of 174	

# Attachment 2 (Page 54 of 98)

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

TABLE 2.2	DRY	WELL UNIDENT	IFIED LEAKAGE	E ·		NIGHT	SHIFT \	VEEK:		to		
APPLICABILITY:	Mode	es 1, 2 & 3 R	eadings are req	uired at all times								
Surveillance Requir	ements: 3.4.4	.1				LOCA	FION: Panel 1-9	)-4, 1-FR-77-6				
	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		Revi	ew Init
Preferred reading times are 2000, 0000 and 0400	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
Friday												
Saturday										Col. G.1 ≤ 5.0 gpm		
Sunday										≤2 gpm (Note 3)		
Monday												
				NOTE								
					SAKE UN TH		PAGE!					
Tuesday												

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 74 of 174	

## Attachment 2 (Page 55 of 98)

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

TABLE 2.2	DRY	WELL UNIDENT	IFIED LEAKAGI	E		NIGHT	SHIFT	VEEK:		to		
APPLICABILITY:	Mode	es 1, 2 & 3 R	eadings are req	uired at all times	3.							
Surveillance Requir	ements: 3.4.4	.1				LOCA	FION: Panel 1-	9-4, 1-FR-77-6				
	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		Revi	ew Init
Preferred reading times are 2000, 0000 and 0400	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												

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. (1)

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

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

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 75 of 174	

# Attachment 2 (Page 56 of 98)

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

TABLE 2.3	DRY	WELL IDENTIFI	ED LEAKAGE A	ND TOTAL LEA	<age< th=""><th>NIGHT</th><th>SHIFT \</th><th>VEEK:</th><th></th><th> to</th><th></th><th></th></age<>	NIGHT	SHIFT \	VEEK:		to		
APPLICABILITY:	Mode	es 1, 2 & 3 F	Readings are req	uired at all times								
Surveillance Requir	ements: 3.4.4	.1				LOCA	FION: Panel 1-	9-4, 1-FR-77-16				
	Col. A.2	Col. B.2	Col. C.2	Col. D.2	Col. E.2	Col. F.2	Col. G.2	Col. H.2	Col. 1.2		Revi	ew Init
Preferred reading times are 2000, 0000 and 0400	Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Gallons Pumped Col. A.2 - Col. B.2 Note 2	Current Time Note 2	Previous Days Time from Col. D.2 Note 2	Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	UO	Unit Supvr Note 4
Friday												
Saturday												
										Col. I.2 ≤ 30.0 gpm		
Sunday												
Monday												
				NOTE	S ARE ON TH		PAGE					
			<b></b>					1		0.1.10	l	T
Tuesday										Col. I.2 ≤ 30.0 gpm		
, accur,												

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 76 of 174	

## Attachment 2 (Page 57 of 98)

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

TABLE 2.3	DRY	WELL IDENTIFIE	ED LEAKAGE A	ND TOTAL LEA	KAGE	NIGHT	SHIFT	WEEK:		to		
APPLICABILITY:	Mode	es1,2&3 F	Readings are req	uired at all times	6.							
Surveillance Requir	ements: 3.4.4	.1				LOCAT	ION: Panel 1-	9-4, 1-FR-77-16				
	Col. A.2	Col. B.2	Col. C.2	Col. D.2	Col. E.2	Col. F.2	Col. G.2	Col. H.2	Col. I.2		Revi	ew Init
Preferred reading times are 2000, 0000 and 0400	Current Point 4 (1-FQ-77-16) Reading (gals) Notes 1, 2	Previous Days 1-FQ-77-16 Reading from Col. A.2 (gals) Note 2	Gallons Pumped Col. A.2 - Col. B.2 Note 2	Current Time Note 2	Previous Days Time from Col. D.2 Note 2	Elapsed Time Col. D.2 - Col. E.2 (min) Note 2	Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) Note 2	Current Unidentified Leakrate from Col. G.1 (gpm) Notes 2 & 3	Total Leakrate Col. G.2 + Col. H.2 (gpm) Note 2	LIMITS (AC)	UO	Unit Supvr Note 4
Wednesday			· · · · · · · · · · · · · · · · · · ·									
Thursday												

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. (1) Example: Record 0065432.1 as 54321. 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

(2) 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 fan Drywell Unidentified Leakage Col. G.1 on previous page. Unit Supervisor shall independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria. (4)

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 77 of 174	

### Attachment 2 (Page 58 of 98)

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

TABLE 2.4	2 HOUR AVERAGE DRY	WELL UNIDENTIFIED LEAKAGE (5 gpm)	NIGHT SHIFT	WEEK:	to
APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times.			
Surveillance Requirer	ments: 3.4.4.1				

Surveillance IX	equirements.	5.4.4.1										
LOCATION:		Panel 1-9-4, 1-F	R-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		Revie	ew Init
Preferred reading times are 0000	Current Point 3 (1-FQ-77-6) Reading (gals) Notes 1, 2, 4	Previous Shift 1200 HOURS 1-FQ-77-6 Reading from Col. A.3 (gals) Note 2	Gallons Pumped Col. A.3 - Co I. B.3 Note 2	Current Time Note 2	Previous Shift Time from Col. D.3 Note 2	Elapsed Time Col. D.3 - C ol. 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 - C ol. H.3 (gpm) Note 2	LIMITS (AC)	UO	Unit Supvr Note 5
Friday												
Saturday												
Sunday												
Monday										≤ 5.0 gpm		
Tuesday										-		
Wednesday												
Thursday												

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 (1) digits as gallons of flow. Example: Record 0065432.1 as 54321.

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 (2) 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  $\leq$  5 gpm for 12 hours per Tech Specs 3.4.4.1.

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

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

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 78 of 174	

## Attachment 2 (Page 59 of 98)

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

TABLE 2.5	DRY	WELL AIR SAMPLING	SYSTEM INSTRUM	<b>IENTATION</b>	NIGH	T SHIFT	WEEK:		to	
APPLICABILIT	Y:	Modes 1, 2 & 3	Readings are re	quired at all	times.					
Surveillance Re	equirements:	3.4.5.1			LOCATION:	Panel 1-9-2	2, 1-MON-90-50 - (1-RM-90-2	256) Note 4		
		Air	Sample Flow		Drywell Noble Ga	S	Drywell Particulat	e	Reviev	/ Initials
DAY	TIME	(LPM)	MIN (AC)	MAX (AC)	(μci/cc) Note 2 & 3	MAX (AC)	(µсі/сс) Note 2 & 3	MAX (AC)	UO	Unit Supvr
	2000									
Friday	0000									
	0400					]				
	2000					]		]		
Saturday	0000									
	0400									
	2000							]		
Sunday	0000	······				1		1		·
	0400					l		]		
	2000							1		
Monday	0000		45 lpm	60 lpm		Note 1		Note 1		
-	0400							1		
	2000			[		1		[		
Tuesday	0000							1		
	0400					1		1.		
	2000			1				1		
Wednesday	0000					1	· · · ·			
	0400			ļ				1	-	
	2000					Į		4		
Thursday	0000					1		4		I
	0400									

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

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. (2)

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.

(3) (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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
	· · · · · · · · · · · · · · · · · · ·	Page 79 of 174	

## Attachment 2 (Page 60 of 98)

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

TABLE 2.6	HEAT	BALANCE RE	LATED ICS AL	ARM SETPOI	NTS (Note 1)	NIGHT	SHIFT	WEEK:	to		
APPLICABILI	TY: Mode '	Mode 1 when $\geq$ 25% RTP Record the readings as soon as possible after the generator breaker has been closed.									
Criteria Sourc	e: BFPEF	R951914									
LOCATION:	ICS Co	omputer		· ·						Reviev	v Initials
			ICS Points	5			Verify	y HI and HI HI alarm setp	points listed in		
	3-48A (°F)	3-48B (°F)	3-50A (°F)	3-50B (°F)	NSS0017 (°F)	MAX DEV Note 2	Table 2.	B.1 & 2.B.2 are NOT exc SAT / UNSAT / N	ceeded. (Note 3) /A	UO	Unit Supvr
Friday											
Saturday											
Sunday											
Monday						2°F					
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			

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 80 of 174

## Attachment 2 (Page 61 of 98)

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

TABLE 2.7	CONTROL ROD POSITIONS	NIGHT SHIFT WEEK:t	0	
APPLICABILITY:	Modes 1 & 2, Readings are required at all times,			
Surveillance Requ	irements: 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	Revie	<i>w</i> Initials
DAY	All Operable Control Rod Positions (Note 1, 2 & 3) SAT / UNSAT	LIMITS (AC)	UO	Unit Supvr
Friday				
Saturday				
Sunday				
Monday		All Operable Control Rod Positions Verified Satisfactory		
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 81 of 174

Attachment 2 (Page 62 of 98)

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

TABLE 2.8 CONTROL ROD SCRAM ACCUMULATORS		NIGHT SHIFT WEEK:t	0	·					
APPLICABILITY:	Modes 1 & 2 Readings are required at all times.								
Surveillance Requ	Surveillance Requirements: 3.1.5.1								
LOCATION:	Panel 1-9-5 Full Core Display And/Or Local HCU Accur	nulator Pressure Indicators (Reactor Building Elevation 565)	Reviev	/ Initials					
DAY	HCU Scram Accumulator Pressures ≥ 940 psig for All Operable Control Rods (Notes 1 & 2) SAT / UNSAT	LIMITS (AC)	UO	Unit Supvr					
Friday									
Saturday									
Sunday									
Monday		HCU Scram Accumulator Pressure for All Operable Control Rods Satisfactory (≥ 940 psig)							
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 82 of 174

Attachment 2 (Page 63 of 98)

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

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

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 83 of 174

## Attachment 2 (Page 64 of 98)

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

TABLE 2.10	STANDBY LIQUID CONT	ROL TANK VOLUME	NIGH	T SHIFT WEEK:	t	to		
APPLICABILITY:	Modes 1, 2, & 3	Readings are required a	at all times.					
Surveillance Require	ements: 3.1.7.1							
LOCATION:	Panel 1-9-5	1-LPNL-925-0019	Local (Top of Tank)			Revie	Review Initials	
	1-LI-63-1A (% Notes 1, 2	%) 1-LI-063-0001B (%) Notes 1, 2	Dipstick (inches) Note 1, 2	(AC) Notes 2, 3, 4	All Data is SAT/UNSAT	UO	Unit Supvr	
Friday			· · ·					
Saturday								
Sunday				≥ 82.5 percent				
Monday				≥ 82.5 percent OR ≥ 109.4 inches				
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  $\ge$  4000 gallons.

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

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 84 of 174

### Attachment 2 (Page 65 of 98)

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

TABLE 2.11	IRM INS	TRUMENTA	ATION				NIG	HT SHIFT	. WEEK: to			
APPLICABILITY:		Mode 2	Reading	s are requir	ed at all times	S.						
Surveillance Requirements: 3.3.1.1.1 (f1.a)							Technical	Requiremen	its Manual TSRs: 3	.3.5.4(f2.b) & 3.3.4.	1 (f2.a, 2.b)	
LOCATION:	Panel 1-9-5										Review	w Initials
			(1	IRM R ENTER 1 TH No	ANGE HROUGH 10 te 1	)			MAX DEV	All Data SAT/UNSAT		
	А	С	E	G	В	D	F	н	(AC)	Note 2	UO	Unit Supvr
Friday												
Saturday												
Sunday									2 Ranges with			
Monday									conditions of			
Tuesday									Note i satisfied			
Wednesday												
Thursday						-						

(1) Maintain IRM's onscale (i.e.,  $25 \le$  IRM value  $\le 75$ ) 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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 85 of 174

### Attachment 2 (Page 66 of 98)

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

TABLE 2.12	SR	M INSTR	UMENTA	ΓΙΟΝ		•		NIGHT S	HIFT	WEEK:		to							
APPLICABILIT	TY:	Mo	de 2 with	IRM's on	range 2 or	below, Mode 3	Readings a	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										TS	R's 3.3.	4.1 & 3.3.5.3							
LOCATION:		Pa	nel 1-9-5,	1-XR-92-7	7/45								Review	v Initials					
		SRM Count Rate (cps) Note 1			LIMITS (AC)	MAX (AC) Note 2	SRM S	ystem Si 1-SR∙ AT / INO	gnal to Noi -3.3.1.2.4 P (Note 3 &	se Ratio 4)	All Data SAT/UNSAT								
	TIME	A	С	В	D			A	C	В	D	(Note 5)	UO	Unit Supvr					
Friday	2000					OPERABLE	OPERABLE												
Saturday	2000							OPERABLE											
Sunday	2000					SRMs count	SRMs count												
Monday	2000					rate must be	rate must be												
Tuesday	2000					≥ 3 cps	< 1 E6 cps												
Wednesday	2000					]													
Thursday	2000																		

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, (1) the operable detectors shall have their Surveillances performed including channel checks.

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 (2) spikes shall be investigated.

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

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 (4) exceeded.) • SAT

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 A. MODE 1 satisfactory performance of 1-SR-3.3.1.2.4

В. MODE 2 Every 24 Hours after IRM's are on range 2 or below.

MODE 3 Every 24 hours C.

.

An SRM fails its Signal to Noise Ratio section of 1-SR-3.3.1.2.4. INOP

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

BFN Unit 1	Instrument Checks and Observations	1-SR-2 Rev. 0007 Page 86 of 174
---------------	------------------------------------	---------------------------------------

Attachment 2 (Page 67 of 98)

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

TABLE 2.13	REACTOR COOLANT CONDUCTIVITY	NIGHT SHIFT WEEK:t	o	
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		Reviev	v Initials
	1-CE-43-11 (Point 1) (μmho) Note 1	MAX (AC)	UO	Unit Supvr
Friday	·			
Saturday				
Sunday				
Monday		1.0 μmho		
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 87 of 174

Attachment 2 (Page 68 of 98)

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

TABLE 2.14	SUPPRESSION POOL WATER	RLEVEL	NIGHT SHIFT	WEEK:t	0	
APPLICABILITY:	Modes 1, 2 & 3	Readings are required at all times	3.			
Surveillance Require	ements: 3.6.2.2.1					
LOCATION:	Panel 1-9-3				Reviev	v Initials
	1-LI-64-54A (inches) Note 1	1-LI-€ (incl Not	64-66 nes) e 1	LIMITS (AC)	UO	Unit Supvr
Friday						
Saturday						
Sunday						
Monday				≥-5.5 inches and ≤ -2.0 inches (Note 2)		
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 <u>AND</u> ≥ -7.25" and ≤ -1.0" without DW to Torus DP established.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 88 of 174	

Attachment 2 (Page 69 of 98)

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

#### TABLE 2.15 BULK VOLUMETRIC AVERAGE DRYWELL AIR TEMPERATURE **NIGHT SHIFT** WEEK: to 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** ICS Pt (CALC608) (°F) Note 1 1-TI-82 Value (°F) LIMITS TIME Note 1 (AC) UΟ Unit Supvr 2000 Friday 2000 Saturday 2000 Sunday 2000 $\leq 150^{\circ}F$ Monday 2000 Tuesday 2000 Wednesday 2000 Thursday

(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.

BFN Unit 1	Instrument Checks and Observations	1-SR-2 Rev. 0007 Page 89 of 174
		Fage 09 01 174

Attachment 2 (Page 70 of 98)

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

TABLE 2.16	SUPPRESSION	N CHAMBER AIR TEMPERATURE	NIGHT SHIFT WEEK:	_ to	
APPLICABILITY:	Modes 1, 2, & 3	Readings are required at all times.			
Criteria Source:	Technical Requ	irements Manual TSR 3.3.5.1			
LOCATION:	Panel 1-9-3			Revie	w Initials
	TIME	1-XR-64-52 1-TE-64-52B (Ch 1) (Note 1)	MAX (AC)	UO	Unit Supvr
Friday	2000				
Saturday	2000				
Sunday	2000				
Monday	2000		150°F		
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 90 of 174	

## Attachment 2 (Page 71 of 98)

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

to

#### TABLE 2.17 DRYWELL - SUPPRESSION CHAMBER DIFFERENTIAL PRESSURE NIGHT SHIFT WEEK:

APPLICABILITY:	Mode prior t Readi	1 (FROM 24 hours after THERMAL o the next scheduled reactor shutdongs are required at all times.	POWER is > 15% RTP following sown.)	startup, TO 24 hours pri	or to reducing THER	MAL POWER	to < 15% RTP
Surveillance Require	ments: 3.6.2.	6.1	Technical Requir	rements Manual TSRs:	3.3.5.1		•
LOCATION:	Panel	1-9-3				Revie	w 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						
Saturday	2000						
Sunday	2000			> 1.1  psid  8			
Monday	2000			$\leq 1.33 \text{ psid}$	0.10 psid		
Tuesday	2000			(Note 1)			
Wednesday	2000						
Thursday	2000						

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

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 91 of 174

#### Attachment 2 (Page 72 of 98)

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

TABLE 2.18	SUPPRESSION POOL	BULK WATER TEM	PERATURE	NIGHT SHIF	T WEEK:	to		
APPLICABILITY:	Modes 1, 2 &	& 3 Readings a	re required at all time	S.				
Surveillance Requir	ements: 3.6.2.1.1							
LOCATION:			Panel 1-9-3			Panel 1-25-32	Revie	w 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								
Saturday								
Sunday					CR Instruments			
Monday					within 5°F of each other and			
Tuesday					< 95°F			
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.  $\leq$  110°F when all OPERABLE IRM channels are  $\leq$  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 3.3.2, "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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 92 of 174

Attachment 2 (Page 73 of 98)

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

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APPLICABILITY:	Modes 1, 2, & 3	Readings are require	ed at all times.					
Criteria Source:	Technical Requirem	ents Manual TSR 3.3.3.1	.1 & 3.5.4.1		:			
LOCATION:	Panel 1-9-3						Review	v 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				· · ·				
Saturday					-	_		
Sunday					For	For For each OPERABL h OPERABL E subsystem:		
Monday					each OPERABL			
Tuesday					E subsystem: 100 psig	100 psia		
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	<u>35 psig</u>			 Deleted: 48	
RHR Loop II	1-PI-74-65	48 psig		 	 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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 93 of 174	

Attachment 2 (Page 74 of 98)

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

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APPLICABILI	TY:	MODE 3 Reading	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						Review	v Initials
		Recirc No	c Pump te 2	F	RHR Shutdown Cooling Subsystem Note 2 & 3		LIMITS	Alll Data			
	TIME	A I/S	B I/S	A I/S	B I/S	C I/S	D I/S	(AC)	SAT/UNSAT	UO	Unit Supvr
Friday	2000							> One RHR			
Saturday	2000							Shutdown			
Sunday	2000							Subsystem			
Monday	2000							OR			
Tuesday	2000							≥One			
Wednesday	2000							Recirc Pump In			
Thursday	2000							Service			

(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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 94 of 174	

Attachment 2 (Page 75 of 98)

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

TABLE 2.21	REACTOR BUILDING VENTILATION RADIATION I	MONITORING NIGHT SHIFT WEEK:		to		
APPLICABILITY:	Modes 1, 2 & 3 Readings are requ	ired at all times.				
Surveillance Requir	rements: 3.3.6.2.1(f3, 4) and 3.3.7.1.1(f3,4)					
LOCATION:	Panel 1-9-2 - 1-RR-90-144			Revie	w Initials	
	REACTOR ZONE EXHA	UST RADIATION MONITOR	MAX DEV		and a second	
	RE-90-142A (Point 1)	RE-90-143A (Point 2)	(AC)	UO Unit Sup		
Friday		·				
Saturday						
Sunday					1	
Monday			14 mr/hr			
Tuesday						
Wednesday						
Thursday						
	REFUEL ZONE EXHAU	IST RADIATION MONITOR				
	RE-90-140A (Point 3)	RE-90-141A (Point 4)		UO	Unit Supvr	
Friday	·					
Saturday						
Sunday		·	20 mr/hr			
Monday						
Tuesday						
Wednesday						
Thursday						

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 95 of 174	

# Attachment 2 (Page 76 of 98)

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

TABLE 2.22	RHRSW RADIATION MONITORS	NIGHT S	SHIFT	WEEK:	to _		· · · · · · · · · · · · · · · · · · ·
APPLICABILITY:	During RHRSW Loop Operation	Readings are required at all times.					
Criteria Source:	ODCM Section 1/2.1.1, Surveillance	e 2.1.1					
LOCATION:	Panel 1-9-2					Revie	w Initials
		1-RR-90-134					
	RHRSW SYS I HX OUTL (Poir 1-RE-90-133A (cpm)	nt 1) RHRSW SYS I HX OUTL (Point 2) 1-RE-90-134A (cpm)	)	MAX (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday							
Saturday							
Sunday							
Monday				Note 1			
Tuesday							
Wednesday							
Thursday							
TABLE 2.23	RCW RADIATION MONITOR					- <u> </u>	

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

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 96 of 174

### Attachment 2 (Page 77 of 98)

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

TABLE 2.24 APRM/OPRM INSTRUMENTATION					NIGHT	SHIFT V	VEEK:	- Lynnau	tc						
APPLICABILITY: Modes 1 & 2 (Flow Bias Mode 1 only) Rea				dings are re	quired at all	times.									
Surveillance R	equirer	ments:	3.3.1.	1.1 (f2a	a, 2b, 2c, 2e	, 2f)		Te	chnical Req	uirements M	anual TSRs:	3.3.4.1 (f	1a, 1b, 1c,	1d)	
LOCATION:			Pane	1-9-5	or Panel 1-9	-14								Revie	w Initials
APRM Flow Note 2							APRM ( NO	% FLUX) TE 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.

BFN Unit 1	Instrument Checks and Observations	1-SR-2 Rev. 0007
		Page 97 of 174

Attachment 2 (Page 78 of 98)

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

TABLE 2.25	L	PRM INS	RUMENT	ATION						NIGHT SHIF	т	WEEK:		to	
APPLICABILIT	.ITY: Modes 1 & 2 Readings are required at all times.														
Criteria Source	э: Т	echnical F	Requireme	nts Manua	l TSR 3.3.	5.3									
LOCATION:	F	anel 1-9-1	4 and ICS	Compute	r									Review	/ Initials
				# LP	RMs BYPA	ASSED (N	ote 1)			Total #	# LPRMs				
DAY	TIME	APRM #2	LPRM #2	APRM #4	LPRM #4	APRM #3	LPRM #3	APRM #1	LPRM #1	LPRMs Bypassed (Note 2)	reading ≤ 3% on ICS (Note 3)	MAX DEV (AC) (Note 4)	All Data SAT/UNSAT	UO	Unit Supvr
Friday	2000														
Saturday	2000														
Sunday	2000											]			
Monday	2000											0		•	
Tuesday	2000			- e											
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	Ì
		Page 98 of 174	

## Attachment 2 (Page 79 of 98)

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

TABLE 2.26	CHARCOAL BEI	CHARCOAL BED BYPASS VALVE POSITION				/EEK:	to		
APPLICABILITY:	Mode 1 when > 2	25% RTP Re	eadings are required a	at all times.					
Criteria Source:	ODCM, Section 7	1/2.2.2, Surveilland	e 2.2.2.4.1						
LOCATION:	Panel 1-9-53							Review	v Initials
	1-FCV-6	6-117	1-FCV-66	S-113B	1-FCV-6	6-118			
	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)	VALVE POSITION	LIMITS (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday									
Saturday									
Sunday		Valve is		Valve is		Valve is			
Monday		required to be OPEN		required to be CLOSED		required to be OPEN			
Tuesday		(Note 1)		(Note 1)		(Note 1)			
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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 99 of 174

Attachment 2 (Page 80 of 98)

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

TABLE 2.27	SPENT FUEL POOL WATER LEVEL	NIGHT SHIFT WEEK: to			
APPLICABILITY:	During movement of Irradiated Fuel Assemblie Readings are required at all times.	es in the Spent Fuel Pool			
Surveillance Requ	irements: 3.7.6.1				
LOCATION:	Panel 1-9-4 and / or Reactor Building Elevation	n 639 Local Observation		Revie	ew Initials
DAY	Spent Fuel Storage Pool Water Level. (Note 1) SAT / UNSAT	LIMITS (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday					
Saturday					
Sunday		The spent fuel storage peel water level shall be			
Monday		$\geq$ 21.5 ft over the top of irradiated fuel assemblies			
Tuesday		seated in the spent fuel storage pool racks.			
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 100 of 174	

## Attachment 2 (Page 81 of 98)

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

TABLE 2.28	SPENT FUEL POOL TEMPERATURE	NIGHT SHIFT	WEEK:	_ to	
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	•		Revie	w Initials
	1-TRS-74-80 Point 21 (TE-78-8) Note 1, 4		LIMITS (AC)	UO	Unit Supvr
Friday					
Saturday					-
Sunday		Spent Fi	iel Pool Temperature		
Monday		≥ 72	$2^{\circ}$ FAND $\leq 125^{\circ}$ F		
Tuesday			(Notes 2, 5)		
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 temporature monitoring device can be used to determine Spent Fuel Pool Temperature when 1-TRS-74-80-Point 21 becomes unavailable.

BFN	Instrument Checks and Observations	1-SR-2	÷
Unit 1		Rev. 0007	
		Page 101 of 174	

# Attachment 2 (Page 82 of 98)

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

TABLE 2.29	MA	IN STEAM LINE FLOV	VS			NIGHT	SHIFT	WEEK:		to		
APPLICABILIT	Υ:	Modes 1, 2 & 3	Read	ings are required at all	times.		Surveillance	Requirements: 3.3.	6.1.1 (f1c)			
LOCATION:		1-PNLA-009-00	86	1-PNLA-009-00	85	1-PNLA-009-0	084	1-PNLA-009-00	083		Review Init	
	STEAM		VALUE		VALUE		VALUE		VALUE	1		UNIT
DAY	LINE	INSTRUMENT	(psid)	INSTRUMENT	(psid)	INSTRUMENT	(psid)	INSTRUMENT	(psid)	MAX DEV	UO	SUPVR
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Friday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	С	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				
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Saturday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
outarday	С	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				
	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
	С	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				
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Monday	В	1-PDIS-001-0025D		1-PDIS-001-0025C	•	1-PDIS-001-0025B		1-PDIS-001-0025A		Notes 1 & 2		
wonday	С	1-PDIS-001-0036D		1-PDIS-001-0036C		1-PDIS-001-0036B		1-PDIS-001-0036A		(Next Page)		
	D	1-PDIS-001-0050D		1-PDIS-001-0050C		1-PDIS-001-0050B		1-PDIS-001-0050A				
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Tuesday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
Tuesday	С	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				
	A	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A				
Wednesday	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A				
weunesuay	С	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				
	А	1-PDIS-001-0013D		1-PDIS-001-0013C		1-PDIS-001-0013B		1-PDIS-001-0013A		]		
Thursdou	В	1-PDIS-001-0025D		1-PDIS-001-0025C		1-PDIS-001-0025B		1-PDIS-001-0025A		]		
mursuay	С	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!

NIGHT SHIFT

WEEK:

\_\_to \_\_

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 102 of 174	

## Attachment 2 (Page 83 of 98)

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

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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 103 of 174

Attachment 2 (Page 84 of 98)

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

TABLE 2.30 REACTOR VESSEL STEAM DOME PRESSURE INSTRUMENTATION					RUMENTATION	NIGHT SHI	IFT WE	EEK:	٨: to				
APPLICABILI	ΓY:	Мо	des 1 & 2	Read	lings are required a	t all times.							
Surveillance R	equirements	s: 3.3	5.1.1.1(f3), 3	3.3.3.1.1, 3.	4.10.1								
ICS LOCATION: (Notes 1 &		CS s 1 & 4)		1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083				Revie	w Initials	
				МАХ	Ď	c .	В	A	МАХ				
Reference Leg	TIME (Note 4)	3-74A	3-74B	DEV (AC)	1-PIS-003-0022D	1-PIS-003-0022C	1-PIS-003-0022BB	1-PIS-003-0022AA	DEV (AC)	MAX LIMIT	All Data SAT/UNSAT	UO	Unit Supvr
Friday	0800												
Saturday	0800												
Sunday	0800												
Monday	0800			40 psig (Note 2)					60 psig (Note 2)	Note 3			
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 104 of 174	

### Attachment 2 (Page 85 of 98)

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

TABLE 2.31	REACTOR WA	ATER LEVEL INST	RUMENTATION -W	IDE RANGE	NIGHT S	SHIFT	WEEK:	to	)	
Part 1 - APPLIC	ABILITY: Mod	es 1, 2 & 3 Readi	ngs are required at	all times.						
Surveillance Re	quirements: 3.3.6	5.1.1(f1a)					an a	an a		
LOCATION:	1-PNLA-009-	0083 1-P	NLA-009-0084	1-PNLA-009-0	0085	1-Pi	NLA-009-0086	MAX DEV	Revie	w Initials
Ref. Leg	A		В	С			D	(AC)		
	1-LIS-003-0056	6A (in.) 1-LIS	-003-0056B (in.)	1-LIS-003-0056	iC (in.)	1-LIS-	003-0056D (in.)	Note 4	UO	Unit Supvr
Friday			,				1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999 (19			
Saturday							-			
Sunday										
Monday					likis koholaisi isti invursuuringe elkii 2000					
Tuesday										
Wednesday					Manual Martin and an and a state of the local data					
Thursday		·								
Part 2 - APPLIC	ABILITY: Mod	es 1, 2 & 3 Readi	ngs are required at	all times.				7.5 inch		
Surveillance Re	quirements: 3.3.4	l.2.1, 3.3.5.1.1(f1a,2	2a,3a, 4a,5a), 3.3.5	.2.1(f1)				Deviation		
LOCATION:	1-PNLA-	009-0081	1-PNLA-	009-0082	tion of the second s	1-9-5 (	Note 3)	Between All	and the second states	
Ref. Leg	Α	В	С	D	A		D	Instruments		
	1-LIS-003-0058A	1-LIS-003-0058B	1-LIS-003-0058C	1-LIS-003-0058D	1-LI-3-58	A (in.)	1-LI-3-58B (in.)		10	
Friday	(in.)	(in.)	(in.)	(in.)	1.01.01.01.000000000000000000000000000				00	
Friday										
Saturday										
Sunday					A REAL PROPERTY AND A REAL		nan kalan kala		annan an a	
Tuesday					North and a lot of the state of		n fan de ferste ferste ander en sterne ferste fe			
Wedneedey										
Thursday			1		NAMES OF TAXABLE PARTY AND ADDRESS OF TAXABLE PARTY.					
(1) Defer To (	l \ttoobmont 1 during	off normal oncretin								
(1) Refer 10 F (2) ICS and/or	titachment 4 during	oll-normal operation	IG CONDILIONS. SII _1_XX_03_100 _c	orrected for level in	dication to	assist in	operability determi	nation		
(3) Failure of	1-LI-3-58A or 1-LI-3	3-58B to meet MAX	DEV in Modes 1 &	2 also affects LCO 3	3.3.3.1, "PA	M Instru	mentation."			
( )										

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." 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. (4)

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 105 of 174

# Attachment 2 (Page 86 of 98)

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

TABLE 2.32	REACTOR W	/ATER LEVEL INSTF ISATED)	RUMENTATION - N	ARROW RANGE	NIGHT S	HIFT WEEK:		to		
Part 1 - APPLIC	ABILITY: M	odes 1, 2 & 3 Re	adings are required	at all times.		Mode 3 Read	dinas are require	d at all times.	ana ang ang ang ang ang ang ang ang ang	
Surveillance Red	quirements: 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)	V			
LOCATION:	1-PNLA-009-0	083 1-PN	NLA-009-0084	1-PNLA-009-0	085 1-P	NLA-009-0086			Review	v Initials
Reference Leg		LegA/B Instruments			Leg C/D Instruments	;	MAX DEV			
	A		В	С		D	(AC)	All Data		
	1-LIS-003-0203	A (in.) 1-LIS-	003-0203B (in.)	1-LIS-003-0203	C (in.) 1-LIS	-003-0203D (in.)	Note 3	SAT/UNSAT	UO	Unit Supvr
Friday										
Saturday							J			
Sunday							5.0 inch			
Monday							Deviation			
Tuesday							Between All			
Wednesday						and the second	Instruments			
Thursday						an in the second se				1
Part 2 - APPLIC	ABILITY: Me Re quirements: 1- 1-	ode 1 and Modes 2 & eadings are required LIS-003-0208A-D = 3 LIS-003-0184 & 185	3 when Reactor ste at all times. 3.3.2.2.1, 3.3.5.1.1(f = 3.3.5.1.1(f4d,5d)	eam dome pressure > 3c), 3.3.5.2.1(f2)	> 150 psig		3.5 inch Deviation Between All Instruments			
LOCATION:	anna an an bhar an an ann an an an an ann an ann an ann an a	1-PNLA-009-0081	nonneenneennennennennennen heren som anderen		1-PNLA-009-0082	ning a stand and a stand and a stand of a stand of the stan	on the A/B			I
Reference Leg		Leg A/B Instruments			Leg C/D Instruments		Leg			
	A	B	В	С	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	A CONTRACTOR OF THE OWNER OF THE	Company and the second second					3.5 inch	and an and a second		an a
Saturday							Between All			
Sunday	NAME AND A DESCRIPTION OF A						Instruments			Construction of Contrast Supervision
Monday							on the C/D			
Tuesday							Leg			1
Wednesday							]			
Thursday							]			

Refer To Attachment 4 during off-normal operating conditions. ICS and/or IM's may obtain voltage readings per SII -1-XX-03-100, corrected for level indication, to assist in operability determination. 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.

(1) (2) (3)

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 106 of 174

Attachment 2 (Page 87 of 98)

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

#### 

APPLICABILIT	Y: Modes	1,2&3 Readi	ngs are required at all	times.						
Surveillance R	Surveillance Requirements: 3.3.5.1.1(f2e)									
LOCATION:	1-PNLA-009-0082	1-PNLA-009-0081		1-9-3 (Notes 3, 4)			Review Initials			
Reference	С	В	В	С	С					
Leg	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.)	MAX DEV (AC)	UO	Unit Supvr		
Friday										
Saturday										
Sunday						10.0 inches				
Monday						(When on scale)				
Tuesday						INOTE 5				
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.
BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 107 of 174	

Attachment 2 (Page 88 of 98)

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

TABLE 2.34	DRYWELL PRESSU	RE INSTRUMENTATION		NIGHT SHIFT WEEK: _	to	)	
APPLICABILIT	Y: Modes 1, 2	& 3 Readings are require	ed at all times.				
Surveillance R	equirements: 3.3.6.2.2						
LOCATION:	1-PNLA-009-0086	1-PNLA-009-0085	1-PNLA-009-0084	1-PNLA-009-0083		Reviev	v 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							
Saturday							
Sunday							
Monday					0.2 psig		
Tuesday							
Wednesday							
Thursday							

BFN	Instrument Checks and Observations	1-SR-2	ĺ
Unit 1		Rev. 0007	
		Page 108 of 174	

# Attachment 2 (Page 89 of 98)

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

TABLE 2.35	CORE SPRAY SPARGER DIFFERE	INTIAL PRESSURE	NIGHT SHIFT WEEK:	to		
APPLICABILITY:	Modes 1, 2, & 3 Readings are requir	ed at all times.				
Criteria Source:	Technical Requirements Manual TSI	R 3.3.3.3.1				
LOCATION:	1-LPNL-925-0057				Revie	w 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:			
Saturday Sunday			DP > 2.0 psid when > 2% RTP			
Monday			OR			
Tuesday Wednesday Thursday			DP within $\pm$ 0.2 psid of Chart Value when $\leq$ 2% RTP	·		-
<ul> <li>(1) There is one switch for e between its Technical R</li> <li>(2) During reac pressure for normal reac standby rea 1-PDIS-075 at less than should be w temperature temperature temperature temperature the same va instrument of the same</li></ul>	e core spray sparger to reactor pressu ach core spray subsystem. Each instru- respective core spray loop and the reac Requirements Manual requires the instru- tor operation at greater than 2% rated r each OPERABLE subsystem shall be cor operation at greater than 2% rated adiness, 1-PDIS-075-0028 should read 5-0056 should read between 3.0 to 6.0 or equal to 2% rated thermal reactor p within $\pm$ 0.2 psid of the reading on chart e. To determine the correct expected of e closest to the actual temperature of th e is 175°-200°, use 200°). Since no inc ariable exist, the instrument check will d exhibits an expected reading for the qiv	re differential pressure indicating ument indicates the pressure actor vessel pressure. The uments to alarm at $2.0 \pm 0.4$ psid. thermal power, indicated differential greater than 2.0 psid. During thermal power, with core spray in between 3.0 to 4.0 psid and psid. When the Reactor is operating ower, the instrument readings below, based on Reactor water //p reading, use the chart he reactor water (i.e. if reactor water lependent instruments measuring consist of observing that the ren plant conditions.	Gover Sp Core Sp	es es ci ci ray Sparger D/P (paid)	28	3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 109 of 174	
	Attachment 2		

Attachment 2 (Page 90 of 98)

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

TABLE 2.37	NITROGEN MAKEUP REQUIREMENTS NIGHT SHIFT WEEK:to					
APPLICABILITY:	Whenever Containment is Inerted					
Criteria Source:	TSR 3.6.5.1 & FSAR 5.2.3.8 & 5.2.4.7					
	Primary Containment Nitrogen Consumptior	and Leakage 1-SI-	4.7.A.2.a		Review	<i>w</i> Initials
				Performed	UO	Unit Supvr
Friday						
Saturday						
Sunday	When Containment is Inerted,	erformed column				
Monday	(N/A performed column when SI performance is n	not required.)				
Tuesday						
Wednesday						
Thursday						

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 110 of 174

Attachment 2 (Page 91 of 98)

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

TABLE 2.42	CO2 STORAGE TANK		NIGHT SHIFT WEEK:	to	
APPLICABILITY:	AT ALL TIMES (Note 2)				
Criteria Source:	FIRE PROTECTION REPORT	FPP Section 9.4.11.D.1.a			
LOCATION:	LOCAL			Reviev	v Initials
	PRESSURE 1-PI-039-0034	LEVEL 1-LIS-039-0033	MAX (AC)	UO	Unit Supvr
Friday					
Saturday					
Sunday			Pressure greater than 275 psig.		
Monday			Level greater than 50% (3 tons)		
Tuesday			Note 1		
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<sub>2</sub> 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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 111 of 174	

#### Attachment 2 (Page 92 of 98)

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

TABLE 2.43	CONTROL ROOM AIR SUPPLY RADIATION MONITORS NIGHT SHIFT WEEK:				to					
APPLICABILITY:	Any Unit in N	IODES 1, 2 OR	3, OR operations with a	potential for dr	aining the reacto	r vessel (OPDRVs).				
Criteria Source:	3.3.7.1.1	<u></u>								
LOCATION:	Note 1				·····				Review	v Initials
	RM-90-259A         RM-90-259B           (cpm) Note 2         (cpm) Note 2		RM-90-259B (cpm) Note 2		MAX (AC)	MAX DEV				
	Beta	Gamma	Beta + Gamma	Beta	Gamma	Beta + Gamma	]	(AC)	UO	Unit Supvr
Friday										
Saturday							1			
Sunday										
Monday							250 cpm (Note 3)	100 cpm (Note 3)		
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).

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 112 of 174	

#### Attachment 2 (Page 93 of 98)

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

TABLE 2.44	CONTROL ROOM EMERGENC	Y VENTILATION TIME IN SERVIC	E NIGHT SHIFT WEEK:	to		
	RECORD					
APPLICABILITY:	ANY UNIT IN MODES 1 OR 2 O	R During Operations with a Potenti	al for Draining the Reactor Vessel	(OPDRVs)		
Criteria Source:	3.7.3.2, 5.5.7					
LOCATION:	N/A				Reviev	/ Initials
	COL A	COL B	COL C.2			
	CREV Time in Service during shift (hours) Note 1	Previous Shift Running Total of CREV Time in Service (hours) Note 2	RUNNING TOTAL of CREV Time in Service COL A + COL B (hours) Note 3	LIMITS Note 4	UO	Unit Supvr
CREV A						
Friday						
Saturday						
Sunday						
Monday				650 Total Inservice hours		
Tuesday						
Wednesday						
Thursday						
CREV B						
Friday						
Saturday						
Sunday						
Monday				650 Total Inservice hours		
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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 113 of 174	

## Attachment 2 (Page 94 of 98)

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

Criteria Source:	3.6.4.3.2, 5.5.7					
LOCATION:	N/A				Reviev	w Initials
	COL A	COL B	COL C.2			
	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
SBGT A						
Friday						
Saturday						
Sunday						
Monday				650 Total Inservice hours		
Tuesday						
Wednesday						
Thursday						
SBGT B						
Friday						-
Saturday						
Sunday					and an and the second	N NOT THE OWNER DESIGNATION OF THE OWNER OWNER OWNER OWNER
Monday				650 Total Inservice hours		
Tuesday						
Wednesday					CONTRACTOR AND AND AND ADDRESS	The second s
Thursday						
SBGT C						-
Friday						and the second
Saturday						
Sunday					administratives representative and the second statement and the	
Monday		na malana kana kana kana kana kana kana panangan na kana kana kana kana kana kana		650 Total Inservice hours		
Tuesday						
Wednesday		en eksember spielen under gen eine stellen eine sollen eine stelle sollen der seine sollen eine sollen sollen	a ana ana amin'ny faritr'o amin'ny faritr'o ana amin'ny faritr'o ana amin'ny faritr'o ana amin'ny faritr'o amin			
Thursday				L		L

NOTES ON FOLLOWING PAGE

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 114 of 174	1

#### Attachment 2 (Page 95 of 98)

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

NIGHT SHIFT WEEK:

to

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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
		Page 115 of 174

#### Attachment 2 (Page 96 of 98)

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

TABLE 2.46	RESERVOIR	R WATER LEVEL		NIGHT SHIFT WEEK: _	to		
APPLICABILITY:	ANY UNIT II	N MODES 1, 2, OR 3					
Criteria Source:	TSR 3.3.6.3	, FSAR 5.3.3.5					
LOCATION:	ICS COMPL	JTER				Revie	w Initials
	Time	NOTES 1 AND 3	MIN / MAX (AC)	12 HOUR DIFFERENCE	Maximum Difference	UO	Unit Supvr
Friday	2000						
	0200	. •					
Saturday	2000						
	0200						
Sunday	2000						
	0200						
Monday	2000		≥ 550 Ft. AND ≤ 558 Ft.		± 0.75 Ft (9 INCHES)		
	0200		(Notes 2, 3, & 4)		(Note 5)		
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 <u>0-AOI-100-3</u> 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, <u>VERIFY</u> RCW is in service on all three units in accordance with OI-24. If the reservoir level cannot be restored to ≥550 ft within <u>12 hours</u>, 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.

BFN	Instrument Checks and Observations	1-SR-2	
Unit 1		Rev. 0007	
		Page 116 of 174	

#### Attachment 2 (Page 97 of 98)

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

TABLE 2.47	RESERVO	DIR WATER TEMP DOWNST	REAM AVE	RAGE NI	GHT SHIFT	WEEK:	to	o		
APPLICABILITY:	APPLICABILITY: At All Times									
Criteria Source:	NPDES, D	OSN101, Area Plan 0800								
LOCATION:	ICS Compu	iter, OR TSC Computer						Revie	w Initials	
	Time	Hourly Downstream Average	MAX	24-Hour Downstream Average	MAX	24-Hour River Temperature Rise	МАХ	UO	Unit Supvr	
Friday	2000								1	
	0200									
Saturday	2000				]		]			
	0200						]			
Sunday	2000									
	0200						]			
Monday	2000		Note 1		00°E		10°E			
	0200		Note 1		301		101			
Tuesday	2000									
	0200									
Wednesday	2000									
	0200									
Thursday	2000									
	0200				1					

(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.

BFN	Instrument Checks and Observations	1-SR-2
Unit 1		Rev. 0007
	· · · · · ·	Page 117 of 174

Attachment 2 (Page 98 of 98)

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

TABLE 2.48	METEOROLOGICA	OLOGICAL INSTRUMENTATION NIGHT SHIFT WEEK: to						
APPLICABILITY:	AT ALL TIMES (Not	e 2)						
Criteria Source:	TSR 3.3.7.1							
LOCATION:	ICS Computer (Note	e 1)					Revie	w Initials
		WIND DIRECTION			WIND SPEED			
	91M	46M	10M	91M	46M	10M	UO	Unit Supvr
Friday								
Saturday								
Sunday								1
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.

# {PRIVATE }

1

#### {PRIVATE } **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)

TASK NUMBER: U-068-SU-05

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

0606 AJPM 2-2 REV. NO. 0 PAGE 2 OF 25

# {PRIVATE } 2

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

# **REVISION LOG**

Revision Number Effective Date

06/03/07

Pages Affected Description of Revision

0

All

New Procedure

0606 AJPM 2-2 REV. NO. 0 PAGE 3 OF 25

## {PRIVATE }

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:

3

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<u>3.6</u> SRO: <u>3.4</u>

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: <u>30:00</u> LOCAL: \_\_\_\_\_

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

PERFORMANCE TIME: \_\_\_\_ CONTROL ROOM \_\_\_ LOCAL \_\_\_

COMMENTS: THE SR SHOULD BE COMPLETED UP TO STEP 7.1 BEFORE IT IS GIVEN TO THE PERFORMER.

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY UNSATISFACTORY \_\_\_\_

SIGNATURE:

EXAMINER

\_\_\_\_\_DATE: \_\_\_\_\_

# {PRIVATE }

\*\*\*\*\*

# 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-3.4.1, Jet Pump Mismatch and Operability, is in progress and complete up to Step 7.1[1].

**INITIATING CUES:** The Unit Supervisor directs you to continue with 2-SR-3.4.2.1. starting with Step 7.1[1].

0606 AJPM 2-2 REV. NO. 0 PAGE 5 OF 25

# 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 7.1. 7.0 PROCEDURE STEPS

#### 

Performance Step:

Critical\_\_Not Critical\_X

# 7.0 PROCEDURE STEPS

#### 7.1 Initial Conditions

- [1] **PERFORM** the following checks:
  - □ CHECK that all Precautions and Limitations in Section 3.0 have been reviewed.
  - □ **CHECK** that all Prerequisites listed in Section 4.0 are satisfied.
- [2] **OBTAIN** permission from the Unit Supervisor to perform this test.
- [3] [NRC/C] **NOTIFY** the Unit Operator (UO) that this test is commencing. [RPT 82-16, LER 259/8232]

#### Standard:

**REVIEWED** Precautions and Limitation in Section 3.0 and **NOTIFIED** the Unit Operator that this test is commencing.

{PRIVATE } CUE: UNDERSTAND THAT THE JET PUMP OPERABILITY SR 5 IS COMMENCING.

0606 AJPM 2-2 REV. NO. 0 PAGE 6 OF 25

# 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

[4] **RECORD** the date & time started, plant conditions and any pre-test remarks on Attachment 1, Surveillance Procedure Review Form.

.Standard:

**RECORDS** date, time and plant conditions on Attachment 1.

SAT\_UNSAT\_N/A\_ COMMENTS:\_\_\_\_\_

Performance Step:

Critical <u>Not Critical X</u>

#### 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\_\_\_\_\_ CMWT.

#### Standard:

**RECORDS** ICS point CALC002 (From Data Sheet).

SAT\_UNSAT\_N/A\_ COMMENTS:\_\_\_\_\_

0606 AJPM 2-2 REV. NO. 0 PAGE 7 OF 25

*****	******	******	******	******	******	*****	*****	******
Performance	<u>e Step:</u>					Critical_	_ No	ot Critical <u>X</u>
[2]	RECOF point 68 Core Pr	<b>RD</b> the C 8-52 or 2 ress Drop	ore plate -XR-68- p 68-52	e differe 50 (Gre	ntial pro en Pen	essure fror ). (N/A if no _ PSID	n ICS ot av	S ailable).
Standard:								
<b>RECORDS</b> Data Sheet)	Core pla ).	ite differe	ential pre	essure fr	om ICS	point 68-5	2 or :	2 XR-68-50 (From
SAT_UNSA	T_N/A		/ENTS:_					
****	******	*****	*******	******	*****	*****	*****	*****
Performance	e Step:					Critical_	_ Nc	ot Critical <u>X</u>
[3]		RECOR	D the To Total Co 2	otal Cor ore Flov -XR-68-	re flow. v (Red I -50 Mlb/hi	Pen)		
Standard:		L						
RECORDS	Total Co	ore Flow	2-XA-68	8-50 (Fr	om Dat	a Sheet).		
		,		<b>\</b>		···· <b>·</b> /·		

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0606 AJPM 2-2 REV. NO. 0 PAGE 8 OF 25



0606 AJPM 2-2 REV. NO. 0 PAGE 9 OF 25

\*\*\*\*\*\*\*

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
RPM	RPM

\*\*\*\*\*

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

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

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

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

Standard:

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

0606 AJPM 2-2 REV. NO. 0 PAGE 10 OF 25

#### 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 follow	ving Differ	rential Pressure re	adings b	elow:
Loop 2A			Loop 2B		
INSTRUMENT	JET PUMP	PSID	INSTRUMENT	JET PUMP	PSID
2-PDI-68-38	11		2-PDI-68-15	1	-
2-PDI-68-39	12		2-PDI-68-18	2	
2-PDI-68-40	13		2-PDI-68-19	3	
2-PDI-68-42	14		2-PDI-68-21	4	
2-PDI-68-43	15		2-PDI-68-22	5	
2-PDI-68-07	16		2-PDI-68-25	6	
2-PDI-68-08	17		2-PDI-68-26	7	
2-PDI-68-10	18		2-PDI-68-28	8	
2-PDI-68-11	19		2-PDI-68-29	9	
2-PDI-68-13	20		2-PDI-68-30	10	
					1

# Standard:

**RECORDS** Jet Pump Differential Pressure readings (From Data Sheet)

0606 AJPM 2-2 REV. NO. 0 PAGE 11 OF 25

# 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
(÷102.5) X 100 =	

[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

Standard:	Mlb/hr	-	Mlb/I	۱r	=		_Mlb/hr
PERFORMS CAL	CULATION in Steps	; [1]	and [2] (2 Mlb/hr m	isma	atch)	).	

SAT\_UNSAT\_N/A\_ COMMENTS:\_\_\_\_\_

0606 AJPM 2-2 REV. NO. 0 PAGE 12 OF 25

#### 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)
- 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%.

0606 AJPM 2-2 REV. NO. 0 PAGE 13 OF 25

formance	<u>Step:</u>	Critical <u>X</u> Not Critical
7.4	Tech Flov	h Spec 3.4.2.1 - Part A -Recirculation Pump and Jet Pump w 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]:
		<b>CHECK</b> that the plot falls between the two bold lines on Illustration 1 and <b>RECORD</b> 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]:
		Illustration 2 and <b>RECORD</b> below.
		Plot falls between the bold lines Yes  No
	[3]	Using Steps 7.4.1[1] and 7.4.1[2] from above:
		<b>DETERMINE</b> 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 □
ndard.		· · · · · · · · · · · · · · · · · · ·

SAT\_UNSAT\_N/A\_ COMMENTS:\_\_\_\_\_

0606 AJPM 2-2 REV. NO. 0 PAGE 14 OF 25

Performance Step:

#### Critical X Not Critical

#### 7.4.1 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 2E	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 the Illustrations for [1].

SAT\_UNSAT\_N/A\_ COMMENTS:\_\_\_\_\_

0606 AJPM 2-2 REV. NO. 0 PAGE 15 OF 25

****	***************************************
Performance Step:	Critical_X_Not Critical
7.4.3 Re Pr	ecirculation Jet Pump Diffuser to Lower Plenum Differential ressure Verification:
[1]	Using the individual 2A Jet Pump DP's recorded in Step 7.2.3[1]
	<b>CHECK</b> 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 <b>RECORD</b> 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]
•	<b>CHECK</b> 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 <b>RECORD</b> 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]
	<b>DETERMINE</b> 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 D No D
<u>Standard:</u> <b>MARKS</b> Steps the two lines o	[1] <b>YES</b> ,[2] <b>NO</b> , and [3] <b>NO</b> after VERIFING DP is <b>NOT</b> between n the Illustrations for [2].

0606 AJPM 2-2 REV. NO. 0 PAGE 16 OF 25

#### 

#### 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.

0606 AJPM 2-2 REV. NO. 0 PAGE 17 OF 25

Performance Step:

#### Critical\_X\_Not Critical\_\_\_

#### Attachment 2 (Page 1 of 1) Engineering Judgement/Review

Date:

#### \_\_\_\_

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)

CAUTION

[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 I No I

[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 I No I

#### Standard:

MARKS third box on [1], Signs [2], N/A's [3], Signs [4] A. and sends to engineering.

0606 AJPM 2-2 REV. NO. 0 PAGE 18 OF 25

#### 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.			

# CUE: Attachment 2 has come back from Engineering marked NO

Standard:

MARKS Steps 7.4.1[3] and 7.4.2[3] NO, Step 7.4.3[3] NO and ATT 2 NO.

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 [3] (Critical) and NOTIFIES US OF FAILURE (Not Critical)

0606 AJPM 2-2 REV. NO. 0 PAGE 19 OF 25



2A RECIRC PUMP SPEED VS PUMP FLOW TWO LOOP OPERATION









2A RECIRC SPEED VS JET PUMP FLOW TWO LOOP OPERATION

0606 AJPM 2-2 REV. NO. 0 PAGE 20 OF 25

0606 AJPM 2-2 REV. NO. 0 PAGE 21 OF 25



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

0606 AJPM 2-2 REV. NO. 0 PAGE 22 OF 25



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



0606 AJPM 2-2 REV. NO. 0 PAGE 23 OF 25

Performance Step:

Critical\_\_ Not Critical\_X\_\_

**PERFORMER** demonstrated the use of TOUCH STAAR during this JPM. <u>Standard</u>:

**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

0606 AJPM 2-2 REV. NO. 0 PAGE 24 OF 25

# **EVALUATOR's Data Sheet**

{PRIVATE } 6

#### 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 7.1[1].

INITIATING CUES: The Unit Supervisor directs you to continue with 2-SR-3.4.2.1. starting with Step 7.1[1].

Point CALC002		3456 CMWT
2-XR-68-50, CORE PRESSURE DROP		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		43 Mlb/hr
2-FI-68-48, RECIRC LOOP 2B JET PUMP FLOW		45 Mlb/hr
2-XR-68-50, T	OTAL CORE FLOW	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 (out of bounds)
2-PDI-68-25	JET PUMP 6	9.5 PSID
2-PDI-68-26	JET PUMP 7	10.0 PSID (out of bounds)
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

5.13	1		
2 I \	IA.		18
<b>XI V</b>	11 1		222
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7

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 7.1[1].

**INITIATING CUES:** The Unit Supervisor directs you to continue with 2-SR-3.4.2.1. starting with Step 7.1[1].

Point CALC002	3456 CMWT
2-XR-68-50, CORE PRESSURE DROP	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	43 Mlb/hr
2-FI-68-48, RECIRC LOOP 2B JET PUMP FLOW	45 Mlb/hr
2-XR-68-50, TOTAL CORE FLOW	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

0606 AJPM 2-3 REV. NO. 0 PAGE 10F 7

{PRIVATE }

1

#### {PRIVATE } **BROWNS FERRY NUCLEAR PLANT** JOB PERFORMANCE MEASURE

JPM NUMBER: 0606 AJPM 2-3

TITLE: REVIEW A RADIOLOGICAL SURVEY MAP

TASK NUMBER: N/A

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

0606 AJPM 2-3 REV. NO. 0 PAGE 2OF 7

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

# **REVISION LOG**

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

{PRIVATE }

2

0606 AJPM 2-3 REV. NO. 0 PAGE 3OF 7

{PRIVATE } 3	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 TASK STANDARD: REV TASK CAN BE COMPLE	K/A RATING: RO <u>2.9</u> SRO: <u>3.3</u> IEW A RADIOLOGICAL SURBEY MAP TO DETERMINE IF A TED WITHOUT EXCEEDING EXPOSURE LIMITS.		
LOCATION OF PERFOR	MANCE: SIMULATOR PLANT CONTROL ROOM		
REFERENCES/PROCED	URES NEEDED: Handout - Survey Map		
VALIDATION TIME:	CONTROL ROOM:LOCAL:		
MAX. TIME ALLOWED: _	(Completed for Time Critical JPMs only)		
PERFORMANCE TIME:     COMMENTS:			
Additional comment shee	ts attached? YES NO		
RESULTS: SATISFAC	TORY UNSATISFACTORY		
EXAMINER SIGNATURE	EXAMINER		

0606 AJPM 2-3 REV. NO. 0 PAGE 4OF 7

,

## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

{PRIVATE }

#### 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 Hx's and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Hx's will be vented from the south end of the Hx's, and will require <u>15 minutes</u> for the Regenerative Hx's and <u>15 minutes</u> for the Non-Regenerative Hx's. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require <u>10 minutes</u> to close the valve and another <u>10 minutes</u> 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.

0606 AJPM 2-3 REV. NO. 0 PAGE 6 OF7

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

{PRIVATE }

5

#### 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 Hx's and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Hx's will be vented from the south end of the Hx's, and will require <u>15 minutes</u> for the Regenerative Hx's and <u>15 minutes</u> for the Non-Regenerative Hx's. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require <u>10 minutes</u> to close the valve and another <u>10 minutes</u> 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

0606 AJPM 2-3 REV. NO. 0 PAGE 7 OF7

#### ANSWER

Dressout requirements;

1. Shoe covers, one pair 2. No personal outer clothing 3. Coveralls, one pair 4. Face Shield (Critical to get 8 of 11 right) 5. Gloves, rubber, two pair 6. cloth inserts 7. modesty clothing 8. Surgeon's cap 9. Booties, plastic, 2 pair Rain suit 10. Hood 11. 2 Hx's at 15 min each = 30 min 30/60 = .5 hrs  $.5 \ge 250 = 125$  mrem to vent Hx's

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</td>work areas at 30cm dose rate 250 & 100 are both < 500mrem rate alarm</td>Therefore (Yes - within the limits of the RWP)(Critical)

# **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 PLAN	T MAINTENANCE		PSE: N
HP	CONTINUOUS	Authoriz	zation Type: INDIVIDUAL
ALARA Review Number	: 0A-0010	Primary Work I	Doc:
Person-mrem Estimate	: 1904	Person-Hrs Estima	ate: 1082
Dose Alarm	: 200	Dose Rate Ala	rm: 500
DAC-Hrs Tracked	:: N		
Work Area Description	: Unit 3 Areas All Elev	vations	

#### **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

BROWNS FERRY NUCLEAR PLANT

#### **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.

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



Survey printed on: 6/15/2007 at: 08:54

0606 AJPM 2-4a REV. NO. 11 PAGE 1 OF 20

{PRIVATE }

1

{PRIVATE }

# 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

	OPERATIONS	
PLANT CONCURRENCE		DATE
	TRAINING	
APPROVED:		DATE:
VALIDATED BY:		_DATE:
SUBMITTED BY:		_ DATE:

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

0606 AJPM 2-4a REV. NO. 11 PAGE 2 OF 20

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

{PRIVATE }

2

# **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

0606 AJPM 2-4a REV. NO. 11 PAGE 3 OF 20

#### {PRIVATE } BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

3

OPERATOR:	
RO SRO _	X DATE:
JPM NUMBER:	0606 AJPM 2-4a
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 <u>2.2</u> SRO: <u>4.0</u>
TASK STANDARD:	THE EVENT IS CLASSIFIED AS AN <u>SITE AREA EMERGENCY</u> BASED ON AN UNISOLABLE PRIMARY SYS LEAK OUTSIDE PRIMARY CONTAINMENT. (TIME ODS NOTIFIED) – (TIME DECLARED) LESS THAN 5 MINUTES, OR IF ODS CANNOT BE CONTACTED, (TIME STATE NOTIFIED) – (TIME DECLARED) LESS THAN 15 MINUTES AND (TIME NRC NOTIFIED) – (TIME DECLARED) LESS THAN 60 MINUTES.
LOCATION OF PERFO	RMANCE: SIMULATOR X PLANT CONTROL ROOM
REFERENCES/PROCE	DURES NEEDED: EPIP 1, REV 40 ; EPIP 4, REV 29
VALIDATION TIME:	CONTROL ROOM: <u>15</u> LOCAL: <u>N/A</u>
MAX. TIME ALLOWED:	_ <u>5/15/60</u> (Completed for Time Critical JPMs only)
PERFORMANCE TIME	CONTROL ROOM LOCAL <u>N/A</u>
COMMENTS:	· · · · · · · · · · · · · · · · · · ·
Additional comment	sheets attached? YES NO
RESULTS: SAT	ISFACTORYUNSATISFACTORY
SIGNATURE:	DATE:

0606 AJPM 2-4a REV. NO. 11 PAGE 4 OF 20

# EXAMINER

{PRIVATE } 4

#### 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.)

0606 AJPM 2-4a REV. NO. 11 PAGE 6 OF 19

START TIME:	
***************************************	*****
Performance Step :	Critical X_Not Critical
Refers to EPIP 1 to classify emergency event.	
Standard:	
SHIFT MANAGER/UNIT SUPERVISOR refers Radioactivity Release and declares a SITE ARI an unisolable primary system leak outside prim	to EPIP 1, Section 4.0, EA EMERGENCY(4.2.S) based on ary containment.
SAT_UNSAT_N/A COMMENTS:	
***************************************	***************************************
Performance Step :	Critical X_Not Critical
IMPLEMENTS EPIP-4 SITE AREA EMERGENCY	
Standard:	
SHIFT MANAGER/UNIT SUPERVISOR recogr EMERGENCY per EPIP-4.	nizes/implements a SITE AREA

SAT\_UNSAT\_N/A\_ COMMENTS:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 7 OF 19

# 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.

0606 AJPM 2-4a REV. NO. 11 PAGE 8 OF 19

#### 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
    - EMERGENCY
    - STAGING AREA (See caution note above)

Standard:

DIRECTS Unit Operator to make notifications per Appendix B.

SAT\_UNSAT\_N/A\_ COMMENTS:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 9 OF 19

# 3.2 Operations Duty Specialist (ODS) Notification / State of Alabama Notification

NOTI	E	
The ODS should be notified within 5 minutes after the emergency has been declared.		
**************************************	Critical <u>X</u>	

3.2.1 **COMPLETE** Appendix A (Initial Notification Form)

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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 10 OF 19

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.

{PRIVATE }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

0606 AJPM 2-4a REV. NO. 11 PAGE 11 OF 19

#### 

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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 12 OF 19

<u>NOTE</u>

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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 13 OF 19

#### 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.

{PRIVATE } 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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 14 OF 19

# 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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 15 OF 19

#### 3.5 Assembly / Accountability

# <u>CAUTION</u>

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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 16 OF 19

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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 17 OF 19

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 \_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 18 OF 19

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:\_\_\_\_\_

0606 AJPM 2-4a REV. NO. 11 PAGE 19 OF 19

#### 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.

{PRIVATE }CUE: THE EMERGENCY CENTERS ARE STAFFED AND THE PLANT MANAGER (SITE EMERGENCY DIRECTOR) IS HERE TO RELIEVE YOU. THAT WILL BE ALL FOR NOW.

#### **END OF TASK**

STOP TIME:

0606 AJPM 2-4a REV. NO. 11 PAGE 20 OF 19

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:\_\_\_\_\_

0606 AJPM 2-4b REV. NO. 0 PAGE 1 OF 9

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

This is Juso A phan call Jpm fication 0606 AJPM 2-4b JPM NUMBER: Respond to a Medical Emergency Notification TITLE: > aplag U-000-EM-85 TASK NUMBER:

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED:	TRAINING	DATE:
PLANT CONCURRENCE:	OPERATIONS	DATE:

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

\*

0606 AJPM 2-4b REV. NO. 0 PAGE 2 OF 9

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:			
RO	SRO	DATE:	
JPM NUMBER:	0606 AJPM 2-4b		
TASK NUMBER:	U-000-EM-85		
TASK TITLE:	Respond to a M	EDICAL Emergency No	otification
K/A NUMBER:	230000A4.02	K/A RATING: RO_	2.9 SRO: <u>3.0</u>
* * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
TASK STANDARD:	Respond to a M	EDICAL Emergency No	otification
LOCATION OF PER	RFORMANCE: SIMUI	LATOR X PLANT	CONTROL ROOM
REFERENCES/PROC	CEDURES NEEDED:	EPIP-10 REV. 28	х.
VALIDATION TIME	E: CONTROL R	OOM:LOCAL:	· · · · · · · · · · · · · · · · · · ·
MAX. TIME ALLOW	VED: (Co	ompleted for Time (	Critical JPMs only)
PERFORMANCE TIN	4E:	CONTROL ROOM	LOCAL
COMMENTS:			
Additional comm	nent sheets atta	ached? YES	NO
RESULTS: SAT	FISFACTORY	UNSATISFACTORY	
SIGNATURE:		DATE:	

0606 AJPM 2-4b REV. NO. 0 PAGE 3 OF 9

#### EXAMINER

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

# REVISION LOG

Revision	Effective	Pages	Description
Number	Date	Affected	of Revision
0	6/15/07	All	NEW

#### 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 1 Desk Operator. Unit 1 is operating at 100% power.

**INITIATING CUES:** Respond to the next event.

0606 AJPM 2-4b REV. NO. 0 PAGE 5 OF 9

NOTE TO EXAMINER, (1)The Console Operator will call in the Control Room, and Report the Medical Emergency to the UNIT OPERATOR. (2) Have a Phone setup on the simulator Labeled
(3) Have the FIRE/MEDICAL Bell setup next to the Phone (The Bell is not connected SO the CONSOLE OPERATOR will have to sound the Bell when the operator depresses the
Button).

CUE: Console operator calls the fire/med Phone, (# ????) When the UO answers the phone, **REPORT -** I'm calling to report a Medical Emergency. If asked for name; **RESPOND -** My Name is JOHN SMITH.

- 3.3 Control Room Response / Initial Notification by Control Room Operator
  - 3.3.1 Upon receiving a medical emergency call, Control Room personnel may perform Appendix A, "Control Room Operator Medical Response Checklist". Appendix A may be used to aid the Control Room Operator in making initial notifications and should not be forwarded to EP for record retention.
    - Obtain **Name** of caller.

#### Standard:

Answers the Phone (This is the FIRE/MED Emergency phone, do you have a FIRE/MED Emergency) and Obtains name of caller.

SAT UNSAT\_\_\_N/A\_\_\_ COMMENTS:\_\_\_\_\_
0606 AJPM 2-4b REV. NO. 0 PAGE 6 OF 9

CUE: When asked for location; <b>REPORT</b> - Service Bldg in the machine shop
************************************
3.3 Control Room Response / Initial Notification by Control Room Operator
Obtain Location of medical emergency.
Standard:
Obtains location of medical emergency.
SATUNSATN/A COMMENTS:
* * * * * * * * * * * * * * * * * * * *
CUE: When asked the type of Medical Emergency; <b>RESPOND</b> - A Pipefitter has cut his hand.
**************************************
3.3 Control Room Response / Initial Notification by Control Room Operator:
Obtain <b>Type</b> of medical emergency.
Standard:
Obtains type of medical emergency.
SATUNSATN/A COMMENTS:

0606 AJPM 2-4b REV. NO. 0 PAGE 7 OF 9

CUE: If asked for the number of people involved; RESPOND - Only ONE, the Pipefitter Critical Not Critical X Performance Step: 3.3 Control Room Response / Initial Notification by Control Room Operator: Obtain Number of People involved. Standard: Obtained the Number of People involved SAT UNSAT N/A COMMENTS: CUE: If asked for the telephone number; RESPOND - 2783 Performance Step: Critical Not Critical X 3.3 Control Room Response / Initial Notification by Control Room Operator: • Obtain Telephone Number from caller. Standard: Obtained the telephone number from caller. SAT UNSAT N/A COMMENTS:

0606 AJPM 2-4b REV. NO. 0 PAGE 8 OF 9

CUE: Console Operator needs to monitor the Operator and when the Fire/Med Emergency bell pushbutton is depressed; Sound the Fire/Med Emergency Alarm. **INSERT** (mrf fp01 on)

Performance Step:

Critical X Not Critical

3.3.2 If not activated, activate the plant medical/fire alarm. Announce medical emergency location over the plant public address (PA) system, repeating at regular intervals to alert the Medical Emergency Response Team (MERT) to the location until instructed otherwise by Shift Manager or Unit Supervisor.

## Standard:

Initiate the "Fire/MED Alarm Bell." Announce the Medical Emergency location over the plant public address (PA) system.

SAT UNSAT N/A COMMENTS:

CUE: When Notified (as Fire Ops) by radio the location of the Fire; Repeat back Location and **REPORT** - Fire Protection is responding to the Medical Emergency location at this time.

3.3.3 Notify the Fire Protection personnel using the Operations/Fire Protection radio.

## Standard:

Notify the Fire Protection Personnel using the Operations/Fire Protection Radio.

SAT UNSAT N/A COMMENTS:

0606 AJPM 2-4b REV. NO. 0 PAGE 9 OF 9

Note : <b>EXAMINER</b> will perform the role as the Shift Manager.
************************************
3.3.4 Notify the Shift Manager.
Standard:
Notify the Shift Manager of the MEDICAL Emergency.
SATUNSATN/ACOMMENTS:
CUE: That will be all for now.
Performance Step: Critical Not Critical_X
<b>PERFORMER</b> demonstrated the use of 3-WAY COMMUNICATION during this JPM.
Standard:
<b>PERFORMER</b> utilized 3-WAY COMMUNICATION (Standard is subjective and instructor must evaluate the need for additional training on 3-WAY COMMUNICATION to maintain plant standards).
SATUNSATN/ACOMMENTS

END OF TASK