JPM NO. 606F REV. NO. 5 PAGE 1 of 11

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 606F

TITLE: EOI APPENDIX-3A - SLC INJECTION

TASK NUMBER: U-000-EM-73

# SIM "A" UNIT-2

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

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

JPM NO. 606F REV. NO. 5 PAGE 2 of 11

### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

### **REVISION LOG**

Revision	Effective	Pages	Description
Number	Date	Affected	Of Revision
0	05/12/01	All	Initial issue
1	10/22/98	All	Re-formatted
2	10/03/00	All	General revision
3	09/13/02	All	Modified failure mode for NRC
4	07/08/06	All	General revision
5	06/12/08	All	General revision & re-format
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JPM NO. 606F REV. NO. 5 PAGE 3 of 11

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:				
RO	SRO		DATE:	
JPM NUMBER:	606F			
TASK NUMBER:	U-000-EM-73			
TASK TITLE:	EOI APPENDIX-34	A - SLC INJECTI	NC	
K/A NUMBER:	211000A4.02	K/A RATING:	RO <u>4.2</u>	SRO <u>4.2</u>
	: PERFORM OPER AND INJECT SLC 2-EOI APPENDIX-	ATION NECESS. SOLUTION INT	ARY TO START A	N SLC PUMP
PERFORMANCE	LOCATION: SIN	IULATOR <u>X</u> PL	ANT CONTRC	L ROOM
REFERENCES/PR	OCEDURES NEED	ED: 2-EOI A	ppendix-3A, Rev 5	
VALIDATION TIME	SIMU	JLATOR: <u>5:00</u>	D LOCAL:	
MAX. TIME ALLOV	VED:	_ (FOR TIME CI	RITICAL JPMs ON	LY)
PERFORMANCE 1	TIME:			
COMMENTS:				
ADDITIONAL COM	IMENT SHEETS AT	TACHED?	YES	_NO
RESULTS:	SATISFACTORY		UNSATISFACTO	)RY
EXAMINER SIGNA	ATURE:		DATE:	

JPM NO. 606F REV. NO. 5 PAGE 4 of 11

#### 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 on Unit 2.

- The reactor has scrammed and control rods failed to insert.
- 2-EOI-1 has been entered and followed to RC/Q-12.
- Reactor power is >5%.
- RWL has been lowered per EOI C5 and Appendix-4.
- MSIV's are closed.

**INITIATING CUES:** The Unit Supervisor has directed you to inject SLC per 2-EOI Appendix-3A, SLC Injection.

JPM NO. 606F REV. NO. 5 PAGE 5 of 11

# START TIME \_\_\_\_\_

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Simulator Driver: This JPM requires a FCV-69-1 open and failed such that it NOT close), and both RWCU pumps s	will not Auto	o Close, 6	9-2 & 12 open (b	1
**************************************			NOT CRITICAL	
When requested by examiner identify/ob	tain copy of r	equired p	rocedure.	
STANDARD:				
Obtained copy of 2-EOI Appendix-3A.				
SAT UNSAT N/A		COMME	NTS:	
	*****	*****	*****	*******
PERFORMANCE STEP:	CRITICAL	<u> </u>	NOT CRITICAL	
1. <b>UNLOCK</b> and <b>PLACE</b> 2-HS-63-6 START-A or START-B position.	A, SLC PUM	P 2A/2B,	control switch in	
STANDARD:				
Unlocked and Placed SLC pump control	switch in <u>eitl</u>	<u>ner</u> STAR	T-A or START-B p	position.
SAT UNSAT N/A		COMME	NTS:	

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#### PERFORMANCE STEP: CRITICAL \_\_\_\_\_ NOT CRITICAL \_\_X\_

- 2. **CHECK** SLC System for injection by observing the following:
  - Selected pump starts, as indicated by red light illuminated above pump control switch.
  - Squib valves fire, as indicated by SQUIB VALVE A and B CONTINUITY blue lights extinguished,
  - SLC SQUIB VALVE CONTINUITY LOST Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 20).
  - 2-PI-63-7A, SLC PUMP DISCH PRESS, indicates above RPV pressure.
  - System flow, as indicated by 2-IL-63-11, SLC FLOW, red light illuminated on Panel 9-5,
  - SLC INJECTION FLOW TO REACTOR Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 14).

#### STANDARD:

Verified selected SLC pump is injecting to RPV by Observing the above parameters.

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

			JPM NO. 606F	
			REV. NO. 5 PAGE 7 of 11	
			FAGE / ULT	
******	******	*****	************	
PERFORMANCE	<u>STEP:</u>	CRITICAL	NOT CRITICALX	
3.IFProper system operation CANNOT be verified,THEN <b>RETURN</b> to Step 1 and <b>START</b> other SLC pump.				
STANDARD:				
N/A - verified prop	er operation of runnir	ng pump and continu	ies to step 4.	
SAT U	NSAT N/A	A COM	IMENTS:	
*****	******	*****	*****	
PERFORMANCE	<u>STEP:</u>	CRITICAL <u>X</u>	NOT CRITICAL	
4. VERIFY RV	VCU isolation by obs	erving 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:

Examinee Recognized the failure of RWCU to isolate and manually Closes 2-FCV-69-1 by taking 2-HS-69-1 to the close direction on panel 9-4 OR trips both RWCU pumps. (closing 69-1 will trip both pumps) (Attempts but Notices that 69-2 and 69-12 will NOT close and notifies US) Verified illuminated Green valve position indicating lights above the 69-1 valve handswitch and Verified RWCU pumps tripped by Observing illuminated Green breaker position indicating lights above pump handswitches. (Only closing 69-1 OR tripping the pumps is Critical)

SAT _	UNSAT	N/A	_ COMMENTS:
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			JPM NO. 606 REV. NO. 5 PAGE 8 of 1	
PERFORMANCE STEP:	CRITICAL	N0	OT CRITICAL	<u> </u>
5. <b>VERIFY</b> ADS inhibited.				
STANDARD:				
Verified 2-XS-1-159A and 2-XS-1-7 Verified Alarm Panel 2-XA-55-3C, XA-55-3C, Window 31, "ADS LOG	Window 18, "ADS	LOGIC BUS	A INHIBITED a	
SAT UNSAT	N/A	COMMENT	-S:	
****				
PERFORMANCE STEP:	CRITICAL	N	OT CRITICAL	<u>     X    </u>
6. <b>MONITOR</b> reactor power fo	r downward trend.			
STANDARD:				
Monitored all available APRMs/IRM	As for downward re	eactor power	trend.	
SAT UNSAT	N/A	COMMENT	rs:	

			JPM NO. 606F REV. NO. 5 PAGE 9 of 11
	**************************************		NOT CRITICAL X
7.		SLC STORAGE TANK L	EVEL, and <b>CHECK</b> that level is
STAN	IDARD:		
Obse	rved 2-LI-63-1A and Ve	rified SLC storage tank le	evel decreasing.
SAT	UNSAT	N/A	COMMENTS:
CILE	Another Operator wil	I secure SLC when nec	essarv

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		JPM NO. 600 REV. NO. 5	
		PAGE 10 of	
PERFORMANCE STEP:		NOT CRITICAL	
PERFORMER demonstrated the	use of SELF CHECKIN	G during this JPM	
STANDARD:			
PERFORMER verified applicable accordance with plant standards.	components by utilizing	g SELF CHECKING in	
SAT UNSAT	_ N/A Co	OMMENTS:	
PERFORMANCE STEP:		NOT CRITICAL	
PERFORMER demonstrated the	use of 3-WAY COMMU	NICATION during this J	PM
<u>STANDARD:</u>			
PERFORMER utilized 3-WAY CC	OMMUNICATION in acc	ordance with plant stan	dards
SAT UNSAT	_ N/A C0	OMMENTS:	
	END OF TASK		
STOP TIME:	-		

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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 on Unit 2.

- The reactor has scrammed and control rods failed to insert.
- 2-EOI-1 has been entered and followed to RC/Q-12.
- Reactor power is >5%.
- RWL has been lowered per EOI C5 and Appendix-4.
- MSIV's are closed.

**INITIATING CUES:** The Unit Supervisor has directed you to inject SLC per 2-EOI Appendix-3A, SLC Injection.

JPM NO. 328F REV. NO. 0 PAGE 1 of 11

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 328F

TITLE: EOI APPENDIX-3A - SLC INJECTION

TASK NUMBER: U-000-EM-73

# SIM "A" UNIT-3

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SUBMITTED BY:		_ DATE:
VALIDATED BY:		DATE:
APPROVED BY:		DATE:
	TRAINING	
PLANT CONCURREN	CE:	DATE:
	OPERATIONS	

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

JPM NO. 328F REV. NO. 0 PAGE 2 of 11

### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

# **REVISION LOG**

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Revision Number	Effective Date	Pages Affected	Description Of Revision
0	08/17/08	All	Initial issue
0	08/17/08	All	Initial issue
	1	1	1

JPM NO. 328F REV. NO. 0 PAGE 3 of 11

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:				
RO	SRO		DATE:	
JPM NUMBER:	328F			
TASK NUMBER:	U-000-EM-73			
TASK TITLE:	EOI APPENDIX-3A	- SLC INJECTI	ON	
K/A NUMBER:	211000A4.02	K/A RATING:	RO <u>4.2</u>	SRO <u>4.2</u>
**************************************	: PERFORM OPERA AND INJECT SLC 3-EOI APPENDIX-3	SOLUTION INTO		
PERFORMANCE	LOCATION:		SIMULA	
REFERENCES/PR	OCEDURES NEED	ED: 3-EOI A	ppendix-3A, Rev 1	
VALIDATION TIME	E: SIMU	ILATOR: 5:00	0LOCAL:	
MAX. TIME ALLOW	VED:	_ (FOR TIME CI	RITICAL JPMs ON	LY)
PERFORMANCE	ГІМЕ:			
COMMENTS:				
ADDITIONAL CON	IMENT SHEETS AT	TACHED?	YES	_NO
RESULTS:	SATISFACTORY		UNSATISFACTO	0RY
EXAMINER SIGNA	ATURE:		DATE:	

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JPM NO. 328F REV. NO. 0 PAGE 4 of 11

#### 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 on Unit 3.

- The reactor has scrammed and control rods failed to insert.
- 3-EOI-1 has been entered and followed to RC/Q-12.
- Reactor power is > 5%.
- Suppression pool temperature is 105°F and rising.

INITIATING CUES:

The Unit Supervisor has directed you to inject SLC per 3-EOI Appendix-3A, SLC Injection.

JPM NO. 328F REV. NO. 0 PAGE 5 of 11

START	TIME	
017.011		-

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Simulator Driver: This JPM requires an ATWS > 5% and Torus temp ~ 105°F, and 3-FCV-69-1 failed such that it will not Auto Close.					
******	*****	****			
PERFORMANCE STEP:	CRITICAL _	NOT CRITICAL <u>X</u>			
When requested by examiner identify	/obtain copy of re	quired procedure.			
STANDARD:					
Obtained copy of 3-EOI Appendix-3A					
SAT UNSAT N	/A	COMMENTS:			
******	*****	******			
PERFORMANCE STEP:	CRITICAL	X NOT CRITICAL			
1. <b>UNLOCK</b> and <b>PLACE</b> 3-HS-6 PUMP 3A or START PUMP 3E	•	3A/3B, control switch in START			
STANDARD:					
Unlocked and Placed SLC pump control switch in <u>either START-A or START-B position.</u>					
SAT UNSAT N	I/A	COMMENTS:			

JPM NO. 328F REV. NO. 0 PAGE 6 of 11

# PERFORMANCE STEP: CRITICAL \_\_\_\_\_ 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 3-9-5 (3-XA-55-5B, Window 20).
  - 3-PI-63-7A, SLC PUMP DISCH PRESS, indicates above RPV pressure.
  - System flow, as indicated by 3-IL-63-11, SLC FLOW, red light illuminated on Panel 3-9-5,
  - SLC INJECTION FLOW TO REACTOR Annunciator in alarm on Panel 3-9-5 (3-XA-55-5B, Window 14).

### STANDARD:

Verified selected SLC pump is injecting to RPV by Observing the above parameters.

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

			REV. NO. 0 PAGE 7 of 11	
	RFORMANCE STEP:	CRITICAL	NOT CRITICALX	
3.		atem operation CANNOT be v to Step 1 and <b>START</b> other S		
<u>STA</u>	NDARD:			
N/A	- verified proper operation	of running pump and continu	es to step 4.	
SAT	UNSAT	N/A COM	MENTS:	
*****	*****	*****	*****	
PEF	RFORMANCE STEP:	CRITICAL <u>X</u>	_ NOT CRITICAL	
4. <b>VERIFY</b> RWCU isolation by observing the following:				
•		B tripped D SUCT ISOLATION VALVE TBD SUCT ISOLATION VAL		

IDM NO 2005

• 3-FCV-69-12, RWCU RETURN ISOLATION VALVE closed

# STANDARD:

Examinee Recognized the failure of 3-FCV-69-1 to isolate and manually Closes 3-FCV-69-1 by taking 3-HS-69-1 to the close direction on panel 9-4. Verified illuminated Green valve position indicating lights above the (other) respective valve handswitches and Verified RWCU pumps tripped by Observing illuminated Green breaker position indicating lights above pump handswitches. (Only closing 69-1 is Critical)

SAT UNSAT N/A COMMENTS:	
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			JPM NO. 32 REV. NO. PAGE 8 of	0
*******				
PERFORMANCE STEP:	CRITICAL		NOT CRITICAL	<u>    X    </u>
5. <b>VERIFY</b> ADS inhibited.				
STANDARD:				
Verified 3-XS-1-159A and 3-XS-1- Verified Alarm Panel 3-XA-55-3C, 3-XA-55-3C, Window 31, "ADS LC	Window 18, "ADS	LOGIC B	US A INHIBITED	
SAT UNSAT	N/A	COMME	ENTS:	
*****	*****	******	*****	*****
PERFORMANCE STEP:	CRITICAL		NOT CRITICAL	<u> </u>
6. <b>MONITOR</b> reactor power fo	r downward trend.			
STANDARD:				
Monitored all available APRMs/IRM	Ms for downward r	eactor pov	wer trend.	
SAT UNSAT	N/A	COMME	ENTS:	

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PERFORMANCE STEP:	CRITICAL	NOT CRITICAL
	1A, SLC STORAGE TANK LEV ately 1% per minute.	√EL, and <b>CHECK</b> that
STANDARD:		
Observed 3-LI-63-1A and	Verified SLC storage tank leve	l decreasing.
SAT UNSAT	N/A CO	OMMENTS:
	of the following exists: $drops to 0\%$	
**************************************	CRITICAL	NOT CRITICAL
	-	
SLC tank level of the second sec	drops to 0%,	
OR		
As directed by S		
THEN STOP SL	C Pump 3A or 3B.	
<u>STANDARD:</u>		
SAT UNSAT	N/A Co	OMMENTS:

C

	REV. NO.	0
*****		
CRITICAL	NOT CRITICAL	X
of SELF CHECH	KING during this JPM	
nponents by utiliz	zing SELF CHECKING in	
I/A	COMMENTS:	
****	****	*****
CRITICAL	NOT CRITICAL	X
of 3-WAY COM	MUNICATION during this	JPM
UNICATION in	accordance with plant star	idards.
I/A	COMMENTS:	
END OF TASK		
	CRITICAL of SELF CHECK mponents by utiliz I/A CRITICAL of 3-WAY COM	JPM NO. 32 REV. NO. PAGE 10 of CRITICAL NOT CRITICAL of SELF CHECKING during this JPM nponents by utilizing SELF CHECKING in I/A COMMENTS: CRITICAL NOT CRITICAL of 3-WAY COMMUNICATION during this of /UNICATION in accordance with plant star

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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 an operator on Unit 3.

- The reactor has scrammed and control rods failed to insert.
- 3-EOI-1 has been entered and followed to RC/Q-12.
- Reactor power is > 5%.
- Suppression pool temperature is 105°F and rising.
- INITIATING CUES:
- The Unit Supervisor has directed you to inject SLC per 3-EOI Appendix-3A, SLC Injection.

JPM NO. 14F REV. NO. 5 PAGE 1 of 17

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 14F

TITLE: 2-EOI APPENDIX-5A - INJECTION SYSTEMS LINEUP – CONDENSATE/FEEDWATER, HP HTRs ISOLATED.

TASK NUMBER: U-000-EM-29

# SIM "B" UNIT-2

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

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

JPM NO. 14F REV. NO. 5 PAGE 2 of 17

### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

### **REVISION LOG**

Revision	Effective	Pages	Description
Number	Date	Affected	Of Revision
0	10/23/98	All	Initial issue
1	10/23/01	3,4	Procedure revision, format, setpoint change
2	08/14/03	All	Procedure revision, editorial, add setup cue
3	08/24/06	3	Procedure revision
4	06/01/07	All	General revision
5	06/12/08	All	General revision & re-format

JPM NO. 14F REV. NO. 5 PAGE 3 of 17

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:				
RO	SRO	DATE:		
JPM NUMBER:	14F			
TASK NUMBER:	U-000-EM-29			
TASK TITLE:	2-EOI APPENDIX-5A - INJECT CONDENSATE/FEEDWATER,			
K/A NUMBER:	295031EA1.08 K/A RATIN	G: RO <u>3.8</u> SRO <u>3.9</u>		
*****	******	***********		
TASK STANDARD	ERFORM CONTROL ROOM ESTABLISH THE CONDENSA RPV INJECTION SYSTEM IAW	TE/FEEDWATER SYSTEM AS AN		
PERFORMANCE	LOCATION: SIMULATOR X	PLANT CONTROL ROOM		
REFERENCES/PF	ROCEDURES NEEDED: 2-EC	DI Appendix-5A, Rev 8		
VALIDATION TIME: SIMULATOR: <u>11:00</u> LOCAL:				
MAX. TIME ALLOWED: (FOR TIME CRITICAL JPMs ONLY)				
PERFORMANCE TIME:				
COMMENTS:				
ADDITIONAL CON	IMENT SHEETS ATTACHED?	YESNO		
RESULTS:	SATISFACTORY	UNSATISFACTORY		
EXAMINER SIGN	ATURE:	DATE:		

JPM NO. 14F REV. NO. 5 PAGE 4 of 17

#### 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 a trip of all Reactor Feedwater pumps and EOI-1 has been followed through RC/L-3.
INITIATING CUES:	The problem that caused the trip of the RFP's 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.

		JPM NO. 14F REV. NO. 5
		PAGE 5 of 17
START TIME		
Simulator Driver: This JPM require	es all RFPs tripped w	vith all HP heaters isolated.
*******	*****	********************************
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
When requested by examiner identify	obtain copy of require	ed procedure.
STANDARD:		
Obtained copy of 2-EOI Appendix-5A		
SAT UNSAT N	I/A CON	/MENTS:
*****	*****	*******
PERFORMANCE STEP:	CRITICAL	NOT CRITICALX
1. <b>VERIFY</b> Condensate System i	n service, supplying s	suction to RFPs.
STANDARD:		
Verified condensate system in service and condensate booster pump opera		<b>Q</b>
SAT UNSAT N	I/A COM	MMENTS:

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PERFORMANCE STEP:       CRITICAL NOT         2.       VERIFY OPEN MSIVs, supplying steam to RFPTs.         STANDARD:       Verified MSIVs open by illuminated RED valve position indicating lat (vertical panel or benchboard).         SAT UNSAT N/A COMMENTS         PERFORMANCE STEP:       CRITICAL NOT         3.       VERIFY Hotwell Pressure below -7 in. Hg.         STANDARD:       Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.         SAT UNSAT N/A COMMENTS	JPM NO. 14 REV. NO. 5 PAGE 6 of 7
2. VERIFY OPEN MSIVs, supplying steam to RFPTs.  STANDARD: Verified MSIVs open by illuminated RED valve position indicating lat (vertical panel or benchboard). SAT UNSAT N/A COMMENTS PERFORMANCE STEP: CRITICAL NOT 3. VERIFY Hotwell Pressure below -7 in. Hg. STANDARD: Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.	
STANDARD:         Verified MSIVs open by illuminated RED valve position indicating lat (vertical panel or benchboard).         SAT	JI CRITICAL
Verified MSIVs open by illuminated RED valve position indicating lat (vertical panel or benchboard). SAT UNSAT N/A COMMENTS PERFORMANCE STEP: CRITICAL NO <sup></sup> 3. VERIFY Hotwell Pressure below -7 in. Hg. STANDARD: Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.	
(vertical panel or benchboard).         SATUNSATN/ACOMMENTS	
PERFORMANCE STEP:       CRITICAL NOT         3.       VERIFY Hotwell Pressure below -7 in. Hg.         STANDARD:       Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.	lamps on Pan
PERFORMANCE STEP:       CRITICAL NOT         3.       VERIFY Hotwell Pressure below -7 in. Hg.         STANDARD:       Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.	Ś:
PERFORMANCE STEP:       CRITICAL NOT         3. VERIFY Hotwell Pressure below -7 in. Hg.         STANDARD:         Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.	
STANDARD: Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.	
Verified Hotwell Pressure below -7 inches Hg. as indicated on 2-XR ICS computer.	
ICS computer.	
SAT UNSAT N/A COMMENTS	
	<sup>-</sup> S:

					JPM NO. 14F REV. NO. 5 PAGE 7 of 1	
					NOT CRITICAL	
4.	<b>VERIFY CL</b> SUPPLY V		V-1-121(129)(13 <sup>-</sup>	7), RFPT 2	A(2B)(2C) LP STEAM	
			st of time, Cand (Prompt, if nece		ot required to wait at t	this
STAN	NDARD:					
				• •	oove 2-HS-1-121, (129 actions to close valve(	, ·
SAT	L	INSAT	N/A	CON	MMENTS:	
					NOT CRITICAL	
5.	<b>VERIFY OI</b> VALVE.	PEN 2-FCV-	1-125(133)(141),	RFPT 2A(2	2B)(2C) HP STEAM SU	JPPLY
STAN	NDARD:					
Verifi (141)		d RED valve	position indicatir	ig lamp abo	ove 2-HS-1-125, (133)	, or
SAT	L	JNSAT	N/A	CO	MMENTS:	

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*******	******			*********************	
PERFORM	ANCE STEP:	CRIT	ICAL X	NOT CRITICAL	
	RESS 2-HS-46-8A SE/LOWER, and VE				
STANDARI	<u>D:</u>				
	2-HS-46-8A, (9A), ber light illuminated		cted RFPT Sp	eed Cont Raise/Low	er and
venned am					
	UNSAT	N/A	_ COMN	1ENTS:	
SAT		*****	****	1ENTS:	*****
SAT	****	CRI1	**************************************	NOT CRITICAL	*****
SAT	<u>ANCE STEP:</u>	CRI1	**************************************	NOT CRITICAL	*****
SAT ********************************	<u>ANCE STEP:</u>	CRIT np is running for nning for the sele	TICAL	NOT CRITICAL	*****

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			REV. NO. 5 PAGE 9 of 1
	<u>FORMANCE STEP:</u>		NOT CRITICAL
8.	<b>VERIFY</b> for EACH of the the red light is extinguish	• •	, the green light is illuminat
	2-HS-3-208A, RX WTR I 2-HS-3-208B, RX WTR I		
STAI	NDARD:		
Verif	fied GREEN light illuminate	d and RED light exting	uished on 2-HS-3-208A & 2
SAT	UNSAT	N/A	COMMENTS:
<u>PER</u> ).	************************************	CRITICAL wing valves:	X NOT CRITICAL
<u>PER</u> 9. •	FORMANCE STEP:	CRITICAL wing valves: \1 FW OUTLET ISOL \ 31 FW OUTLET ISOL \	<u>X</u> NOT CRITICAL
9.	FORMANCE STEP: VERIFY OPEN the follow 2-FCV-3-75, HP HTR 2A 2-FCV-3-76, HP HTR 2E	CRITICAL wing valves: A1 FW OUTLET ISOL W B1 FW OUTLET ISOL W C1 FW OUTLET ISOL W O <b>t fully open before t</b> h	<u>X</u> NOT CRITICAL /LV /LV /LV
9. • • • • • • • • • • • • • • • • • • •	EFORMANCE STEP: VERIFY OPEN the follow 2-FCV-3-75, HP HTR 2A 2-FCV-3-76, HP HTR 2E 2-FCV-3-77, HP HTR 2C miner Note: Inlet valve no	CRITICAL wing valves: A1 FW OUTLET ISOL W B1 FW OUTLET ISOL W C1 FW OUTLET ISOL W O <b>t fully open before t</b> h	<u>X</u> NOT CRITICAL /LV /LV /LV
9. 9. Exar will STA Reco of the	<b>EFORMANCE STEP:</b> <b>VERIFY OPEN</b> the follow 2-FCV-3-75, HP HTR 2A 2-FCV-3-76, HP HTR 2E 2-FCV-3-77, HP HTR 2C miner Note: Inlet valve no cause the outlet valve to	CRITICAL wing valves: A1 FW OUTLET ISOL W B1 FW OUTLET ISOL W C1 FW OUTLET ISOL W ot fully open before the close.	<u>X</u> NOT CRITICAL

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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, as applicable:
    - o 2-HS-3-108, RFPT 2A HP STOP VLV TEST
    - o 2-HS-3-134, RFPT 2B HP STOP VLV TEST
    - o 2-HS-3-159, RFPT 2C HP STOP VLV TEST
  - LP Stop Valve OPEN as indicated by red light above the following, as applicable:
    - o 2-HS-3-107, RFPT 2A LP STOP VLV TEST
    - o 2-HS-3-133, RFPT 2B LP STOP VLV TEST
    - 2-HS-3-158, RFPT 2C LP STOP VLV TEST

#### STANDARD:

Depressed TRIP RESET PB 3-124A, (150A), or (175A) for the selected pump, and Checked the BLUE light extinguished, HP Stop Valve Open as indicated by RED light above HS for the selected pump, and the LP Stop Valve Open as indicated by the RED light above HS for the selected pump.

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

PERFORMANCE STEP:       CRITICALNOT CRITICAL         11.       VERIFY OPEN 2-FCV-3-20(13)(6), RFP 2A(2B)(2C) MIN FLOW VALVE.         STANDARD:         Verified illuminated RED valve position indicating light for minimum flow valve 3-20, (13), or (6)above HS for selected pump.         SAT	PERFORMANCE STEP:       CRITICAL NOT CRITICAL         11. VERIFY OPEN 2-FCV-3-20(13)(6), RFP 2A(2B)(2C) MIN FLOW VALVE.         STANDARD:         Verified illuminated RED valve position indicating light for minimum flow valve 3-20 (13), or (6)above HS for selected pump.         SAT UNSAT N/A COMMENTS:            PERFORMANCE STEP:         CRITICALX_ NOT CRITICAL         PERFORMANCE STEP:         CRITICALX_ 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 pump 46-112A, (138A), or (163A START.											RE	V. N	). 14F O. 5 1 of 1	
11.       VERIFY OPEN 2-FCV-3-20(13)(6), RFP 2A(2B)(2C) MIN FLOW VALVE.         STANDARD:         Verified illuminated RED valve position indicating light for minimum flow valve 3-20, (13), or (6)above HS for selected pump.         SAT       N/A COMMENTS:	11.       VERIFY OPEN 2-FCV-3-20(13)(6), RFP 2A(2B)(2C) MIN FLOW VALVE.         STANDARD:         Verified illuminated RED valve position indicating light for minimum flow valve 3-20 (13), or (6)above HS for selected pump.         SAT       N/A       COMMENTS:         SAT       N/A       COMMENTS:         PERFORMANCE STEP:       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 pump 46-112A, (138A), or (163A START.					·******									
STANDARD:         Verified illuminated RED valve position indicating light for minimum flow valve 3-20, (13), or (6)above HS for selected pump.         SAT	STANDARD:         Verified illuminated RED valve position indicating light for minimum flow valve 3-20 (13), or (6)above HS for selected pump.         SAT	RFOF	<u>RMAN</u>	<u>CE STE</u>	<u>-P:</u>			CRITIC	CAL		_ N	от с	RITIC		<u> </u>
Verified illuminated RED valve position indicating light for minimum flow valve 3-20, (13), or (6)above HS for selected pump.         SATUNSATN/ACOMMENTS:  PERFORMANCE STEP:         CRITICALX_ 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 pump 46-112A, (138A), or (163A) START.	Verified illuminated RED valve position indicating light for minimum flow valve 3-20 (13), or (6)above HS for selected pump.         SAT	VI	/ERIFY	OPEN	2-FC∖	/-3-20(	13)(6),	RFP 2	A(2E	3)(2C) N	MIN F	LOW	/ VAL	VE.	
(13), or (6)above HS for selected pump.         SATUNSATN/ACOMMENTS:	<pre>(13), or (6)above HS for selected pump. SAT UNSAT N/A COMMENTS: PERFORMANCE STEP: CRITICALX_ 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 pump 46-112A, (138A), or (163A START.</pre>	ANDA	<u>ARD:</u>												
PERFORMANCE STEP:       CRITICALX_ 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 pump 46-112A, (138A), or (163A) START.	PERFORMANCE STEP:       CRITICALX_ 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 pump 46-112A, (138A), or (163A START.							licating	ı ligh	t for mi	nimu	m flov	v valv	/e 3-2	0,
PERFORMANCE STEP:       CRITICALX_ 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 pump 46-112A, (138A), or (163A) START.	PERFORMANCE STEP:       CRITICALX_ 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 pump 46-112A, (138A), or (163A START.	Γ		UNSA	<b>Α</b> Τ		N/A			COM	∕IEN <sup>-</sup>	۲S:			
ENABLE, in START. <u>STANDARD:</u> Placed Start/Local Enable switch for the selected pump 46-112A, (138A), or (163A) START.	ENABLE, in START. <u>STANDARD:</u> Placed Start/Local Enable switch for the selected pump 46-112A, (138A), or (163A START.					*****									
Placed Start/Local Enable switch for the selected pump 46-112A, (138A), or (163A) START.	Placed Start/Local Enable switch for the selected pump 46-112A, (138A), or (163A START.					۹(138A	(163A	(), RFP	ΥT 24	(2B)(2	C) S⁻	[ART	/LOC	AL	
START.	START.	ANDA	<u>ARD:</u>												
SAT UNSAT N/A COMMENTS:	SAT UNSAT N/A COMMENTS:			ocal Ena	able sv	vitch fc	or the s	electec	l pun	np 46-1	12A,	(138	A), or	r (163/	A) ir
		Т		UNSA	<b>Δ</b> Τ		N/A			COM	MEN	TS:			

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		PAGE 12 of 17
******	*****	**********
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL X
13. <b>CHECK</b> RFPT 2A(2B)(2C) s	peed increases to	approximately 600 rpm.
STANDARD:		
Checked RFPT Speed accelerated	to approximately	600 rpm.
SAT UNSAT	N/A	COMMENTS:
*****	****	******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
14. VERIFY OPEN 2-FCV-3-19	(12)(5), RFP 2A(2I	B)(2C) DISCHARGE VALVE.
STANDARD:		
Verified illuminated RED valve pos selected pump, 3-19, (12), or (5).	ition indicating ligh	nt above discharge valve for the
SAT UNSAT	N/A	COMMENTS:

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PERFORMANCE STEP: CRITICAL X NOT CRITICAL

- 15. **RAISE** RFPT 2A(2B)(2C) speed UNTIL RFP discharge pressure is approximately equal to RPV pressure using ANY 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 selected 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:	
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PERFORMANCE STEP:

CRITICAL X NOT CRITICAL \_\_\_\_

- 16. **SLOWLY RAISE** speed of RFPT UNTIL RFW flow to the RPV is indicated using ANY 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 selected RFPT Until RFW flow to the RPV is indicated utilizing one of the above methods.

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

JPM NO. 14F REV. NO. 5 PAGE 15 of 17

PERFORMANCE STEP: CRITICAL NOT CRITICAL X

- 17. **ADJUST** RFPT speed as necessary to control injection using ANY 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 selected RFPT as required utilizing one of the above methods.

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

Examiner Note: [When RX water level is rising and Candidate demonstrates control of a RFP] [Candidate doesn't necessarily have to recover water level +2 to +51 inches- it is sufficient that Examiner is satisfied that level is recovering and is assured Candidate has control of the RFP]

CUE: That completes this task.

STOP TIME:			
	END OF TASK		
SAT UNSAT I	N/A	COMMENTS:	
PERFORMER utilized 3-WAY COMI	MUNICATION in	accordance with plant s	tandards.
STANDARD:			
PERFORMER demonstrated the use	e of 3-WAY COM	MUNICATION during th	is JPM
**************************************		NOT CRITIC/	
SAT UNSAT I	N/A	COMMENTS:	
PERFORMER verified applicable col accordance with plant standards.	mponents by utili	ZING SELF CHECKING	n
STANDARD:			
PERFORMER demonstrated the use			
PERFORMANCE STEP:		NOT CRITICA	AL <u>X</u>
***************************************			
		JPM NO. REV. NO PAGE 16	. 5

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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 a trip of all Reactor Feedwater pumps and EOI-1 has been followed through RC/L-3.
INITIATING CUES:	The problem that caused the trip of the RFP's 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.

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## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 55F

TITLE: 2-EOI APPENDIX-13 - EMERGENCY VENTING PRIMARY CONTAINMENT

TASK NUMBER: U-000-EM-63

## SIM "C" UNIT-2

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

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

JPM NO. 55F REV. NO. 0 PAGE 2 of 17

## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

## **REVISION LOG**

Revision Number	Effective Date	Pages Affected	Description Of Revision
	11/10/00		
0	11/19/08	All	Initial Issue
			·

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## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:				
RO	SRO		DATE:	
JPM NUMBER:	55F			
TASK NUMBER:	U-000-EM-63			
TASK TITLE:	2-EOI APPENDIX-1 CONTAINMENT	3 - EMERGENO	CY VENTING PRIM	IARY
K/A NUMBER:	295024EA1.14	K/A RATING:	RO <u>3.4</u>	SRO <u>3.5</u>
	PERFORM CONTR EMERGENCY VEN	OL ROOM OPE	ERATIONS REQUI	RED TO
PERFORMANCE	_OCATION: SIM	ULATOR <u>X</u> PL	ANT CONTRO	ROOM
REFERENCES/PR	OCEDURES NEEDE	D: 2-EOI A	ppendix-13, Rev 6	
VALIDATION TIME	SIMUL	_ATOR:	LOCAL:	
MAX. TIME ALLOV	VED:	_ (FOR TIME CI	RITICAL JPMs ONI	_Y)
PERFORMANCE 1	IME:	-		
COMMENTS:				
ADDITIONAL COM	IMENT SHEETS ATT	ACHED?	YES	NO
RESULTS:	SATISFACTORY		UNSATISFACTO	RY
EXAMINER SIGNA	TURE:		DATE:	

JPM NO. 55F REV. NO. 0 PAGE 4 of 17

#### 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. A large leak inside primary containment has developed on Unit 2. The reactor scrammed and several control rods are still not fully inserted to 00 and primary containment pressure is approaching 55 psig and rising. The US is performing EOI-2 at PC/P-15.

**INITIATING CUES:** 

The Unit Supervisor directs you to emergency vent primary containment as directed by 2-EOI Appendix-13.

	REV. NO. 0	
	PAGE 5 of 17	
*****	******	****
CRITICAL	NOT CRITICAL	<u>X</u>
tify/obtain copy of r	equired procedure.	
13.		
N/A	COMMENTS:	
****	****	****
D of the following:		
its will be exceede	d.	
ce contact with exa	miner.	
N/A	COMMENTS:	
	CRITICAL tify/obtain copy of r 13. N/A CRITICAL D of the following: nary Containment i its will be exceede wledges] Emerge s release rate limi	PAGE 5 of 17   CRITICAL NOT CRITICAL   tify/obtain copy of required procedure.   13.   N/A   COMMENTS:     CRITICAL   NOT CRITICAL

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PERFORMANCE STEP:       CRITICAL         2.       VENT the Suppression Chamber as follows (Panel a. IFEITHER of the following exists:	NOT CRITICAL X
( (	0.2).
a. IFEITHER of the following exists:	9-5).
Suppression Pool water level CANNOT be	determined to be below 20 ft,
OR <ul> <li>Suppression Chamber CANNOT be vented</li> </ul>	l,
THEN <b>CONTINUE</b> in this procedure at	Step 3.
STANDARD:	
SAT UNSAT N/A CO	MMENTS:
PERFORMANCE STEP: CRITICAL	NOT CRITICALX
b. <b>PLACE</b> keylock switch 2-HS-64-222B, HARI VENT OUTBD PERMISSIVE, in PERM.	DENED SUPPR CHBR
STANDARD:	
Placed 2-HS-64-222B in the PERM position.	
SAT UNSAT N/A CO	MMENTS:

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				JPM NO. 55 REV. NO. 0 PAGE 7 of 1	-
*****	*****	******	******	*****	******
PERFORMA	NCE STEP:	CRITICA	L	NOT CRITICAL	X
С.		ating light above 2- BD PERMISSIVE,			JPPR
STANDARD	<u>):</u>				
Verified BLL	JE indicating lamp a	bove 2-HS-64-222E	3 Illuminate	ed.	
SAT	UNSAT	N/A	СОММ	ENTS:	
****	****	*****	****	****	****
PERFORMA	NCE STEP:	CRITICA	L	NOT CRITICAL	X
d.	<b>OPEN</b> 2-FCV-64-2 VLV.	222, HARDENED S	UPPR CHI	BR VENT OUTBD	ISOL
STANDARD	) <u>:</u>				
	S-64-222A in the OP mp above associate	•	erified illum	inated RED valve	position
SAT	UNSAT	N/A	COMM	ENTS:	

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		JPM NO. 55F REV. NO. 0 PAGE 8 of 17
******	******	*********
PERFORMANCE STEP:	CRITICAL	NOT CRITICALX
e. <b>PLACE</b> keylock swit VENT INBD PERMI	tch 2-HS-64-221B, HARD SSIVE, in PERM.	DENED SUPPR CHBR
STANDARD:		
Placed 2-HS-64-221B in the PER	M position.	
SAT UNSAT	_ N/A CON	/MENTS:
******	******	******
PERFORMANCE STEP:	CRITICAL	NOT CRITICALX
	ting light above 2-HS-64-2 PERMISSIVE, illuminated	221B, HARDENED SUPPR d.
STANDARD:		
Verified BLUE indicating lamp abo	ove 2-HS-64-221B Illumir	nated.
SAT UNSAT	_ N/A COM	MMENTS:

			JPM NO. 55F REV. NO. 0 PAGE 9 of 17
***********	******	******	******
PERFORMA	ANCE STEP:	CRITICAL	NOT CRITICAL X
g.	<b>OPEN</b> 2-FCV-64-22 VLV.	1, HARDENED SUPPR	CHBR VENT INBD ISOL
STANDARD	<u>):</u>		
	S-64-221A in the OPE bes to step 3.0.	N position and recogniz	ed 2-FCV-64-221 failed to
SAT	UNSAT	_ N/A CC	DMMENTS:
*******	*****	****	****
PERFORM	ANCE STEP:	CRITICAL	NOT CRITICALX
	Suppression Ch NVENT the Drywe	amber vent path is NO <sup>-</sup> ell as follows:	l available,
a.	<b>NOTIFY</b> Shift Mana is possible.	ger / SED that Seconda	ry Containment integrity failure
STANDARD	) <u>:</u>		
Notifies Shi	ft Manager that Secor	idary Containment integ	rity failure is possible.
SAT	UNSAT	_ N/A CO	DMMENTS:

PERFORMANCE STEP:       CRITICAL NOT CRITICALX         b. NOTIFY Radiation Protection that Reactor Building is being evacuated due to imminent failure of Primary Containment vent ducts.         STANDARD:         Notifies Radiation Protection that Reactor Building is being evacuated due to imminent failure of Primary Containment vent ducts.         SAT       UNSAT       N/A         COMMENTS:					JPM NO. 55 REV. NO. 0 PAGE 10 of	
b.       NOTIFY Radiation Protection that Reactor Building is being evacuated due to imminent failure of Primary Containment vent ducts.         STANDARD:         Notifies Radiation Protection that Reactor Building is being evacuated due to imminent failure of Primary Containment vent ducts.         SAT	*******	******	*****	*******	******	******
due to imminent failure of Primary Containment vent ducts.         STANDARD:         Notifies Radiation Protection that Reactor Building is being evacuated due to imminen failure of Primary Containment vent ducts.         SAT	PERFORM	IANCE STEP:	CRITI	CAL	NOT CRITICAL	X
Notifies Radiation Protection that Reactor Building is being evacuated due to imminen failure of Primary Containment vent ducts.         SATUNSATN/ACOMMENTS:	b.					ated
failure of Primary Containment vent ducts.   SAT UNSAT N/A COMMENTS: SAT N/A COMMENTS: PERFORMANCE STEP: CRITICAL NOT CRITICALX c. EVACUATE ALL Reactor Buildings using P.A. System. STANDARD: Evacuates all Reactor Buildings.	STANDAR	<u>D:</u>				
PERFORMANCE STEP:       CRITICAL NOT CRITICALX         c.       EVACUATE ALL Reactor Buildings using P.A. System.         STANDARD:       Evacuates all Reactor Buildings.				ng is being	evacuated due to imr	ninent
PERFORMANCE STEP:       CRITICAL	SAT	UNSAT	N/A	CON	1MENTS:	
STANDARD: Evacuates all Reactor Buildings.						
Evacuates all Reactor Buildings.	C.	EVACUATE AL	L Reactor Building	s using P.A	A. System.	
	STANDAR	<u>D:</u>				
SAT UNSAT N/A COMMENTS:	Evacuates	all Reactor Buildin	gs.			
	SAT	UNSAT	N/A	CON	1MENTS:	

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	MANCE STEP:			NOT CRITICA
d.	START ALL ava	ilable SGTS trains	S.	
STANDA	RD:			
Verifies a	II 3 trains of SBGT a	re in service.		
	UNSAT			
PERFOR	**************************************	**************************************	**************************************	NOT CRITICA
*****	**************************************	****	**************************************	NOT CRITICA
PERFOR	MANCE STEP: VERIFY CLOSE (Panel 9-3).	**************************************	**************************************	NOT CRITICA
********** <u>PERFOR</u> e. <u>STANDA</u>	MANCE STEP: VERIFY CLOSE (Panel 9-3).	•••••• CRIT D 2-FCV-64-36, [	ICAL DW/SUPPR C	NOT CRITICA

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******	****	*****	*****	JPM NO. 55F REV. NO. 0 PAGE 12 of 17
PERFORM	IANCE STEP:	CRITICAL	X	NOT CRITICAL
f.	VERIFY OPEN the	e following dampers (I	Panel 9-2	5):
		REACTOR ZONE EX REACTOR ZONE EX		
<u>STANDAR</u>	<u>D:</u>			
Goes to pa	inel 9-25 and Opens 2	2-FCO-64-40 and 41.		
SAT	UNSAT	N/A	COMME	NTS:
	**************************************			**************************************
g.	VERIFY CLOSED (Panel 9-3 or Pane		ELL VEN	IT INBD ISOL VALVE
<u>STANDAR</u>	<u>D:</u>			
Verifies 2-I	FCV-64-29 is closed b	by illuminated green li	ght above	e handswitch.
SAT	UNSAT	N/A	COMME	ENTS:

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*****	*****	****	JPM NO. 55F REV. NO. 0 PAGE 13 of 17
PERFORM	IANCE STEP:	CRITICAL	NOT CRITICAL
h.	DISPATCH perso following:	nnel to Unit 2 Auxiliary Ins	trument Room to perform
	jumper from 2) LOCATE te 3) JUMPER D 4) NOTIFY Ur	Attachment 1 and <b>OBTA</b> n EOI Equipment Storage erminal strip DD in Panel 9 DD-76 to DD-77 (Panel 9-4 nit Operator that jumper fo BD ISOLATION VLV, is in	Box 0-43, Front 3) r 2-FCV-64-30, DRYWELL
<u>STANDAR</u>			
Directs AU	O or Outside US to p	erform step 3. h.	
SAT	UNSAT	N/A CO	MMENTS:
******	****	****	****
	**************************************		
	IANCE STEP:		NOT CRITICAL
PERFORM	<u>IANCE STEP:</u> VERIFY OPEN 2- VLV (Panel 9-3)	CRITICAL	NOT CRITICAL
<u>PERFORM</u> i. <u>STANDAR</u>	<u>IANCE STEP:</u> VERIFY OPEN 2- VLV (Panel 9-3) <u>D:</u>	CRITICAL	NOT CRITICAL
<u>PERFORM</u> i. <u>STANDAR</u> Verifies 2-I	<u>IANCE STEP:</u> <b>VERIFY OPEN</b> 2- VLV (Panel 9-3) <u>D:</u> -CV-64-30 is Open b	CRITICAL FCV-64-30, DRYWELL VI	

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*****	JPM NO. 55F REV. NO. 0 PAGE 14 of 17
PERFORMANCE STEP:	CRITICAL <u>X</u> NOT CRITICAL
j. <b>PLACE</b> keylock swit SELECT, to DRYWE	tch 2-HS-84-36, SUPPR CHBR/DW VENT ISOL B` ELL (Panel 9-54).
STANDARD:	
Places keylock 2-HS-64-36 to Ophandswitch (Not Critical).	en (Critical) and Verifies illuminated red light above
SAT UNSAT	_ N/A COMMENTS:
•••••••••••••••••••••••••••••••••••••••	······································
*******	***************************************
PERFORMANCE STEP:	CRITICAL NOT CRITICAL
k. <b>VERIFY OPEN</b> 2-F0 (Panel 9-54).	CV-64-29, DRYWELL VENT INBD ISOL VALVE
	CV-64-29, DRYWELL VENT INBD ISOL VALVE
(Panel 9-54). <u>STANDARD:</u>	CV-64-29, DRYWELL VENT INBD ISOL VALVE illuminated red light above handswitch.
(Panel 9-54). <u>STANDARD:</u> Verifies 2-FCV-64-29 is Open by	
(Panel 9-54). <u>STANDARD:</u> Verifies 2-FCV-64-29 is Open by	illuminated red light above handswitch.

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		JPM NO. 55F REV. NO. 0 PAGE 15 of 17
PERFORMANCE STEP:		
I. CHECK Drywell a	nd Suppression Chambe	pressure lowering.
STANDARD:		
Verifies Drywell and Suppressic lower leak, if necessary)	on Chamber pressure low	ering. (have simulator drive
SAT UNSAT	N/A CO	DMMENTS:
PERFORMANCE STEP: m. MAINTAIN Primar	CRITICAL	NOT CRITICAL below 55 psig using 2-FCV
PERFORMANCE STEP: m. MAINTAIN Primar	CRITICAL	NOT CRITICAL below 55 psig using 2-FCV
<u>PERFORMANCE STEP:</u> m. <b>MAINTAIN</b> Primar 29, DRYWELL VE	CRITICAL	NOT CRITICAL below 55 psig using 2-FCV
PERFORMANCE STEP: m. <b>MAINTAIN</b> Primar 29, DRYWELL VE <u>STANDARD:</u>	CRITICAL ry Containment pressure ENT INBD ISOL VALVE, a	NOT CRITICAL below 55 psig using 2-FCV
PERFORMANCE STEP: m. <b>MAINTAIN</b> Primar 29, DRYWELL VE <u>STANDARD:</u> N/A.	CRITICAL ry Containment pressure ENT INBD ISOL VALVE, a	NOT CRITICAL below 55 psig using 2-FCV as directed by SRO.
PERFORMANCE STEP: m. <b>MAINTAIN</b> Primar 29, DRYWELL VE <u>STANDARD:</u> N/A.	CRITICAL ry Containment pressure ENT INBD ISOL VALVE, a	NOT CRITICAL below 55 psig using 2-FCV as directed by SRO.

CUE: [When Drywell Pressure lowering] That completes this task.

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		JPM NO. 55F REV. NO. 0 PAGE 16 of 17
		PAGE 10 01 17
PERFORMANCE STEP:		NOT CRITICAL <u>X</u>
PERFORMER demonstrated the u	use of SELF CHEC	CKING during this JPM
STANDARD:		
PERFORMER verified applicable accordance with plant standards.	components by uti	ilizing SELF CHECKING in
SAT UNSAT	N/A	COMMENTS:
******	*****	******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL X
PERFORMER demonstrated the	use of 3-WAY COI	MMUNICATION during this JPM
STANDARD:		
PERFORMER utilized 3-WAY CC	MMUNICATION in	n accordance with plant standards.
SAT UNSAT	N/A	COMMENTS:
	END OF TASK	
STOP TIME:		

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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 an Operator. A large leak inside primary containment has developed on Unit 2. The reactor scrammed and several control rods are still not fully inserted to 00 and primary containment pressure is approaching 55 psig and rising. The US is performing EOI-2 at PC/P-15.

**INITIATING CUES:** 

The Unit Supervisor directs you to emergency vent primary containment as directed by 2-EOI Appendix-13.

JPM NO. 201F REV. NO. 2 PAGE 1 of 24

## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 201F

TITLE: LOSS OF SHUTDOWN COOLING

TASK NUMBER: 0-74-AB-01

# SIM "D" UNIT-2

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

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

JPM NO. 201F REV. NO. 2 PAGE 2 of 24

## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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## **REVISION LOG**

Revision	Effective	Pages	Description
Number	Date	Affected	Of Revision
0	08/13/03	All	Initial issue
1	03/28/06	All	Procedure revision
2	06/29/08	All	General revision & re-format
k	J	L	L

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## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:				
RO	SRO		DATE:	
JPM NUMBER:	201F			
TASK NUMBER:	0-74-AB-01			
TASK TITLE:	LOSS OF SHUTDO	OWN COOLING		
K/A NUMBER:	295021 AA1.02	K/A RATING:	RO <u>3.5</u>	SRO <u>3.5</u>
	: SUCCESSFULLY I FOLLOWING LOS	RESTORE SHU	TDOWN COOLING	3
PERFORMANCE	LOCATION: SIM	IULATOR <u>X</u> PL	ANT CONTRC	L ROOM
REFERENCES/PR	OCEDURES NEED	ED: 2-AOI-74	4-1, Rev 32	
VALIDATION TIME	: SIMU	ILATOR: <u>25:0</u>	0LOCAL:	
MAX. TIME ALLOW	VED:	_ (FOR TIME CI	RITICAL JPMs ON	LY)
PERFORMANCE	ГIME:	_		
COMMENTS:				
ADDITIONAL COM	IMENT SHEETS AT	TACHED?	YES	_NO
RESULTS:	SATISFACTORY		UNSATISFACTC	PRY
EXAMINER SIGNA	TURE:		DATE:	

JPM NO. 201F REV. NO. 2 PAGE 4 of 24

## 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.

- Unit 2 is in Mode 3 (Rx temp > 212°F) heading towards cold conditions for a refueling outage.
- RHR Loop II using 2B RHR Pump was in shutdown cooling and Unit 3 is carrying 1350 gpm RHRSW flow for "B" RHRSW Header.
- An inadvertent loss of 2B RPS bus resulted in a partial isolation of RHR shutdown cooling.
- RPS 2B has been restored on the alternate supply.
- Another operator is assisting with recovery from the loss of 2B RPS.
- The Unit Supervisor has notified the Shift Manager of the problem.

**INITIATING CUES:** The Unit Supervisor directs you to restore shutdown cooling using 2B RHR pump in accordance with 2-AOI-74-1.

JPM NO. 201F REV. NO. 2 PAGE 5 of 24

#### START TIME \_\_\_\_\_

Simulator Driver: This JPM requires start at IC 21 – Verify Rx coolant temp > 212°F with a loss of RPS B & xfer to alt (<u>mrf rp04 b</u>), everything reset except Group 2 PCIS and a trip on 2B RHR pump (<u>imf rh01b</u>).

PERFORMANCE STEP:

CRITICAL

\_\_\_\_ NOT CRITICAL \_\_\_X

When requested by examiner identify/obtain copy of required procedure.

**STANDARD:** 

Obtained copy of 2-AOI-74-1.

SAT	UNSAT	N/A	COMMENTS:
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## CAUTIONS

- 1) Reactor vessel stratification may occur until Shutdown Cooling is restored or a reactor Recirculation Pump is placed in service.
- 2) Loss of Shutdown Cooling during the first 24 hours is most critical due to massive decay heat and limitations on the RHRSW Piping. If Shutdown Cooling is lost during the first 24 hours post reactor shutdown, priorities are required to be placed on the recovery of shutdown cooling in an expeditious manner [BFN PER 02-003140-000].

### NOTE

The following systems, if available, may be used as alternate methods of decay heat removal .Refer to the applicable Tec Spec Bases B 3.4.7, B 3.4.8, B 3.9.7, B 3.9.8

ADHR System- (0-OI-72)

Fuel Pool Cooling System- (2-OI-78)

RWCU System- (2-OI-69)

Ambient losses with natural or forced circulation

				JPM NO. 2011 REV. NO. 2 PAGE 6 of 24
*****	*******	******		*****
PER	FORM/	ANCE STEP:	CRITICA	L NOT CRITICAL
4.2	Subs	equent Actions		
	[1]	IF any EOI entry c	ondition is met, <b>TH</b>	EN
		ENTER the approp	priate EOI(s). (Othe	erwise N/A)
<u>STAI</u>	NDARD	<u>):</u>		
		no FOI antre conditi	ions have been me	t and N/As step
Dete	rmines	no EOI entry conditi		
		·		COMMENTS:
SAT		UNSAT	N/A	
SAT		UNSAT	N/A	COMMENTS:
SAT 	FORM	UNSAT ANCE STEP: NOTIFY the Shift	N/A	COMMENTS:
SAT	FORM/ [2] NDARE	UNSAT ANCE STEP: NOTIFY the Shift	N/A ********************************	COMMENTS:
SAT  <u>PER</u>  	FORM/ [2] NDARE - given	UNSAT ANCE STEP: NOTIFY the Shift I	N/A ********************************	COMMENTS:

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			JPM NO. 201F REV. NO. 2 PAGE 7 of 24
	ANCE STEP:		NOT CRITICALX
[3]	-	n progress, <b>THEN</b>	
	<b>NOTIFY</b> the Ref	ueling Floor SRO. (Otherwise	≥ N/A)
<u>STANDARI</u>	<u>D:</u>		
N/A - Mode	3 given in initial co	onditions. Not required to noti	fy Refueling Floor SRO.
SAT	UNSAT	N/A CON	IMENTS:
	ANCE STEP:		NOT CRITICALX
	ANCE STEP:		NOT CRITICALX
<u>PERFORM</u> [4]	ANCE STEP: REVIEW EPIP-1 conditions.	CRITICAL	NOT CRITICAL <u>X</u> tion Logic, for entry
<u>PERFORM</u> [4]	ANCE STEP: <b>REVIEW</b> EPIP-1 conditions. Shift Manager an	CRITICAL	NOT CRITICAL <u>X</u>
PERFORM [4] CUE: The	ANCE STEP: <b>REVIEW</b> EPIP-1 conditions. Shift Manager an	CRITICAL	NOT CRITICAL <u>X</u>
PERFORM [4] CUE: The STANDARI N/A.	ANCE STEP: <b>REVIEW</b> EPIP-1 conditions. Shift Manager an	CRITICAL	NOT CRITICAL <u>X</u>

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*********	***************************************
PERFORM	ANCE STEP: CRITICAL NOT CRITICAL
[5]	IF Shutdown Cooling isolates on low RPV water level or high Drywell press (GROUP 2 ISOL) AND RPV water level needs restoring using LPCI, THEN (Otherwise N/A)
	<b>PERFORM</b> the following before reaching -122 inches RPV water level:
	[5.1] <b>PERFORM</b>
	[5.2] <b>DEPRESS</b>
	[5.3] <b>IF</b>
STANDARE	<u>):</u>
Determines to step 4.2[6	water level does NOT need restoring, N/A's all section 4.2[5] and continues
SAT	UNSATN/ACOMMENTS:

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				REV. NO. 2 PAGE 9 of 24	-
	**************************************			NOT CRITICAL	
[6]	IF Primary Contair	nment Integrity is r	equired, <b>T</b> F	IEN	
	VERIFY RHR syst >TRM 3.5.4 Limits			e is being maintainec wise N/A)	k
STANDAR	<u>RD:</u>				
	s Primary Containmen -65 for Loop II RHR. (2 ).				
SAT	UNSAT	N/A	COMM	1ENTS:	
	e Reactor in Cold Shu ation may be indicate			Mode 5), reactor coo	lant
	actor pressure above ding at or below 212°		actor coolai	nt temperature indica	ation
BO <sup>-</sup> VES 13(	erential temperatures TTOM HEAD (FLANG SSEL FW NOZZLE N 14)(15)(16) temperatu MPERATURE recorde	GE DR LINE) 2-TE 4B END (N4B INB ures from the REA	-56-29 (8) t D)(N4B EN	emperatures and R⊁ ID)(N4D INBD) 2-TE	
spa ENI	h recirculation pumps rger temperature of 2 D (N4B INBD)(N4D E n the REACTOR VES	00°F or greater on ND)(N4D INBD) 2-	any RX VI -TE-56-13(	ESSEL FW NOZZLE 14)(15)(16) tempera	E (N4B tures
	or purposes of therma epresentative as long				ine is

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**********	***************************************
PERFORMANCE STEP:	CRITICAL NOT CRITICALX_
[7] PLOT heatup/cooldor REFER TO 2-SR-3.4	wn rate as necessary. .9.1(1).
CUE: Another Operator is perfo	rming 2-SR-3.4.9.1(1).
STANDARD:	
Checks step off and continues to s	tep 4.2[8]
SAT UNSAT	N/A COMMENTS:

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 PERFORMANCE STEP:
 CRITICAL \_\_\_\_\_ NOT CRITICAL \_\_\_\_\_

- [8] **DIRECT** the STA to ESTIMATE the following times at least once per shift until a method of decay heat removal is restored:
  - [8.1] **DETERMINE** the time since shutdown.
  - [8.2] DETERMINE the current RPV heat-up rate from 2-SR-3.4.9.1(1), or, if reactor coolant stratification is suspected, USE Illustration 1. IF additional information is required to determine the heat-up rates, THEN

**CONTACT** Reactor Engineer.

- [8.3] **DETERMINE** the reactor coolant temperature or use the last valid reactor coolant temperature available.
- [8.4] **ESTIMATE** the time for reactor coolant temperature to reach 212°F, using data obtained in Steps 4.2[8.1] through 4.2[8.3].
- [8.5] **IF** the Reactor Vessel head is removed and the cavity is flooded with the fuel pool gates installed, **THEN** (Otherwise N/A)

**ESTIMATE** the time for reactor coolant temperature to reach 125°F and 150°F using a plot of the actual heatup rate or Illustration 1.

## CUE: [As STA – state] I will perform 2-AOI-74-1 step [8] at least once per shift.

### STANDARD:

Directs STA to estimate the heat up rate and check for stratification at least once per shift.

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

PERFORM	ANCE STEP:	CRITICAL	NOT CRITICAL _	X
[9]	<b>IF</b> the loss of Shut	down Cooling is due to in	adequate RHRSW flow, 1	HEN
		by RHRSW pump for the a 23. (Otherwise N/A)	appropriate header.	
STANDARI	<u>D:</u>			
N/As Step 4	4.2[9] since there is r	no loss of RHRSW.		
SAT	UNSAT	N/A CC	DMMENTS:	
		*****		
	ANCE STEP:		XNOT CRITICAL _	
	ANCE STEP: IF the loss of Shut		X NOT CRITICAL _	HEN
PERFORM	ANCE STEP: IF the loss of Shut conditions which p	CRITICAL down Cooling is due to G permit resetting Group 2 F	X NOT CRITICAL _	HEN
PERFORM	ANCE STEP: IF the loss of Shut conditions which p (Otherwise N/A) PERFORM the fol [10.1] RESET Gro	CRITICAL down Cooling is due to G bermit resetting Group 2 F llowing: oup 2 isolation by momen HS-64-16A-S32, and PCI	X NOT CRITICAL roup 2 PCIS isolation, Wire CIS isolation are met, TH	HEN IEN
PERFORM	ANCE STEP: IF the loss of Shut conditions which p (Otherwise N/A) PERFORM the fol [10.1] RESET Gro RESET, 2-H S33, in rese	CRITICAL down Cooling is due to G bermit resetting Group 2 F llowing: oup 2 isolation by momen HS-64-16A-S32, and PCI	X NOT CRITICAL roup 2 PCIS isolation, Wire CIS isolation are met, TH	HEN IEN
<u>PERFORM</u> [10] <u>STANDAR</u>	IF the loss of Shut conditions which p (Otherwise N/A) PERFORM the fol [10.1] RESET Gro RESET, 2-ł S33, in rese	CRITICAL down Cooling is due to G bermit resetting Group 2 F llowing: oup 2 isolation by momen HS-64-16A-S32, and PCI	X NOT CRITICAL roup 2 PCIS isolation, Wi CIS isolation are met, TH tarily PLACING PCIS DIV S DIV II RESET, 2-HS-64	HEN IEN '   -16A-
<u>PERFORM</u> [10] <u>STANDAR</u> On Panel 2	ANCE STEP: IF the loss of Shut conditions which p (Otherwise N/A) PERFORM the fol [10.1] RESET Gro RESET, 2-H S33, in rese D: 2-9-4, Resets Group 2	CRITICAL tdown Cooling is due to G bermit resetting Group 2 F llowing: bup 2 isolation by momen HS-64-16A-S32, and PCI et.	X NOT CRITICAL roup 2 PCIS isolation, Wi CIS isolation are met, Th tarily PLACING PCIS DIV S DIV II RESET, 2-HS-64	HEN IEN '   -16A-

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> [10.2] MOMENTARILY DEPRESS RHR SYS I(II) SD CLG INBD INJECT ISOL RESET, 2-XS-74-126 and 2-XS-74-132. VERIFY 2-IL-74-126 and 2-IL-74-132 extinguished.

STANDARD:

Momentarily depresses RHR SYS II SD CLG INBD INJECT ISOL RESET, 2-XS-74-132 (Critical). Verify 2-IL-74-132 extinguished (Not critical). Depresses RHR SYS I SD CLG INBD INJECT ISOL RESET, 2-XS-74-126 (Not critical) and Verify 2-IL-74-126 extinguished (Not critical).

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

				JPM NO. 201 REV. NO. 22 PAGE 14 of 2	2
	******				******
PERFORMA	NCE STEP:	CRITICAL		NOT CRITICAL	<u>    X    </u>
[11]	IF the loss of Shutdown Co signal fails to reset or rema THEN (Otherwise N/A)				
	PERFORM the following:				
	[11.1] <b>VERIFY</b>				
	[11.2] <b>OBTAIN</b>				
	[11.3] <b>DEFEAT</b>				
	[11.4] <b>IF</b>				
STANDARD	<u>.</u>				
N/As all Step	o 4.2[11], the PCIS signal sh	ould have res	set above.		
SAT	_ UNSAT N/A		COMME	NTS:	

				JPM NO. 201F REV. NO. 2 PAGE 15 of 24
PERFORMANCE ST				NOT CRITICAL
	Group 2 PCIS Isola			<b>IEN</b> Cooling as follows.
	<b>CLOSE</b> RHR SYS 2-FCV-74-52(66).	I(II) LPCI OU	TBD INJE	ECT VALVE,
STANDARD:				
Places 2-HS-74-66 in illuminated.	າ close until only G	REEN valve	position in	idicating lamp is
SAT UNS	SAT N/#	Α	COMME	ENTS:

## NOTE

2-POI-74-2 aligns the RHR system to prevent SDC isolations during modes 4 and 5 operations. For Step 4.2[12.2], it accomplishes this by opening RHR SYS I(II) LPCI INBD INJECT VALVE, 2-FCV-74-53(67) and opening its associated breaker. If an isolation is received the valve will **NOT** close because the breaker is open. Therefore, to restore Shutdown Cooling, it is **NOT** necessary to manipulate this already open valve.

Opens 2-FCV-74-67 (Critical) and verifies only RED valve position indicating lamp illuminated (Not Critical).				JPM NO. 201F REV. NO. 2 PAGE 16 of 24
(IF the valve is aligned per 2-POI-74-2 (valve open with its breaked open), THEN         N/A this step).         STANDARD:         Opens 2-FCV-74-67 (Critical) and verifies only RED valve position indicating lamp illuminated (Not Critical).         SAT       UNSAT         SAT       UNSAT         N/A       COMMENTS:         PERFORMANCE STEP:       CRITICAL         [12.3]       VERIFY RHR SYSTEM I(II) MIN FLOW INHIBIT switch, 2-HS-74-148(149) in INHIBIT         STANDARD:       Verifies 2-HS-74-149 is in INHIBIT.				
STANDARD:         Opens 2-FCV-74-67 (Critical) and verifies only RED valve position indicating lamp illuminated (Not Critical).         SATUNSATN/ACOMMENTS:	( <b>IF</b> the valve is			
Opens 2-FCV-74-67 (Critical) and verifies only RED valve position indicating lamp         SAT	N/A this step).			
PERFORMANCE STEP:       CRITICAL NOT CRITICALX         [12.3]       VERIFY RHR SYSTEM I(II) MIN FLOW INHIBIT switch, 2-HS-74-148(149) in INHIBIT         STANDARD:       Verifies 2-HS-74-149 is in INHIBIT.	STANDARD:			
PERFORMANCE STEP: [12.3] VERIFY RHR SYSTEM I(II) MIN FLOW INHIBIT switch, 2-HS-74-148(149) in INHIBIT STANDARD: Verifies 2-HS-74-149 is in INHIBIT.		verifies only RED va	llve pos	ition indicating lamp
PERFORMANCE STEP:       CRITICAL       NOT CRITICAL       X         [12.3]       VERIFY RHR SYSTEM I(II) MIN FLOW INHIBIT switch, 2-HS-74-148(149) in INHIBIT       Switch, 2       Switch, 2         STANDARD:       Verifies 2-HS-74-149 is in INHIBIT.       Verifies 2-HS-74-149 is in INHIBIT.       Verifies 2-HS-74-149 is in INHIBIT.	SAT UNSAT	N/A	COMM	ENTS:
[12.3] <b>VERIFY</b> RHR SYSTEM I(II) MIN FLOW INHIBIT switch, 2-HS-74-148(149) in INHIBIT <u>STANDARD:</u> Verifies 2-HS-74-149 is in INHIBIT.				
Verifies 2-HS-74-149 is in INHIBIT.	[12.3] <b>VERIFY</b> RHR	SYSTEM I(II) MIN F		
	STANDARD:			
SAT UNSAT N/A COMMENTS:	Verifies 2-HS-74-149 is in INHIBIT			
	SAT UNSAT	N/A	СОММ	ENTS:

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***************************************		
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL X
[12.4] <b>VERIFY CLO</b> 2-FCV-74-7(	<b>DSED</b> RHR SYSTEM I( 30).	II) MIN FLOW VALVE,
STANDARD:		
Verifies 2-FCV-74-30 is CLOSED	).	
SAT UNSAT	N/A C	OMMENTS:
*****	*****	******
PERFORMANCE STEP:	CRITICAL _	NOT CRITICAL X
	<b>DSED</b> RHR PUMP 2A(2 , 2-FCV-74-1(24) and 2	2B) and 2C(2D) SUPPR POOL -FCV- 74-12(35).
STANDARD:		
Verifies 2-FCV-74-24 and 2-FCV	-74-35 are CLOSED.	
SAT UNSAT	_ N/A C	OMMENTS:

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		REV. NO. 2 PAGE 18 of 24
**************	******	*******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
	•	2B) and 2C(2D) SD COOLING d 2-FCV-74-13(36).
STANDARD:		
Verifies 2-FCV-74-25 and 2-FCV-7	74-36 are OPEN.	
SAT UNSAT	N/A	COMMENTS:

IDM NO 204E

**NOTE** 2-POI-74-2 aligns the RHR system to prevent SDC isolations during modes 4 and 5 operations. For Step 4.2[12.7], it accomplishes this by opening either RHR SHUTDOWN COOLING SUCT OUTBD VLV, 2-FCV-74-47 or INBD ISOL VLV, 2-FCV-74-48 and opening the associated breaker. If an isolation is received the valve will **NOT** close because the breaker is open. Therefore, to restore Shutdown Cooling, it is **NOT** necessary to manipulate this already open valve. The other valve will still have power and if closed, is required to be reopened.

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PERFORMANCE ST	<u>EP:</u>	CRITICAL	<u>    X    </u>	NOT CRITICAL
	ISOL VLVs, 2-FC aligned per 2-PO	℃-74-47 and 2 1-74-2 (valve op at valve. The ot	FCV-74-4 pen with its her valve v	T OUTBD and INBD 8 (If either valve is s breaker open), this s will still need to be
STANDARD:				
indicating lamp is illu	minated (Not Cri	tical) and Verifi	ed 2-FCV-	7 only RED valve posit 74-48 only RED valve 2 is not in effect since
SAT UNS	SAT N	I/A	COMME	ENTS:
	****	****	****	NTS:
PERFORMANCE S1 [12.8]	**************************************	CRITICAL	) RHR PU	****
PERFORMANCE S1 [12.8]	**************************************	CRITICAL	) RHR PU	NOT CRITICAL
PERFORMANCE ST	<u>FEP:</u> <b>RESTART</b> trippe using 2-HS-74-5.	CRITICAL cd RHR pump(s A(16A)(28A)(39	) RHR PU 9A)	NOT CRITICAL MP 2A(2C)(2B)(2D)
PERFORMANCE ST [12.8] STANDARD: Places 2-HS-74-28A	<u>FEP:</u> <b>RESTART</b> trippe using 2-HS-74-5.	CRITICAL cd RHR pump(s A(16A)(28A)(39 ) in Start and R	) RHR PU A)	NOT CRITICAL MP 2A(2C)(2B)(2D)

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			JPM NO. 201 REV. NO. 2 PAGE 20 of 2	2
***************************************				
PERFORMANCE STEP:	CRITICAL		NOT CRITICAL	<u>     X    </u>
Notify US of pump failure to start.				
CUE:  [As US – acknowledge repo [If answer is "Start 2D RHR pump'				
STANDARD:				
Notifies US. (He/she should recomm	end starting 2D R	RHR pum	o)	
SAT UNSAT	N/A	COMME	NTS:	
**************************************			NOT CRITICAL	
Start 2D RHR pump.				
STANDARD:				
<u>STANDARD:</u> Places 2-HS-74-39A (2D RHR Pum)	, ,	I) and Ve	rifies only RED ligh	nt
STANDARD:	, ,	I) and Ve	rifies only RED ligh	nt

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# 

PERFORMANCE STEP:

CRITICAL X NOT CRITICAL \_\_\_\_\_

[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:

RHR Pumps in Operation	1	2
Loop Flow	7,000 to 10,000	14,000 to 20,000
Loop Flow (1 or more fuel bundles removed from core)	6,000 to 6,500	N/A

### **STANDARD:**

Manipulates 2-HS-74-66 to obtain RHR System II Loop flow between 7,000 and 10,000 gpm on 2-FI-74-64.

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

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***************************************	*****	********	*******

PERFORMANCE STEP:

CRITICAL \_\_\_\_ NOT CRITICAL \_\_X\_

[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.

CUE: [As AUO, report] The breaker target indicates charged and the amber breaker spring charged light is illuminated. Maintenance is investigating 2B RHR pump.

### STANDARD:

Dispatched personnel to Verify RHR Pump 2D breaker closing spring recharged and investigate 2B RHR pump failure.

SAT I	JNSAT	N/A		COMME	NTS:	
					****	
PERFORMANCE		~~~~~	CRITICAL		NOT CRITICAL	
540						

[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:**

Using 2-HS-23-52A and co-ordinating with Unit 3, reduces D2 RHRSW pump cooling flow to ~900 gpm as indicated on 2-FI-23-54 (while Unit 3 picks up minimum flow) and using 2-HS-23-46A raises B2 RHRSW pump dilution flow to ~4000 gpm (while Unit 3 lowers their flow to 0 gpm) as indicated on 2-FI-23-48.

SAT	UNSAT	N/A	COMMENTS:

CUE: That completes this task.

		JPM NO. 201F REV. NO. 2 PAGE 23 of 24
**************************************		**************************************
PERFORMER demonstrated the u	se of SELF CHECKINC	G during this JPM
STANDARD:		
PERFORMER verified applicable of accordance with plant standards.	components by utilizing	SELF CHECKING in
SAT UNSAT	N/A CC	DMMENTS:
**************************************		**************************************
PERFORMER demonstrated the u		
STANDARD: PERFORMER utilized 3-WAY COM	MMUNICATION in acco	ordance with plant standards.
SAT UNSAT	N/A CC	DMMENTS:
	END OF TASK	
STOP TIME:		

C

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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.

- Unit 2 is in Mode 3 (Rx temp > 212°F) heading towards cold conditions for a refueling outage.
- RHR Loop II using 2B RHR Pump was in shutdown cooling and Unit 3 is carrying 1350 gpm RHRSW flow for "B" RHRSW Header.
- An inadvertent loss of 2B RPS bus resulted in a partial isolation of RHR shutdown cooling.
- RPS 2B has been restored on the alternate supply.
- Another operator is assisting with recovery from the loss of 2B RPS.
- The Unit Supervisor has notified the Shift Manager of the problem.

**INITIATING CUES:** The Unit Supervisor directs you to restore shutdown cooling using 2B RHR pump in accordance with 2-AOI-74-1.

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### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 401F

TITLE: LOSS OF SHUTDOWN COOLING

TASK NUMBER: 0-74-AB-01

# SIM "D" UNIT-3

 $( \ )$ 

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

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

JPM NO. 401F REV. NO. 1 PAGE 2 of 22

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

# **REVISION LOG**

Revision Number	Effective Date	Pages Affected	Description Of Revision
0	12/29/07	All	Initial issue
1	08/16/08	All	General revision & re-format
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		l	

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# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:				
RO	SRO		DATE:	
JPM NUMBER:	401F			
TASK NUMBER:	0-74-AB-01			
TASK TITLE:	LOSS OF SHUTD	OWN COOLING		
K/A NUMBER:	295021 AA1.02	K/A RATING:	RO <u>3.5</u>	SRO <u>3.5</u>
	SUCCESSFULLY FOLLOWING LOS	RESTORE SHU	TDOWN COOLIN	G
PERFORMANCE	LOCATION:		SIMUL	ATOR X
REFERENCES/PR	OCEDURES NEED	ED: 3-AOI-74	4-1, Rev 16	
VALIDATION TIME	E: SIMU	JLATOR: <u>25:0</u>	0LOCAL	:
MAX. TIME ALLOW	VED:	_ (FOR TIME CI	RITICAL JPMs Of	NLY)
PERFORMANCE	ГІМЕ:			
COMMENTS:				
ADDITIONAL CON	IMENT SHEETS AT	TACHED?	YES	_NO
RESULTS:	SATISFACTORY		UNSATISFACT	ORY
EXAMINER SIGNA	ATURE:		DATE:	

JPM NO. 401F REV. NO. 1 PAGE 4 of 22

### 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 3 operator.

- Unit 3 is in Mode 3 (Rx temp >212 <sup>O</sup>F) heading towards cold conditions for a refueling outage.
- RHR Loop II using 3B RHR Pump was in shutdown cooling and Unit 2 is carrying 1350 gpm RHRSW flow for "B" RHRSW Header.
- An inadvertent loss of 3B RPS bus resulted in a partial isolation of RHR shutdown cooling.
- RPS 3B has been restored on the alternate supply.
- Another operator is assisting with recovery from the loss of 3B RPS.
- The US has notified the Shift Manager of the problem.

# **INITIATING CUES:** The US directs you to restore shutdown cooling using 3B RHR pump in accordance with 3-AOI-74-1.

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STAF	PAGE 5 of 22
	************************************
Wher	n requested by examiner identify/obtain copy of required procedure.
STAN	IDARD:
Obtai	ined a copy of 3-AOI-74-1.
SAT	UNSAT N/A COMMENTS:
3.0	AUTOMATIC ACTIONS None
4.0	OPERATOR ACTIONS
4.1	Immediate Actions None
4.2	Subsequent Actions
[	CAUTIONS

- CAUTIONS
- 1) Reactor vessel stratification may occur until Shutdown Cooling is restored or a Reactor Recirculation Pump is placed in service.
- 2) Loss of Shutdown Cooling during the first 24 hours is most critical due to massive decay heat and limitations on the RHRSW Piping. If Shutdown Cooling is lost during the first 24 hours post reactor shutdown, priorities shall be placed on the recovery of shutdown cooling in an expeditious manner [BFN PER 02-003140-000].

### NOTE

The following systems, if available, may be used as alternate methods of decay heat removal .Refer to the applicable Tec Spec Bases B 3.4.7, B 3.4.8, B 3.9.7, B 3.9.8 ADHR System- (0-OI-72) Fuel Pool Cooling System- (3-OI-78) RWCU System- (3-OI-69) Ambient losses with natural or forced circulation

				JPM NO. 40 REV. NO. PAGE 6 of	1
*******	*****	*****	******	******	******
PERFORM	ANCE STEP:	CRITI	CAL	_ NOT CRITICAL	<u>    X    </u>
[1]	IF any EOI entry	condition is met,	THEN		
	ENTER the app	ropriate EOI(s). (O	therwise <b>N/A</b>	N)	
STANDAR	<u>D:</u>				
Determines	no EOI entry con	ditions have been	met and N/A	s step.	
SAT	UNSAT	N/A	COMM	MENTS:	
				****	
PERFORM	ANCE STEP:	CRITI	CAL	_ NOT CRITICAL	<u> </u>
[2]	NOTIFY the Shi	ft Manager.			
STANDAR	<u>):</u>				
N/A - Given	in the initial cond	tions.			
SAT	UNSAT	N/A	COM	MENTS:	

				JPM NO. 401 REV. NO. 1 PAGE 7 of 22	F
PERFORMANCE S				NOT CRITICAL	
	ueling is in progre			NOT ORTIONE	
	• • •			•	
	<b>Y</b> the Refueling F	ioor SRU. (Utr	erwise N/	<b>A</b> )	
<u>STANDARD:</u>					
Mode 3 given in init	al conditions. Not	required to not	ify Refueli	ng Floor SRO.	
SAT UN	SAT N	/A	COMME	ENTS:	
PERFORMANCE S				NOT CRITICAL	
	W EPIP-1, Emerç ions. (Otherwise N		ssification	Logic, for entry	
CUE: The Shift Ma	inager and STA a	are reviewing t	he EPIPs		
CUE: The Shift Ma	inager and STA a	are reviewing t	he EPIPs		
<u>STANDARD:</u>	inager and STA a	are reviewing f	he EPIPs		
<u>STANDARD:</u> N/A					
<u>STANDARD:</u>				• ENTS:	
<u>STANDARD:</u> N/A					

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 PERFORMANCE STEP:
 CRITICAL \_\_\_\_\_ NOT CRITICAL \_\_\_\_\_

[5] **IF** Shutdown Cooling isolates on low RPV water level or high Drywell press (GROUP 2 ISOL) AND RPV water level needs restoring using LPCI,

**THEN** (Otherwise N/A)

**PERFORM** the following before reaching -122 inches RPV water level:

- [5.1] Verify Closed....
- [5.2] Depress....
- [5.3] If the RHR....

### STANDARD:

Determines water level does NOT need restoring, N/A's all section 4.2[5] and continues to step 4.2[6]

SAT	 UNSAT	 N/A	COMMENTS:_	 

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***************************************							
PERFORMANCE STEP:		CRITICAL	NOT CRITICAL	<u>&lt;                                    </u>			
[6]	IF Primary Containment Integrity is required, THEN (Otherwise N						
	<b>VERIFY</b> RHR system discharge piping pressure is being maintained > TRM 3.5.4 Limits. <b>REFER TO</b> 3-OI-74.						
<u>STANDARD</u>	STANDARD:						
Determines Primary Containment IS required in Mode 3 and Verifies pressure is ≥ 35 psig on 3-PI-74-65 for Loop II RHR. (3-OI-74r83 P&L 3.1.M).							
SAT	_ UNSAT N	I/A	COMMENTS:				

NOTES
1) With the Reactor in Cold Shutdown Condition (Mode 4 or Mode 5), reactor coolant stratification may be indicated by one of the following:
<ul> <li>Reactor pressure above 0 psig with any reactor coolant temperature indication reading at or below 212°F.</li> </ul>
<ul> <li>Differential temperatures of 50°F or greater between either RX VESSEL</li> </ul>
BOTTOM HEAD (FLANGE DR LINE) 3-TE-56-29 (8) temperatures and RX
VESSEL FW NOZZLE N4B END (N4B INBD)(N4B END)(N4D INBD)
3-TE-56-13(14)(15)(16) temperatures from the REACTOR VESSEL METAL
TEMPERATURE recorder, 3-TR-56-4.
With recirculation pumps and shutdown cooling out of service, a Feedwater
sparger temperature of 200°F or greater on any RX VESSEL FW NOZZLE (N4B
END (N4B INBD)(N4D END)(N4D INBD) 3-TE-56-13(14)(15)(16) temperatures
from the REACTOR VESSEL METAL TEMPERATURE recorder, 3-TR-56-4.

2) [NER/C] For purposes of thermal stratification monitoring, the bottom head drain line is more representative as long as there is flow in the line. [GE SIL 251 and 430]

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***************************************	*****	*****	*******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL	X

[7] **PLOT** heatup/cooldown rate as necessary. **REFER TO** 3-SR-3.4.9.1(1).

CUE: Another Operator is performing 3-SR-3.4.9.1(1).

### STANDARD:

Checks step off and continues to step 4.2[8] (since another Operator is performing the SR), Candidate may select HUR on SPDS.

SAT	 UNSAT	 N/A	COMMENTS:	

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- [8] **REQUEST** the SRO to **ESTIMATE** the following times at least once per shift until a method of decay heat removal is restored:
  - [8.1] **DETERMINE** the time since shutdown.
  - [8.2] **DETERMINE** the current RPV heat-up rate from 3-SR-3.4.9.1(1), or, if reactor coolant stratification is suspected, use Illustration 1.
    - [8.2.1] **IF** additional information is required to determine the heat-up rates, **THEN**

**NOTIFY** Reactor Engineer.

- [8.3] **DETERMINE** the reactor coolant temperature or use the last valid reactor coolant temperature available.
- [8.4] **IF** the Reactor Vessel head is removed and the cavity is flooded with the fuel pool gates installed, **THEN** (Otherwise **N/A**)

**ESTIMATE** the time for reactor coolant temperature to reach 125°F and 150°F using a plot of the actual heatup rate or Illustration 1.

[8.5] **ESTIMATE** the time for reactor coolant temperature to reach 212°F, using data obtained in Steps 4.2[8.1] through 4.2[8.3].

# CUE: [As STA (SRO) – state] I will perform 3-AOI-74-1 step [8] at least once per shift.

### STANDARD:

Requests SRO to estimate the heat up rate and check for stratification at least once per shift.

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

			JPM NO. 401F REV. NO. 1 PAGE 12 of 22
	ANCE STEP:		NOT CRITICAL <u>X</u>
		ntdown Cooling is due to ina e <b>N/A</b> )	adequate RHRSW flow,
	<b>START</b> the stand <b>TO</b> 0-OI-23.	by RHRSW pump for the a	appropriate header. <b>REFER</b>
STANDARD	<u>):</u>		
N/As Step 4	.2[9] since there is	no loss of RHRSW.	
SAT	UNSAT	N/A CC	MMENTS:
[10]	THEN (Otherwise	,	
	WUEN conditions	) pormit reporting (`roup ()	
	PERFORM the for [10.1] RESET Gr RESET, 3-	roup 2 isolation by moment -HS-64-16A-S32, and PCI	tarily PLACING PCIS DIV I
	PERFORM the fo [10.1] RESET Gr RESET, 3- 3-HS-64-1	roup 2 isolation by moment	tarily PLACING PCIS DIV I
STANDARE	PERFORM the fo [10.1] RESET Gr RESET, 3- 3-HS-64-1	ollowing: roup 2 isolation by moment -HS-64-16A-S32, and PCIS	tarily PLACING PCIS DIV I
On Panel 3-	PERFORM the fo [10.1] RESET Gr RESET, 3- 3-HS-64-1 <u>):</u> -9-4, RESETS Grou	ollowing: roup 2 isolation by moment -HS-64-16A-S32, and PCIS 6A-S33, in reset. up 2 isolation by momentar	tarily PLACING PCIS DIV I S DIV II RESET,
On Panel 3- RESET, 3-ŀ	PERFORM the fo [10.1] RESET Gr RESET, 3- 3-HS-64-1 <u>):</u> -9-4, RESETS Grou	ollowing: roup 2 isolation by moment -HS-64-16A-S32, and PCIS 6A-S33, in reset. up 2 isolation by momentar reset and PCIS Div II RES	tarily PLACING PCIS DIV I S DIV II RESET, ily PLACING PCIS DIV I
On Panel 3- RESET, 3-ŀ	PERFORM the fo [10.1] RESET Gr RESET, 3- 3-HS-64-1 <u>D:</u> -9-4, RESETS Grou HS-64-16A-S32, in r	ollowing: roup 2 isolation by moment -HS-64-16A-S32, and PCIS 6A-S33, in reset. up 2 isolation by momentar reset and PCIS Div II RES	tarily PLACING PCIS DIV I S DIV II RESET, rily PLACING PCIS DIV I ET, 3-HS-64-16A-S33 to res
On Panel 3- RESET, 3-ŀ	PERFORM the fo [10.1] RESET Gr RESET, 3- 3-HS-64-1 <u>D:</u> -9-4, RESETS Grou HS-64-16A-S32, in r	ollowing: roup 2 isolation by moment -HS-64-16A-S32, and PCIS 6A-S33, in reset. up 2 isolation by momentar reset and PCIS Div II RES	tarily PLACING PCIS DIV I S DIV II RESET, rily PLACING PCIS DIV I ET, 3-HS-64-16A-S33 to res

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	••••••••••••••••••••••••••••••••••••••				
<u> </u>	[10.2] MOMENTARIL	• Y DEPRESS RHR 3-XS-74-126 and 3-	SYS I(		
STANDARD	<u>):</u>				
(Critical). VE CLG INBD I	/ Depresses RHR SYS I ERIFY 3-IL-74-132 exting NJECT ISOL RESET, 3 d (Not critical).	guished (Not critica	l). Dep	resses RHR SYS I	SD
SAT	UNSAT	N/A	СОММ	ENTS:	
	1				
	**************************************			NOT CRITICAL	
		CRITICAL n Cooling is due to remain reset due t	Group	NOT CRITICAL	<u>X</u> Solatio
PERFORM	ANCE STEP: IF the loss of Shutdow signal fails to reset, or	CRITICAL In Cooling is due to remain reset due t	Group	NOT CRITICAL	<u>X</u> X
PERFORM	ANCE STEP: IF the loss of Shutdow signal fails to reset, or THEN (Otherwise N/A	CRITICAL In Cooling is due to remain reset due t	Group	NOT CRITICAL	<u>X</u> X
PERFORM	ANCE STEP: IF the loss of Shutdow signal fails to reset, or THEN (Otherwise N/A PERFORM the followi	CRITICAL In Cooling is due to remain reset due t	Group	NOT CRITICAL	<u>X</u> X
PERFORM	ANCE STEP: IF the loss of Shutdow signal fails to reset, or THEN (Otherwise N/A PERFORM the followi [11.1] Verify	CRITICAL In Cooling is due to remain reset due t	Group	NOT CRITICAL	<u>X</u> X
PERFORM	ANCE STEP: IF the loss of Shutdow signal fails to reset, or THEN (Otherwise N/A PERFORM the followi [11.1] Verify [11.2] Obtain	CRITICAL In Cooling is due to remain reset due t	Group	NOT CRITICAL	<u>X</u> X
PERFORM	ANCE STEP: IF the loss of Shutdow signal fails to reset, or THEN (Otherwise N/A PERFORM the followi [11.1] Verify [11.2] Obtain [11.3] Defeat [11.4] If conditions	CRITICAL In Cooling is due to remain reset due t	Group	NOT CRITICAL	<u>X</u> X
<u>PERFORM</u> [11] <u>STANDARE</u>	ANCE STEP: IF the loss of Shutdow signal fails to reset, or THEN (Otherwise N/A PERFORM the followi [11.1] Verify [11.2] Obtain [11.3] Defeat [11.4] If conditions	CRITICAL n Cooling is due to remain reset due t	o Group o invali	NOT CRITICAL 2 PCIS <b>AND</b> the is id and/or sporadic s	<u>X</u> X
<u>PERFORM</u> [11] <u>STANDARE</u> N/As all Ste	ANCE STEP: IF the loss of Shutdow signal fails to reset, or THEN (Otherwise N/A PERFORM the followi [11.1] Verify [11.2] Obtain [11.3] Defeat [11.4] If conditions D:	CRITICAL n Cooling is due to remain reset due to ng: nal should have res	o Group o invali	NOT CRITICAL 2 PCIS <b>AND</b> the is id and/or sporadic s	X solatio ignals

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				REV. NO. 1 PAGE 14 of 22
	ANCE STEP:			NOT CRITICAL
[12]	IF the Group 2	PCIS Isolation has bee	n reset, <b>-</b>	THEN (otherwise N/A)
	<b>RETURN</b> the a	ffected loop of RHR to	Shutdow	n Cooling as follows:
		RHR SYS I(II) LPCI OU 74-52(66).	JTBD IN.	JECT VALVE,
STANDARD	) <u>:</u>			
	6-74-66 (Critical) d (Not Critical).	and verifies ONLY GR	EEN valv	e position indicating lamp
SAT	UNSAT	N/A	COM	//ENTS:
	ANCE STEP:			
[12.2]	] OPEN RHR SY	YS I(II) LPCI INBD INJE	ECT VAL	VE, 3-FCV-74-53(67).
<u>STANDARE</u>	<u>):</u>			
	CV-74-67 (Critical).	I) and verifies ONLY RE	ED valve	position indicating lamp
SAT	UNSAT	N/A	COM	MENTS:

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			JPM NO. 40 <sup>°</sup> REV. NO. PAGE 15 of 2	1
**************************************			OT CRITICAL	
[12.3] <b>VERIFY</b> RHR 3-HS-74-148(	SYSTEM I(II) MIN 149) in INHIBIT	FLOW INHI	BIT switch,	
STANDARD:				
Verifies 3-HS-74-149 in INHIBIT.				
SAT UNSAT	N/A	COMMEN	TS:	
**********	******	*****	******	*******
PERFORMANCE STEP:	CRITICAL	N	IOT CRITICAL	X
[12.4] <b>VERIFY CLO</b> 3-FCV-74-7(3		M I(II) MIN F	LOW VALVE,	
STANDARD:				
Verifies 3-FCV-74-30 is closed.				
SAT UNSAT	N/A	COMMEN	TS:	

 $( \ )$ 

PERFORMANCE STEP:			
	<b>-OSED</b> RHR PUMP 3A s, 3-FCV-74-1(24) and	(3B) and 3C(3D) SUPPI 3-FCV-74-12(35).	R POO
STANDARD:			
Verifies 3-FCV-74-24 & 35 are o	closed.		
- · · · · · ·	N1/A		
SAT UNSAT	N/A	COMMENTS:	
****	****		******
	CRITICAL	NOT CRITICA 3) and 3C(3D) SD COOI	 L
PERFORMANCE STEP: [12.6] <b>VERIFY OF</b>	CRITICAL PEN RHR PUMP 3A(3I	NOT CRITICA 3) and 3C(3D) SD COOI	 L
PERFORMANCE STEP: [12.6] <b>VERIFY OF</b> SUCT VLV	CRITICAL PEN RHR PUMP 3A(3I s, 3-FCV-74-2(25) and	NOT CRITICA 3) and 3C(3D) SD COOI	 L

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******	******	*******	*******
PERFORMANCE STEP:	CRITICAL	<u>    X    </u>	NOT CRITICAL
[12.7] <b>OPEN</b> RHR SHUTE ISOL VLVs, 3-FCV-			
STANDARD:			
Places 3-HS-74-47 in Open (Critical)and position indicating lamp is illuminated (N		CV-74-48	ONLY RED valve
SAT UNSAT N/A		COMME	ENTS:
******	*****	*********	*****
PERFORMANCE STEP:	CRITICAL	<u>    X    </u>	NOT CRITICAL
[12.8] <b>RESTART</b> RHR PL (16A), (28A), (39A)	· · · · ·	3B)(3D) u	sing 3-HS-74-5A ,
STANDARD:			
Places 3-HS-74-28A (3B RHR Pump) in	Start and Re	cognizes	Failure To Start.
SAT UNSAT N/A		COMME	ENTS:

		JPM NO. 401 REV. NO. 1 PAGE 18 of 2	l
*****			
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL	<u> </u>
Notify US of pump failure to star	t.		
CUE: [As US] Acknowledge	report. If necessary, ask	; What do you recomm	nend?
STANDARD:			
Notifies US.			
SAT UNSAT	N/A CC	DMMENTS:	
******			
PERFORMANCE STEP:	CRITICAL	XNOT CRITICAL	
Start 3D RHR pump.			
STANDARD:			
PLACES 3-HS-74-39a for 3D R light above handswitch (Not Crit	•	ical) and verifies it starts	by red
SAT UNSAT	N/A CO	DMMENTS:	

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PERFORMANCE STEP:

CRITICAL X NOT CRITICAL

[12.9] THROTTLE RHR SYS I(II) LPCI OUTBD INJECT VALVE,
 3-FCV-74-52(66), to establish and maintain RHR flow as indicated by 3-FI-74-50(64), RHR SYS I(II) FLOW, as follows:

RHR Pumps in Operation	1	2
Loop Flow	7,000 to 10,000 gpm	14,000 to 20,000 gpm
Loop Flow (1 or more fuel bundles removed from core)	6,000 to 6,500 gpm	N/A

### STANDARD:

Manipulates 3-HS-74-66 to obtain RHR System II Loop flow between 7,000 and 10,000 gpm on 3-FI-74-64.

SAT	UNSAT	N/A	COMMENTS:	

PERFORMAN [ STANDARD: Dispatched pe investigate 3B	ICE STEP: 12.10] <b>WHEN</b> ti <b>VERIFY</b> F observing spring tar ersonnel to verify RHR pump fail	CR ime permits afte RHR Pump Brea g amber breaker get indicates ch y RHR Pump 3D ure.	ITICAL r RHR pump aker charging spring charg arged. D breaker clo	NOT CRITICAL <u>X</u> o is started, <b>THEN</b> g spring recharged by ged light is on and closing
<u>STANDARD:</u> Dispatched pe investigate 3B	VERIFY F observing spring tar ersonnel to verify RHR pump fail	ime permits afte RHR Pump Brea g amber breaker get indicates ch y RHR Pump 3E ure.	r RHR pump aker charging spring charg arged. D breaker clo	o is started, <b>THEN</b> g spring recharged by ged light is on and closing osing spring recharged and
Dispatched pe investigate 3B	observing spring tar ersonnel to verify RHR pump fail	g amber breaker get indicates ch y RHR Pump 3E ure.	spring charged. D breaker clo	ged light is on and closing
Dispatched pe investigate 3B	RHR pump fail	ure.		
investigate 3B	RHR pump fail	ure.		
SAT	UNSAT	N/A	CO	
				MMENTS:
PERFORMAN	ICE STEP: [12.11] <b>SLOWL</b> `	CR <b>Y THROTTLE</b> F	ITICAL	NOT CRITICAL X 3C)(3B)(3D) RHRSW OUTLE obtain desired cooldown rate
STANDARD:		, ,	// // //	
flow to ~900 g using 3-HS-23	pm as indicated	d on 3-FI-23-54 RHRSW pump	(while Unit 2 dilution flow	s D2 RHRSW pump cooling picks up minimum flow) and to ~4000 gpm (while Unit 2
SAT	UNSAT	N/A	со	MMENTS:
_				

(

PERFORMANCE STEP:		NOT CRITICAL	
PERFORMER demonstrated the	use of SELF CHECKINC	G during this JPM	
STANDARD:			
PERFORMER verified applicable accordance with plant standards.	components by utilizing	SELF CHECKING in	
SAT UNSAT	_ N/A CC	MMENTS:	
PERFORMANCE STEP:		NOT CRITICAL	
PERFORMANCE STEP: PERFORMER demonstrated the <u>STANDARD:</u>	CRITICAL	NOT CRITICAL	<u>×</u> M
PERFORMANCE STEP: PERFORMER demonstrated the	CRITICAL	NOT CRITICAL	<u>×</u> M
PERFORMANCE STEP: PERFORMER demonstrated the <u>STANDARD:</u>	CRITICAL use of 3-WAY COMMUN	NOT CRITICAL	<u>X</u> M ards.
PERFORMANCE STEP: PERFORMER demonstrated the <u>STANDARD:</u> PERFORMER utilized 3-WAY CO SAT UNSAT	CRITICAL use of 3-WAY COMMUN DMMUNICATION in acco _ N/A CC	NOT CRITICAL	<u>X</u> Mards.

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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 a Unit 3 operator.

- Unit 3 is in Mode 3 (Rx temp >212 <sup>O</sup>F) heading towards cold conditions for a refueling outage.
- RHR Loop II using 3B RHR Pump was in shutdown cooling and Unit 2 is carrying 1350 gpm RHRSW flow for "B" RHRSW Header.
- An inadvertent loss of 3B RPS bus resulted in a partial isolation of RHR shutdown cooling.
- RPS 3B has been restored on the alternate supply.
- Another operator is assisting with recovery from the loss of 3B RPS.
- The US has notified the Shift Manager of the problem.

**INITIATING CUES:** The US directs you to restore shutdown cooling using 3B RHR pump in accordance with 3-AOI-74-1.

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# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

### **REVISION LOG**

Revision Number	Effective Date	Pages Affected	Description Of Revision
0	11/09/07	All	Initial issue
1	08/28/08	All	General revision & re-format

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# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

0

6

OPERATOR:						
R0	SRO		DATE:			
JPM NUMBER:	376					
TASK NUMBER:	U-000-EM-64					
TASK TITLE:	3-EOI APPENDIX-	14B - CAD OPEF	RATION TO THE E	DRYWELL		
K/A NUMBER:	223001A4.04	K/A RATING:	RO <u>3.5</u>	SRO <u>3.6</u>		
*****	*****	*****	*****	*****		
TASK STANDARD	: PERFORM MANIP 3-EOI APPENDIX- THE DRYWELL W	14B REQUIRED	TO ADMIT NITRO	GEN TO		
PERFORMANCE LOCATION: SIMULATOR X						
REFERENCES/PR	OCEDURES NEED	ED: 3-EOI A	ppendix-14B, Rev	4		
VALIDATION TIME	SIMU	LATOR: 5:00	DLOCAL:			
MAX. TIME ALLOW	VED:	_ (FOR TIME CI	RITICAL JPMs ON	LY)		
PERFORMANCE 1	ГІМЕ:					
COMMENTS:						
ADDITIONAL COM	IMENT SHEETS AT	TACHED?	YES	_NO		
RESULTS:	SATISFACTORY		UNSATISFACTO	PRY		
EXAMINER SIGNA	ATURE:		DATE:			

JPM NO. 376 REV. NO. 1 PAGE 4 of 14

### 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.

- A LOCA has led to fuel failure and a rising level of hydrogen concentration in the Unit 3 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 3-EOI Appendix-14B.

	JPM NO. 376 REV. NO. 1
	PAGE 5 of 14
START TIME	
**************************************	CRITICAL NOT CRITICAL
When requested by examiner identify	/obtain copy of required procedure.
STANDARD:	
Obtained copy of 3-EOI Appendix-14	В.
SAT UNSAT N	J/A COMMENTS:
-	
	NOTE
	AD TRAIN A (Division I) or CAD TRAIN B (Division in B are in parentheses in the steps below.
*****	***************************************
PERFORMANCE STEP:	CRITICAL NOT CRITICAL
1. <b>VERIFY</b> containment hydroger	n/oxygen analyzer sample pumps in service.
STANDARD:	
Verified Sample Pumps in service by 3-HS-76-59 and 49 on Panels 3-9-54	observing illuminated RED status lamps above and 55.
SAT UNSAT N	V/A COMMENTS:

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					JPM NO. 370 REV. NO.	1
					PAGE 6 of 1	
	RFORMANCE S				NOT CRITICAL	
2.	concentratio			, ,	n and Oxygen rs 3-XR-76-110A c	r
<u>STA</u>	NDARD:					
Loca	ated 3-XR-76-1	10A and 3-XR-	76-110B and rea	ad off appro	ximate indications	
SAT	UV	NSAT	N/A	COMME	ENTS:	
<u></u>						
	RFORMANCE S				NOT CRITICAL	
	RFORMANCE S	<u>STEP:</u>	CRITICA	L		<u>    X</u>
PER	RFORMANCE S	<u>STEP:</u> Drywell or Sup are or become <b>NOTIFY</b> Chem	CRITICA pression Chamb inoperable,	L per hydroge Drywell and	NOT CRITICAL	<u>X</u> zers
<u>PER</u> 3.	RFORMANCE S	<u>STEP:</u> Drywell or Sup are or become <b>NOTIFY</b> Chem	CRITICA pression Chamb inoperable, h Lab to sample	L per hydroge Drywell and	NOT CRITICAL	<u>X</u> zers
<u>PER</u> 3. <u>STA</u>	RFORMANCE S IF THEN NDARD:	<u>STEP:</u> Drywell or Sup are or become <b>NOTIFY</b> Chem	CRITICA opression Chamb inoperable, n Lab to sample and oxygen using	L per hydroge Drywell and	NOT CRITICAL	<u>X</u> zers
<u>PEF</u> 3. <u>STA</u> Acki	RFORMANCE S IF THEN NDARD: nowledged the	<u>STEP:</u> Drywell or Sup are or become <b>NOTIFY</b> Chem for hydrogen a above step and	CRITICA opression Chamb inoperable, a Lab to sample and oxygen using d continued.	L per hydroge Drywell and CI-644.	NOT CRITICAL en or oxygen analy: d Suppression Cha	X zers mber
<u>PEF</u> 3. <u>STA</u> Acki	RFORMANCE S IF THEN NDARD: nowledged the	<u>STEP:</u> Drywell or Sup are or become <b>NOTIFY</b> Chem for hydrogen a above step and	CRITICA opression Chamb inoperable, a Lab to sample and oxygen using d continued.	L per hydroge Drywell and CI-644.	NOT CRITICAL	X zers mber

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JPM NO. 376 REV. NO. 1 PAGE 7 of 14

# PERFORMANCE STEP: CRITICAL NOT CRITICAL X\_\_\_\_

4. **NOTIFY** STA to record post-LOCA containment parameters on Attachment 1 of this procedure every 4 hours as required by FSAR.

# CUE: [STA Repeats] Recording Post-LOCA data on Attachment 1 every 4 hours.

### STANDARD:

Simulated Notifying STA by phone or voice to perform Attachment 1 of this procedure every four (4) hours.

SAT		UNSAT		N/A	-	COMMENTS:	
-----	--	-------	--	-----	---	-----------	--

#### CAUTION

CAD operation with Primary Containment pressure above 30 psig may result in Containment failure.

The following are 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\_

- While executing this procedure for CAD addition per SAMG-2, 5. IF..... Step G-4 or G-9,
  - Primary Containment Pressure approaches 30 psig, OR
  - Primary Containment is to be vented,

THEN..... **BEFORE:** 

- Primary Containment Pressure reaches 30 psig,
  - OR
- Primary Containment venting begins, •

**PERFORM** Step 7 to **STOP** CAD addition to the Primary Containment.

#### CUE: Primary Containment is not to be vented at this time.

#### STANDARD:

Verified Primary Containment < 30 psig and acknowledges primary containment not to be vented at this time.

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

							R	PM NO. 3 EV. NO.	1
							P	AGE 9 of	14
		ANCE STEP:	**********					CRITICAL	
6.	PLA	<b>CE</b> CAD Syste	m in servi	ice as follows	:				
	a.	IF	CAD add	dition is requi	red per	SAMO	i-2, Ste	pG-4 or (	G-9,
		THEN		all Primary C Containment			•	• •	AND
STA	NDAR	<u>):</u>							
	fied Prir g vente	mary Containn d.	nent < 30	psig and ack	nowledg	ges pri	mary co	ontainmer	nt not
SAT		UNSAT		N/A	С	OMME	ENTS:		
SAT		UNSAT		N/A	С	OMME	ENTS:		
SAT		UNSAT		N/A	C	OMME	ENTS:		
		UNSAT							
****	******			*****	*****	*****	******		*****
****	******	**************************************		*****	******** CAL _	******** X	******** NOT (	CRITICAL	****** 
 ****** <u>PER</u>	*********	******************** ANCE STEP: OPEN 0-FC Panel 3-9-54		CRITI	******** CAL _	******** X	******** NOT (	CRITICAL	****** 
+***** <u>PER</u> <u>STA</u> Plac	b. NDARI	******************** ANCE STEP: OPEN 0-FC Panel 3-9-54	V-84-5(16 4(55). OPEN pc	CRITI 6), CAD SYS <sup>-</sup>	******** САL ГЕМ А(I	X3) N2 \$	NOT (	********** CRITICAL	 E, on
++++++ PER STA Plac posit	b. NDARI	ANCE STEP: OPEN 0-FC Panel 3-9-54 D: S-84-5A in the	V-84-5(16 4(55). OPEN pc lot Critica	CRITI 5), CAD SYS <sup>-</sup> osition (Critica I).	******* САL ГЕМ А(I	3) N2 3	NOT ( SHUTO	********** CRITICAL FF VALV	E, on

C

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 $( \$ 

						REV. NO. 1 PAGE 10 of 1	14
		<u> ************************************</u>	**************************************			OT CRITICAL	
	C.	IF	CAD addition	n to Suppress	ion Chambe	er is required,	
		THEN	. CONTINUE	in this proced	ure at Step	6.e.	
STAN	IDAR	<u>):</u>					
Condi	itions	and Initiating	ddition to the Su g Cues) and con	tinues at step	d.		
SAT		UNSA	T N/A	·	COMMEN	TS:	
		<b></b>					
	<u></u>						
		ANCE STE	**************************************				****
			<u> </u>				
	d.	INITIATE	CAD to Drywell	as follows:			
	d.	1) <b>PL</b>	CAD to Drywell <b>ACE</b> 3-HS-84-8, LY SEL, handsv	A/B(8C/D), Sl		•	
	d.	1) PL SP	ACE 3-HS-84-8	A/B(8C/D), St vitch on Pane	3-9-54(55)	•	
<u>STAN</u>	d. IDARI	1) PL SF 2) CC	ACE 3-HS-84-8/ LY SEL, handsv	A/B(8C/D), St vitch on Pane	3-9-54(55)	•	
	IDARI	1) PL SF 2) CC <u>D:</u>	ACE 3-HS-84-8/ LY SEL, handsv	A/B(8C/D), St vitch on Pane procedure at	3-9-54(55), Step 6.f.	in DRYWELL.	B)

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*************	******	******	*******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL	<u>     X    </u>

- f. **CHECK** CAD operating properly as follows on Panel 3-9-54(55):
  - 0-FI-84-7/3(18/3), CAD A(B) N2 SYSTEM FLOW, indicates between 90 and 100 scfm.
  - 0-TI-84-27/3(28/3), VAPOR A(B) OUTLET TEMP, indicates approximately 20 degrees below outside air temperature.
  - 0-PI-84-6/3(17/3), VAPOR A(B) OUTLET PRESS, indicates below 150 psig.

CUE: Outside air temperature is approximately 75°F.

#### **STANDARD:**

Located 0-FI-84-7/3, 0-TI-84-27/3, and 0-PI-84-6/3 (on side of Unit 3 Panel) and Verified acceptable indications.

SAT		UNSAT	 N/A	COMMENTS:
	944 <sup>1</sup> 7		 	

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PERF	PERFORMANCE STEP:			CRITICA	\L	NOT CRITICAL	X		
7.				CAD a		by Step 5 to the Dry		uppression Chamber	as
	a.					), SUPPI (55), in C		DW CAD 3A(3B) SPL	Y SEL.
	b.		<b>FY</b> 0-F I 3-9-54		18/3), (	CAD LINE	E A(B) N2	FLOW, indicates 0 s	cfm on
	C	IF		CAD is	NOT b	eing use	d to suppl	y Drywell Control Air,	,
		THE	۷	CLOSE on Pan		•	5), CAD S`	YSTEM A(B) N2 SHU	JTOFF,
CUE:	[Unit	Super	visor c	lirects]	CAD ac	dition w	ill be cor	itinued.	
STAN	NDARE	<u>):</u>							
N/A									
SAT		UI	NSAT		N/A _		СОМ	MENTS:	

CUE: That completes this task.

PERFORMER demonstrated the u <u>STANDARD:</u> PERFORMER utilized 3-WAY COI		-
	ISE OF 3-WAY COMMUN	IICATION during this J
PERFORMER demonstrated the u	ISE OF 3-WAY COMMUN	IICATION during this .
**************************************		NOT CRITICAL
SAT UNSAT	N/A CO	MMENTS:
PERFORMER verified applicable of accordance with plant standards.	components by utilizing	SELF CHECKING in
<u>STANDARD:</u>		
PERFORMER demonstrated the u	se of SELF CHECKING	during this JPM
PERFORMANCE STEP:		NOT CRITICAL
***************************************	*****	******

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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 an Operator.

- A LOCA has led to fuel failure and a rising level of hydrogen concentration in the Unit 3 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 3-EOI Appendix-14B.

JPM NO. 385F REV. NO. 1 PAGE 1 of 14

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 385F

TITLE: DIESEL GENERATOR LOW LOW OIL PRESSURE

TASK NUMBER: U-082-AL-04

# SIM "F" UNIT-3

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

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

JPM NO. 385F REV. NO. 1 PAGE 2 of 14

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

# **REVISION LOG**

Revision Number	Effective Date	Pages Affected	Description Of Revision
0	12/22/07	All	Initial issue
1	08/28/08	All	General revision & re-format
L	L	1	

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# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

OPERATOR:							
RO	SRO		DATE:				
JPM NUMBER:	385F						
TASK NUMBER:	U-082-AL-04						
TASK TITLE:	DIESEL GENERATO	R LOW LOW C	DIL PRESSURE				
K/A NUMBER:	264000K4.01 K	/A RATING:	RO <u>3.5</u>	SRO <u>3.7</u>			
****	*****	*****	*****	****			
TASK STANDARD: SHUTDOWN DG WHEN LOW LOW OIL PRESSURE LIGHT IS ILLUMINATED ON PANEL 9-23 IN THE MCR							
PERFORMANCE	LOCATION:		SIMULA	TOR <u>X</u>			
REFERENCES/PR	OCEDURES NEEDED		5.1.1(3A), Rev 34, -23A, Rev 10				
VALIDATION TIME	E: SIMULA	TOR:	LOCAL:				
MAX. TIME ALLOW	VED:(	FOR TIME CF	RITICAL JPMs ONI	_Y)			
PERFORMANCE	ГІМЕ:						
COMMENTS:	A copy of 3-S required to provide	R-3.8.1.1(3A) to the student	marked-up to ster t.	o 7.8[1] is			
ADDITIONAL COM	IMENT SHEETS ATTA	CHED?	YES	NO			
RESULTS:	SATISFACTORY _		UNSATISFACTO	RY			
EXAMINER SIGNA	ATURE:		DATE:				

JPM NO. 385F REV. NO. 1 PAGE 4 of 14

#### 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 extra operator.

- The (3A) Diesel Generator Monthly test 3-SR-3.8.1.1(3A) is in progress for December.
- The DG has been rolled and AUO is stationed at the DG with a stopwatch.
- All other support personnel are also standing by at the DG.

**INITIATING CUES:** You are at step 7.8[1] of 3-SR-3.8.1.1(3A) ready to start the DG, The AUO is standing by waiting on your mark to start his/her stopwatch locally.

START TIME

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PERFORMANCE STEP: CRITICAL

CRITICAL \_\_\_\_\_ NOT CRITICAL \_\_X\_

When requested by examiner identify/obtain copy of required procedure.

Examiner Note: When Student locates SR in the book, give him/her the markedup copy of the SR signed off up to step 7.8[1].

STANDARD:

Obtained copy of 3-SR-3.8.1.1(3A).

SAT	<u></u>	UNSAT		N/A	COMMENTS:
-----	---------	-------	--	-----	-----------

JPM NO. 385F REV. NO. 1 PAGE 6 of 14

#### NOTES

- The Fast Start Section 7.8, should be performed during the first scheduled runs for the months of June and December or directed by the Shift Manager. Upon the Shift Manager's direction, Fast Starts of the Diesel Generator may be performed as required. It is desired to perform the fast starts as scheduled, but as conditions warrant, fast starts may be performed to facilitate maintenance activities.
- 2) The Operator in Diesel Generator Room 3A should begin timing on mark from the Operator at Panel 3-9-23 when Diesel Generator 3A Control Switch is taken to the start position and stop timing when engine speed reaches 900 RPM as indicated on the engine RPM meter on the Diesel Engine Control Cabinet.
- 3) The first Operator at Panel 3-9-23 should begin timing on mark from the second Operator at Panel 3-9-23 when Diesel Generator 3A Control Switch is taken to the start position and should stop timing when frequency at Panel 3-9-23 reads greater than 58.8 Hz.
- 4) The second Operator at Panel 3-9-23 should begin timing when Diesel Generator 3A Control Switch is taken to the start position and stop timing when Generator Voltage reaches greater than 3940 V as indicated on the Diesel Generator Voltmeter located on Panel 3-9-23.
- 5) Diesel Generator 3A Operating Data is obtained from Data Acquisition Unit connected in accordance with 0-TI-298.

Data Acquisition is normally performed during the months of June and December. Data Acquisition may be required as a result of maintenance, testing, or surveillance not performed as scheduled during the required months.

6) Electrical Maintenance is required to record Generator Turbo Charger (NO LOAD) vibration readings in accordance with 0-TI-230 at 900 rpm.

					JPM NO. 385 REV. NO. 1 PAGE 7 of 14	
*****	******	******	******	*******	*****	*******
PERF	ORMA	NCE STEP:	CRITIC	4L	NOT CRITICAL	<u>X</u>
7.8	Fast	Start of Diesel (	Generator (continue	d)		
	[1]	<b>REVIEW</b> the no	otes on the previous p	age.		
<u>STAN</u>	IDARD	<u>):</u>				
Revie	ews not	es on previous p	age.			
SAT		UNSAT	N/A	COM	IENTS:	
		ANCE STEP:	CRITIC		_ NOT CRITICAL	
	[2]	<b>VERIFY</b> the fol Running:	lowing Diesel Genera	tor Rm Exl	haust Fans are not	
			ERATOR RM 3A EXH ERATOR RM 3A EXH			
CUE	[Whe	n asked, AUO r	eports] A & B exha	ust fans al	re NOT running.	
STAN		) <u>:</u>				
Verifi	es exh	aust fans are not	running.			
SAT		UNSAT	N/A	COM	MENTS:	

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PERFORMANCE STEP:	CRITICAI	Х	NOT CRITICAL	

[3] **PLACE** DG 3A BKR 1838 SYNC SWITCH, 3-25-211-3EA/9A to the ON position.

\*\*\*\*\*

STANDARD:

Places DG 3A BKR 1838 SYNC, 3-25-211-3EA/9A to the ON position.

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

**NOTE** Steps 7.8[4] and 7.8[5] are time critical and are to be completed without delay and may be signed off after the completion of Step 7.8[5].

Examiner Notes: Start of Critical Steps. The Examiner will simulate being the second Operator and simulate timing from the Control switch taken to Start and when voltage reaches greater than 3940 V (Time Shall be less than 10 seconds). Either the Simulator driver or the Examiner can simulate being the AUO locally at the Diesel and simulate timing from the diesel start till the engine speed reaches 900 rpm (once again – the time Shall be less than 10 seconds).

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***************************************	*****	******	*****	*****
PERFORMANCE STEP:	CRITICAL	Х	NOT CRITICAL	

#### [4] **SIMULTANEOUSLY PERFORM** the following:

- START the Diesel Generator using DG 3A CONTROL, 3-HS-82-3A/1A, AND
- **START** the stopwatches.

#### STANDARD:

Places DG 3A CONTROL 3-HS-82-3A/1A to START and STARTS the stop watch Simultaneously while communicating with the second Operator and the AUO locally so they can start their stopwatch(s).

SAT	UNSAT	N/A	COMMENTS:

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[5]	STOP the stopwatche	es at the following cond	lition	s:	
<u>PERFORMA</u>	NCE STEP:	CRITICAL	X	NOT CRITICAL	
***********	******	******	*****	******	********

- **STOP** the Control Room frequency stopwatch when DG frequency reaches greater than 58.8 Hz.
- **STOP** the Control Room voltage stopwatch when voltage reaches greater than 3940 V.
- **STOP** the DG Room stopwatch when engine speed reaches at least 900 RPM on DIESEL GENERATOR 3A TACHOMETER, 3-SI-082-0003A.

CUE: THE TIME IS 7.44 SEC (FOR THE PARAMETER TIMED at panel 9-23) CUE: THE TIME IS 8.2 SEC (FOR THE LOCAL SPEED).

#### STANDARD:

Operator stops the stop watch when parameter is reached, < 10 sec.

SAT	UNSAT	N/A	COMMENTS:
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			JPM NO. 385F REV. NO. 1 PAGE 11 of 14
	**************************************		NOT CRITICAL
[6]	<b>RECORD</b> the elap	psed time from all thre	ee stopwatches.
	First Control Room st	topwatch (frequency) (less	s than or equal to 10 sec) sec
	Second Control Roon	m stopwatch (voltage) (les	s than or equal to 10 sec) sec
	DG Room stopwatch	(speed) (less than or equa	al to 10 sec) sec
STANDARI	<u>D:</u>		
Operator re	cords the times fron	n all 3 stopwatches.	
	UNSAT		COMMENTS:
*****	ANCE STEP: CHECK that the t	CRITICAL	****
**************************************	ANCE STEP: CHECK that the t frequency stopwa	CRITICAL	X NOT CRITICAL
*********************** <u>PERFORM</u> [7] <u>STANDARI</u>	ANCE STEP: CHECK that the t frequency stopwa	CRITICAL	X NOT CRITICAL
<u>PERFORM</u> [7] <u>STANDARI</u> Verifies volt	ANCE STEP: CHECK that the t frequency stopwa	CRITICAL imes recorded from th atch meets the criteria times meet the (AC).	X NOT CRITICAL
<u>PERFORM</u> [7] <u>STANDARI</u> Verifies volt	ANCE STEP: CHECK that the t frequency stopwa D: tage and frequency	CRITICAL imes recorded from th atch meets the criteria times meet the (AC).	<u>X</u> NOT CRITICAL ne voltage stopwatch and the specified in Step 6.0A.1.
<u>PERFORM</u> [7] <u>STANDARI</u> Verifies volt	ANCE STEP: CHECK that the t frequency stopwa D: tage and frequency	CRITICAL imes recorded from th atch meets the criteria times meet the (AC).	<u>X</u> NOT CRITICAL ne voltage stopwatch and the specified in Step 6.0A.1.

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		JPM NO. 385F REV. NO. 1 PAGE 12 of 14
<pre>************************************</pre>		NOT CRITICAL
<b>RESPONDS</b> to the Alarm 9-23A Winotices the AMBER LIGHT (LOW		LUBE OIL ABNORMAL) a
STANDARD:		
Responds per the ARP and Verifi	es the AMBER LIGHT is	lit.
SAT UNSAT	_ N/A COI	MMENTS:
DG control panel and no oil vis running as expected.		
PERFORMANCE STEP:	CRITICAL	K NOT CRITICAL
PERFORMANCE STEP: SHUTS DOWN the DG with the E	CRITICAL	K NOT CRITICAL
PERFORMANCE STEP: SHUTS DOWN the DG with the E STANDARD:	CRITICAL	K NOT CRITICAL
PERFORMANCE STEP: SHUTS DOWN the DG with the E STANDARD: Shuts Down the DG with the Eme	CRITICAL	<u>K</u> NOT CRITICAL ton per the ARP.
PERFORMANCE STEP: SHUTS DOWN the DG with the E STANDARD:	CRITICAL	<u>K</u> NOT CRITICAL ton per the ARP.
PERFORMANCE STEP: SHUTS DOWN the DG with the E STANDARD: Shuts Down the DG with the Eme	CRITICAL	<u>K</u> NOT CRITICAL ton per the ARP.

CUE: That completes this task.

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		JPM NO. 385 REV. NO. 1 PAGE 13 of 1	I
**************************************		NOT CRITICAL	
PERFORMER demonstrated the u	use of SELF CHECKIN	G during this JPM	
<u>STANDARD:</u>			
PERFORMER verified applicable accordance with plant standards.	components by utilizing	3 SELF CHECKING in	
SAT UNSAT	_ N/A C0	DMMENTS:	
PERFORMANCE STEP: PERFORMER demonstrated the u STANDARD: PERFORMER utilized 3-WAY CO	use of 3-WAY COMMU		⊃W
SAT UNSAT			
	END OF TASK		
STOP TIME:			

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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 an extra operator.

- The (3A) Diesel Generator Monthly test 3-SR-3.8.1.1(3A) is in progress for December.
- The DG has been rolled and AUO is stationed at the DG with a stopwatch.
- All other support personnel are also standing by at the DG.

```
INITIATING CUES:
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You are at step 7.8[1] of 3-SR-3.8.1.1(3A) ready to start the DG, The AUO is standing by waiting on your mark to start his/her stopwatch locally.

JPM NO. 329F REV. NO. 0 PAGE 1 of 13

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 329F

TITLE: RESPOND TO A RBCCW PUMP DISCH. HDR PRESSURE LOW ALARM

TASK NUMBER: U-070-AL03

# SIM "G" UNIT-3

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

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

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# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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## **REVISION LOG**

Revision Number	Effective Date	Pages Affected	Description Of Revision
0	08/12/08	All	Initial issue
0	00/12/00	All	

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# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:				
RO	SRO		DATE:	
JPM NUMBER:	329F			
TASK NUMBER:	U-070-AL03			
TASK TITLE:	RESPOND TO A R ALARM	BCCW PUMP D	ISCH. HDR PRES	SURE LOW
K/A NUMBER:	226001A4.12	K/A RATING:	RO <u>3.8</u>	SRO <u>3.8</u>
*****	*****	*****	*****	*****
TASK STANDARD	: RESPOND TO A R ALARM PER THE A		ISCH.HDR PRES	S LOW
PERFORMANCE	LOCATION:		SIMULA	TOR X
REFERENCES/PR	OCEDURES NEEDE		9C Window 12, Rev 0-1, Rev 14 Rev 37	/ 30
VALIDATION TIME	E: SIMU	LATOR:	LOCAL:	
MAX. TIME ALLOW	VED:	_ (FOR TIME CI	RITICAL JPMs ON	LY)
PERFORMANCE	ГІМЕ:	_		
COMMENTS:	··			
ADDITIONAL COM	IMENT SHEETS AT	TACHED?	YES	_NO
RESULTS:	SATISFACTORY		UNSATISFACTC	RY
EXAMINER SIGNA	ATURE:	Part	DATE:	

JPM NO. 329F REV. NO. 0 PAGE 4 of 13

## 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.

- Unit 3 is Operating at 100 % power.
- Nothing is out of service.

**INITIATING CUES:** Respond to the next Event.

	JPM NO. 329F REV. NO. 0
	PAGE 5 of 13
	NOT CRITICAL <u>X</u>
DISCH HDR P	PRESS LOW).
WIN 12.	
I/A	COMMENTS:
- Mar - 1167 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187 - 1187	
	XNOT CRITICAL
NG/CLOSED.	
NG/CLOSED ar	nd CLOSES 3-FCV-70-48.
I/A	COMMENTS:
	CRITICAL DISCH HDR F WIN 12. //A CRITICAL IG/CLOSED.

 $( \$ 

		RE	/I NO. 329F V. NO. 0 GE 6 of 13	
*****	******	******	******	*****
PERFORMANCE STEP:	CRITICAL	NOT CF	RITICAL	<u>X</u>
B. <b>VERIFY</b> RBCCW pumps A	A and B in service.			
STANDARD:				
Verifies RBCCW pumps A and E not know until AUO is sent into th	· ·	pump is uncoupled	, Candidate	will
SAT UNSAT	_ N/A	COMMENTS:		
*****				
PERFORMANCE STEP:	CRITICAL		RITICAL	<u>X</u>
C. VERIFY RBCCW surge ta	nk low level alarm	s reset.		
STANDARD:				
Verifies RBCCW surge tank low	level alarm is reset			
SAT UNSAT	N/A	COMMENTS:		

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		ICE STEP:					NOT CRITICAL
D.	DISPA	TCH person	nel to ch	neck the	following:		
	• 6	RBCCW sur	ge tank	level loca	ally.		
	• [	RBCCW pur	nps for <sub>l</sub>	proper of	peration.		
<u>STA</u>	NDARD:						
	•	ersonnel to o per operatio		e RBCC	W surge ta	ank level l	ocally and RBCC
CUE	: When /	AUO is disp	atched,	AUO Re	ports the	3A RBCC	ENTS:
CUE	: When / oupled. [l	AUO is disp	atched, mp doe	AUO Re s not see	ports the	3A RBCC	
CUE unc han	: When / oupled. [ dswitch to	AUO is disp If the 3A pu o trip 1 to 2	atched, mp doe sec].	AUO Re s not see	ports the cure, have	3A RBCC the Can	CW pump is run
CUE unc han <u>***** PEF</u> Ope	: When / oupled. [ dswitch to RFORMAN	AUO is disp If the 3A pu o trip 1 to 2 ICE STEP:	atched, mp doe sec].	AUO Re s not see	eports the cure, have	3A RBC0 the Can 	CW pump is runn didate hold the p
CUE unc han PEF Ope unc	: When / oupled. [i dswitch to RFORMAN	AUO is disp If the 3A pu o trip 1 to 2 ICE STEP:	atched, mp doe sec].	AUO Re s not see	eports the cure, have	3A RBC0 the Can 	CW pump is runn didate hold the p NOT CRITICAI
CUE unc han PEF Ope unc STA	: When / oupled. [ dswitch to RFORMAN erator Secu oupled.	AUO is disp If the 3A pu o trip 1 to 2 ICE STEP:	atched, mp doe sec]. *********	AUO Re s not see	eports the cure, have	3A RBC0 the Can 	CW pump is runn didate hold the p NOT CRITICAI

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			JPM NO. 32 REV. NO. PAGE 8 of 1	0
******	*****	******	******	******
E STEP:	CRITICAL		NOT CRITICAL	X
<b>FO</b> 3-AOI-70-1 for RE mp.	BCCW System fa	ailure and 3	3-OI-70, for startir	ng
.OI-70-1 and 3-OI-70.				
UNSAT N	N/A	COMME	NTS:	
<u>E STEP:</u>			NOT CRITICAL	
ate Actions				
RBCCW Pump(s) ha		1		
RBCCW Pump(s) ca H <b>UT DOWN</b> RWCU S			· /	
uld shutdown RWCU	pumps (If syster	n has not a	already isolated).	
UNSAT	N/A	COMME	NTS:	
				UNSAT N/A COMMENTS:

 $( \ )$ 

PER	FORM/	ANCE STEP:	CRITICAL	NOT CRITICAL
4.2	Subs	equent Actions		
	[1]	IF Reactor is at po restored, THEN	wer AND Drywell Cooling	g cannot be immediate
		<b>PERFORM</b> the foll [1.1] [1.4]	lowing (otherwise <b>N/A</b> ):	
STAI	NDARD	) <u>:</u>		
All of	fsectior	n 1, [1.1] — [1.4] shoı	uld be N/A. Drywell Coolii	ng is Not affected.
		UNSAT	N/A CC	DMMENTS:
		UNSAT	N/A CC	DMMENTS:
SAT				
SAT	******		****	
SAT	******	ANCE STEP:	****	NOT CRITICAL
SAT	FORM	ANCE STEP:	CRITICAL	NOT CRITICAL
SAT	FORM/ [2]	ANCE STEP: IF any EOI entry c ENTER appropriat	CRITICAL ondition is met, <b>THEN:</b> (0	NOT CRITICAL Dtherwise N/A)
SAT	FORM/ [2] : The l	ANCE STEP: IF any EOI entry c ENTER appropriat Unit Supervisor and	CRITICAL	NOT CRITICAL Dtherwise N/A)
SAT PER	FORM/ [2] : The I	ANCE STEP: IF any EOI entry c ENTER appropriat Unit Supervisor and	CRITICAL ondition is met, <b>THEN:</b> (0	NOT CRITICAL Dtherwise N/A)
SAT PER	FORM/ [2] : The I	ANCE STEP: IF any EOI entry c ENTER appropriat Unit Supervisor and	CRITICAL ondition is met, <b>THEN:</b> (0	NOT CRITICA Dtherwise N/A)

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				JPM NO. 329 REV. NO. 0 PAGE 10 of	) 13
	<u>ANCE STEP:</u>	CRITICAL		NOT CRITICAL	
[3]	IF unable to resta	rt a tripped pump, <b>`TH</b> l	EN		
	PLACE Spare RB (Otherwise N/A)	CCW Pump in service	e. REFE	<b>R TO</b> 3-OI-70.	
		ace Spare RBCCW p oump is in service to	· · · · · · · · · · · · · · · · · · ·	service to Unit 3 a	nd
STANDARD	<u>):</u>				
Refers to 3- service to U		Unit 1 Operator to pla	ace the s	pare RBCCW pum	p in
SAT	UNSAT	N/A	СОММ	ENTS:	
	ANCE STEP: IF RBCCW flow w	vas restored to two pu service in the preced	X_ mp oper	NOT CRITICAL ation by placing the	 Spar
		RBCCW SECTIONAL	IZING VI	_V, 3-HS-70-48A.	
STANDAR	<u>):</u>				
Reopens R placed I/S.	BCCW Sectionalizi	ng vlv, 3-HS-70-48A.	after the	Spare RBCCW put	mp is
placed 1/0.					
	UNSAT	N/A	COMM	IENTS:	
	UNSAT	N/A	COMM	IENTS:	

 $( \ )$ 

		JPM NO. 329F
		REV. NO. 0
		PAGE 11 of 13
******	*****	******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL X
[4.2] <b>RESTORE</b>	the RWCU system to ope	eration. ( <b>REFER TO</b> 3-OI-69).
CUE: Another Operator will	Restore the RWCU syste	m.
STANDARD:		
N/A.		
SAT UNSAT	N/A CC	DMMENTS:
CUE: That completes this ta	ek	

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		END OF T	Ver		
SAT	ΙΙΝSΔΤ	N/A	COM	MENTS:	
<u>STANDARI</u> PERFORM		COMMUNICATIO	DN in accord	ance with plant stan	Idards
PERFORM	ER demonstrated t	ne use of 3-WAY	COMMUNIC	ATION during this	JPINI
	<u>ANCE STEP:</u>			_ NOT CRITICAL	
*****	*****			*****	
SAT	UNSAT	N/A	COMN	/IENTS:	
	with plant standar	•	, ,		
	ER verified applica	ble components b	y utilizing SE	LF CHECKING in	
STANDARI	D:				
PERFORM	ER demonstrated t	he use of SELF C	HECKING d	uring this JPM	
PERFORM	ANCE STEP:	CRITI	CAL	NOT CRITICAL	X
****	*****	****	*****	PAGE 12 OT	
				REV. NO. PAGE 12 of	-

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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.

- Unit 3 is Operating at 100 % power.
- Nothing is out of service.

**INITIATING CUES:** Respond to the next Event.

JPM NO. 333 REV. NO. 0 PAGE 1 of 12

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 333

TITLE: 3-EOI APPENDIX 8B - REOPENING MSIVs FOLLOWING GROUP I ISOLATION

TASK NUMBER: U-000-EM-46

# SIM "H" UNIT-3

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

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

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## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

# **REVISION LOG**

Revision Number	Effective Date	Pages Affected	Description Of Revision
0	07/20/08	All	Initial issue
	01120100	7 11	
		1	

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# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:					
RO	SRO DATE	:			
JPM NUMBER:	333				
TASK NUMBER:	U-000-EM-46				
TASK TITLE:	3-EOI APPENDIX 8B - REOPENING MSIVs FO	OLLOWING GROUP			
K/A NUMBER:	223002A4.03 K/A RATING: RO <u>3.6</u>	SRO <u>3.5</u>			
*****	***************************************	******			
TASK STANDARD	TASK STANDARD: PERFORM THE CORRECT EQUIPMENT MANIPULATIONS REQUIRED TO EQUALIZE AROUND THE MSIVS AND REOPEN THE MSIVS PER 3-EOI APPENDIX-8B				
PERFORMANCE LOCATION: SIMULATOR X PLANT CONTROL ROOM					
REFERENCES/PR	ROCEDURES NEEDED: 3-EOI Appendix-8B	, Rev 2			
VALIDATION TIME	E: SIMULATOR: 25:00 L	OCAL:			
MAX. TIME ALLOW	WED: (FOR TIME CRITICAL JP	Ms ONLY)			
PERFORMANCE	TIME:				
COMMENTS:					
ADDITIONAL COM	MMENT SHEETS ATTACHED? YES	NO			
RESULTS:	SATISFACTORY UNSATIS	FACTORY			
EXAMINER SIGNA	ATURE: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.

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**INITIAL CONDITIONS:** You are a Unit 3 Operator.

- Unit 3 reactor has scrammed and isolated.
- HPCI is in service for RPV pressure control.
- "B" SJAE, and "A" OFF GAS PREHEATER are in service from AUX BOILER steam.
- Venting Primary containment per APP-12.
- EOI-1 and EOI-2 have been entered and conditions allow the MSIVs to be reopened to establish the main condenser as a heat sink.

**INITIATING CUES:** The Unit Supervisor directs you to reopen the MSIVs as directed by 3-EOI Appendix-8B.

		JPM NO. 333 REV. NO. 0
START TIME	_	PAGE 5 of 12
*****	*****	*****
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
When requested by examiner ide	entify/obtain copy of requ	ired procedure.
STANDARD:		
Obtained copy of 3-EOI Appendi	x-8B.	
SAT UNSAT	_ N/A CC	MMENTS:
*****	****	*****
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
1. VERIFY <u>ALL</u> MSIV contro	I switches in CLOSE pos	sition.
STANDARD:		
Verified all eight MSIVs hand sw	itches in the CLOSE pos	ition.
SAT UNSAT	_ N/A CC	DMMENTS:

			JPM NO. 333 REV. NO. 0 PAGE 6 of 12	
******	*****	******	*****	******
PERFORMANCE STEP:	CRITICAL	X	NOT CRITICAL	
2. <b>RESET</b> PCIS logic (Panel 9-4	).			
STANDARD:				
Placed both PCIS reset switches on Verified that four RED light above the				
SAT UNSAT N	N/A	COMM	ENTS:	
PERFORMANCE STEP:				
3. <b>DEPRESS</b> the following push	buttons to trip Ri	-PIS (Pa	nei 9-6):	
• 3-HS-3-125, RFPT 3A	TRIP			
• 3-HS-3-151, RFPT 3B	TRIP			
• 3-HS-3-176, RFPT 3C	TRIP			
STANDARD:				
Depressed 3-HS-3-125, 151, 176, or	r verified all 3 RF	P's trippe	ed.	
SAT UNSAT I	N/A	COMM	ENTS:	

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NOTE: To prevent auto opening of 3-FCV-1-58, handswitch 3-HS-1-58A must be held in the CLOSE position until main turbine speed decreases to below 1700 RPM.

PERFORMANCE STEP: CRITICAL X NOT CRITICAL \_\_\_\_

4. **VERIFY CLOSED** the following drain valves (Panel 9-3):

- 3-FCV-1-58, UPSTREAM MSL DRAIN TO CONDENSER
- 3-FCV-1-59, DOWNSTREAM MSL DRAIN TO CONDENSER

#### STANDARD:

Verified illuminated GREEN valve position indicating lights above 3-HS-1-59 (Not Critical). Placed 3-HS-1-58 in the CLOSE position (Critical) and Verified illuminated GREEN valve position indicating lamp above associated control switch (Not Critical).

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

JPM NO. 333 REV. NO. 0 PAGE 8 of 12

<u> </u>	****** PER	FORMANCE STEP:	CRITICAL	<u>******</u>	NOT CRITICAL	******
ļ	5.	<b>OPEN</b> the following outboard	d MSIVs (Panel 9-3):			
		• 3-FCV-1-15, MSIV LII	NE A OUTBOARD			
		• 3-FCV-1-27, MSIV LI	NE B OUTBOARD			
		• 3-FCV-1-38, MSIV LI	NE C OUTBOARD			
		• 3-FCV-1-52, MSIV LII	NE D OUTBOARD			

# STANDARD:

Placed 3-HS-1-15, 27, 38 and 52 in the OPEN position (Critical) and Verified illuminated RED valve position indicating lamps above the associated control switches (Not Critical).

SAT	UNSAT	N/A	COMMENTS:
*****	*****	*****	**********
PERFORM	IANCE STEP:	CRIT	ICAL X NOT CRITICAL
read	ctor pressure.	DER PRESSUR	E CONTROL with SETPOINT set abo
<u>STANDAR</u>	<u>.D.</u>		
•	l 3-HS-1-16 and/or ch that it indicates g		ed. Adjusts Setpoint as indicated on 3- or pressure.
47-162 suc		reater than react	or pressure.
47-162 suc	ch that it indicates g	reater than react	or pressure.
47-162 suc	ch that it indicates g	reater than react	or pressure.
47-162 suc	ch that it indicates g	reater than react	or pressure.

JPM NO. 333 REV. NO. 0 PAGE 9 of 12

************************************						
7. <b>OPEN</b> the following drain valves (Panel 9-3):						
• 3-FCV-1-55, MN STM LINE DRAIN INBD ISOLATION VLV						
• 3-FCV-1-56, MN STM LINE DRAIN OUTBD ISOLATION VLV						
• 3-FCV-1-57, MSIV DOWNSTREAM DRAINS SHUTOFF						
STANDARD:						
Placed 3-HS-1-55 and 3-HS-1-56 in the OPEN position (Critical) and Verified illuminated RED valve position indicating lamps above the associated control switches (Not Critical). Verified illuminated RED valve position indicating lamp above 3-HS-1-57 (Not Critical).						
SAT UNSAT N/A COMMENTS:						

<u>CAUTION</u> Opening MSIVs when differential pressure is above 50 psid may result in piping system damage. 

JPM NO. 333 REV. NO. 0 PAGE 10 of 12

PERFORMANCE STEP: CRITICAL \_\_\_\_ NOT CRITICAL \_\_\_\_

- 8. WHEN ... Main steam pressure is within 50 psig of RPV pressure, THEN ... **OPEN** the following inboard MSIVs (Panel 9-3):
  - 3-FCV-1-14, MSIV LINE A INBOARD
  - 3-FCV-1-26, MSIV LINE B INBOARD
  - 3-FCV-1-37, MSIV LINE C INBOARD
  - 3-FCV-1-51, MSIV LINE D INBOARD

CUE: [During the time header pressure is rising. Have the individual to show what he/she is looking for to open the MSIV's. ON Panel 9-7 they should be looking at steam header pressure (3-PI-47-99) and RPV pressure (3-PI-3-54, 61, 207, or 207A, or from EHC workstation on overview screen) to be W/I 50 psid of each other. When you are satisfied, REPORT] RPV pressure and header pressure are within 35 PSID.

#### STANDARD:

When main steam pressure as indicated by 3-PI-47-99 on Panel 9-7 is within 50 psig of reactor pressure, Placed HS-1-14, 26, 37 and 51 in the AUTO/OPEN position (Critical) and Verified RED valve position indicating lamps above associated hand switches (Non Critical).

SAT UNSAT N/A COMMENTS:
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CUE: That completes this task.

		JPM NO. 333 REV. NO. 0
		PAGE 11 of 12
PERFORMANCE STEP:		NOT CRITICAL <u>X</u>
PERFORMER demonstrated the	use of SELF CHECKING	during this JPM
<u>STANDARD:</u>		
PERFORMER verified applicable accordance with plant standards.	components by utilizing S	SELF CHECKING in
SAT UNSAT	_ N/A CON	/MENTS:
*****	******	*******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
PERFORMER demonstrated the	use of 3-WAY COMMUN	ICATION during this JPM
STANDARD:		
PERFORMER utilized 3-WAY CC	OMMUNICATION in accor	dance with plant standards.
SAT UNSAT		/IMENTS:
	END OF TASK	
STOP TIME:	-	

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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 3 Operator.

- Unit 3 reactor has scrammed and isolated.
- HPCI is in service for RPV pressure control.
- "B" SJAE, and "A" OFF GAS PREHEATER are in service from AUX BOILER steam.
- Venting Primary containment per APP-12.
- EOI-1 and EOI-2 have been entered and conditions allow the MSIVs to be reopened to establish the main condenser as a heat sink.

**INITIATING CUES:** The Unit Supervisor directs you to reopen the MSIVs as directed by 3-EOI Appendix-8B.

JPM NO. 335 REV. NO. 6 PAGE 1 of 20

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 335

#### TITLE: START RCIC FROM OUTSIDE CONTROL ROOM

TASK NUMBER: U-000-AB-05

Provide a copy of 3-AOI-100-2, Attachment 3.

# IN-PLANT "A"

SUBMITTED BY:		DATE:
VALIDATED BY:		DATE:
APPROVED BY:	TRAINING	DATE:
PLANT CONCURREN	ICE: OPERATIONS	DATE:

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

JPM NO. 335 REV. NO. 6 PAGE 2 of 20

### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

#### **REVISION LOG**

Revision	Effective	Pages	Description
Number	Date	Affected	Of Revision
0	10/08/96	All	Initial issue
1	11/04/97	All	Procedure revision, added 3-way comm
2	10/28/98	All	General revision
3	11/12/99	2,6-16	Procedure revision
4	08/13/03	All	re-format, mark critical steps consistently
5	08/18/07	All	Procedure revision
6	06/07/08	All	General revision & re-format
L		1	

JPM NO. 335 REV. NO. 6 PAGE 3 of 20

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:					
RO	SRO		DATE:		
JPM NUMBER:	335				
TASK NUMBER:	U-000-AB-05				
TASK TITLE:	START RCIC FRO	M OUTSIDE CO	NTROL ROOM		
K/A NUMBER:	295016AA1.07	K/A RATING:	RO <u>4.2</u>	SRO <u>4.3</u>	
******	*******************	*****	*****	*****	
TASK STANDARD: SIMULATE PERFORMING OPERATIONS NECESSARY TO ALIGN RCIC FROM OUTSIDE CONTROL ROOM AS DIRECTED BY 3-AOI-100-2.					
PERFORMANCE LOCATION: SIMULATOR PLANT X CONTROL ROOM					
REFERENCES/PR	OCEDURES NEED	ED: 3-AOI-1	00-2, Rev 17		
VALIDATION TIME	CONTROL F	ROOM:	LOCAL:	12:00	
MAX. TIME ALLOV	VED:	_ (FOR TIME CI	RITICAL JPMs ON	LY)	
PERFORMANCE 1	TIME:	_			
COMMENTS:					
ADDITIONAL COM	IMENT SHEETS AT	TACHED?	YES	NO	
RESULTS:	SATISFACTORY		UNSATISFACTO	RY	
EXAMINER SIGNA	TURE:		DATE:		

JPM NO. 335 REV. NO. 6 PAGE 4 of 20

#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL</u> <u>STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:** 

**INITIATING CUES:** 

Unit 3 Control Room has been abandoned due to toxic gas in the Control Room.

- Pressure control has been established at the backup control panel 3-25-32.
- The RCIC system is being aligned for injection to the RPV.
- You are an operator assigned to the reactor building and you are in radio contact with the operators at the backup control panel.

The Unit Operator directs you to perform Attachment 3, Part A, of 3-AOI-100-2.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

JPM NO. 335 REV. NO. 6 PAGE 5 of 20

START TIME \_\_\_\_\_

**************	******	******	******
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL	X

When requested by examiner, identify/obtain copy of required procedure.

Examiner Note: Applicant has demonstrated obtaining procedures on the simulator, therefore, just hand him/her the procedure.

**STANDARD**:

Identified or obtained copy of 3-AOI-100-2, Attachment 3.

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

#### **NOTE** PAX phone Ext. 2336 is located at Column R-18, P-line.

Reactor Bldg. - RCIC Backup Control Panel 3-LPNL-925-0031 El 621'

 PERFORMANCE STEP:
 CRITICAL \_ X NOT CRITICAL \_\_\_\_

 3-XS-071-0036B RCIC SYSTEM FLOW TRANSFER
 EMERG\_\_\_\_\_

 3-XS-071-0045 RCIC TURB BRG OIL TEMP HIGH XFR
 EMERG\_\_\_\_\_

 3-XS-071-0023 RCIC OIL CLR OUTLET OIL TEMP HIGH
 EMERG\_\_\_\_\_

 CONTINUE Part A of this Attachment.
 EMERG\_\_\_\_\_\_

#### STANDARD:

At Panel 3-LPNL-925-0031, Simulated placing 3-XS-071-0036B, 3-XS-071-0045 and 3-XS-071-0023 in EMERG.

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

JPM NO. 335 REV. NO. 6 PAGE 7 of 20

		CAUTION				
Failur	e to place control sw	vitch for each component in desired p	osition prior to			
transf	ferring to emergency	may result in inadvertent actuation of	f the component.			
		NOTE				
PAX	phone Ext. 2326 is lo	ocated at Column R-16, R-line betwee	en West-side HCUs.			
*****	*****	*********	*****			
PERF	ORMANCE STEP:	CRITICAL	NOT CRITICAL X			
<u> </u>						
	Reactor Bldg 250V DC Reactor MOV Board 3C - El 565'					
1E	3-BKR-071-0029	RCIC TURB BAROMETRIC CNDR				
		CNDS PUMP BREAKER				
	3-XS-071-0029	RCIC BAROMETRIC				
	0 //0-01 1-0020	CNDR CNDS PUMP				
		EMER TRANS SWITCH	EMERG			
3-HS-071-0029C RCIC VAC TANK CNDS						
PUMP EMER HAND SWITCH START						
CUE: [As each switch is simulated]						
3-XS-071-0029 is in Emergency						
	-071-0029C is in Sta					

STANDARD:

At 250v DC RMOV bd 3C, compartment 1E, Simulated placing 3-XS-071-0029 in the EMERG position and 3-HS-071-0029C in the START position.

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

			JPM NO. 335 REV. NO. 6 PAGE 8 of 20
	FORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
	Reactor B	ldg 250V DC Reactor MOV Board	3C - El 565'
3B	3-BKR-071-0037	RCIC PUMP DISCH VALVE BREAKER (GE-13-20)	
	3-XS-071-0037	RCIC PUMP DISCH VALVE EMER TRANS SWITCH	EMERG
	3-HS-071-0037C	RCIC PUMP DISCH VALVE EMER HAND SWITCH	OPEN
3-XS	: [As each switch i 5-071-0037 is in Eme 5-071-0037C is in Op	ergency	
<u>STA</u>	NDARD:		
		c, compartment 3B, Simulated placir S-071-0037C in the OPEN position.	
SAT	UNSAT	N/A COMM	IENTS:

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JPM NO. 335 REV. NO. 6 PAGE 9 of 20

~~~~~	FORMANCE STEP:	CRITICAL <u>X</u> NOT CR			
	Reactor B	dg 250V DC Reactor MOV Board 3C - El 565	'		
3D	3-BKR-071-0039	RCIC PUMP INJECTION VALVE BREAKER (GE-13-21)			
	3-XS-071-0039	RCIC PUMP INJECTION VALVE EMER TRANS SWITCH	EMERG		
	3-HS-071-0039C	RCIC PUMP INJECTION VALVE EMER HAND SWITCH	OPEN		
CUE: [As each switch is simulated] 3-XS-071-0039 is in Emergency 3-HS-071-0039C is in Open					
STANDARD:					
At 250v DC RMOV bd 3C, compartment 3D, Simulated placing 3-XS-071-0039 in the EMERG position and 3-HS-071-0039C in the OPEN position.					

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

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JPM NO. 335 REV. NO. 6 PAGE 10 of 20

	FORMANCE STEP:	CRITICAL <u>X</u> NOT CRITICAL			
	Reactor B	ldg 250V DC Reactor MOV Board 3C - El 565'			
4B	3-BKR-071-0008	RCIC TURBINE STM SUPPLY VALVE BREAKER (GE-13-131)			
3-XS-071-0008 RCIC TURBINE STM SUPPLY VALVE EMER TRANS SWITCH EME					
	3-HS-071-0008C	RCIC TURBINE STM SUPPLY VALVE EMER HAND SWITCH NOR			
3-XS	[As each switch is -071-0008 is in Eme -071-0008C is in No	rgency			
STAN	IDARD:				
		, compartment 4B, Simulated placing 3-XS-071-0008 in the S-071-0008C in the NOR position.			
SAT	UNSAT	N/A COMMENTS:			

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			JPM NO. 335 REV. NO. 6 PAGE 11 of 20
*****	*****	*****	*****
PERFORMANCE	<u>STEP:</u>	CRITICAL	_ NOT CRITICAL <u>X</u>
<del>م</del>	Reactor Bldg 2	50V DC Reactor MOV Board	I 3C - El 565'
6D 3-BKR-07		CST 3 SUCT /E BREAKER (GE-13-18)	
3-XS-071-		C CST 3 SUCT VE EMER TRANS SWITCH	EMERG
3-HS-071-		C CST 3 SUCT /E EMER HAND SWITCH	OPEN
CUE: [As each 3-XS-071-0019 i 3-HS-071-0019C	s in Emergenc	<b>-</b>	
STANDARD:			
	•	oartment 6D, Simulated plac 0019C in the OPEN positior	•
SAT	UNSAT	N/A COM	MENTS:

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		JPM NO. 335 REV. NO. 6 PAGE 12 of 20			
****	***********	*****			
PERFORMANCE STE	<u>CRITICAL</u>	NOT CRITICAL X			
Reacto	<sup>r</sup> Bldg 250V DC Reactor MOV Board	3C - El 565'			
7B 3-BKR-071-0038	B RCIC PUMP TEST VALVE BREAKER (GE-13-30)				
3-XS-071-0038	RCIC PUMP TEST VALVE EMER TRANS SWITCH	EMERGENCY			
3-HS-071-00380	C RCIC PUMP TEST VALVE EMER HAND SWITCH	CLOSE			
CUE: [As each switcl 3-XS-071-0038 is in E 3-HS-071-0038C is in	mergency				
STANDARD:					
At 250v DC RMOV bd 3C, compartment 7B, Simulated placing 3-XS-071-0038 in the EMERGENCY position and 3-HS-071-0038C in the CLOSE position.					

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

			JPM NO. 335 REV. NO. 6 PAGE 13 of 20
*****	*****	*********	******
PER	FORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
	Reactor B	ldg 250V DC Reactor MOV Boa	ard 3C - El 565'
7D	3-BKR-071-0018	RCIC SUPPR POOL OUTBD SUCT VALVE BREAKER (GE-13-39)	
	3-XS-071-0018	RCIC SUPPR POOL OUTBD SUCT EMER TRANS SWITCH	EMERGENCY
	3-HS-071-0018C	RCIC SUPPR POOL OUTBD SUCT VALVE EMER HAND SWITCH	CLOSE
3-XS	: [As each switch i 6-071-0018 is in Eme 6-071-0018C is in Cl	ergency	
STA	NDARD:		

At 250v DC RMOV bd 3C, compartment 7D, Simulated placing 3-XS-071-0018 in the EMERGENCY position and 3-HS-071-0018C in the CLOSE position.

SAT	UNSAT	N/A	COMMENTS:	·····
<u></u>				

			JPM NO. 335 REV. NO. 6 PAGE 14 of 20
*****	******	********	*****
PER	FORMANCE STEP:	CRITICAL	NOT CRITICALX
	Reactor B	ldg 250V DC Reactor MOV Boa	urd 3C - El 565'
8B	3-BKR-071-0017	RCIC SUPPR POOL INBD SUCT VALVE BREAKER (GE-13-41)	
	3-XS-071-0017	RCIC SUPPR POOL INBD SUCT EMER TRANS SWITCH	EMERGENCY
	3-HS-071-0017C	RCIC SUPPR POOL INBD SUCT VALVE EMER HAND SWITCH	CLOSE
3-XS	: [As each switch i 6-071-0017 is in Eme 6-071-0017C is in Cl	ergency	

STANDARD:

At 250v DC RMOV bd 3C, compartment 8B, Simulated placing 3-XS-071-0017 in the EMERGENCY position and 3-HS-071-0017C in the CLOSE position.

SAT	 UNSAT	 N/A	COMMENTS:	

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*****	***************************************					
PER	FORMANCE STEP:	CRITICAL X	NOT CRITICAL			
	Reactor B	ldg 250V DC Reactor MOV Board 3C	C - El 565'			
8D	3-BKR-071-0025	RCIC LUBE OIL COOLING WATER VALVE BREAKER (GE-13-	18)			
	3-XS-071-0025	RCIC LUBE OIL CLR COOLING WATER VALVE EMER TRANS SWITCH	EMERGENCY			
	3-HS-071-0025C	RCIC LUBE OIL CLR COOLING WATER VALVE EMER HAND SWITCH	OPEN			
CUE: [As each switch is simulated] 3-XS-071-0025 is in Emergency 3-HS-071-0025C is in Open						
<u>STA</u>	NDARD:					
	At 250v DC RMOV bd 3C, compartment 8D, Simulated placing 3-XS-071-0025 in the EMERG position and 3-HS-071-0025C in the OPEN position.					

SAT	 UNSAT	 N/A	COMMENTS:	

			JPM NO. 335 REV. NO. 6 PAGE 16 of 20		
		******			
PERF	<u>FORMANCE STEP:</u>	CRITICAL	NOT CRITICAL X		
	Reactor B	ldg 250V DC Reactor MOV Board 30	C - El 565'		
10E	3-BKR-071-0031	RCIC TURB BAROMETRIC CNDR VAC PUMP BREAKER			
	3-XS-071-0031	RCIC BAROMETRIC CNDR VAC PUMP EMER TRANS SWITCH	EMERGENCY		
	3-HS-071-0031C	RCIC BAROMETRIC CNDR VAC PUMP EMER HAND SWITCH	START		
3-XS	: [As each switch i -071-0031 is in Eme -071-0031C is in St	ergency			
STAN	NDARD:				
At 25	At 250v DC RMOV bd 3C, compartment 10E, Simulated placing 3-XS-071-0031 in the				

EMERG position and 3-HS-071-0031C in the START position.

SAT	UNSAT	N/A	COMMENTS:	
<u> </u>				

		JPM NO. 335 REV. NO. 6 PAGE 17 of 20
*****		***********
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
NOTIFY UO at Panel 3-25-32 upc	on completion of P	art A.
CUE: [When Simulated notifyin complete.		peat] Attachment 3 Part A is
<u>STANDARD:</u>		
Simulated notifying UO of comple phone Ext. 2326 at R-16, R-Line (		
SAT UNSAT	N/A	COMMENTS:
PERFORMANCE STEP:		NOT CRITICALX
STOP here until directed to perfor	m Part B.	
STANDARD:		
N/A		
SAT UNSAT	_ N/A	COMMENTS:

CUE: That completes this task.

PERFORMANCE STEP:	CRITICAL NOT CRITICAL
PERFORMER complied with a	Il safety rules and regulations
STANDARD:	
	l safety rules and regulations (hardhat, safety glasses, tion was worn AS REQUIRED.)
such as rings, metal wristwatch	so adhered to AS REQUIRED: Exposed conductive article es, bracelets, and metal necklaces shall not be worn by ance of exposed energized electrical conductors of 50 vol
or greater.	
or greater.	N/A COMMENTS:
or greater. SAT UNSAT	
or greater. SAT UNSAT	N/A COMMENTS:
or greater. SAT UNSAT	N/A COMMENTS:
or greater. SAT UNSAT PERFORMANCE STEP: PERFORMER demonstrated p STANDARD:	N/A COMMENTS:

		JPM NO. 335 REV. NO. 6 PAGE 19 of 20
PERFORMANCE STEP:		NOT CRITICALX
PERFORMER demonstrated the	use of SELF CHECKING	during this JPM
STANDARD:		
PERFORMER verified applicable accordance with plant standards.		SELF CHECKING in
SAT UNSAT	_ N/A CON	/MENTS:
*****	*****	*****
PERFORMANCE STEP:	CRITICAL	
PERFORMER demonstrated the	use of 3-WAY COMMUN	ICATION during this JPM
STANDARD:		
PERFORMER utilized 3-WAY C		
	OMMUNICATION in accor	dance with plant standards
SAT UNSAT		
	_ N/A COM	MMENTS:
	_ N/A COM	MMENTS:
	_ N/A COM	
	_ N/A COM	MMENTS:

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#### BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

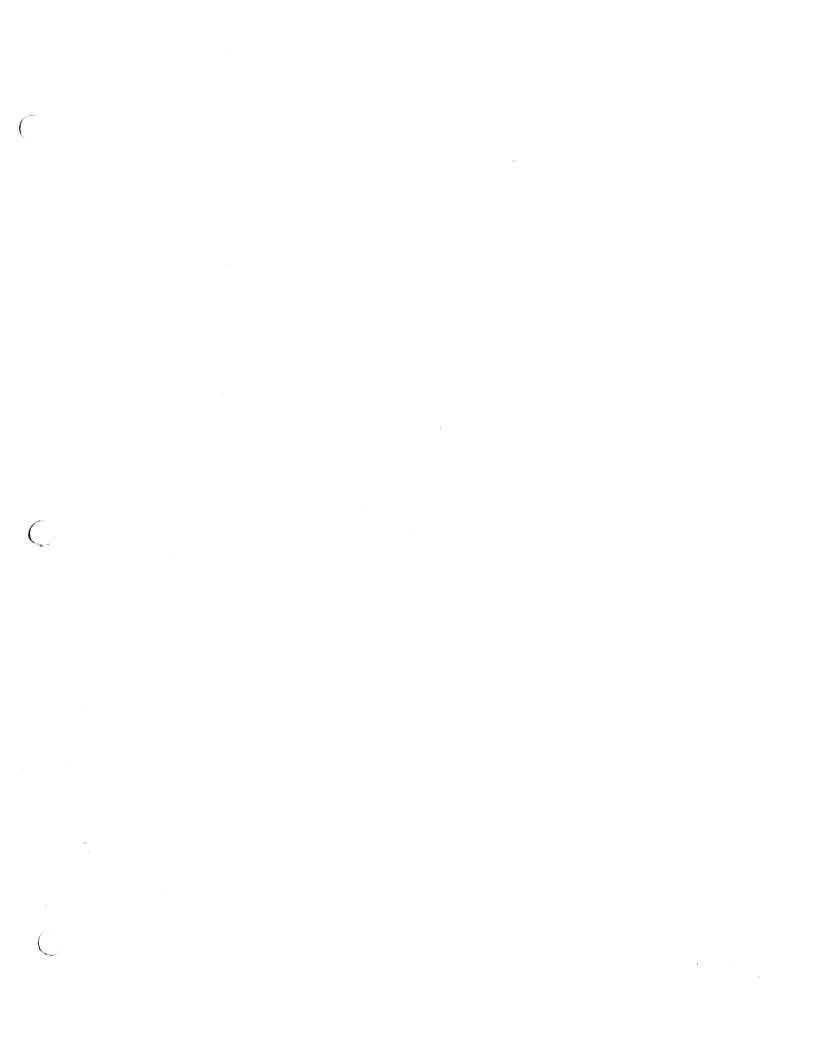
**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL</u> <u>STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:** 

Unit 3 Control Room has been abandoned due to toxic gas in the Control Room.

- Pressure control has been established at the backup control panel 3-25-32.
- The RCIC system is being aligned for injection to the RPV.
- You are an operator 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 3-AOI-100-2.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!



BFN	Control Room Abandonment	3-AOI-100-2
Unit 3		Rev. 0017
		Page 36 of 90

#### Attachment 3 (Page 1 of 9) Unit 3 RB AUO Panel Checklist

Date \_\_\_\_\_

# NOTE

PAX phone Ext. 2336 is located at Column R-18, P-line.

### 1.0 PART A

Switch/ Breaker Number	Component Description	Required Position	Initials
Reactor	Bidg RCIC Backup Control Panel 3-LPN	IL-925-0031 EI 6	521'
3-XS-071-0036B	RCIC SYSTEM FLOW TRANSFER	EMERG	
3-XS-071-0045	RCIC TURB BRG OIL TEMP HIGH XFR	EMERG	
3-XS-071-0023	RCIC OIL CLR OUTLET OIL TEMP HIGH	EMERG	
	<b>CONTINUE</b> Part A of this Attachment.		

BFN	Control Room Abandonment	3-AOI-100-2
Unit 3		Rev. 0017
		Page 37 of 90

#### Attachment 3 (Page 2 of 9) Unit 3 RB AUO Panel Checklist

Date \_\_\_\_\_

### 1.0 PART A (continued)

#### CAUTION

Failure to place control switch for each component in desired position prior to transferring to emergency may result in inadvertent actuation of the component.

#### NOTE

PAX phone Ext. 2326 is located at Column R-16, R-line between West-side HCUs.

Switch/ Breaker Number	Component Description		Required Position	Initials
	Reactor Bldg 2	250V DC Reactor MOV Boar	d 3C - El 565'	
1E	3-BKR-071-0029	RCIC TURB BAROMETRIC CNDR CNDS PUMP BREAKER		
	3-XS-071-0029	RCIC BAROMETRIC CNDR CNDS PUMP EMER TRANS SWITCH	EMERG	
	3-HS-071-0029C	RCIC VAC TANK CNDS PUMP EMER HAND SWITCH	START	
3B	3-BKR-071-0037	RCIC PUMP DISCH VALVE BREAKER (GE-13-20)		
	3-XS-071-0037	RCIC PUMP DISCH VALVE EMER TRANS SWITCH	EMERG	
	3-HS-071-0037C	RCIC PUMP DISCH VALVE EMER HAND SWITCH	OPEN	

BFN	<b>Control Room Abandonment</b>	3-AOI-100-2
Unit 3		Rev. 0017
		Page 38 of 90

# Attachment 3 (Page 3 of 9) Unit 3 RB AUO Panel Checklist

			Dat	e
1.0 F	PART A (continued)			
Switch/ Breaker Number	Component Description		Required Position	Initials
	Reactor Bldg 2	250V DC Reactor MOV Board	d 3C - El 565'	
3D	3-BKR-071-0039	RCIC PUMP INJECTION VALVE BREAKER (GE-13-21)		
	3-XS-071-0039	RCIC PUMP INJECTION VALVE EMER TRANS SWITCH	EMERG	
	3-HS-071-0039C	RCIC PUMP INJECTION VALVE EMER HAND SWITCH	OPEN	
4B	3-BKR-071-0008	RCIC TURBINE STM SUPPLY VALVE BREAKER (GE-13-131)		
	3-XS-071-0008	RCIC TURB STM SUPPLY EMER TRANS SWITCH	EMERG	
	3-HS-071-0008C	RCIC TURB STM SUPPLY VALVE EMER HAND SWITCH	NOR	
6D	3-BKR-071-0019	RCIC CST 3 SUCT VALVE BREAKER (GE-13-18)		
	3-XS-071-0019	RCIC CST 3 SUCT VALVE EMER TRANS SWITCH	EMERGENCY	
	3-HS-071-0019C	RCIC CST 3 SUCT VALVE EMER HAND SWITCH	OPEN	

BFN	Control Room Abandonment	3-AOI-100-2
Unit 3		Rev. 0017
		Page 39 of 90

### Attachment 3 (Page 4 of 9) Unit 3 RB AUO Panel Checklist

			Date				
1.0 F	PART A (continued)						
Switch/ Breaker Number	Component Description		Required Position	Initials			
Reactor Bldg 250V DC Reactor MOV Board 3C - El 565'							
7B	3-BKR-071-0038	RCIC PUMP TEST VALVE BREAKER (GE-13-30)					
	3-XS-071-0038	RCIC PUMP TEST VALVE EMER TRANS SWITCH	EMERGENCY				
	3-HS-071-0038C	RCIC PUMP TEST VALVE EMER HAND SWITCH	CLOSE				
7D	3-BKR-071-0018	RCIC SUPPR POOL OUTBD SUCT VALVE BREAKER (GE-13-39)					
	3-XS-071-0018	RCIC SUPP POOL OUTBD SUCT EMER TRANS SWITCH	EMERGENCY				
	3-HS-071-0018C	RCIC SUPPR POOL OUTBD SUCT VALVE EMER HAND SWITCH	CLOSE				
8B	3-BKR-071-0017	RCIC SUPPR POOL INBD SUCT VALVE BREAKER (GE-13-41)					
	3-XS-071-0017	RCIC SUPP POOL INBD SUCT EMER TRANS SWITCH	EMERGENCY				
	3-HS-071-0017C	RCIC SUPPR POOL INBD SUCT VALVE EMER HAND SWITCH	CLOSE				

BFN	Control Room Abandonment	3-AOI-100-2
Unit 3		Rev. 0017
		Page 40 of 90

# Attachment 3 (Page 5 of 9) Unit 3 RB AUO Panel Checklist

			Date				
1.0 P	ART A (continued)						
Switch/ Breaker Number	Component Description		Required Position	Initials			
Reactor Bldg 250V DC Reactor MOV Board 3C - El 565'							
8D	3-BKR-071-0025	RCIC LUBE OIL COOLING WATER VALVE BREAKER (GE-13-132)					
	3-XS-071-0025	RCIC LUBE OIL CLR COOLING WATER VALVE EMER TRANS SWITCH	EMERGENCY				
	3-HS-071-0025C	RCIC LUBE OIL CLR COOLING WATER VALVE EMER HAND SWITCH	OPEN				
10E	3-BKR-071-0031	RCIC TURB BAROMETRIC CNDR VAC PUMP BREAKER					
	3-XS-071-0031	RCIC BAROMETRIC CNDR VAC PUMP EMER TRANS SWITCH	EMERGENCY				
	3-HS-071-0031C	RCIC BAROMETRIC CNDR VAC PUMP EMER HAND SWITCH	START				
	<b>NOTIFY</b> UO at Panel 3-25-32 upon completion of Part A.						
	STOP here until direct						

JPM NO. 99 REV. NO. 5 PAGE 1 of 10

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 99

TITLE: EOI APPENDIX 16H - BYPASSING RCIC HIGH RPV WATER LEVEL SHUTDOWN INTERLOCKS

TASK NUMBER: U-000-EM-42

Provide a copy of 2-EOI Appendix-16H

# IN-PLANT "B"

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

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

JPM NO. 99 REV. NO. 5 PAGE 2 of 10

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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# **REVISION LOG**

Revision Number	Effective Date	Pages Affected	Description Of Revision
1	12/08/94	1,2,3,4	Revise to new format
2	11/09/95	All	Procedure revision
3	11/23/99	2,3,4,8	Added plant work expectations Safety, Touch STAAR, and 3-Way Comm.
4	05/17/06	All	Procedure revision
5	05/31/08	All	General revision & re-format

JPM NO. 99 REV. NO. 5 PAGE 3 of 10

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:				
RO	SRO		DATE:	
JPM NUMBER:	99			
TASK NUMBER:	U-000-EM-42			
TASK TITLE:	EOI APPENDIX 16 LEVEL SHUTDOW			/ WATER
K/A NUMBER:	217000A4.03	K/A RATING:	RO <u>3.4</u>	SRO <u>3.3</u>
*****	******	*****	******	******
TASK STANDARD: SIMULATE PERFORMING ACTIONS REQUIRED TO DEFEAT RCIC HIGH RPV LEVEL SHUTDOWN INTERLOCKS AS DIRECTED BY EOI APPENDIX 16H.				
PERFORMANCE	LOCATION: SIN	MULATOR PL	_ANT <u>X</u> CONTR	OL ROOM
REFERENCES/PF	ROCEDURES NEED	ED: 2-EOI A	ppendix-16H, Re	v 5
VALIDATION TIM	E: CONTROL	ROOM: <u>5:00</u>	) LOCAI	_:2:00
MAX. TIME ALLO	NED:	(FOR TIME C	RITICAL JPMs O	NLY)
PERFORMANCE	TIME:			
COMMENTS:				
ADDITIONAL COM	MMENT SHEETS AT	TACHED?	YES	NO
RESULTS:	SATISFACTORY		UNSATISFACT	ORY
EXAMINER SIGN	ATURE:		DATE:	

JPM NO. 99 REV. NO. 5 PAGE 4 of 10

## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL</u> <u>STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

INITIAL CONDITIONS:

You are an Operator.

- Unit 2 reactor has scrammed due to a leak in the drywell.
- Reactor water level cannot be determined.
- EOI-1 has been followed to C4-6.
- The RCIC system, using auxiliary steam, is to be used as an injection source as directed by Appendix 7H.
- You have a hand-held radio with you.

#### **INITIATING CUES:**

The UNIT SUPERVISOR directs you to bypass the RCIC high RPV water level shutdown interlocks as directed by 2-EOI Appendix 16H.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

		JPM NO. 99 REV. NO. 5	
START TIME		PAGE 5 of 10	)
	_		
PERFORMANCE STEP:		NOT CRITICAL	
When requested by examiner, ide	entify/obtain copy of requ	uired procedure.	
Examiner Note: Applicant has simulator, therefore, just hand applicant locates the EOI Equip	him/her the procedure	, however, Verify that	
STANDARD:			
Identified or obtained copy of 2-E	OI Appendix-16H.		
SAT UNSAT	_ N/A CC	OMMENTS:	
*******			*****
PERFORMANCE STEP:	CRITICAL	X NOT CRITICAL	
1. <b>PLACE</b> 2-XS-071-0008, R to EMERG position (250V			CH,
CUE: [When correctly simulate	d] 2-XS-71-8 is in the	emergency position.	
STANDARD:			
Located and Simulated placing 2-	-XS-071-0008 in the EN	IERG position.	
SAT UNSAT	_ N/A CO	OMMENTS:	

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JPM NO. 99 REV. NO. 5 PAGE 6 of 10

# CUE: [On hand-held radio] The Unit 2 Operator directs you to open 2-FCV-71-8.

PERFORMANCE STEP:	CRITICAL	<u>    X    </u>	NOT CRITICAL

2. WHEN ... Requested by Unit Operator,

THEN ... **OPEN** 2-FCV-71-8, RCIC TURB STM SUPPLY VALVE (250V RMOV Board 2C, Compartment 4B).

CUE: [When correctly simulated] The green valve position indicating lamp for 2-FCV-71-8 is extinguished and the red valve position indicating lamp is illuminated.

### **STANDARD:**

At Compartment 4, 250V DC RMOV Board 2C. Simulated placing 2-HS-71-8C in the OPEN position.

SAT	111	NSAT	N/A	COMMENTS:
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		JPM NO. 99 REV. NO. 5 PAGE 7 of 10		
PERFORMANCE STEP: CRITICAL NOT CRITICAL X				
3. WHEN 2-FCV-71-8,	, RCIC TURB STN	I SUPPLY VALVE, is open,		
THEN NOTIFY Uni	t Operator.			
CUE: [When simulated] Unit C	horator acknowl	adaps 2 ECV 71 8 is open		
COE. [When simulated] Ohit C	perator acknowl	leuges z-r c v-/ 1-6 is open.		
STANDARD:				
Simulated notifying Unit 2 Opera	tor using hand-he	ld radio.		
SAT UNSAT	N/A	COMMENTS:		

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CUE: That completes this task.

		REV. NO. PAGE 8 of
******	*****	
PERFORMANCE STEP:	CRITICAL	_ NOT CRITICA
PERFORMER complied with all sa	ety rules and regulations	
STANDARD:		
PERFORMER complied with all safe sideshields, and hearing protection	• • • •	
ELECTRICAL SAFETY was also ad such as rings, metal wristwatches, b employees within <u>reaching distance</u> or greater.	racelets, and metal neckla	aces shall not be w
SAT UNSAT	N/A COMM	MENTS:
PERFORMANCE STEP:	CRITICAL	
PERFORMER demonstrated prope		-
STANDARD:		
PERFORMER applied proper radiol performance.	ogical practices, AS REQ	JIRED, during JPN
SAT UNSAT	N/A COM	MENTS:

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PERFORMER demonstrated the u STANDARD: PERFORMER utilized 3-WAY CO SAT UNSAT	MMUNICATION in acc	ordance with plant standards
<u>STANDARD:</u> PERFORMER utilized 3-WAY CO	MMUNICATION in acc	ordance with plant standards
	use of 3-WAY COMMU	NICATION during this JPM
PERFORMER demonstrated the u	use of 3-WAY COMMU	NICATION during this JPM
PERFORMANCE STEP:	URITIOAL	NOT CRITICAL <u>X</u>
SAT UNSAT	N/A CC	MMENTS:
PERFORMER verified applicable accordance with plant standards.	components by utilizing	SELF CHECKING in
STANDARD:		
PERFORMER demonstrated the u	use of SELF CHECKIN	G during this JPM
PERFORMANCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>
		************************************

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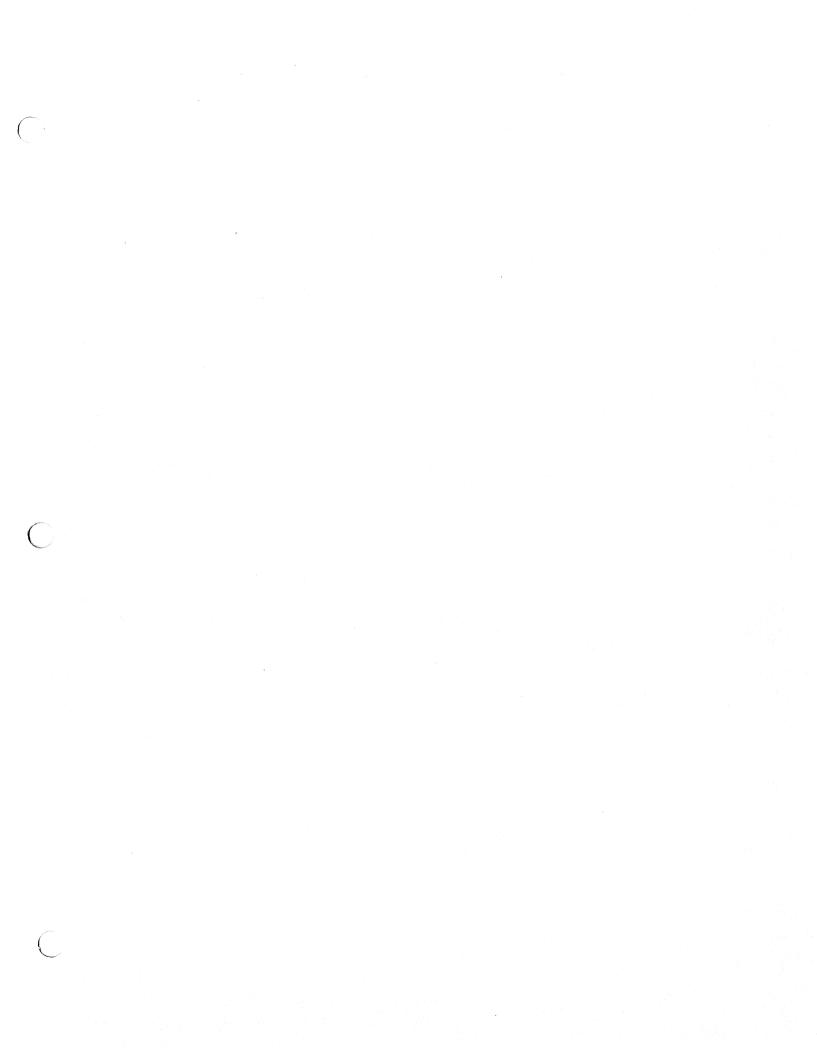
# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL</u> <u>STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:** You are an Operator.

- Unit 2 reactor has scrammed due to a leak in the drywell.
- Reactor water level cannot be determined.
- EOI-1 has been followed to C4-6.
- The RCIC system, using auxiliary steam, is to be used as an injection source as directed by Appendix 7H.
- You have a hand-held radio with you.
- **INITIATING CUES:** The UNIT SUPERVISOR directs you to bypass the RCIC high RPV water level shutdown interlocks as directed by 2-EOI Appendix 16H.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!



TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT

#### EOI PROGRAM MANUAL SECTION IX

2-EOI APPENDIX-16H

# BYPASSSING RCIC HIGH RPV WATER LEVEL SHUTDOWN INTERLOCKS

**REVISION** 5

PREPARED BY: M. Morrow

PHONE: 3708

RESPONSIBLE ORGANIZATION: Operations

APPROVED BY: A. S. Bhatnagar

EFFECTIVE DATE: 10/26/00

LEVEL OF USE: REFERENCE USE

VALIDATION DATE: 05/09/92

QUALITY-RELATED

## HISTORY OF REVISION/REVIEW 2-EOI APPENDIX-16H

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REV. NO.	DATE:	REVISED PAGES	REASON FOR CURRENT REVISION
0	6/15/92	ALL	New procedure. Necessary to support implementation of Revision 4 EPGs into BFNP EOIs.
1	7/10/92	ALL	Incorporated Writer's Guide discrepancies, typos, and plant nomenclature discrepancies
2	4/21/93	ALL	Converted from WordPerfect 5.1 to Pagemaker 4.0 to better support desktop publishing capabilities.
3			Changed Location for procedure performance from control room to reactor building. Changed location information regarding valve operation for clarity.
3	12/28/93	1	Revised nomenclature and UNID to reflect new system labels.
4	8/3/95	1	Revised valve nomenclature and UNID to reflect new system labels.
5	10/26/00	All	Converted to MS-Word.

2-EOI APPENDIX-16H Rev. 5 Page 1 of 1

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# 2-EOI APPENDIX-16H

# BYPASSSING RCIC HIGH RPV WATER LEVEL SHUTDOWN INTERLOCKS

LOCATION: Unit 2 Reactor Building, 250V RMOV Board 2C

ATTACHMENTS: None

- 1. **PLACE** 2-XS-071-0008, RCIC TURB STM SUPPLY EMER TRANS SWITCH, to EMERG position (250V RMOV Board 2C, Compartment 4B).
- 2. WHEN ... Requested by Unit Operator, THEN ... OPEN 2-FCV-71-8, RCIC TURB STM SUPPLY VALVE (250V RMOV Board 2C, Compartment 4B).
- 3. WHEN ... 2-FCV-71-8, RCIC TURB STM SUPPLY VALVE, is open, THEN ... NOTIFY Unit Operator.

LAST PAGE

JPM NO. 115F REV. NO. 1 PAGE 1 of 12

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

JPM NUMBER: 115F

TITLE: PLACE A 4KV SHUTDOWN BOARD 250V BATTERY CHARGER IN SERVICE

TASK NUMBER: S-57D-NO-11

Provide a copy of 0-OI-57D, Section 5.16 (include 0-OI-57D, Section 3.0)

# IN-PLANT "C"

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

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

JPM NO. 115F REV. NO. 1 PAGE 2 of 12

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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# **REVISION LOG**

Revision	Effective	Pages Affected	Description
Number	Date	Affected	Of Revision
0	08/19/06	All	Initial issue
1	07/20/08	All	General revision & re-format
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JPM NO. 115F REV. NO. 1 PAGE 3 of 12

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

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OPERATOR:				
RO	SRO		DATE:	<u></u>
JPM NUMBER:	115F			
TASK NUMBER:	S-57D-NO-11			
TASK TITLE:	PLACE A 4KV SHUTD IN SERVICE	OWN BOAR	D 250V BATTERY	CHARGER
K/A NUMBER:	263000K1.02 K/	A RATING:	RO <u>3.2</u>	SRO <u>3.3</u>
******	**********	******	******	*****
TASK STANDARD	: SIMULATE PERFORM A 4KV SHUTDOWN B SERVICE			
PERFORMANCE	LOCATION: SIMUL	ATOR PL	ANT <u>X</u> CONTRC	L ROOM
REFERENCES/PR	OCEDURES NEEDED:	0-01-57[	D, Rev 119	
VALIDATION TIME	CONTROL RO	OM :	LOCAL:	
MAX. TIME ALLOW	VED: <u>N/A</u> (F	FOR TIME CI	RITICAL JPMs ONI	_Y)
PERFORMANCE	ГІМЕ:			
COMMENTS:				
ADDITIONAL COM	IMENT SHEETS ATTAC	CHED?	YES	NO
RESULTS:	SATISFACTORY		UNSATISFACTO	RY
EXAMINER SIGN	TURE:		DATE:	

JPM NO. 115F REV. NO. 1 PAGE 4 of 12

## BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL</u> <u>STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:** You are an operator.

- 4KV Shutdown Board A control power is being supplied by its alternate source in accordance with Section 8.6 of 0-OI-57D.
- 4KV Shutdown Board 250V Battery Charger SB-A has been temporarily out of service for maintenance which has been completed.
- Diesel Generator A is <u>NOT</u> running.

# **INITIATING CUES:**

You are directed to return 4KV Shutdown Board 250V Battery Charger SB-A to service.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME				JPM NO. 11 REV. NO. 1 PAGE 5 of 1	
PERFORMANCE STEP:       CRITICAL NOT CRITICALX_         When requested by examiner, identify/obtain copy of required procedure.         Examiner Note: Applicant has demonstrated obtaining procedures on the simulator, therefore, just hand him/her the procedure.         STANDARD:         Identified or obtained copy of 0-OI-57D.         SAT UNSAT N/A COMMENTS:	START TIME				2
When requested by examiner, identify/obtain copy of required procedure.         Examiner Note: Applicant has demonstrated obtaining procedures on the simulator, therefore, just hand him/her the procedure.         STANDARD:         Identified or obtained copy of 0-OI-57D.         SAT       UNSAT         N/A       COMMENTS:         PERFORMANCE STEP:       CRITICAL         NOT CRITICAL       X         5.16       Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service         [1] REVIEW all Precautions and Limitations in Section 3.0.         STANDARD:         Reviewed section 3.0	*****	*****	******	*****	*****
Examiner Note: Applicant has demonstrated obtaining procedures on the simulator, therefore, just hand him/her the procedure.         STANDARD:         Identified or obtained copy of 0-OI-57D.         SAT       N/A	PERFORMANCE STEP:	CRITICAL	I	NOT CRITICAL	<u>    X    </u>
simulator, therefore, just hand him/her the procedure.         STANDARD:         Identified or obtained copy of 0-OI-57D.         SAT	When requested by examiner, identi	ify/obtain copy of	required pr	ocedure.	
Identified or obtained copy of 0-OI-57D.         SAT UNSAT N/A COMMENTS:	• •			cedures on the	
SAT UNSAT N/A COMMENTS: PERFORMANCE STEP: CRITICAL NOT CRITICALX 5.16 Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service [1] REVIEW all Precautions and Limitations in Section 3.0. STANDARD: Reviewed section 3.0	STANDARD:				
PERFORMANCE STEP:       CRITICAL NOT CRITICALX         5.16       Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service         [1] REVIEW all Precautions and Limitations in Section 3.0.         STANDARD:         Reviewed section 3.0	Identified or obtained copy of 0-OI-57	′D.			
PERFORMANCE STEP:       CRITICAL       NOT CRITICAL       X         5.16       Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service         [1] REVIEW all Precautions and Limitations in Section 3.0.         STANDARD:         Reviewed section 3.0	SAT UNSAT	N/A	COMMEN	ITS:	
PERFORMANCE STEP:       CRITICAL       NOT CRITICAL       X         5.16       Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service         [1] REVIEW all Precautions and Limitations in Section 3.0.         STANDARD:         Reviewed section 3.0					
<ul> <li>5.16 Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service [1] REVIEW all Precautions and Limitations in Section 3.0.</li> <li><u>STANDARD:</u></li> <li>Reviewed section 3.0</li> </ul>	*****	*****	******	****	*****
[1] REVIEW all Precautions and Limitations in Section 3.0. <u>STANDARD:</u> Reviewed section 3.0	PERFORMANCE STEP:	CRITICAL		NOT CRITICAL	<u>    X    </u>
STANDARD: Reviewed section 3.0	5.16 Placing the 4kV Shutdown Bo	oard 250V Batter	y Charger S	SB-A(B)(C)(D) in	Service
Reviewed section 3.0	[1] REVIEW all Precautions a	and Limitations in	Section 3.0	).	
	STANDARD:				
SAT UNSAT N/A COMMENTS:	Reviewed section 3.0				
	SAT UNSAT	N/A	COMMEN	NTS:	

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JPM NO. 115F REV. NO. 1 PAGE 6 of 12

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PERFORMANCE STEP:

CRITICAL X NOT CRITICAL

[2] VERIFY OFF SHUTDOWN BDS 250V DC SPARE BAT CHGR TRANS SW SB-A(B)(C)(D), 0-XSW-248-0000A(B)(C)(D).

# CUE: [When OFF position is indicated] 0-XSW-248-0000A is in the OFF position

## STANDARD:

Simulated placing 0-XSW-248-0000A in the OFF position.

SAT	UNSAT	N/A	COM	MENTS:	
********	*****	*****	*****	*****	*******
PERFORM	ANCE STEP:	CRITI	CAL	_ NOT CRITICAL	<u>    X    </u>
[3]		SB-C ONLY, VE /-248-000C1 IS IN		NDIX R TRANSFER MAL POSITION.	
STANDAR	<u>D:</u>				
N/A – SB-C	C charger not being	used			
SAT	UNSAT	N/A	COM	IMENTS:	

			JPM NO. 115F REV. NO. 1 PAGE 7 of 12	
PERFORMA			**************************************	
[4]	VERIFY ON MAIN 0-FUDS-248-0001	I DISCONNECT FOR 0-P IA(B)(C)(D).	NLA-248-A(B)(C)(D),	
CUE: [Whe	n ON position is i	ndicated] 0-FUDS-248-00	001A is in the ON position	
STANDARD	<u>:</u>			
Verified 0-FL	JDS-248-0001A in	the ON position		
SAT	_ UNSAT	N/A CO	DMMENTS:	
				_
******	*****	*******	******	<b>*</b>
PERFORMA	NCE STEP:	CRITICAL	NOT CRITICAL <u>X</u>	
[5]		RIBUTION PANEL SUPF )(C)(D), 0-FUDS-248-000		
CUE: [Whe	n ON position is i	ndicated] 0-FUDS-248-0	00AF is in the ON position	
<u>STANDARD</u>	<u>.</u>			
Simulated ve	erifying 0-FUDS-24	8-000AF in the ON position	n	
SAT	UNSAT	N/A CO	DMMENTS:	

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JPM NO. 115F REV. NO. 1 PAGE 8 of 12

## CAUTION

If a charger malfunction occurs the AC and DC power breakers should be placed to the OFF position. The Shift Manager should be informed immediately of this condition.

PERFORMANCE STEP:

CRITICAL X NOT CRITICAL \_

[6] CLOSE BATTERY CHARGER 0-CHGA-248-A(B)(C)(D) AC SUPPLY BKR, 0-BKR-248-000A/AC(B/AC)(C/AC)(D/AC).

CUE: [When simulated] 0-BKR-248-000A/AC is in the ON position

#### **STANDARD:**

Simulated placing 0-BKR-248-000A/AC in the ON position

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

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JPM NO. 115F REV. NO. 1 PAGE 9 of 12

## CAUTION

If a charger malfunction occurs the AC and DC power breakers should be placed to the OFF position. The Shift Manager should be informed immediately of this condition.

PERFORMANCE STEP:

CRITICAL X NOT CRITICAL

[7] CHECK SHUTDOWN BDS 250V DC BATTERY CHGR SB-A(B)(C)(D), 0-EI-248-A/B(B/B)(C/B)(D/B) indicates greater than 250 volts and stable.

CUE: [When location and position indicated] 0-EI-248-A/B is swinging from 200 to 240 volts.

### STANDARD:

Indicated location of 0-EI-248-A/B and approximate pointer position for 250 volts. When CUE given, refers to CAUTION (top of this page) and SIMULATES OPENING the AC and DC power breakers and immediately notifies the Shift Manager (Only simulating opening the AC breaker is Critical, the DC breaker has not been closed yet).

	SAT	UNS	AT	N/A	COMMENTS:
--	-----	-----	----	-----	-----------

CUE: [When simulated opening breakers and notifying the Shift Manager] 0-BKR-248-000A/AC and 0-BKR-248-000A/DC are open, That will be all for now.

			JPM NO. 1 <sup>-</sup> REV. NO. 1 PAGE 10 of	
******	*****	*****	****	****
PERFORMANCE STEP:	CRITIC	AL	NOT CRITICAL	
PERFORMER complied with all s	afety rules and r	egulations		
STANDARD:				
PERFORMER complied with all sa sideshields, and hearing protectior		•	rdhat, safety glass	ses,
ELECTRICAL SAFETY was also a such as rings, metal wristwatches, employees within <u>reaching distanc</u> or greater.	, bracelets, and m	netal necklace	es shall not be wo	rn b
SAT UNSAT	_ N/A	COMME	ENTS:	
PERFORMANCE STEP:	CRITIC	AL	NOT CRITICAL	
PERFORMER demonstrated prop	er radiological pr	actices AS R	EQUIRED	
STANDARD:				
PERFORMER applied proper radi	ological practices	s, AS REQUII	RED, during JPM	
performance.				
			ENTS:	
performance.			ENTS:	
performance.			ENTS:	

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		tod the use					
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PERFORME	R demonstrat					ining this t	ואו וכ
PERFORME							ואו וע
STANDARD						-	
TANDARD						-	

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PAGE 12 of 12

# BROWNS FERRY NUCLEAR PLANT JOB PERFORMANCE MEASURE

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. <u>ALL</u> <u>STEPS WILL BE SIMULATED</u>. Do <u>NOT</u> operate any plant equipment. SELF CHECKING may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. Observe ALL plant radiological and safety precautions. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:** You are an operator.

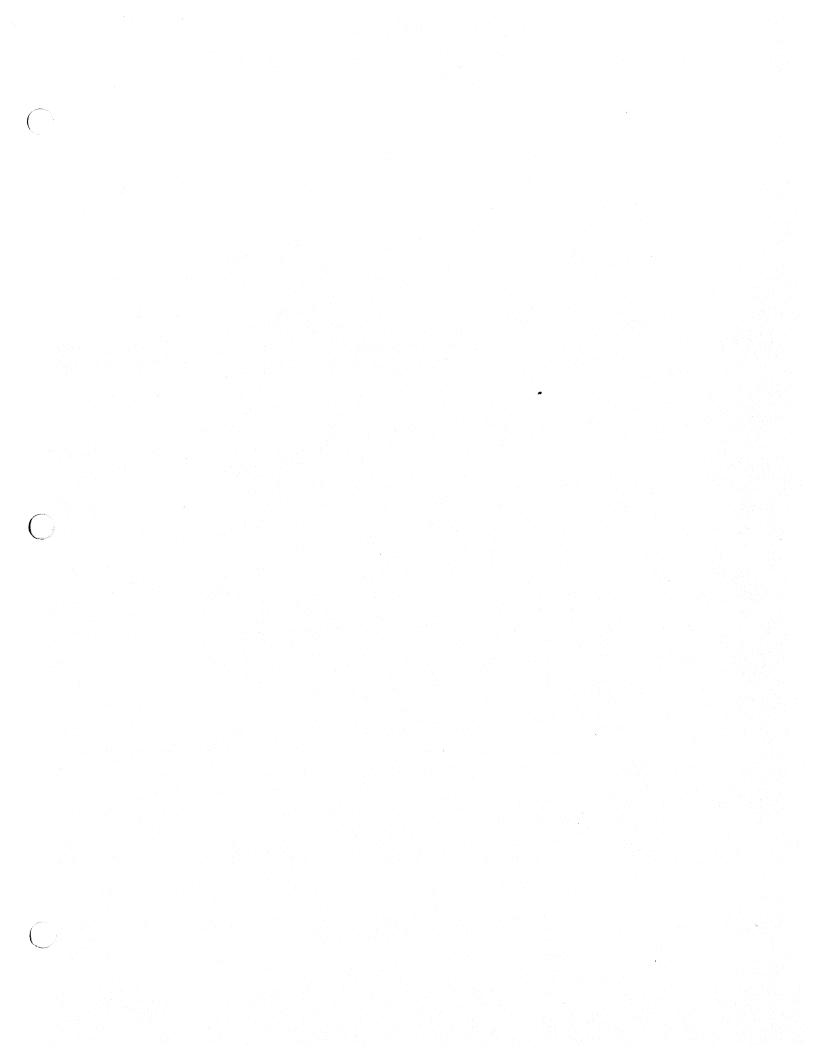
• 4KV Shutdown Board A control power is being supplied by its alternate source in accordance with Section 8.6 of 0-OI-57D.

- 4KV Shutdown Board 250V Battery Charger SB-A has been temporarily out of service for maintenance which has been completed.
- Diesel Generator A is <u>NOT</u> running.

### INITIATING CUES:

You are directed to return 4KV Shutdown Board 250V Battery Charger SB-A to service.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!



BFN DC Electrical System Unit 0	0-OI-57D Rev. 0119 Page 14 of 249
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#### 3.0 PRECAUTIONS AND LIMITATIONS

- A. In the event a Unit Battery System is removed from service or a 250VDC RMOV Board is transferred to the alternate supply, one or more of the limitations below may apply. If time permits, a Caution Order should be placed on the affected MOV handswitches prior to transfer of board to alternate to prevent violation of these safe shutdown restrictions.
  - 1. In the event any 250VDC RMOV Board is on its alternate supply, the following restrictions apply to DC motor operated valves that are supplied from a battery that is feeding any RMOV board alternate supply:
    - a. No DC MOV may be operated except as required to mitigate accident conditions, to obtain safe shutdown or to comply with Technical Specifications(i.e. to comply with LCO ACTIONS statements only).
    - Testing(including SI/SRs) that requires DC motor operated valve operation is NOT allowed. [Ref. Dwgs. 1-45E701-3, 2-45E702-4, 3-45E703-3]

DC MOVs that may NOT be operated except as required to mitigate accident conditions or to obtain safe shutdown or to comply with Technical Specifications(i.e. to comply with LCO ACTIONS statements only) with RMOV boards on alternate supply.

RMOV BOARD ON ALTERNATE	NORMAL SUPPLY BATTERY	ALTERNATE SUPPLY BATTERY	MAY NOT OPERATE MOVs SUPPLIED FROM RMOV BD (i.e. supplied from the alternate battery)
1A	1	2	1C, 2A, 3C, 1A
1B	3	1	1A, 2C, 3B, 1B
1C	2	1	1A, 2C, 3B, 1C
2A	2	3	1B, 2B, 3A, 2A
2B	3	1	1A, 2C, 3B, 2B
2C	1	2	1C, 2A, 3C, 2C
3A	3	2	1C, 2A, 3C, 3A
3B	1	3	1B, 2B, 3A, 3B
3C	2	3	1B, 2B, 3A, 3C

- If Battery System 1 is out of service or 250VDC RMOV Board 1A is on alternate supply, the following actions are required: [Ref. Dwg.: 1-45E701-3, 1-45E712-1]
  - a. If Battery System 1 is out of service, 1-FCV-073-0044, 2-FCV-73-44 and 3-FCV-73-44 and their supply circuit breakers must be open.
  - b. If 250V DC MOV Board 1A is transferred to alternate supply, 1-FCV-0073-0044 and 2-FCV-73-44 and their supply circuit breakers must be open.
- 3. If Battery System 2 is out of service or 250VDC RMOV Board 2A is on the alternate supply, the following additional actions and limitations are required: [Ref. Dwgs.: 2-45E702-4, 2-45E712-1]
  - a. If Battery System is out of service, valves 1-FCV-73-44, 2-FCV-73-44 and 3-FCV-73-44 and their associated supply circuit breakers must be opened.
  - b. If 250VDC RMOV Board 2A is transferred to the alternate supply, valves 2-FCV-73-44 and 3-FCV-73-44 and their associated supply circuit breakers must be opened.
- 4. If Battery System 3 is out of service or 250VDC RMOV Board 3A is on the alternate supply, the following additional actions and limitations are required: [Ref. Dwgs.: 3-45E703-3, 3-45E712-1]
  - a. If Battery System is out of service, valves 1-FCV-73-44, 2-FCV-73-44 and 3-FCV-73-44 and their associated supply circuit breakers must be opened.
  - If 250VDC RMOV Board 3A is transferred to the alternate supply, valves 3-FCV-73-44 and 2-FCV-73-44 and their associated supply circuit breakers must be opened.
- B. If Battery System 4, 5 or 6 becomes inoperable the emergency bearing oil pump motor must be started upon transfer to the alternate source. This action ensures D.C. system availability during design basis conditions.
- C. Prior to entry into Battery Room(s) ventilation fans to the Battery Room(s) should be in service.
- D. Extreme care should be used when deenergizing equipment while locating grounds to prevent interruption of power to vital and safeguard equipment. REFER TO 0-GOI-300-2, Electrical.

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- E. All safety requirements concerning smoking, fires or sparks should be observed when in the Battery-Battery Board Rooms because of potential accumulation of hydrogen in flammable amounts.
- F. 250V Unit Battery Charger 1,2A,2B and 3 Emergency ON select switch bypasses battery charger emergency load shed contacts. Placing the select switch in Emergency ON reestablishes charger operations with an accident signal present and Diesel Generator voltage available. Battery Charger 4 supply breaker, 480V Shutdown Board 3B, Compt 6D, receives a trip signal from the load shed logic and the breaker must be manually re-closed after a 40 second time delay to restore the charger to service. The annunciation circuit for the 250V Unit Battery Charger 3 does NOT work when the EMER/OFF/ON Select Switch is in the EMER Position.
- G. [II/C] Neutron monitoring battery chargers are NOT stand alone power supplies and shall only be operated while connected to the neutron monitoring batteries. [BFPER 940862]
- H. Within 30 minutes after the loss of the normal charger to a 250V Unit Battery another charger shall be placed in service to that battery and load reduced so that the battery is NOT discharging.
- I. [NRC/C] Upon return to service of 24V DC Neutron Monitoring Battery A or B, Instrument Maintenance must perform functional tests on SRMs and IRMs that are powered from the affected battery board (In that the IRMs and SRMs are normally inoperable after entering RUN mode due to lack of testing, these tests are N/A for the IRMs and the SRMs if the Unit is in RUN Mode and the IRMs and SRMs are inoperable). Prior to calling the IRMs and SRMs operable, the tests have to be performed. [NRC IE Inspect Follow-up Item 86-40]
- J. To return equipment to service following a failure or trip, the shutdown section of this instruction should be performed on the equipment failed. The initial conditions may NOT be applicable in this case.
- K. [NRC/C] The transfer of 250VDC control power to a 4kV Shutdown Board with a diesel generator operating may cause an inadvertent start of a RHRSW pump. [LER 88021/25]

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- L. The 250 V DC RMOV boards have alternate power supplies from another 250 V Unit DC board. For a unit in MODES 1, 2, or 3, the boards are considered inoperable when powered from their alternate feeder breakers because a single failure of the power source could affect both divisions depending on the board alignment.
  - 1. The alternate battery that has been loaded due to the transfer may be considered operable if the controlled drawing restrictions as referenced in P&L W are met.
  - 2. Transfer of individual loads required by the Technical Specifications on the Unit Batteries such as the RPT Logic should be considered inoperable if divisional separation cannot be proven. If transfer of such loads is performed solely due to an inoperable distribution board or source, then Technical Specification LCO 3.0.6 can apply to the loads, however, a distribution LCO must be entered.
  - 3. For a unit in MODE 4 or 5, the DC boards can be placed on their alternate feeder breakers and considered OPERABLE as long as the restrictions on the associated drawings are met.
- M. A 250V DC unit battery charger should NOT be considered operable if its safety related supply is NOT available. If normal power(safety related supply) is available but the charger is on its alternate supply it is still considered operable.
- N. When a 250V RMOV board is transferred to the alternate supply (except for 2B 250V DC RMOV Bd), both divisions (I and II) will be supplied from the same source.
- O. Battery Boards should be unloaded before removing Battery or Battery Charger from service, unless the evolution is of short duration (i.e. transferring battery chargers) or plant conditions warrant otherwise.
- P. A critical voltage for any cell is 2.13 volts. Prolonged operation of a cell below 2.13 volts will reduce its life expectancy. However it is NOT unusual for a replacement cell to measure 2.07 volts (on float charge) and to slowly rise in voltage over a 3 month period to normal float voltage ranges.
- Q. Any Battery suspected to have been discharged shall be recharged immediately to prevent battery damage.

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- R. The 125V DC Diesel Generator Batteries 0-BATB-254-A(B)(C)(D) and 3-BATB-254-3A(3B)(3C)(3D) are designed to normally operate with 60 cells. The batteries have sufficient capacity to maintain minimum acceptable voltages with one(1) cell jumpered out of service (Strapped Out). The cell SHALL BE jumpered out (Strapped Out) in accordance with Drawing 0-761E580-1 NOTE 9 or 3-C196C11017, NOTE 8, as applicable The plant SHALL NOTIFY the Site Engineering Manager prior to implementation. [see EDC 69382]
- S. The 250V DC Shutdown Boards Batteries 0-BATA-248-A(B)(C)(D) and 3-BATA-248-3EB are designed to normally operate with 120 cells. The batteries have sufficient capacity to maintain minimum acceptable voltages with two(2) cells jumpered out of service (Strapped Out). The cells SHALL BE jumpered out (Strapped Out) in accordance with Drawing 0-45E709-1 NOTE 10 or 3-45E709-2, NOTE 13, as applicable The plant SHALL NOTIFY the Site Engineering Manager prior to implementation. [see EDC 69382]
- T. The 250V spare battery charger shall be stored in the seismic restraint at all times unless the charger is being transported to another location.
- U. Battery Board 1 is the only EQ power supply to Unit 2 ADS valves 1-5 and 1-34. Valves 1-5 and 1-34 are still considered operable when on there alternate power supply.
- V. [IVF] To prevent the interruption of test equipment and chemical analyses, the Radiochemical Lab (RCL) shall be notified prior to transferring the power supply to Battery Board 2. [II-B-91-056]
- W. Environmental calculations assume battery ambient temperatures at 60° to 110°F for all batteries except Shutdown Board 3EB and DG batteries which are 40°F - 110°F.
- X. [CAQR/C] Unless the spare and normal 48V Annunciator battery chargers are operated in parallel, a discharged battery <u>CANNOT</u> be recharged within 12 hours while supplying normal loads. [CAQR BFP 880827]

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Y. Plant controlled drawings document restrictions on Unit 1, 2, & 3 loads which could adversely affect Unit 1, 2, 3 Safe Shutdown capability based on Nuclear Engineering calculations for plant configurations. Due to these restrictions operators must check the restrictions on the associated prints prior to manipulating the following loads.

BOARD	Drawing No.
250V Battery Bd 1	1-45E701-3
250V Battery Bd 2	2-45E702-4
250V Battery Bd 3	3-45E703-3
250V Battery Bd 4	0-45E704
250V Battery Bd 5	0-45E704-1
250V Battery Bd 6	0-45E704-2
250V RMOV Bd 1A	1-45E712-1
250V RMOV Bd 1B	1-45E712-2
250V RMOV Bd 1C	1-45E712-3
250V RMOV Bd 2A	2-45E712-1
250V RMOV Bd 2B	2-45E712-2
250V RMOV Bd 2C	2-45E712-3
250V RMOV Bd 3A	3-45E712-1
250V RMOV Bd 3B	3-45E712-2
250V RMOV Bd 3C	3-45E712-3

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Z. Plant controlled drawings document Technical Specification restrictions on Unit 1, 2, & 3 when a Shutdown Boards Control Power is transferred to its Alternate source. Due to these restrictions, operators must check the restrictions on the associated prints prior to transferring Control Power.

Shutdown Board	Norm Control Power	Transfer Switch	Drawing
4160V SD BD A	250V Battery SB-A	0-XSW-211-A	0-45E724-1
4160V SD BD B	250V Battery SB-B	0-XSW-211-B	0-45E724-2
4160V SD BD C	250V Battery SB-C	0-XSW-211-C	0-45E724-3
4160V SD BD D	250V Battery SB-D	0-XSW-211-D	0-45E724-4
4160V SD BD 3EA	250V Battery BD 1	3-XSW-211-3EA	3-45E724-6
4160V SD BD 3EB	250V Battery SB-3EB	3-XSW-211-3EB	3-45E724-7
4160V SD BD 3EC	250V Battery BD 3	3-XSW-211-3EC	3-45E724-8
4160V SD BD 3ED	250V Battery BD 2	3-XSW-211-3ED	3-45E724-9
480V SD BD 1A	250V Battery SB-A	1-XSW-231-1A	1-45E749-1
480V SD BD 1B	250V Battery SB-C	1-XSW-231-1B	1-45E749-2
480V SD BD 2A	250V Battery SB-B	2-XSW-231-2A	2-45E749-3
480V SD BD 2B	250V Battery SB-D	2-XSW-231-2B	2-45E749-4
480V SD BD 3A	250V Battery BD 1	3-XSW-231-3A/A	3-45E749-5
480V SD BD 3B	250V Battery BD 3	3-XSW-231-3B/A	3-45E749-6

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	Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service		
[1] <b>RI</b>	EVIEW all Precautions and Limitations ir	Section 3.0.	
r_1			
TF	RANSFER SWITCH, 0-XSW-248-000C1		
		01A(B)(C)(D).	
CI	HGR 0-CHGA-248-A(B)(C)(D),	PLY FROM BAT	
	Unit 0 Placing 1 SB-A(B) [1] RI [2] VE TF [3] FC TF NC [4] VE 0- [5] VE CH	<ul> <li>Unit 0</li> <li>Placing the 4kV Shutdown Board 250V Battery SB-A(B)(C)(D) in Service</li> <li>[1] REVIEW all Precautions and Limitations in</li> <li>[2] VERIFY OFF SHUTDOWN BDS 250V DC TRANS SW SB-A(B)(C)(D), 0-XSW-248-0</li> <li>[3] FOR CHARGER SB-C ONLY, VERIFY AF TRANSFER SWITCH, 0-XSW-248-000C1 NORMAL POSITION.</li> <li>[4] VERIFY ON MAIN DISCONNECT FOR 0-PNLA-248-A(B)(C)(D), 0-FUDS-248-000C1</li> </ul>	Unit 0       Rev. 0119 Page 106 of 249         Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service       [1]         [1]       REVIEW all Precautions and Limitations in Section 3.0.         [2]       VERIFY OFF SHUTDOWN BDS 250V DC SPARE BAT CHGR TRANS SW SB-A(B)(C)(D), 0-XSW-248-0000A(B)(C)(D).         [3]       FOR CHARGER SB-C ONLY, VERIFY APPENDIX R TRANSFER SWITCH, 0-XSW-248-000C1 IS IN THE NORMAL POSITION.         [4]       VERIFY ON MAIN DISCONNECT FOR 0-PNLA-248-A(B)(C)(D), 0-FUDS-248-0001A(B)(C)(D).         [5]       VERIFY ON DISTRIBUTION PANEL SUPPLY FROM BAT CHGR 0-CHGA-248-A(B)(C)(D),

## CAUTION

If a charger malfunction occurs the AC and DC power breakers should be placed to the OFF position. The Shift Manager should be informed immediately of this condition.

C

[6]	CLOSE BATTERY CHARGER 0-CHGA-248-A(B)(C)(D) AC SUPPLY BKR, 0-BKR-248-000A/AC(B/AC)(C/AC)(D/AC).	
[7]	<b>CHECK</b> SHUTDOWN BDS 250V DC BATTERY CHGR SB-A(B)(C)(D), 0-EI-248-A/B(B/B)(C/B)(D/B) indicates greater than 250 volts and stable.	
[8]	<b>CHECK</b> SHUTDOWN BDS 250V DC BATTERY CHGR SB-A(B)(C)(D), 0-II-248-A/B(B/B)(C/B)(D/B) indicates from 0-50 amps and stable.	
[9]	CLOSE BATTERY CHARGER 0-CHGA-248-A(B)(C)(D) DC SUPPLY, 0-BKR-248-000A/DC(B/DC)(C/DC)(D/DC).	

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#### 5.16 Placing the 4kV Shutdown Board 250V Battery Charger SB-A(B)(C)(D) in Service (continued)

- [10] **CHECK** the following indications on SHUTDOWN BDS 250V DC DISTRIBUTION PNL SB-A(B)(C)(D), 0-PNLA-248-0000A(B)(C)(D):
  - SHUTDOWN BDS 250V DC DISTRIBUTION PNL SB-A(B)(C)(D), 0-EI-248-A/A(B/A)(C/A)(D/A) indicates greater than 250 volts.

 SHUTDOWN BDS 250V DC DISTRIBUTION PNL SB-A(B)(C)(D), 0-II-248-A/A(B/A)(C/A)(D/A) indicates zero amps or less.