Draft Submittal

BROWNS FERRY EXAM
50-259, 50-260, &
50-296/2004-301

April 23 - 30, 2004

1. Administrative Questions/JPMs
2. In-plant JPMs
3. Control Room JPMs (simulator JPMs)
4. Administrative Topics Outline ES-301-1
5. Control Room Systems and Facility Walk-Through Test Outline ES-301-2

Draft

Admin

(Browns Ferry 2004-301)

Facility: BFN **Draft Submittal**	Date of Examination:_____
Examination Level (circle one): RO / SRO	Operating Test Number:_____

Administrative Topic See Note:	Describe Activity to be Performed
Conduct of Operations	**Review the Primary Containment Nitrogen Consumption SR and make appropriate ITS call based on results**
Conduct of Operations	**Determine appropriate actions when informed of failure of RWM during Rx startup**
Equipment Control	**Review the SRM operability SR during refueling and determine the quadrants in which fuel handling is allowed**
Radiation Control	**Review a Radiological Survey map**
Emergency Plan	**Classify the event per the REP**

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 182

TITLE: CLASSIFY THE EVENT PER THE REP (SPENT FUEL POOL LEVEL LOWER)

TASK NUMBER: S-000-EM-21

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	10/1/96	ALL	INITIAL ISSUE
1	12/10/96	2,3,9-11	PROCEDURE REVISION
2	11/16/99	ALL	PROCEDURE REVISIONS, FORMAT DOCUMENT

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____SS#_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 182

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

TASK TITLE: CLASSIFY THE EVENT PER THE REP

K/A NUMBER: 294001A1.16 K/A RATING: RO 2.9 SRO: 4.7

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TASK STANDARD: THE EVENT IS CLASSIFIED AS AN NOUE BASED ON UNCONTROLLED WATER LEVEL DECREASE IN SPENT FUEL POOL WITH IRRADIATED FUEL ASSEMBLIES EXPECTED TO REMAIN COVERED BY WATER.

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: EPIP-1, REV. 31, EPIP-2, REV. 26

VALIDATION TIME: CONTROL ROOM: 16 MIN LOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____UNSATISFACTORY _____

SIGNATURE: _____ **DATE:** _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

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INITIAL CONDITIONS: You are the SHIFT MANAGER. Unit 2 is at 100% power. The Unit 2 Board Operator acknowledges alarm "Fuel Pool System Abnormal" and refers to ARP 2-XA-55-4C, Window 1. AUO is dispatched to Panels 25-15 and 25-16 and determines that the cause is low level. The AUO reports to the Control Room that the Fuel Pool Liner appears to be leaking and level is slowly trending downward--Condensate makeup valve 2-SHV-078-0532 is tagged. The Operator notifies the US and SM of the impending problem.
The SHIFT MANAGER calls Technical Support and Radcon for support and dispathes the UNIT SUPERVISOR to analyze the situation.

INITIATING CUES: TECHNICAL SUPPORT personnel/UNIT SUPERVISOR determine that it will be two (2) hours before the fuel in the spent fuel pool will be in danger of being uncovered and 2-SHV-078-0532, Condensate Makeup valve will be untagged in one (1) hour for an adequate makeup source. Radcon reports that radiation levels around the Fuel Pool are raising slowly. Using the following parameters provided to you by the Control Room operating crew, **CLASSIFY THE EVENT** according to the EPIP's and perform any required actions.

Reactor Level--(+33 inches on Normal Range)
Reactor Pressure--1005 psig
DW Pressure--1.35 psig
DW Temperature--148 degrees F
DW Radiation--RR-90-256 reading normal
Torus Temperature--89 degrees F

Torus Pressure--1.40 psig
Torus Level--(+3 inches on normal band)
Fuel Pool Level two (2) feet below normal (TRENDING DOWN SLOWLY)
Radiation around Fuel Pool--previously 10 mr/hr--presently 20 mr/hr
NOTE: No abnormal radiological release is expected Offsite.

START TIME:_____

****

Performance Step : Critical_X__ Not Critical___

Refers to EPIP 1 to determine level of event.

Standard:

SHIFT MANAGER/SED refers to EPIP 1, Section 1.1, Reactor Water Level and declares an NOUE (1.1-U2) based on "Uncontrolled water level decrease in Spend Fuel Pool with irradiated fuel assemblies expected to remain covered by water.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical_X__ Not Critical___

Implements EPIP-2 NOTIFICATION OF UNUSUAL EVENT.

Standard:

SHIFT MANAGER/SED recognizes/implements an NOUE per EPIP-2.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

NOTIFICATION OF UNUSUAL EVENT | EPIP-2 | BROWNS FERRY NUCLEAR PLANT

3.0 INSTRUCTIONS

3.1 Notification of the Operations Duty Specialist (ODS)

Note: The ODS **should** be notified within 5 minutes after the emergency event is declared.

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Performance Step : Critical_X__ Not Critical___

3.1.1 **Complete** Attachment A (Notification Information).

Standard:

ATTACHMENT A is complete with EAL Designator 1.1-U2 NOTIFICATION OF UNUSUAL EVENT status on Unit 2. Unit 2 is at 100% power with a Fuel Pool Liner leak causing fuel pool level to be two (2) feet below normal. Fuel Pool Makeup valve, 2-SHV-078-0532 is tagged [expected to be untagged in one (1) hour.] Irradiated fuel is expected to remain covered at all times. Radiation levels around pool are slowly trending upward. No abnormal radiological OFFSITE releases expected. **(INFORMATION GIVEN IN INITIAL CONDITIONS & INITIATING CUES EXCEPT EAL DESIGNATOR) NOTE: THIS IS GENERIC INFORMATION FOR DESCRIPTION OF EVENT--ALL THIS EXACT INFORMATION IS NOT REQUIRED FOR ACCEPTANCE UNDER BRIEF DESCRIPTION OF EVENT.**

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical X Not Critical___

3.1.2 **Notify** the ODS and **Provide** the information from Attachment A.

Note: Utilize the direct ring-down ODS phone when making this notification or as applicable dial direct.

ODS Telephone Numbers
5-751-1700
5-751-2495

If the ODS cannot be reached within 10 minutes, **Then** contact the State of Alabama directly by requesting the Rad Health Duty Officer at:

Day Shift 8 a.m.-5 p.m.
9-1-334-206-5391

Holidays-Weekends-Offshifts
9-1-334-242-4378

Standard:

NOTIFIES the ODS within **5 minutes** from the time of declaration of event and **provides** the information from Attachment A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

3.1.3 **Fax** a copy of Attachment A to the ODS for confirmation of information or State if contacted directly).

ODS Fax	AL Rad Health
5-751-8620	9-1-334-206-5387

CUE: FAXING TO THE ODS WILL BE SIMULATED.

Standard:

SIMULATED faxing a copy of Attachment A to the ODS.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

3.1.4 **Receive** confirmation call from the ODS (to verify notification of the State of Alabama. (NA this step if the State was contacted directly).

CUE: REQUEST SIMULATOR CONSOLE OPERATOR TO CALL AND CONFIRM THAT ODS HAS NOTIFIED THE STATE OF ALABAMA

3.2 **NOTIFICATION OF SITE PERSONNEL**

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Performance Step : Critical_X__ Not Critical____

3.2.1 **Provide** the Unit 1, Unit Operator with a completed copy of Attachment A.

Standard:

SIMULATED providing the Unit 1 Operator with a completed copy of Attachment A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: UNIT 1 OPERATOR HAS A COPY OF ATTACHMENT A.

****

Performance Step : Critical_X__ Not Critical____

3.2.2 **Direct** the Unit 1, Unit Operator to make notifications from Attachment B (Unit 1, Unit Operator Notification), utilizing information from Attachment A.

Standard:

SIMULATED by calling Console Operator and requesting Unit 1 Operator and directing to make notifications per Attachment B, utilizing information from Attachment A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

3.2.3 **Make** the following P.A. announcement:

THIS IS (NAME), SHIFT MANAGER. A NOTIFICATION OF UNUSUAL EVENT HAS BEEN DECLARED ON UNIT _ 2. I HAVE ASSUMED THE DUTIES OF SITE EMERGENCY DIRECTOR.

Standard:

P. A. Announcement was made giving name, SHIFT MANAGER'S Position, NOTIFICATION OF UNUSUAL EVENT status on Unit 2, and informing crew that the SHIFT MANAGER has the duties of SED.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X__

3.2.4 **Notify** the Plant Manager or alternate.

Standard:

SHIFT MANAGER **SIMULATES** calling the Plant Manager by calling the Simulator Console Operator.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical X__

3.3.1 **Determine** if Assembly and Accountability are required.

Standard:

Shift Manager determines that no Assembly or Accountability are required.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

3.3 ACCOUNTABILITY

3.3.1 **If** the NOUE has been declared due to Security EAL, 6.7-U, and Nuclear Security recommends Accountability to establish the "Two Person (Line of Sight) Rule", **Then** implement EPIP-8, Appendix C, for Assembly and Accountability only.

3.4 **OFFSITE DOSE ASSESSMENT**

3.4.1 Evaluate the need for offsite dose assessment. **(N/A STEP IF NOT APPLICABLE)**

CUE: DOSE ASSESSMENT STEP IS NOT APPLICABLE.

3.4.1.1 When offsite dose assessment is required obtain the information from the CECC when operational.

3.4.1.2 If the CECC is not operational, contact the TSC, when staffed or the RADCON Shift Supervisor and request the implementation of EPIP 14, for manual dose assessment.

Standard:

SHIFT MANAGER/SED addresses the OFFSITE DOSE ASSESSMENT and N/A's STEP.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical_X__ Not Critical___

3.5 **NOTIFICATION OF THE NRC**

3.5.1 **Notify** the **NRC** immediately or within within 1 hour and if requested by the **NRC** maintain an open and continuous communications channel.

Note: **Utilize** the Emergency Notification System **(ENS)** when making this notification. Dial the first number listed on the sticker affixed to the **ENS** telephone, using all 10 digits. **IF** the number is busy, **THEN** select in order, the alternate numbers until a connection is achieved.

Note: **IF** the **ENS** phones are out-of-service, **THEN** dial direct utilizing the TVA phone system by dialing 9-1-the number listed on the **ENS** telephones. No access codes are required.

Standard:

PERFORMER notified NRC on the Simulator by calling the console operator and requesting NRC. Informing NRC that the SHIFT MANAGER/SED has declared a NOTIFICATION OF UNUSUAL EVENT status on Unit 2 (1.1-U2).

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical X__

3.6 **PERIODIC EVALUATION OF THE EVENT**

3.6.1 Continue to **Evaluate** the event by using EPIP-1 as conditions warrant.

CUE: ANOTHER SHIFT MANAGER (SRO) IS HERE TO RELIEVE YOU. THAT WILL BE ALL FOR NOW!

END OF TASK

STOP TIME _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 534

TITLE: Review 2-SI-4.7.A.2.a Primary Containment Nitrogen Consumption and Leakage. (SRO ONLY)

TASK NUMBER:

SUBMITTED BY: _____ DATE:

VALIDATED BY: _____ DATE:

APPROVED: _____ DATE:
TRAINING

PLANT CONCURRENCE: _____ DATE:
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	02/24/04	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR: _____

RO _____ SRO _____ DATE:

JPM NUMBER: 534

JPM TITLE: REVIEW 0-SI-4.7.A.2.a, Primary Containment Nitrogen Consumption and Leakage for the day.

TASK NUMBER: S-090-SU-01

TASK TITLE: Review Nitrogen Consumption SI

K/A NUMBER: 2.1.11 K/A RATING: RO 3.0 SRO: 3.8

****

TASK STANDARD: Upon reviewing 2-SI-4.7.A.2.a for the day, determine an incorrect calculation and the required TRM/ITS actions.

LOCATION OF PERFORMANCE: SIMULATOR x PLANT x CONTROL ROOM x

REFERENCES/PROCEDURES NEEDED: 2-SI-4.7.A.2.a, Primary Containment Nitrogen Consumption and Leakage (filled out) and TRM section 3.6, ITS section 3.6.

VALIDATION TIME: CONTROL ROOM: _____ LOCAL:

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO

RESULTS: SATISFACTORY _____ UNSATISFACTORY

EXAMINER SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

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

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*

INITIAL CONDITIONS: You are the Unit 2 Unit Supervisor. The UO has given you the Primary Containment Nitrogen consumption SI to review for the day.

INITIATING CUES: Review this SI and initial where appropriate.

****

Performance Step: Critical X Not Critical

Review the SR.

Standard:

Initials as Unit Supervisor Attachments 3 & 4 (Not Critical). Determines that Attachment 2 Nitrogen Makeup corrections Event 3 calculation is incorrect, (Critical), when this result is used in Attachment 5 the calculated leakage is also incorrect (Critical).

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****
****

Performance Step: Critical___ Not Critical X

Candidate enters 2-AOI-64-7 and performs all calculations again.

Standard:

Candidate repeats calculations and determines that Primary Containment leakage is greater than the value allowed by TRM.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.5 Nitrogen Makeup to Containment

LCO 3.6.5 When the primary containment is inerted the containment shall be continuously monitored for gross leakage by review of the inerting system makeup requirements. Nitrogen makeup to the primary containment, averaged over 24 hours (corrected for drywell temperature, pressure, and venting operations), shall not exceed 542 scfh.

APPLICABILITY: When primary containment is inerted

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Nitrogen makeup to the primary containment, averaged over 24 hours (corrected for drywell temperature pressure, and venting operations), exceeds 542 scfh.	A.1 Declare primary containment inoperable. (TS LCO 3.6.1.1)	Immediately

****

Performance Step: Critical X Not Critical

Determine appropriate actions.

Standard:

Candidate determines from the TRM/ITS that Primary Containment is inoperable and must be restored in 1 hour or the Unit placed in Mode 3 within 12 hours and Mode 4 within 36 hours.

SAT UNSAT N/A COMMENTS:

****

3.6 CONTAINMENT SYSTEMS

3.6.1.1 Primary Containment

LCO 3.6.1.1 Primary containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment inoperable.	A.1 Restore primary containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 535

TITLE: REVIEW 2-SR-3.3.1.2.4 Source Range Monitor System Count Rate and Signal to Noise Ratio Check (SRO ONLY)

TASK NUMBER:

SUBMITTED BY: _____ DATE:

VALIDATED BY: _____ DATE:

APPROVED: _____ DATE:
TRAINING

PLANT CONCURRENCE: _____ DATE:
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	02/24/2004	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR: _____

RO _____ SRO _____ DATE:

JPM NUMBER: 535

JPM TITLE: REVIEW 2-SR-3.3.1.2.4 Source Range Monitor System Count Rate and Signal to Noise Ratio Check

TASK NUMBER:

TASK TITLE: Determine available Quadrants for Core Alterations.

K/A NUMBER: 2.1.12 K/A RATING: RO 2.9 SRO: 4.0

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*
TASK STANDARD: Upon reviewing 2-SR-3.3.1.2.4, determine Core Alterations are not allowed in Quadrant B.

LOCATION OF PERFORMANCE: SIMULATOR x PLANT x CONTROL ROOM x

REFERENCES/PROCEDURES NEEDED: 2-SR-3.3.1.2.4 Source Range Monitor System Count Rate and Signal to Noise Ratio Check (filled out), ITS section 3.3

VALIDATION TIME: CONTROL ROOM: _____ LOCAL:

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL

COMMENTS: _____

Additional comment sheets attached? YES _____ NO

RESULTS: SATISFACTORY _____ UNSATISFACTORY

EXAMINER SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

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

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INITIAL CONDITIONS: You are the Unit 2 Unit Supervisor. The Board Unit Operator has completed the required performance of 2-SR-3.3.1.2.4 and given to you for review.

INITIATING CUES: Review this SR and initial where appropriate.

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Performance Step: Critical X Not Critical

Review the SR.

Standard:

Reviews SR and determines that step 7.6.9 and 7.14 do not meet Acceptance Criteria. (Critical).

SAT UNSAT N/A COMMENTS:

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Performance Step: Critical X Not Critical

Reference ITS section 3.3 and determines that core alterations are not allowed in Quadrant B.

Standard:

Candidate refers to ITS section 3.3.1.2 and determines that Core Alterations must be stopped in Quadrant B immediately.(Critical)

SAT UNSAT N/A COMMENTS:

SR 3.3.1.2.2 ----------NOTES---------- 1. Only required to be met during CORE ALTERATIONS. 2. One SRM may be used to satisfy more than one of the following. ---------- Verify an OPERABLE SRM detector is located in: a. The fueled region; b. The core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.	12 hours

E. One or more required SRMs inoperable in MODE 5.	E.1 Suspend CORE ALTERATIONS except for control rod insertion. AND	Immediately
	E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 536

TITLE: Determine the appropriate action when notified of mispositioned Control Rods during a Reactor startup. (SRO ONLY)

TASK NUMBER:

SUBMITTED BY: _____ DATE:

VALIDATED BY: _____ DATE:

APPROVED: _____ DATE:
TRAINING

PLANT CONCURRENCE: _____ DATE:
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	02/26/2004	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR: _____

RO _____ SRO _____ DATE:

JPM NUMBER: 536

JPM TITLE: Determine the appropriate action when notified of mispositioned Control Rods during a Reactor startup.

TASK NUMBER:

TASK TITLE:

K/A NUMBER: 2.1.12 K/A RATING: RO 2.9 SRO: 4.0

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*
TASK STANDARD: SRO makes the appropriate Tech Spec call when informed of mispositioned Control Rods during a Reactor startup.

LOCATION OF PERFORMANCE: SIMULATOR x PLANT x CONTROL ROOM x

REFERENCES/PROCEDURES NEEDED: Technical Specifications Section 3.1.6

VALIDATION TIME: CONTROL ROOM: _____ LOCAL:

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO

RESULTS: SATISFACTORY _____ UNSATISFACTORY

EXAMINER SIGNATURE: _____ DATE: _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

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

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INITIAL CONDITIONS: You are the Unit 2 Unit Supervisor. A reactor startup is in progress with moderator temperature at 350 F. This startup was initiated with the RWM inoperable due to a hardware failure in the RWM computer. The Rod pattern is in group 11 and rods are being withdrawn to establish the desired HUR.

INITIATING CUES: The Reactor Engineer informs you that due to a clerical error on the Rod Pull sheets he has determined that 2 rods have been pulled past their group withdrawal limits and 9 rods are outside their BPWS limits. Determine the required actions in response to this problem.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 537

TITLE: REVIEW A RADIOLOGICAL SURVEY MAP

TASK NUMBER: N/A

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	02/28/2004	ALL	NEW

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 537

TASK NUMBER: ADMIN

TASK TITLE: N/A

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

****

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

LOCATION OF PERFORMANCE: SIMULATOR __ PLANT _ CONTROL ROOM _

REFERENCES/PROCEDURES NEEDED: N/A

VALIDATION TIME: CONTROL ROOM: 10 minLOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM ___ LOCAL ___
COMMENTS: _____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

EXAMINER SIGNATURE:_____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

STUDENT HANDOUT

INITIAL CONDITIONS: You are performing the duties of the Work Control SRO and a clearance is scheduled to be placed on system 74 (RHR) during your shift. You have two (2) AUO's available to assign this clearance for placement.

INITIATING CUES: Given the attached survey map, DETERMINE if the assigned AUO's can complete this task without exceeding the TVA administrative annual exposure limit.

The clearance requires closure of 2 large HCV's in a high radiation area. Valve 74-19 will require thirty (30) minutes for two (2) AUO's to close and tag. Valve 74-20 will require one (1) hour for two (2) AUO's to close and tag. AUO A has received 800 mr ytd. AUO B has received 890 mr ytd. The map of the room has radiological survey information you must interpret to successfully complete this JPM.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

EXAMINER'S KEY

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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.

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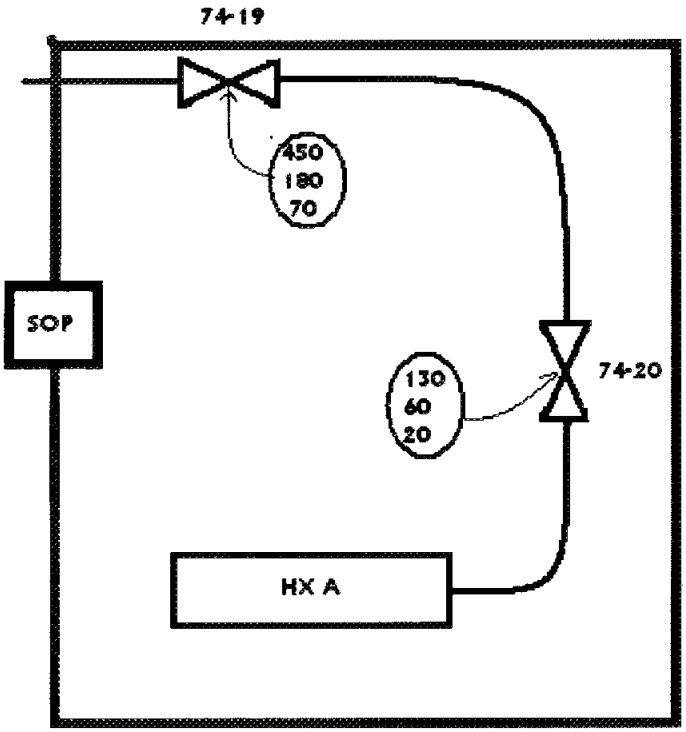
The clearance requires closure of 2 large HCV's in a high radiation area. Valve 74-19 will require thirty (30) minutes for two (2) AUO's to close and tag. Valve 74-20 will require one (1) hour for two (2) AUO's to close and tag. AUO A has received 800 mr ytd. AUO B has received 890 mr ytd. The map of the room has radiological survey information you must interpret to successfully complete this JPM.

ANSWER

AUO A- yes, the accumulated dose for this task is 150 mr. This gives AUO A a total dose of 950 mr ytd.

AUO B- no, the accumulated dose for this task is 150 mr. This gives AUO B a total dose of 1040 mr ytd.



A-on contact
B-12 inches
C-General Area

Draft

JPMs

(Browns Ferry 2004-301)

Facility: BFN ~~Draft Submittal~~	Date of Examination:_____
Exam Level (circle one): SRO-I / SRO-U	Operating Test Number:_____

Control Room Systems (6 for RO; 7for SRO-I; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
7- EOI Appendix 7D - Alternate RPV Injection System Lineup - Standby Coolant	D, S, L	8
14F-EOI Appendix 5A Condensate/Feedwater with High Pressure Heaters isolated	D, A, S, L	2
23F-EOI Appendix 6E Injection Subsystem Lineup-CS Loop II	D, A, S, L	4
~~48F-EOI Appendix 11F Alternate Pressure Control RFP's on minimum flow~~ REPLACE DURING PREP WEEK	D, A, S, L	3
90-Start a Recirc Pump during power operation	M, S	1
126F-Respond to High DW Pressure and Temp	D, A, S	5
133F-EOI Appendix 11B Alternate Pressure Control RCIC in Test Mode	D, A, S, L	3
~~139F-Respond to Uncoupled CRD.~~ DELETE	~~D, A, S, L~~	1
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
79-Start RCIC from outside Control Room	M, L, R	2
86-Place a 250v Battery Charger in service	D	6
193F-Place ECCS ATU in service	D	7

* Type codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow power, (R)CA

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 23F

TITLE: 2-EOI APPENDIX 6E - INJECTION SUBSYSTEM LINEUP - CS SYSTEM II

TASK NUMBER: U-000-EM-35

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	09/20/99	ALL	NEW JPM
1	09/22/00	ALL	GENERAL REVISION
2	8/30/02	ALL	GENERAL REVISON
3	02/26/04	ALL	Format; Editorial

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 23F

TASK NUMBER: U-000-EM-35

TASK TITLE: LINE UP INJECTION SUBSYSTEMS - CORE SPRAY LOOP II IN ACCORDANCE WITH 2-EOI APPENDIX 6E

K/A NUMBER: 209001A4.05 K/A RATING: RO 3.8 SRO: 3.6

****

TASK STANDARD: PERFORM MANIPULATIONS REQUIRED TO INJECT WATER INTO THE RPV VIA CORE SPRAY SYSTEM II AS DIRECTED BY 2-EOI APPENDIX 6E

LOCATION OF PERFORMANCE: SIMULATOR _X_ PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 6E, REV 6

VALIDATION TIME: CONTROL ROOM: 4:15 LOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: **SATISFACTORY** _____ **UNSATISFACTORY** _____

SIGNATURE: _____ **DATE:** _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are the Unit Operator. The Unit 2 reactor was in Mode 4 with shutdown cooling on loop 2 when an unisolable leak developed causing RPV level to lower. The plant is operating per EOI-1.

INITIATING CUES: The Unit Supervisor directs you to inject water into the RPV to restore RPV water level to + 2" - + 51" using Core Spray System II as directed by 2-EOI Appendix 6E.

START TIME_____

INSTRUCTOR NOTE: VERIFY 75-51 CLOSED and 75-53 OPEN FOR THIS JPM.

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 2-EOI APPENDIX 6E.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

1. **VERIFY OPEN** the following valves:

   - 2-FCV-75-30, CORE SPRAY PUMP 2B SUPPR POOL SUCT VLV.

Standard:

VERIFIED illuminated RED valve position indicating lamp located above 2-HS-75-30A.

SAT____UNSAT____N/A____ COMMENTS:_____

****

Performance Step: Critical___ Not Critical_X___

- 2-FCV-75-39, CORE SPRAY PUMP 2D SUPPR POOL SUCT VLV.

Standard:

VERIFIED illuminated RED valve position indicating lamp located above 2-HS-75-39A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X__ Not Critical_____

- 2-FCV-75-51, CORE SPRAY SYS II OUTBD INJECT VALVE.

Standard:

Recognize valve closed (illuminated GREEN valve position indicating lamp located above 2-HS-75-51A) and opened 2-FCV-75-51 with 2-HS-75-51A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

Instuctor Note:
This is the faulted step in the JPM. Valve interlocks will prevent the outboard valve from opening with the inboard valve open. Examinee must first close the inboard valve to allow opening of the outboard valve. If AUO dispatched to open the outboard valve manually, report no personnel available.

****

Performance Step: Critical___ Not Critical_X__

2. **VERIFY CLOSED** 2-FCV-75-50, CORE SPRAY SYS II TEST VALVE.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp located above 2-HS-75-50A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical___

3. **VERIFY** CS Pump 2B and/or 2D running.

Standard:

PLACED 2-HS-74-33A and/or 2-HS-74-42A in the START position and **VERIFIED** illuminated RED motor breaker position indicating lamp(s) above associated control switches.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical____

4. WHEN...RPV pressure is below 450 psig,
THEN...**THROTTLE** 2-FCV-75-53, CORE SPRAY SYS II INBD INJECT VALVE, as necessary to control injection at or below 4000 gpm per pump.

Standard:

PLACED 2-HS-75-53A (2-FCV-75-53) in the OPEN position and **VERIFIED** illuminated RED valve position indicating lamp above associated control switch.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

CAUTION

Continuous operation with inadequate NPSH may result in pump damage or pump inoperability.

****
****

Performance Step : Critical___ Not Critical_X___

5. **MONITOR** Core Spray Pump NPSH using Attachment 1.

Standard:

COMPARED pump flow rate, suppression pool temperature and suppression chamber pressure and **DETERMINED** adequate NPSH.

SAT____UNSAT____N/A____ COMMENTS:_____

END OF TASK

STOP TIME _____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical X

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are the Unit Operator. The Unit 2 reactor was in Mode 4 with shutdown cooling on loop 2 when an unisolable leak developed causing RPV level to lower. The plant is operating per EOI-1.

INITIATING CUES: The Unit Supervisor directs you to inject water into the RPV to restore RPV water level to + 2" - + 51" using Core Spray System II as directed by 2-EOI Appendix 6E.

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

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	10/23/98	ALL	New JPM.
1	10/23/01	3, 4	PROCEDURE CHANGE, FORMAT CHANGE, SETPOINT CHANGE
2	02/28/04	All	Format; Editorial; Procedure Rev; KA change add setup Cue

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 14F

TASK NUMBER: U-000-EM-29

TASK TITLE: LINE UP INJECTION SYSTEMS - CONDENSATE/FEEDWATER IN ACCORDANCE WITH 2-EOI APPENDIX 5A. HP HTRs isolated.

K/A NUMBER: 295031EA1.12 K/A RATING: RO 3.9 SRO: 4.1*

****

TASK STANDARD: PERFORM CONTROL ROOM ACTIONS REQUIRED TO ESTABLISH THE CONDENSATE/FEEDWATER SYSTEM AS AN RPV INJECTION SYSTEM AS DIRECTED BY 2-EOI APPENDIX 5A

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 5A, REV 8

VALIDATION TIME: CONTROL ROOM: 11:00 LOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: **SATISFACTORY** _____ **UNSATISFACTORY** _____

SIGNATURE: _____ **DATE:** _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are a Unit 2 Operator. The reactor was operating at 100% power and was scrammed and feedwater was secured due to misdiagnosis of a leak. EOI-1 has been followed through RC/L-3. RCIC is out of service and HPCI isolated upon startup.

INITIATING CUES: The problem that caused the loss of RFW has been verified to be erroneous 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.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 193F

TITLE: PLACE UNIT 2 DIVISIONAL ECCS ANALOG TRIP UNIT INVERTER IN SERVICE

TASK NUMBER: S-57C-NO-03

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	10/1/97	ALL	NEW JPM
1	11/10/97	2,3	PROCEDURE REVISION
2	11/02/99	3,5	PROCEDURE REVISION, PLACED PERFORMANCE STEP FOR STEP 5.3.
3	10/15/01	All	Procedure Change, Format Improvement
4	08/16/02	2, 3, 7, 8,	DELETED SS#, PROCEDURE REVISION, CHANGED UNID'S AND QUE'S'FOR OPERATOR
5	09/11/03	ALL	FORMAT; EDITORIAL; PROCEDURE REV
6	02/28/04	3	KA to rev 2

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 193F

TASK NUMBER: S-57C-NO-03

TASK TITLE: PLACE UNIT 2 DIVISIONAL ECCS ANALOG TRIP UNIT INVERTER IN SERVICE

K/A NUMBER: 262002 2.1.30 K/A RATING: RO 3.9 SRO: 3.4

****

TASK STANDARD: SIMULATE PERFORMING OUTSIDE CONTROL ROOM OPERATIONS REQUIRED TO PLACE A DE-ENERGIZED UNIT 2 DIVISION I ECCS ANALOG TRIP UNIT IN SERVICE

LOCATION OF PERFORMANCE: SIMULATOR ___ PLANT _X_ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 0-OI-57C, REV 69

VALIDATION TIME: CONTROL ROOM: 7:00 LOCAL: 4:00
MAX. TIME ALLOWED: _____ (Completed for Time Critical JPMs only)

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ **DATE:** _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an Operator. Unit 2 is in cold shutdown. The Unit 2 Division I ECCS Analog trip unit inverter was taken out of service for preventive maintenance in accordance with Section 7.3 of 0-OI-57C. The maintenance has been completed and the clearance released and removed.

INITIATING CUES: The Shift Manager has directed you to return Unit 2 Division I ECCS analog trip unit inverter to service as directed by 0-OI-57C.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 0-OI-57C.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

5.3 Placing Unit 2 Division I(II) ECCS Analog Trip Unit Inverter in Service

5.3.1 **VERIFY** the following initial conditions:

5.3.1.1 Division I(II) ECCS Analog Trip Unit Inverter is shutdown in accordance with Section 7.3.

5.3.1.2 The ECCS Inverter has been shutdown for at least 30 seconds.

Standard:

N/A - given in the initial conditions.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

****

Performance Step: Critical___ Not Critical_X__

5.3.2 **REVIEW** all Precaution and Limitations in Section 3.0.

Standard:

REVIEWED Precautions and Limitations in Section 3.0.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

NOTE:

Steps 5.3.3 through 5.3.7 are performed at the Division I(II) ECCS ATU Inverters located in Electrical Board Room 2B(2A).

****

Performance Step: Critical_X__ Not Critical_____

5.3.3 **VERIFY CLOSED** the DIVISION I(II) ECCS ATU INVERTER on 250V Reactor MOV Board 2B(2A) Compartment 8A(11A1).

CUE: [WHEN INDICATED CORRECTLY] THE BREAKER FOR DIVISION I ECCS ATU INVERTER ON 250V REACTOR MOV BOARD 2B COMPARTMENT 8A IS IN THE OFF POSITION.

Standard:

RECOGNIZED breaker position indicator on 250V RMOV Bd 2B, Compartment 8A, is in the **OFF** position (given by instructor cue) and **SIMULATED CLOSING BREAKER.**

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

****

Performance Step: Critical X Not Critical_____

5.3.4 **PLACE** ECCS ATU INVERTER DIV I(II)- DC INPUT BKR, 2-BKR-256-0001A (0002A) in ON.

Standard:

SIMULATED PLACING ECCS ATU INVERTER DIV I, DC INPUT BREAKER, 2-BKR-256-0001A in the ON position.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

CUE: [WHEN SIMULATED CORRECTLY] THE DC INPUT BREAKER 2-BKR-256-0001A IS IN THE ON POSITION.

****

Performance Step: Critical X Not Critical_____

5.3.5 **PLACE** ECCS ATU INVERTER DIV I(II) - AC OUTPUT BKR, 2-BKR-256-0001B(0002B) in ON.

Standard:

SIMULATED PLACING ECCS ATU INVERTER DIV I, AC OUTPUT BKR, 2-BKR-256-0001B in the ON position.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

CUE: [WHEN SIMULATED CORRECTLY] THE ECCS ATU INVERTER DIV I, AC OUTPUT BKR, 2-BKR-256-0001B IS IN THE ON POSITION.

****

Performance Step: Critical___ Not Critical X___

5.3.6 **IF** any alarm red indicating lights are illuminated, **THEN DEPRESS** the ALARM RESET PUSHBUTTON.

Standard:

If any RED alarm indicating lamps illuminated, **SIMULATED DEPRESSING** ALARM RESET PUSHBUTTON.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

CUE: [IF REQUIRED TO SIMULATE DEPRESSING RESET PUSHBUTTON] THE RED ALARM INDICATING LIGHTS ARE EXTINGUISHED.

****

Performance Step: Critical___ Not Critical_X__

5.3.7 **CHECK** the following parameters on the Inverter:

5.3.7.1 AC current is less than 8.0 Amperes.

5.3.7.2 AC voltage is between 117 and 123 volts.

5.3.7.3 Frequency is between 59.5 and 60.5 Hz.

Standard:

VERIFIED the following indications on the Inverter instrumentation:

- AC current < 8.0 Amperes
- AC voltage between 117 and 123 volts
- Frequency between 59.5 and 60.5 Hz.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

CUE: WHEN OPERATOR CHECKS THE PARAMETERS ON THE INVERTER:

AC CURRENT IS 6 AMPS
AC VOLTS IS 120 VOLTS
FREQUENCY IS 60 HZ

END OF TASK

STOP TIME _____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical _X__

PERFORMER complied with all safety rules and regulations.

Standard:

PERFORMER complied with all safety rules and regulations (hardhat, safety glasses, sideshields, and hearing protection was worn **AS REQUIRED.**)

ELECTRICAL SAFETY was also adhered to **AS REQUIRED**: Exposed conductive articles such as rings, metal wristwatches, bracelets, and metal necklaces shall not be worn by employees within **reaching distance** of exposed energized electrical conductors of 50 volts or greater.

SAT____ UNSAT____ N/A____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated proper radiological practices **AS REQUIRED.**

Standard:

PERFORMER applied proper radiological practices, **AS REQUIRED,** during JPM performance.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical _X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an Operator. Unit 2 is in cold shutdown. The Unit 2 Division I ECCS Analog trip unit inverter was taken out of service for preventive maintenance in accordance with Section 7.3 of 0-OI-57C. The maintenance has been completed and the clearance released and removed.

INITIATING CUES: The Shift Manager has directed you to return Unit 2 Division I ECCS analog trip unit inverter to service as directed by 0-OI-57C.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 86

TITLE: PLACE A 250V BATTERY CHARGER IN SERVICE

TASK NUMBER: S-57D-NO-02

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
2	10/4/94	1,2,3,4	REVISE TO NEW FORMAT
3	12/1/94	1,2,3,4	REVISE TO NEW FORMAT
4	4/25/95	ALL	GENERAL
5	10/26/95	1,2,3,6,11,15	PROCEDURE REVISION
6	10/31/95	11	ADDED INSTRUCTOR'S NOTE
7	11/9/95	15	ADDED CUES
8	11/30/95	11	STEP 5.2.7.5 CHANGED TO NOT CRITICAL
9	10/9/97	ALL	FORMAT, PROCEDURE REVISION, ADDED PLANT WORK EXPECTATIONS TOUCH STAAR, SAFETY, AND 3-WAY COMM., AND INST. STATEMENT REQUIRING PROCEDURE REV. CHECK ON FIRST JPM.
10	10/28/98	3,4	PROCEDURE REVISION
11	10/11/00	all	GENERAL REVISION
12	11/13/03	all	FORMAT; EDITORIAL;

PROCEDURE REV; CHG VERIFY
TO NON-CRITICALS

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 86

TASK NUMBER: S-57D-NO-02

TASK TITLE: PLACE A 250V UNIT BATTERY CHARGER IN SERVICE TO A BATTERY BOARD

K/A NUMBER: 263000A4.1 K/A RATING: RO 3.3 SRO: 3.5

****

TASK STANDARD: SIMULATE PLACING 250V UNIT BATTERY CHARGER 2A IN SERVICE TO BATTERY BOARD 2

LOCATION OF PERFORMANCE: SIMULATOR ___ PLANT X CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 0-OI-57D, REV 70

VALIDATION TIME: CONTROL ROOM: _____ LOCAL: 15:00

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: **SATISFACTORY** _____ **UNSATISFACTORY** _____

SIGNATURE: _____ **DATE:** _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an operator. 250V Battery Board 2 is being fed by 250V (Spare) Battery Charger 2B for testing purposes. Testing has been completed. 250V Unit Battery 2 is in service in accordance with Section 5.1 of 0-OI-57D.

INITIATING CUES: The US has directed you to return 250V Battery Board 2 to its normal charging supply, i.e. place 250V Battery Charger 2A in service to Battery Board 2 using the NORMAL power source as directed by 0-OI-57D.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME_____

****

Performance Step: Critical___ Not Critical_X___

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure, 0-OI-57D.

Standard:

IDENTIFIED OR OBTAINED copy of 0-OI-57D.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

5.2 Placing the 250V Unit Battery Charger 1(2A,3,4,5,6) in Service to Battery Board 1(2,3,4,5,6)

5.2.1 VERIFY the 250V Unit Battery 1(2,3,4,5,6) is in service in accordance with Section 5.1.

****

Performance Step: Critical___ Not Critical_X___

5.2.2 REVIEW all Precautions and Limitations in Section 3.0.

Standard:

REVIEWED precautions and limitations in Section 3.0.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X___

5.2.3 VERIFY the supply breaker on the 480V AC board for the selected AC source is closed per the table below.

250V Battery Charger	Normal Source	Alternate Source (Charger Service Bus)
1	480V SD Bd 1A, Comp 6D 1-BKR-248-0001A/6D	480V Common Bd 1, Comp 3A
2A	480V SD Bd 2A, Comp 6D 2-BKR-248-0002A/6D	480V Common Bd 1, Comp 3A
3	480V SD Bd 3A, Comp 6D 3-BKR-248-0003A/6D	480V Common Bd 1, Comp 3A
4	480V SD Bd 3B, Comp 6D	480V Common Bd 1, Comp 3A
5	480V Common Bd 1 Comp 5C	None
6	480V Common Bd 3 Comp 3D	None

Standard:

LOCATED Compartment 6D on 480V SD Bd 2A and **VERIFIED** breaker position indicator indicated CLOSED.

CUE: THE BREAKER INDICATES CLOSED.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

NOTE:

Steps 5.2.4 through 5.2.11 are performed in the 1(2,3,4) Battery Board Room unless specifically noted. (Or locally at Battery Board 5(6) in Unit 1(3) Turb. Bldg El 617.)

****

Performance Step: Critical___ Not Critical_X_

5.2.4 VERIFY that DC BUS FILTER CAPACITORS, BKR 713 (711,713,211,211,211) is ON.

Standard:

LOCATED breaker 711 and **VERIFIED** in the ON position IN BB RM 2.

CUE: THE BREAKER INDICATES ON.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

NOTES:

(1) Mechanical interlock prevents closing both input transfer switches simultaneously on Battery Chargers 1, 2A, 3 and 4 or 5 or 6.

(2) Battery Chargers 5 and 6 do not have an Alternate AC source.

****

Performance Step: Critical___ Not Critical__X__

5.2.5 VERIFY the BATTERY CHARGER INPUT TRANSFER SWITCH on Battery Charger 1(2A,3,4) is aligned to the desired AC power source, NORMAL or ALTERNATE; and, that the mechanical interlock is in place to prevent paralleling AC services at the battery charger. For Battery Chargers 5 and 6, VERIFY AC power Switch ON.

Standard:

LOCATED battery charger input transfer switch on battery charger 2A and **VERIFIED** aligned to NORMAL power source. **VERIFIED** by observation that mechanical interlock in place to prevent paralleling power supplies.

CUE: THE NORMAL SUPPLY BREAKER IS IN THE ON POSITION. THE MECHANICAL INTERLOCK IS IN PLACE.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

5.2.6 VERIFY the 250V BAT CHGR 1(2A,3,4,5,6) DISCT FROM BAT BD 1(2,3,4,5,6), NORM FDR, BKR 607(608, 608, 201,201,201) on Battery Board 1(2,3,4,5,6) is ON.

Standard:

LOCATED breaker 608 and **VERIFIED** indicated CLOSED IN BB RM2

CUE: THE BREAKER INDICATES ON.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical_X_ Not Critical_____

5.2.7 IF the 250V Battery Charger 2B is supplying power to Battery Board 1(2,3,4,5,6) AND a transfer to the unit battery charger is desired; THEN

5.2.7.1 PLACE the 2B Battery Charger EMER/OFF/ON switch to OFF.

Standard:

LOCATED 2B Battery Charger EMER/OFF/ON switch and **SIMULATED PLACING** in the OFF position.

CUE: THE SWITCH IS IN THE OFF POSITION.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical X Not Critical_____

5.2.7.2 OPEN the 250V BATTERY CHARGER 2B DC BREAKER, on front of charger, by placing breaker to OFF.

Standard:

LOCATED 250V Battery Charger 2B DC breaker and **SIMULATED PLACING** in the OFF position.

CUE: YOU HEAR A LOUD CLICK, THE BREAKER IS IN THE OFF POSITION.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical X Not Critical_____

5.2.7.3 OPEN both the NORMAL and ALTERNATE AC INPUT SUPPLY BREAKERS on the BATTERY CHARGER INPUT TRANSFER SWITCH by placing the breakers to OFF.

Standard:

LOCATED the NORMAL and ALTERNATE AC INPUT SUPPLY BREAKERS and **SIMULATED PLACING** both switches in the OFF position.

FOR EACH BREAKER CUE: YOU HEAR A LOUD CLICK, THE BREAKER IS IN THE OFF POSITION.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X___

5.2.7.4 PLACE all the 2B BATTERY CHARGER OUTPUT TRANSFER SWITCH 2B 0-XSW-248-0002B breakers to OFF.

Standard:

At 250V Battery Charger 2B Output Transfer Switch Panel, **SIMULATED PLACING** all 2B Battery Charger output transfer switches to the OFF position.

FOR EACH BREAKER, CUE: YOU HEAR A LOUD CLICK, THE BREAKER IS IN THE OFF POSITION.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step : Critical___ Not Critical_X__

5.2.7.5 PLACE all the breakers on Battery Charger 2B Output Transfer Switch 2BA, 0-XSW-248-0002BA to Off (located in battery board room 4).

Standard:

SIMULATED going to BB RM4 & **LOCATING** Battery Charger 2B Output Transfer Switch 2BA, 0-XSW-248-002BA and **SIMULATED PLACING** 2BA, 0-XSW-248-0002BA to OFF.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

INSTRUCTOR'S NOTE: WHEN PERFORMER INDICATES THAT STEP, 5.2.7.5, IS IN BATTERY BOARD ROOM 4, THEN STATE "ALL DISCONNECT SWITCHES ON 0-XSW-248-0002BA ARE IN THE OFF POSITION.

NOTE:

Step 5.2.8 does not apply to Battery Charger 4, 5 or 6.

****

Performance Step: Critical___ Not Critical__X__

5.2.8 VERIFY the BATTERY CHARGER 1(2A,3) OUTPUT TRANSFER SWITCH, on 250V Battery Charger 1(2A,3) Output Transfer Switches Panel, is ON.

Standard:

LOCATED Battery Charger 2A output transfer switch and **VERIFIED** in the ON position.

CUE: THE BREAKER IS IN THE ON POSITION.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

NOTE:

Step 5.2.10 does NOT apply to Battery Charger 5 or 6.

****

Performance Step: Critical X Not Critical_____

5.2.9 PLACE the BATTERY CHARGER 1(2A,3,4) EMER/OFF/ON Select Switch to ON and allow voltage to stabilize for approximately 2 minutes.

Standard:

LOCATED BATTERY CHARGER 2A ON/OFF/EMERG ON Select Switch and **SIMULATED PLACING** in the ON position.

CUE: THE SWITCH IS IN THE ON POSITION.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X___

5.2.10 CHECK DC Voltage stabilized greater than 250 Volts on 250VUnit Battery Charger 1(2A,3,4,5,6):

Standard:

CHECKS voltage > 250 VDC.

CUE: VOLTAGE IS STABLE AS INDICATED (> 250 vdc).

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

****

Performance Step: Critical X Not Critical_____

5.2.11 CLOSE the 250V BATTERY CHARGER 1(2A,3,4,5,6) DC BREAKER on front of charger, by placing it to ON.

Standard:

LOCATED 250V BATTERY CHARGER 2A DC BREAKER and **SIMULATED PLACING** in the ON position.

CUE: YOU HEAR A LOUD CLICK, THE BREAKER IS IN THE ON POSITION.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

CAUTION

If a charger malfunction occurs, the Normal and Alternate AC input Supply (Chargers No. 5 and 6 have no Alternate AC Supply) and DC Breakers should be placed to the OFF position and the Shift Manager informed immediately.

****

NOTE:

During Safe Shutdown Instruction (SSI) implementation, load shed logic to Battery Chargers 1 and 2A may be initiated by an LOP/LOCA signal or for Fire Area 16 (Control Building El 593 through 617), by fire damage to load shed logic cables. When operation of either of these chargers is required by an SSI procedure, the control switch must be placed in EMERG to bypass load shed of the charger.

5.2.12 IF SSI procedure has been implemented AND operation of Battery Charger 1(2A) is required, THEN

PERFORM the following:

CUE: SSI PROCEDURE HAS NOT BEEN IMPLEMENTED. SECTION 5.2.12 NOT INCLUDED.

****

Performance Step: Critical___ Not Critical_X__

5.2.13 CHECK the following indications of normal operation on 250V Unit Battery Charger 1(2A,3,4,5,6):

5.2.13.1 DC Voltage greater than 250 Volts.

5.2.13.2 DC Amperes less than 300 Amps.

5.2.13.3 POWER ON light illuminated.

NOTE:

Step 5.2.13.4 through 5.2.13.7 do NOT apply to Battery Chargers 5 and 6.

5.2.13.4 TRANSFORMER OVERTEMP light extinguished.

5.2.13.5 OVERVOLTAGE DC light extinguished.

5.2.13.6 UNDERVOLTAGE DC light extinguished.

5.2.13.7 UNDERVOLTAGE AC light extinguished.

CUES: [IF NO INDICATIONS AVAILABLE AND AS EACH IS CHECKED]

1) DC VOLTAGE IS INDICATED AS 265 VOLTS

2) DC AMPERES ARE INDICATED AS 125

3) THE POWER ON LIGHT IS ILLUMINATED.

Standard:

LOCATED AND CHECKED the following as indications of normal operation:

1) DC Voltage greater than 250 Volts.

2) DC Amperes less than 300 amps.

3) POWER ON light illuminated.

4) TRANSFORMER OVERTEMP light extinguished.

5) OVERVOLTAGE DC light extinguished.

6) UNDERVOLTAGE DC light extinguished.

7) UNDERVOLTAGE AC light extinguished.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

5.2.14 VERIFY that EQUALIZE HOURS timer is set to zero.

Standard:

LOCATED equalize hours timer and **VERIFIED** set to zero.

IF TIMER NOT SET TO ZERO, CUE: THE TIMER INDICATES ZERO.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

****

Performance Step: Critical___ Not Critical_X___

5.2.15 CHECK 250V DC Battery Charger 1(2A,3,4,5,6) is supplying power to the bus by OBSERVING DC Ammeter indication greater than zero Amps.

Standard:

LOCATED 250V DC Battery Charger 2A DC Ammeter and **VERIFIED** indicating greater than zero amps.

IF AMMETER NOT INDICATING GREATER THAN ZERO AMPS, CUE: THE AMMETER INDICATION IS GREATER THAN ZERO.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

END OF TASK

STOP TIME_____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical _X__

PERFORMER complied with all safety rules and regulations.

Standard:

PERFORMER complied with all safety rules and regulations (hardhat, safety glasses, sideshields, and hearing protection was worn **AS REQUIRED.**)

ELECTRICAL SAFETY was also adhered to **AS REQUIRED**: Exposed conductive articles such as rings, metal wristwatches, bracelets, and metal necklaces shall not be worn by employees within **reaching distance** of exposed energized electrical conductors of 50 volts or greater.

SAT____ UNSAT____ N/A____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated proper radiological practices **AS REQUIRED.**

Standard:

PERFORMER applied proper radiological practices, **AS REQUIRED,** during JPM performance.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical _X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an operator. 250V Battery Board 2 is being fed by 250V (Spare) Battery Charger 2B for testing purposes. Testing has been completed. 250V Unit Battery 2 is in service in accordance with Section 5.1 of 0-OI-57D.

INITIATING CUES: The US has directed you to return 250V Battery Board 2 to its normal charging supply, i.e. place 250V Battery Charger 2A in service to Battery Board 2 using the NORMAL power source as directed by 0-OI-57D.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 79

TITLE: START RCIC FROM OUTSIDE CONTROL ROOM

TASK NUMBER: U-000-AB-05

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
3	12/1/94	1,2,3,4	REVISE TO NEW FORMAT
4	10/24/95	ALL	GENERAL REVISION
5	08/25/98	ALL	PROCEDURE REVISION, FORMAT DOCUMENT
6	11/16/99	2,3,5,6	PROCEDURE REVISION, MOVED START TIME.
7	10/03/01	ALL	PROCEDURE REVISION
8	8/21/03	ALL	FORMAT; EDITORIAL; PROCEDURE REV; chg steps required to make RCIC function to crit and those that will not prevent function to non-crit

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 79

TASK NUMBER: U-000-AB-05

TASK TITLE: RESPOND TO CONTROL ROOM ABANDONMENT

K/A NUMBER: 295016AA1.07 K/A RATING: RO 4.2 SRO: 4.3

****

TASK STANDARD: SIMULATE PERFORMING OPERATIONS NECESSARY TO ALIGN RCIC FROM OUTSIDE CONTROL ROOM AS DIRECTED BY 2-AOI-100-2.

LOCATION OF PERFORMANCE: SIMULATOR ___ PLANT X CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-AOI-100-2, REV 48

VALIDATION TIME: CONTROL ROOM: _____ LOCAL: 20:00

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE: _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: Unit 2 Control Room has been abandoned. Pressure control has been established at the backup control panel 2-25-32. The RCIC system is being aligned for injection to the RPV. You are the AUO assigned to the reactor building and you are in radio contact with the operators at the backup control panel.

INITIATING CUES: The Unit Operator directs you to perform Attachment 3, Part A of 2-AOI-100-2, then stand by to perform step 4.2.9.3.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required AOI.

Standard:

IDENTIFIED OR OBTAINED copy of 2-AOI-100-2

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

Reactor Bldg. - RCIC Relay Aux Panel 2-LPNL-025-0031 El 621'

NOTE:

PAX phone Ext. 2233 is located at Column R-12, P-line near stairs to SLC.

PART A

****

Performance Step: Critical_X_ Not Critical___

2-XS-071-0036B RCIC PUMP DISCH FLOW EMER TRANS SWITCH EMERG_____

2-XS-071-0047 RCIC TURB GOV & CPLG END BRG HIGH TEMP EMER TRANS SWITCH EMERG____

2-XS-071-0024 RCIC OIL CLR OIL OUTLET TEMP EMER TRANS SWITCH EMERG_____

Standard:

At Panel 2-25-31, **SIMULATED PLACING** 2-XS-071-0036B, 2-XS-071-0047 and 2-XS-071-0024 in EMERG.

CUE: [AS EACH SWITCH IS SIMULATED], THE SWITCH IS IN EMERG.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

Reactor Bldg. - 250VDC Reactor Mov Bd 2C - EL 565

****

CAUTION

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

****

NOTE:

PAX phone Ext. 2225 is located at Column R-9, R-line between West side HCUs.

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical____ Not Critical__X___

1E 2-BKR-071-0029
RCIC TURB BAROMETRIC CNDR CNDS PUMP BREAKER

2-XS-071-0029, RCIC BAROMETRIC CNDR CNDS
PUMP EMER TRANS SWITCH EMERG_____

2-HS-071-0029C, RCIC VAC TANK CNDS PUMP
EMER HAND SWITCH START_____

Standard:

At compartment 1E, **SIMULATED PLACING** 2-XS-071-0029 in the EMERG position and 2-HS-071-0029C in the START position.

CUE: [AS 2-XS-071-0029 IS SIMULATED] THE SWITCH IS IN EMERG.

[AS 2-HS-071-0029C IS SIMULATED], THE SWITCH IS IN START. [

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical___ Not Critical X__

3B 2-BKR-071-0037
RCIC PUMP DISCHARGE VALVE BREAKER (GE-13-20):

2-XS-071-0037, RCIC PUMP DISCH VLV EMER
TRANS SWITCH EMERG_____

2-HS-071-0037C, RCIC PUMP DISCH VLV EMER
HAND SWITCH OPEN_____

Standard:

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

CUE:[AS 2-HS-071-0037IS SIMULATED], THE SWITCH IS IN EMERG.
[AS 2-HS-071-0037C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical X Not Critical____

3D 2-BKR-071-0039
RCIC PUMP INJECTION VALVE BREAKER: (GE-13-21)

2-XS-071-0039, RCIC PUMP INJECTION VALVE
EMER TRANS SWITCH EMERG_____

2-HS-071-0039C, RCIC PUMP INJECTION VALVE
EMER HAND SWITCH OPEN_____

Standard:

At compartment 3D, **SIMULATED PLACING** 2-XS-071-0039in the EMERG position and 2-HS-071-0039C in the OPEN position.

CUE: [AS 2-XS-071-0039 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0039C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical X Not Critical____

4B 2-BKR-071-0008, RCIC TURBINE STM SUPPLY VALVE BREAKER (GE-13-131)

2-XS-071-0008, RCIC TURB STM SUPPLY EMER TRANS SWITCH EMERG_____

2-HS-071-0008C, RCIC TURB STM SUPPLY VALVE EMER HAND SWITCH NOR_____

Standard:

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

CUE: [AS 2-XS-071-0008 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0008C IS SIMULATED] THE SWITCH IS IN NORM.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical___ Not Critical_X__

6D 2-BKR-071-0019, RCIC CST 2 SUCT VALVE BREAKER (GE-13-18)

2-XS-071-0019, RCIC CST 2 SUCT VALVE EMER TRANS SWITCH EMERG_____

2-HS-071-0019C, RCIC CST 2 SUCT VALVE EMER HAND SWITCH OPEN_____

Standard:

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

CUE: [AS 2-XS-071-0019 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0019C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical___ Not Critical_X__

7B 2-BKR-071-0038, RCIC PUMP TEST VALVE BREAKER (GE-13-30)

2-XS-071-0038, RCIC PUMP TEST VALVE
EMER TRANS SWITCH EMERG_____

2-HS-071-0038C, RCIC PUMP TEST VALVE
EMER HAND SWITCH CLOSE_____

Standard:

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

CUE: [AS 2-XS-071-0038 IS SIMULATED], THE SWITCH IS IN EMER. [AS 2-HS-071-0038C IS SIMULATED] THE SWITCH IS IN CLOSE.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical___ Not Critical_X__

7D 2-BKR-071-0018, RCIC SUPPR POOL OUTBD SUCT VALVE BREAKER

2-XS-071-0018, RCIC SUPP POOL OUTBD SUCT EMER TRANS SWITCH EMERG_____

2-HS-071-0018C, RCIC SUPP POOL OUTBD SUCT VALVE EMER HAND SWITCH CLOSE_____

Standard:

At compartment 7D, **SIMULATED PLACING** 2-XS-071-0018 in the EMERG position and 2-HS-071-0018C in the CLOSE position.

CUE: [AS 2-XS-071-0018 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0018C IS SIMULATED] THE SWITCH IS IN CLOSE.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical___ Not Critical_X__

8B 2-BKR-071-0017, RCIC SUPPR POOL INBD SUCT VALVE BREAKER (GE-13-41)

2-XS-071-0017, RCIC SUPP POOL INBD SUCT EMER TRANS SWITCH EMERG_____

2-HS-071-0017C, RCIC SUPP POOL INBD SUCT VALVE EMER HAND SWITCH CLOSE_____

Standard:

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

CUE: [AS 2-XS-071-0017 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0017C IS SIMULATED] THE SWITCH IS IN CLOSE.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical X Not Critical____

8D 2-BKR-071-0025, RCIC LUBE OIL COOLING WATER VALVE BREAKER (GE-13-132)

2-XS-071-0025, RCIC LUBE OIL CLR COOLING WATER EMERG TRANS SWITCH EMERG_____

2-HS-071-0025C, RCIC LUBE OIL CLR COOLING WATER VALVE EMER HAND SWITCH OPEN_____

Standard:

At compartment 8D, **SIMULATED PLACING** 2-XS-071-0025 in the EMERG position and 2-HS-071-0025C in the OPEN position.

CUE: [AS 2-XS-071-0025 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0025C IS SIMULATED] THE SWITCH IS IN OPEN.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

Switch/ Breaker Number	Component Description	Required Position	Initials

****

Performance Step: Critical___ Not Critical_X__

10E 2-BKR-071-0031, RCIC TURB BAROMETRIC CNDR VAC PUMP BREAKER

2-XS-071-0031, RCIC BAROMETRIC CNDR VAC PUMP EMER TRANS SWITCH EMERG_____

2-HS-071-0031C, RCIC BAROMETRIC CNDR VAC PUMP EMER HAND SWITCH START_____

Standard:

At compartment 10E, **SIMULATED PLACING** 2-XS-071-0031 in the EMERG position and 2-HS-071-0031C in the START position.

CUE: [AS 2-XS-071-0031 IS SIMULATED], THE SWITCH IS IN EMERG. [AS 2-HS-071-0031C IS SIMULATED] THE SWITCH IS IN START.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

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

****

CAUTION

RCIC TURBINE STEAM SUPPLY VALVE, 2-FCV-71-8, transfer switch has been placed in EMERGENCY and will NOT trip on Reactor Water Level High (+51 inches). Failure to maintain level below this value may result in equipment damage.

****

4.2.8 Upon completion of attachments, RE-ESTABLLISH communication using the best available means and continue procedure.

4.2.9 INITIATE RCIC as follows:

4.2.9.1 At Panel 2-25-32, CHECK OPEN 2-FCV-71-9 (Red Light above switch) RCIC TURB TRIP/THROT VALVE RESET, 2-HS-71-9D.

4.2.9.2 At 250V DC RMOV Bd 2B, compt. 5D, PLACE RCIC PUMP MIN FLOW VALVE EMER HAND SWITCH, 2-HS-071-0034C, IN OPEN. (Unit 2 Turbine Building AUO)

****

Performance Step: Critical X Not Critical____

4.2.9.3 At 250V DC RMOV Bd 2C, compt. 4B, PLACE RCIC TURB STM SUPPLY VALVE EMER HAND SWITCH, 2-HS-071-0008C, in OPEN. (Unit 2 Reactor Building AUO)

Standard:

At compartment 4B, PLACED 2-HS-071-0008C, in OPEN and **VERIFIED** illuminated RED valve position indicating lamp above 2-HS-071-0008C.

CUE: [WHEN INDICATED] THE RED LIGHT IS ON.

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

CUE: [WHEN INDICATED] [WHEN STEP 4.2.9.3 REPORTED COMPLETE] THAT WILL BE ALL OF 2-AOI-100-2 REQUIRED OF YOU.

END OF TASK

STOP TIME:_____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical _X__

PERFORMER complied with all safety rules and regulations.

Standard:

PERFORMER complied with all safety rules and regulations (hardhat, safety glasses, sideshields, and hearing protection was worn **AS REQUIRED.**)

ELECTRICAL SAFETY was also adhered to **AS REQUIRED**: Exposed conductive articles such as rings, metal wristwatches, bracelets, and metal necklaces shall not be worn by employees within **reaching distance** of exposed energized electrical conductors of 50 volts or greater.

SAT____ UNSAT____ N/A____ COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated proper radiological practices **AS REQUIRED.**

Standard:

PERFORMER applied proper radiological practices, **AS REQUIRED,** during JPM performance.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: Unit 2 Control Room has been abandoned. Pressure control has been established at the backup control panel 2-25-32. The RCIC system is being aligned for injection to the RPV. You are the AUO assigned to the reactor building and you are in radio contact with the operators at the backup control panel.

INITIATING CUES: The Unit Operator directs you to perform Attachment 3, Part A of 2-AOI-100-2, then stand by to perform step 4.2.9.3.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 133F

TITLE: 2-EOI APPENDIX 11B - ALTERNATE PRESSURE CONTROL - RCIC TEST MODE (FLOW CONTROLLER AUTO FEATURE FAILED)

TASK NUMBER: U-000-EM-54

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
2	12/8/94	1,2,3,4	REVISE TO NEW FORMAT
3	10/22/95	ALL	FORMATTING, TYPOS, UNIT 2 SPECIFIC ITEMS
4	9/5/96	ALL	DELETED PLANT INST., ADDED CRIT. STEP ON TOUCH STAAR, CHANGED ASOS TO US.
5	10/29/96	4, 13	CHANGED CRIT. STEP ON TOUCH STAAR TO NON-CRITICAL.
6	10/28/98	ALL	GENERAL REVISION
7	9/16/02	ALL	GENERAL REVISION
8	02/28/04	ALL	Format; Editorial; change failure to flow controller auto failure

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 133F

TASK NUMBER: U-000-EM-54

TASK TITLE: 2-EOI APPENDIX 11B - ALTERNATE PRESSURE CONTROL - RCIC TEST MODE (FLOW CONTROLLER AUTO FEATURE FAILED)

K/A NUMBER: 295025EA1.05 K/A RATING: RO 3.7 SRO: 3.7

****

TASK STANDARD: PERFORM OPERATIONS NECESSARY TO PLACE RCIC IN TEST MODE FROM STANDBY FOR ALTERNATE RPV PRESSURE CONTROL AS DIRECTED BY 2-EOI APPENDIX 11B.

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ____ CONTROL ROOM ____

REFERENCES/PROCEDURES NEEDED: 2-EOI-APPENDIX 11B, REV 4

VALIDATION TIME: CONTROL ROOM: 6:00 LOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ **DATE:** _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an operator. The Unit 2 reactor has scrammed and three turbine bypass valves stuck open requiring MSIV closure. EOI-1 has been entered and followed to RC/P-11.

INITIATING CUES: The UNIT SUPERVISOR directs you to place RCIC in Alternate RPV Pressure Control as directed by 2-EOI Appendix 11B. Your Pressure band is 600-700 psig.

START TIME:_____

****

Performance Step: Critical___ Not Critical_X_

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

Standard:

IDENTIFIED OR OBTAINED copy of 2-EOI Appendix 11B.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

CAUTION

- Operating RCIC turbine below 2100 rpm may result in unstable system operation and damage.
- Elevated Suppression Chamber pressure may trip the RCIC turbine on high exhaust pressure.
- Operating RCIC Turbine with suction temperatures above 140°F may result in equipment damage.

****

****

Performance Step: Critical___ Not Critical_X_

1. IF.....Emergency RPV Depressurization is required
   OR
   Steam Cooling is required,

   THEN...**EXECUTE** EOI Appendix 16A and 16B as necessary to bypass RCIC Low RPV Pressure and Test Mode Isolation Interlocks.

Standard:

DID NOT request Appendix 16A and 16B.

CUE: EMERGENCY DEPRESSURIZATION NOT REQUIRED.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

2. **IF**.....Suppression Pool level CANNOT be maintained below 7 in.,

   THEN....EXECUTE EOI Appendix 16E concurrently with this procedure to bypass HPCI High Suppression Pool Level Suction Transfer Interlock

Standard:

Did not **REQUEST** EOI Appendix 16E.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

****

Performance Step: Critical___ Not Critical_X_

3. IF.....RCIC Turbine is operating and NOT required for RPV level control,
THEN...**ALIGN** RCIC in test mode as follows:

   a. **OPEN** 2-FCV-71-38, RCIC PUMP CST TEST VLV.

   b. **VERIFY OPEN** 2-FCV-73-36, HPCI/RCIC TEST RETURN VLV.

   c. **CLOSE** 2-FCV-71-39, RCIC PUMP INJECTION VALVE.

   d. **CONTINUE** in this procedure at Step 5.

Standard:

VERIFIES RCIC Turbine not operating by any of the following:

Speed 0 on 2-SI-71-42A
Flow 0 on 2-FIC-71-36A
2-FCV-71-8 Closed
2-FCV-71-39 Closed
Discharge pressure 0 on 2-PI-71-35A

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

4. **IF**.....RCIC is in standby readiness,
THEN...**START** RCIC as follows:

****

Performance Step: Critical___ Not Critical_X_

a. **VERIFY CLOSED** 2-FCV-71-39, RCIC PUMP INJECTION VALVE.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-71-39A.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X__

b. **VERIFY RESET** and **OPEN** 2-FCV-71-9, RCIC TURB TRIP & THROTTLE VALVE RESET.

Standard:

VERIFIED illuminated RED condition indicating lamp 2-ZI-71-9.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical X Not Critical___

c. **VERIFY OPEN** the following valves:

- 2-FCV-71-38, RCIC PUMP TEST RETURN VLV.
- 2-FCV-71-25, RCIC LUBE OIL CLR COOLING WTR VLV.
- 2-FCV-71-34, RCIC PUMP MINIMUM FLOW VLV.
- 2-FCV-73-36, HPCI/RCIC TEST RETURN VLV.

Standard:

HELD 2-HS-71-38A in the OPEN position until **VERIFIED** illuminated RED valve position indicating lamps above associated control switch.

PLACED 2-HS-71-25A, 34A and 73-36A in the OPEN position and **VERIFIED** illuminated RED valve position indicating lamps above associated control switches.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X

d. **PLACE** 2-HS-71-31A, RCIC VACUUM PUMP, handswitch in START.

Standard:

PLACED 2-HS-71-31A in the START position and **VERIFIED** illuminated RED motor breaker position indicating lamp.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

****

Performance Step: Critical_X_ Not Critical___

e. **OPEN** 2-FCV-71-8, RCIC TURBINE STEAM SUPPLY VLV, to start RCIC Turbine.

Standard:

PLACED 2-HS-71-8 in the OPEN position and **VERIFIED** illuminated RED valve position indicating lamp above associated control switch.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

Note: The RCIC Flow Controller will fail to "0" 1 minute after the 71-8 valve is opened.

****

Performance Step: Critical___ Not Critical_X_

f. **VERIFY** RCIC Turbine speed accelerates to above 2100 rpm.

Standard:

VERIFIED speed greater than 2100 rpm on 2-SI-71-42A.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X

5. **VERIFY** proper RCIC minimum flow valve operation as follows:

   a. IF.....RCIC flow is above 120 gpm,
   THEN...**VERIFY CLOSED** 2-FCV-71-34, RCIC PUMP MINIMUM FLOW VALVE.

   b. IF.....BOTH of the following exist:

   - RCIC Initiation signal is not present,

   AND

   - RCIC flow is below 60 gpm,

   THEN...**VERIFY OPEN** 2-FCV-71-34, RCIC PUMP MINIMUM FLOW VALVE.

Standard:

VERIFIED illuminated RED valve position indicating lamp above 2-HS-71-34. **RECOGNIZES** flow controller failure and places controller in manual and raises flow to ~ 600 gpm.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X

6. **THROTTLE** 2-FCV-71-38, RCIC PUMP CST TEST VLV, to control RCIC pump discharge pressure at or below 1100 psig.

Standard:

MANIPULATED 2-HS-71-38 to maintain pressure on 2-PI-71-35A at or below 1100 psig.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical X Not Critical___

7. **ADJUST** 2-FIC-71-36A, RCIC SYSTEM FLOW/CONTROL, controller to control RPV pressure.

Standard:

ADJUSTED 2-FIC-71-36A as required to maintain RPV pressure and:

- Maintain RCIC flow 120-600 gpm on 2-FIC-71-36A.
- Maintain RCIC discharge pressure ≤ 1100 psig on 2-PI-71-35A.
- Maintain RCIC Speed > 2100 rpm on 2-SI-71-42A.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical_X_

8. **IF**....RCIC injection to the RPV becomes necessary, **THEN**... **ALIGN** RCIC to RPV as follows:

   a. **OPEN** 2-FCV-71-39, RCIC Pump Injection valve.

   b. **CLOSE** 2-FCV-71-38, RCIC Pump Test return valve.

   c. **GO TO** EOI Appendix 5C.

CUE: SRO DOES NOT DIRECT RCIC INJECTION.

Standard:

Does not **INJECT** with RCIC

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

END OF TASK

STOP TIME:_____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical _X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an operator. The Unit 2 reactor has scrammed and three turbine bypass valves stuck open requiring MSIV closure. EOI-1 has been entered and followed to RC/P-11.

INITIATING CUES: The UNIT SUPERVISOR directs you to place RCIC in Alternate RPV Pressure Control as directed by 2-EOI Appendix 11B. Your Pressure band is 600-700 psig.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 126F

TITLE: RESPOND TO DRYWELL PRESSURE AND/OR TEMPERATURE HIGH OR EXCESSIVE LEAKAGE INTO DRYWELL

TASK NUMBER: U-064-AB-01

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	9/22/99	ALL	NEW JPM
1	10/03/00	2,4,5	FORMAT REVISION
2	9/16/02	3,8	CHNG PROCED REV, ADD STEP
3	02/28/04	ALL	Format; Editorial

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 126F

TASK NUMBER: U-064-AB-01

TASK TITLE: RESPOND TO DRYWELL PRESSURE AND/OR TEMPERATURE HIGH OR EXCESSIVE LEAKAGE INTO DRYWELL

K/A NUMBER: 223001A4.07 K/A RATING: RO 4.2 SRO: 4.1

****
*

TASK STANDARD: PERFORM SUBSEQUENT OPERATOR ACTION REQUIRED TO REDUCE DRYWELL PRESSURE AS DIRECTED BY 2-AOI-64-1

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-AOI-64-1, REV 20

VALIDATION TIME: CONTROL ROOM: 14:00 LOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

Additional comment sheets attached? YES _____ NO _____

RESULTS: **SATISFACTORY** _____ **UNSATISFACTORY**

SIGNATURE: _____ **DATE:** _____

EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an Operator. Unit 2 is experiencing rising drywell pressure

INITIATING CUES: Respond to rising drywell pressure in accordance with the appropriate procedure.

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required Abnormal Operating Instruction.

Standard:

IDENTIFIED OR OBTAINED copy of 2-AOI-64-1.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

4.2 Subsequent Actions

4.2.1 **IF** any EOI entry condition is met, **THEN**

ENTER appropriate EOI(s).

4.2.2 High Drywell Pressure:

4.2.2.1 **CHECK** Drywell pressure using multiple indications.

4.2.2.2 **ALIGN** and **START** additional Drywell coolers and fans as necessary. **REFER TO** 2-OI-64.

Standard:

Determine no EOI Entry condition is met and verifies all DW coolers are in service.

****

CAUTION

Stack release rates exceeding 1.4 X 10^{7} µci/sec, or a SI-4.8.B.1.a.1 release fraction above one will result in ODCM release being exceeded.

****

****

Performance Step : Critical_X_ Not Critical_____

4.2.2.3 **VENT** Drywell as follows:

4.2.2.3.1 **CLOSE** SUPPR CHBR INBD ISOLATION VLV 2-FCV-64-34 (Panel 2-9-3)

Standard:

PLACED 2-FCV-64-34 in the CLOSE position and **VERIFIED** illuminated GREEN valve position indicating lamp above associated hand switch.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X___

4.2.2.3.2 **VERIFY OPEN**, DRYWELL INBD ISOLATION VLV, 2-FCV-64-31, (Panel 2-9-3).

Standard:

VERIFIED illuminated RED valve position indicating lamps above associated hand switch.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X___

4.2.2.3.3 **VERIFY** 2-FIC-84-20 is in AUTO and SET at 100 scfm (Panel 2-9-55).

Standard:

VERIFIED 2-FIC-84-20 in AUTO and set for 100 scfm.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical_X_ Not Critical_____

4.2.2.3.4 **VERIFY RUNNING** a Standby Gas Treatment Fan STGTS TRAIN C(A)(B) (Panel 2-9-25.)

Standard:

At Panel 2-9-25, **DISCOVERED** that SGT Fan C would not start. Requests Unit 1 Operator to start A or B SGT.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

4.2.2.3.5 **REQUEST** Unit 1 Operator to START Standby Gas Treatment Fans A or B, if required. (Otherwise N/A)

****

CAUTION

If 2-FCV-84-20 closes after 2-HS-64-35 is opened, the reason for valve closure must be cleared and 2-HS-64-35 must be returned to OPEN in order for 2-FCV-84-20 to re-open.

****

****

Performance Step: Critical___ Not Critical_X_____

4.2.2.3.6 **RECORD** venting data (if required) in 2-SI-4.7.A.2.a (Otherwise N/A)

Standard:

None. Not required.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

Performance Step : Critical_X_ Not Critical_____

4.2.2.3.7 **PLACE** 2-FCV-84-20 CONTROL DW/SUPPR CHBR VENT, 2-HS-64-35, in OPEN (Panel 2-9-3).

Standard:

PLACED 2-HS-64-35 in the OPEN position.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical X

4.2.2.3.8 **MONITOR** stack release rates to prevent exceeding ODCM limits.

Standard:

CONTACTED Log Person to determine stack release rates.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

_____

****

CUE: [WHEN STEP 4.2.2.3.6 COMPLETED] THE UNIT SUPERVISOR DIRECTS DRYWELL VENTING TO BE CONTINUED UNTIL DIRECTED TO SECURE THE VENTING OPERATION. STACK RELEASE RATES ARE WELL WITHIN LIMITS.

END OF TASK

STOP TIME:_____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical _X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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 2 is experiencing rising drywell pressure

INITIATING CUES: Respond to rising drywell pressure in accordance with the appropriate procedure.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 90

TITLE: START A RECIRC PUMP DURING POWER OPERATION

TASK NUMBER: U-000-NO-06

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE:_____DATE:_____
OPERATIONS

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

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
3	10/4/94	ALL	GENERAL REVISION
4	10/31/95	ALL	PROCEDURE REVISIONS
5	11/30/95	ALL	PROCEDURE REPAGINATION
6	5/2/96	ALL	PROCEDURE REPAGINATION, ADDED NOTE ON DISCH VLV CLOSURE CKT, AND MINOR VERBAL CHANGES
7	11/09/99	ALL	PROCEDURE REVISION, RE-FORMAT DOCUMENT, ADDED PLANT WORK EXPECT., TOUCH STAAR, 3-WAY COMM., CHANGED ASOS TO US
8	09/23/00	ALL	GENERAL REVISION
9	09/02/01	ALL	General Revision
10	10/10/01	ALL	General Revision
11	02/27/04	ALL	FULL REVISION to incorporate VFDs

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 90

TASK NUMBER: U-068-NO-06

TASK TITLE: START AN IDLE RECIRCULATION PUMP DURING POWER OPERATIONS

K/A NUMBER: 202001A4.01 K/A RATING: RO 3.7 SRO: 3.7

****

TASK STANDARD: PERFORM OPERATIONS NECESSARY TO RESTART AN IDLE RECIRC PUMP DURING POWER OPERATIONS AS DIRECTED BY 2-OI-68

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ____

REFERENCES/PROCEDURES NEEDED: 2-OI-68, REV 106

VALIDATION TIME: SIMULATOR: _____ LOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____

_____

_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ **UNSATISFACTORY** _____

EXAMINER:_____ **DATE:** _____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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

****

INITIAL CONDITIONS: You are an Operator. 2A Recirc Pump tripped 1 hour ago. All AOI actions have been completed. The problem with 2A Recirc Pump has been corrected. The SRO has directed 2A Recirc Pump be restarted. The Reactor Engineer is in the control room. Steps 5.3.1 through 5.3.8 and 2-SR-3.3.1.1.I are complete 2-SR-3.4.9.3 & 4 has been started per step 5.3.9.

INITIATING CUES: The US directs you to continue the return of 2A Recirc Pump to service and balance jet pump flows in preparation for power ascension as directed by 2-OI-68 starting at Step 5.3.10 when step 5.3.9 is complete.

START TIME:_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 2-OI-68.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

****

Performance Steps : Critical___ Not Critical_X___

REVIEW Precautions and Limitations.

Standard:

REVIEWED Precautions and Limitations

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

5.3 Recirc Pump Startup

NOTES:

(1) All operations are performed at Panel 2-9-4 unless noted otherwise.

(2) Capacitor bank fuses are subject to clearing when the unit boards are being supplied from the 161 source and large pumps are started. Unit Supervisors are to evaluate the need to place the Capacitor Banks in Manual prior to starting a Recirc Pump from the Alternate feeder. The evaluation should consider placing a Caution Order on the Recirc Pump's start switches stating, "evaluate the need to place CAP Banks in Manual prior to starting Pumps from the ALTERNATE FEED."

(3) If the OPRMS are inoperable then surveillance 2-SR-3.3.1.1.I is required to be performed prior to starting a recirc pump while in Mode 1.

5.3.1 **VERIFY** Recirc Drive Cooling System is in service with conductivity <3µs REFER TO Section 5.1 .

5.3.2 **VERIFY** Seal purge aligned to the Recirc Pump Being started REFER TO Section 5.2

5.3.3 **VERIFY** RPTs are reset, **REFER** TO Section 8.6.

NOTE: The following step will apply input voltage to the Recirc Drive but will not start the Recirc Pump.

5.3.4 **VERIFY CLOSED**, RECIRC DRIVE 2A(2B) NORMAL FEEDER, 2-HS-57-17(14) or RECIRC DRIVE 2A(2B) ALTERNATE FEEDER 2-HS-57-15(12). REFER TO Section 5.4

NOTE: Recirc Drive cells which are bypassed may be unbypassed when fault is repaired and 4KV is applied to the drive.

5.3.5 **IF** ICS is available, **REFER** TO ICS Screen VFDPMPA or VFDPMPB and VERIFY VFD cells which are bypassed are addressed.

****
CAUTION

Recirc System operation is restricted by criteria in Illustrations 1 and 2.
****

5.3.6 **IF** one Recirc Pump is in service, **THEN**

VERIFY the following:

- Operating Recirc Pump flow is below 46,600 gpm.
- Operating Recirc Pump speed is less than 860 RPM speed.
- Reactor operating conditions are outside of regions 1, 2 and 3. (REFER TO Illustration 1)
- 10% margin between Reactor Power and APRM rod block setpoint.

5.3.7 [NER/C] **VERIFY** RBCCW PUMP SUCTION HDR, 2-TIS-70-3, greater than 70°F (Panel 2-9-4). [GE SIL-303]

5.3.8 **IF** necessary to bring Recirc Pump temperatures to within limits, **THEN**

THROTTLE RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-FCV-68-3(79), using 2-HS-68-3A(79A), as necessary to limit the heatup rate to less than 90°F/hr.

****

CAUTION

Recirc Pump should be started within 15 minutes after performance of 2-SR-3.4.9.3 & 4 to prevent pump temperature changes due to cooldown.

****

NOTE: Control Room copy of 2-SR-3.4.9.3&4 may be used.

5.3.9 **PERFORM** 2-SR-3.4.9.3&4, Reactor Recirculation Pump Start Limitations, to verify that coolant temperatures are within proper limits. **IF** the Control Room Copy of 2-SR-3.4.9.3&4 is used, **THEN**:

NOTIFY TIC to replace.

CUE: When candidate has had an opportunity to review precautions and limitations and earlier procedure steps, REPORT 2-SR-3.4.9.3&4 is completed satisfactorily and logged.

****

Performance Step : Critical_____ Not Critical__X__

5.3.10 **VERIFY** RECIRC LOOP A(B) DIFF PRESS LOW annunciation, 2-XA-55-4A(4B), Window 31 in ALARM.

Standard:

VERIFIES RECIRC LOOP A(B) DIFF PRESS LOW annunciation, 2-XA-55-4A(4B), Window 31 in ALARM

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

NOTE:

The closure circuit for RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-HS-68-3A(79A) is a seal-in and is **NOT** to be held in the **CLOSE** position unless specifically directed.

****

Performance Step : Critical_X__ Not Critical____

5.3.11 **VERIFY CLOSED**, RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-FCV-68-3(79).

Standard:

PLACES 2-HS-68-3 to close and releases. **CHECKS** red light extinguishes

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

****

CAUTION

Recirc System operation is restricted by criteria in Illustrations 1 and 2.

****

NOTES:

(1) The DRIVE READY light will only light after the FAULT RESET push button is depressed, if all the active faults are reset. ICS screen VFDAAL(VFDBAL) can be referred to verify the Number of Active Faults is zero after depressing the fault reset push buttons. Any faults listed after the FAULT RESET push button has been depressed, are keeping the drive from being ready to run.

(2) The actions which occur after the START pushbutton is depressed are listed on the next page.

(3) When depressing the switches which control the Recirc Drives these switches must be firmly depressed to ensure all the contacts are madeup.

****

Performance Steps : Critical___ Not Critical__X___

5.3.12 **IF** the recirc drive startup seq incomplete alarm is received and the Recirc discharge valve is jogging OPEN **THEN**: (N/A if alarm is not received)

5.3.12.1 **CLOSE and HOLD**, RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-FCV-68-3(79).

5.3.12.2 **OPEN THEN CLOSE** RECIRC PUMP A(B) INSTR BKR 519(520) panel 9-9 cabinet 5.

5.3.12.3 **RELEASE** RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-FCV-68-3(79).

Standard:

No Action Required

SAT_____UNSAT_____N/A__X__ COMMENTS:_____

****

Performance Step : Critical X Not Critical_____

5.3.13 **IF** starting 2A Recirc Pump, **THEN**:
PERFORM the Following (otherwise N/A)
5.3.13.1 **DEPRESS** FAULT RESET, 2-HS-96-13
5.3.13.2 **VERIFY** DRIVE READY, 2-IL-96-37 is LIT.
5.3.13.3 **FIRMLY DEPRESS** DRIVE START, 2-HS-96-11.

Standard:

DEPRESSED FAULT RESET, 2-HS-96-13
VERIFIED DRIVE READY, 2-IL-96-37 is LIT.(not critical)
FIRMLY DEPRESSED DRIVE START, 2-HS-96-11.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

****

5.3.14 **IF** starting 2B Recirc Pump, **THEN**:
PERFORM the Following (otherwise N/A)
5.3.14.1 **DEPRESS** FAULT RESET, 2-HS-96-14
5.3.14.2 **VERIFY** DRIVE READY, 2-IL-96-36 is LIT.
5.3.14.3 **FIRMLY DEPRESS** DRIVE START, 2-HS-96-12.

****

Performance Step : Critical_____ Not Critical__X___

5.3.15 For the Recirc Pump being started observe the following.

- DRIVE RUNNING, 2-IL-96-41(40) is LIT
- Pump DP rises to above 5 psid as indicated on PUMP DP, 2-PDI-68-65(82).
- Recirc Pump 2A(2B) speed rises to ≈ 345 RPM, as indicated on RECIRC PUMP 2A(2B) SPEED , 2-SI-68-59(71).
- RECIRC LOOP A(B) DIFF PRESS LOW 2-PDS-68-65(2-PDA-68-82), 2-XA-55-4A(B), Window 31, is reset.
- RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-FCV-68-3(79), begins to open by the automatic jogging circuit.

Standard:

OBSERVED:

- DRIVE RUNNING, 2-IL-96-41(40) is LIT
- Pump DP rises to above 5 psid as indicated on PUMP DP, 2-PDI-68-65(82).
- Recirc Pump 2A(2B) speed rises to ≈ 345 RPM, as indicated on RECIRC PUMP 2A(2B) SPEED , 2-SI-68-59(71).
- RECIRC LOOP A(B) DIFF PRESS LOW 2-PDS-68-65(2-PDA-68-82), 2-XA-55-4A(B), Window 31, is reset.
- RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-FCV-68-3(79), begins to open by the automatic jogging circuit.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

NOTES:

(1) In order to achieve balanced jet pump flows, the Recirc Pumps speed may require a mismatch.
(2) Recirc Pump speed cannot be raised above 480 RPM(28%) until total Feedwater flow is greater than 19 percent. Recirc Pump speed can be controlled between ~345 RPM and ~480 RPM using the Recirc Drive/Recirc Pump Speed Controllers.
(3) Recirc Pump A(B) will trip 85 seconds after initiation of the automatic jogging sequence if RECIRC PUMP A(B) DISCHARGE VALVE, 2-FCV-68-3(79), is less than 90 percent open.
(4) Performance of 2-SR-3.4.2.1 is required 24 hours after reaching > 25% RTP and/or 4 hours after returning a Recirc Pump to service.
(5) After Recirc loop(s) are in service, Technical Specifications Surveillance Requirements SR 3.4.1.1 and SR 3.4.2.1 have performance requirements which shall be referred to while performing Step 5.3.18.

****

Performance Step : Critical___ Not Critical_X_

5.3.16 **VERIFY** fully open, RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-FCV-68-3(79).

Standard:

VERIFIED fully open, RECIRC PUMP 2A DISCHARGE VALVE, 2-FCV-68-3.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

****

CAUTION

Per Technical Specifications, the reactor **CAN BE** operated indefinitely with one Recirc loop out of service, provided the requirements of T.S. 3.4.1 are implemented within 24 hours of entering single loop operations.

****

****

Performance Step : Critical_____ Not Critical__X___

5.3.17 **NOTIFY** Reactor Engineer to **VERIFY** that the following has been **PERFORMED**, as applicable, depending on the number of operating recirc loops, and **RECORD** the applicable requirements and their completion status in the narrative log.

5.3.17.1 2-SR-3.4.1(DLO), Reactor Recirculation System Dual Loop Operation.

OR

5.3.17.2 2-SR-3.4.1(SLO), Reactor Recirculation System Single Loop Operation.

Standard:

NOTIFIES reactor Engineer to verify 2-SR-3.4.1(DLO) has been performed.

CUE: Another unit operator has logged the SR.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

****

Performance Step : Critical___ Not Critical_X_

5.3.18 **PERFORM** 2-SR-3.4.2.1 within the next 4 hours following placing a recirc loop in service. (REFER TO Tech Specs 3.4.1 and 3.4.2.)

Standard:

NONE.

CUE: Another operator will complete the SR after we finish.

SAT_____UNSAT_____N/A___X___ COMMENTS:_____

_____

_____

****

Performance Step : Critical___X__ Not Critical_____

5.3.19 **DEPRESS** push-button RECIRC PUMP 2A(2B) RUNBACK RESET 2-HS-68-32(41).

Standard:

DEPRESSED push-button RECIRC PUMP 2A RUNBACK RESET 2-HS-68-32

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

****

Performance Step : Critical___ Not Critical_X_

5.3.20 **MONITOR** Recirc Pump seal pressures during pressurization for proper operation. (Number 2 seal pressure should be approximately one half that of Number 1 seal pressure).

Standard:

None - seals are pressurized.

SAT_____UNSAT_____N/A___X___ COMMENTS:_____

_____

_____

****

CAUTION

The Recirc System should be operated with balanced jet pump flows to reduce hydraulic forces and vibration stresses on jet pumps and retainers.

****

****

Performance Step : Critical__X__ Not Critical____

5.3.21 **RAISE** Recirc Pump speed 2A using RAISE SLOW (MEDIUM), 2-HS-96-15A(15B)/LOWER SLOW(MEDIUM) 2-HS-96-17A(17B), push buttons, to 480 rpm.

AND/OR

RAISE Recirc Pump speed 2B using RAISE SLOW (MEDIUM), 2-HS-96-16A(16B)/LOWER SLOW(MEDIUM) 2-HS-96-18A(18B), push buttons, to 480 rpm.

Standard:

RAISED Recirc Pump speed 2A using RAISE SLOW (MEDIUM), 2-HS-96-15A(15B)/LOWER SLOW(MEDIUM) 2-HS-96-17A(17B), push buttons, to 480 rpm.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

****

Performance Step : Critical_____ Not Critical__X__

5.3.22 **WHEN** total Feedwater flow is greater than 19%, **THEN**

VERIFY reset, RECIRC LOOP A(B) FLOW LIMITER ENFORCING 2-FA-96-46(47), 2-XA-55-4A(B), Window 35.

Standard:

NONE.

SAT_____UNSAT_____N/A__X__ COMMENTS:_____

_____

_____

****

Performance Step : Critical__X__ Not Critical_____

5.3.23 **WHEN** desired to control Recirc Pumps 2A and/or 2B speed with the RECIRC MASTER CONTROL, **THEN**

ADJUST Recirc Pump speed 2A & 2B using the following push buttons as required.

RAISE SLOW,	2-HS-96-31
RAISE MEDIUM,	2-HS-96-32
LOWER SLOW,	2-HS-96-33
LOWER MEDIUM,	2-HS-96-34
LOWER FAST,	2-HS-96-35

Standard:

BALANCES Jet pump flows.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

_____

NOTE:

This SR requirement may be previously satisfied by performance of step 5.3.18.

5.3.24 **IF** this is the second Recirc Pump started, **THEN**

PERFORM 2-SR-3.4.2.1 for the Jet Pump Mismatch requirements, within the next 24 hours (refer to Tech Specs 3.4.1.1).

5.3.25 **RAISE** Recirc Pumps 2A and/or 2B speed as directed by 2-GOI-100-1A or 2-GOI-100-12, or 2-GOI-100-12A **REFER TO** Section 6.2.

END OF TASK

STOP TIME_____

GENERIC WORK PRACTICES

****

Performance Step: Critical___ Not Critical X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

****

Performance Step: Critical___ Not Critical X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

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. 2A Recirc Pump tripped 1 hour ago. All AOI actions have been completed. The problem with 2A Recirc Pump has been corrected. The SRO has directed 2A Recirc Pump be restarted. The Reactor Engineer is in the control room. Steps 5.3.1 through 5.3.8 and 2-SR-3.3.1.1.I are complete 2-SR-3.4.9.3 & 4 has been started per step 5.3.9.

INITIATING CUES: The US directs you to continue the return of 2A Recirc Pump to service and balance jet pump flows in preparation for power ascension as directed by 2-OI-68 starting at Step 5.3.10 when step 5.3.9 is complete.

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

JPM NUMBER: 7

TITLE: 2-EOI APPENDIX 7D - ALTERNATE RPV INJECTION SYSTEM LINEUP - STANDBY COOLANT

TASK NUMBER: U-000-EM-39

SUBMITTED BY:_____ DATE:_____

VALIDATED BY:_____ DATE:_____

APPROVED: _____ DATE:_____
TRAINING

PLANT CONCURRENCE: _____ DATE:_____
OPERATIONS

* Examination JPMs Require Operations Training Manager or Designee Approval and

Plant Concurrence

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
4	11/29/94	1,2,3,4	REVISE TO NEW FORMAT
5	10/17/95	All	Procedure revision
6	10/23/96	4,12	ADDED NON-CRITICAL STEP ON STAAR, AND CHANGED ASOS TO US
7	09/15/97	ALL	FORMAT, CHANGED MGT EXPECTATIONS TO PLANT WORK EXPECTATIONS, ADDED 3-WAY COMM.
8	09/08/99	2	CHANGED FONT FOR PAGE TO FIT
9	10/03/00	4	DELETED NON-CRITICAL STEPS
10	9/21/02	3	REMOVE SS#, CHANG PROCED REV
11	02/26/04	All	Format; Editorial; change initial conditions

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO _____ DATE:_____

JPM NUMBER: 7

TASK NUMBER: U-000-EM-39

TASK TITLE: LINE UP ALTERNATE RPV INJECTION SYSTEM - STANDBY COOLANT IN ACCORDANCE WITH 2-EOI APPENDIX 7D

K/A NUMBER: 295031EA1.08 K/A RATING: RO 3.8 SRO: 3.9

****

TASK STANDARD: PERFORM CORRECT EQUIPMENT MANIPULATIONS REQUIRED TO INJECT MAKEUP INTO THE RPV AS DIRECTED BY 2-EOI APPENDIX 7D

LOCATION OF PERFORMANCE: SIMULATOR X PLANT ___ CONTROL ROOM ___

REFERENCES/PROCEDURES NEEDED: 2-EOI APPENDIX 7D, REV 5

VALIDATION TIME: CONTROL ROOM: 10:00 LOCAL: _____

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

PERFORMANCE TIME: _____ CONTROL ROOM _____ LOCAL _____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____

SIGNATURE: _____ DATE:_____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

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

****

INITIAL CONDITIONS: You are a Unit 2 Operator. The reactor is in mode 4 for an outage. The loop 1 ECCS pump breakers have been removed for an emergency modification. An unisolable RCS leak occurred in the drywell then 480 V RMOV board 2B was observed to trip with massive arcing. Attempts to manually open the ECCS injection valves have failed. The UNIT SUPERVISOR has determined that RPV water level cannot be maintained above -162".

INITIATING CUES: The UNIT SUPERVISOR has directed you to inject makeup to the RPV using RHR System I as directed by 2-EOI Appendix 7D, Standby Coolant.

START TIME_____

****

Performance Step: Critical___ Not Critical_X__

WHEN REQUESTED BY EXAMINER identify/obtain copy of required procedure.

Standard:

IDENTIFIED OR OBTAINED copy of 2-EOI APPENDIX 7D.

SAT___UNSAT___N/A___ COMMENTS:_____

_____

NOTE: Throughout this appendix, all operations are performed at Unit 2, Panel 2-9-3 unless otherwise noted.

1. **IF**.....RHR Loop I is to be used for Standby Coolant, **THEN**...**PERFORM** the following:

****

Performance Step: Critical___ Not Critical_X_

a. **VERIFY CLOSED** the following valves:

- 2-FCV-74-61, RHR SYS I DW SPRAY INBD VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-61A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

- 2-FCV-74-60, RHR SYS I DW SPRAY OUTBD VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-60A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

- 2-FCV-74-57, RHR SYS I SUPPR CHBR/POOL ISOL VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-57A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

- 2-FCV-74-58, RHR SYS I SUPPR CHBR SPRAY VALVE

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-58A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X_

- 2-FCV-74-59, RHR SYS I SUPPR POOL CLG/TEST VLV.

Standard:

VERIFIED illuminated GREEN valve position indicating lamp above 2-HS-74-59A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step : Critical___ Not Critical_X_

- 2-FCV-23-52, RHR HX 2D RHRSW OUTLET VLV.

Standard:

OBSERVES inability to perform at panel.

CUE: The BUO observed the valve closed just prior to the bus loss and the US concurs the verification step is met.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical___ Not Critical_X__

b. **VERIFY** RHR Pumps 2A and 2C are NOT running.

Standard:

VERIFIED illuminated GREEN control motor breaker position indicating lamps above 2-HS-74-5A and 2-HS-74-16A.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical_____

c. **START** RHRSW Pumps D1 and D2.

Standard:

PLACED 0-HS-23-23A and 0-HS-23-27A in the START position and **VERIFIED** illuminated RED motor breaker position indicating lamps above associated control switches.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical_____

d. **NOTIFY** Unit 1 Operator to perform the following (Unit 1, Panel 1-9-3):

- **VERIFY CLOSED** 1-FCV-23-52, RHR HEAT EXCHANGER D COOL WATER OUTLET VLV.
- **OPEN** 1-FCV-23-57, STANDBY COOLANT VALVE FROM RHRSW.

Standard:

SIMULATED NOTIFYING Unit 1 Operator to verify CLOSED FCV-23-52 [NOT CRITICAL] and OPEN FCV-23-57 (critical).

CUE: [SIMULATOR OPERATOR WHEN CONTACTED] UNIT 1 OPERATOR CONFIRMS FCV-23-52 CLOSED AND FCV 23-57 OPEN.

SAT_____UNSAT_____N/A_____ COMMENTS:_____

****

Performance Step : Critical___ Not Critical_X___

e. **NOTIFY** Unit 3 Operator to **VERIFY CLOSED** 3-FCV-23-52, RHR HX 3D RHRSW OUTLET VLV (Unit 3, Panel 3-9-3).

Standard:

CONTACTED Unit 3 Operator to verify 3-FCV-23-52 closed.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

CUE: [WHEN CONTACTED] UNIT 3 OPERATOR VERIFIES RHR HX 3D RHRSW OUTLET VALVE, 3-FCV-23-52, CLOSED.

f. **INJECT** Standby Coolant into RPV as follows:

****

Performance Step : Critical___ Not Critical_X__

1) **CLOSE** 2-FCV-74-52, RHR SYS I LPCI OUTBD INJECT VALVE.

Standard:

PLACED 2-HS-74-52 in the CLOSE position and **VERIFIED** illuminated GREEN valve position indicating lamp.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical_____

2) **OPEN** 2-FCV-74-100, RHR SYSTEM I U-1 DISCH XTIE.

Standard:

PLACED 2-HS-74-100A in the OPEN position and **VERIFIED** illuminated RED valve position indicating lamp.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical____

3) **OPEN** 2-FCV-74-53, RHR SYS I LPCI INBD INJECT VALVE.

Standard:

PLACED 2-FCV-74-53 in the OPEN position and **VERIFIED** illuminated RED valve position indicating lamp.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical_____

4) **THROTTLE** 2-FCV-74-52, RHR SYS I LPCI OUTBD INJECT VALVE, to control injection.

Standard:

PLACED 2-HS-74-52A in the OPEN position as required for level control and **VERIFIED** illuminated RED valve position indicating lamp above associated control switch.

SAT____UNSAT____N/A____ COMMENTS:_____

_____

END OF TASK

STOP TIME _____

GENERIC WORK PRACTICES

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Performance Step: Critical___ Not Critical_X__

PERFORMER demonstrated the use of SELF CHECKING during this JPM.

Standard:

PERFORMER verified applicable components by utilizing SELF CHECKING in accordance with plant standards.

SAT_____ UNSAT_____ N/A _____COMMENTS:_____

_____

_____

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Performance Step: Critical___ Not Critical _X__

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

Standard:

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

SAT_____ UNSAT_____ N/A _____ COMMENTS:_____

_____

_____

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

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 is in mode 4 for an outage. The loop 1 ECCS pump breakers have been removed for an emergency modification. An unisolable RCS leak occurred in the drywell then 480 V RMOV board 2B was observed to trip with massive arcing. Attempts to manually open the ECCS injection valves have failed. The UNIT SUPERVISOR has determined that RPV water level cannot be maintained above -162".

INITIATING CUES: The UNIT SUPERVISOR has directed you to inject makeup to the RPV using RHR System I as directed by 2-EOI Appendix 7D, Standby Coolant.