

Draft Submittal

(Pink Paper)

FARLEY EXAM 50-348 & 50-364/2003-301

MAY 19 - 26, 2003

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

Facility: <u>Farley</u>		Date of Examination: <u>5/19-27/2003</u>
Examination Level (circle one): RO / SRO		Operating Test Number: <u>1</u>
Administrative Topic (see Note)	Describe activity to be performed	
Conduct of Operations	Calculate Reactor Vessel Head Venting Time (New JPM) 2.1.25 (2.8/3.1)	
Conduct of Operations	Perform ECP [CRO-025A] 2.1.10 (plant parameter verification) (2.7/3.9)	
Equipment Control	Maintenance Retest of 1B RHR Pump (New JPM) K/A 2.2.12 3.0/3.4	
Radiation Control	Perform A Shielding Calculation (New JPM) 2.3.2 (2.5/ 2.9)	
Emergency Plan	N/A	
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.		

Facility: FarleyDate of Examination: 5/19-27/2003Examination Level (circle one): RO / SROOperating Test Number: 1

Administrative Topic (see Note)	Describe activity to be performed
Conduct of Operations	Calculate Reactor Vessel Head Venting Time (New JPM) 2.1.25 (2.8/3.1)
Conduct of Operations	Perform ECP [CRO-025A] 2.1.10 (plant parameter verification) (2.7/3.9)
Equipment Control	Maintenance Retest of 1B RHR Pump (New JPM) K/A 2.2.12 3.0/3.4
Radiation Control	Perform A Shielding Calculation (New JPM) 2.3.2 (2.5/ 2.9)
Emergency Plan	Classification of an Emergency Event (New JPM) 2.4.41 (2.3/4.1)
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.	

DRAFT

Conduct of Operations: Calculate Reactor Vessel Head Venting Time

Initial Conditions:

FNPP-1-FRP-1.3, Response to Voids in Reactor Vessel, has been implemented and completed through subsequent step 20.1. The following conditions exist:

Containment Pressure	9 psig
Lower Containment Temperature	140°F
H ₂ Concentration	1.8%
RCS Pressure	290 psig

Referenced Documents:

FNPP-1-FRP-1.3, Response to Voids in Reactor Vessel
FR-1.3, HP-Rev. 1C Base Documents

Task Standard:

Reactor Vessel Head venting time calculated to be 13 minutes 5 seconds.

Initiating Cues:

The SRO has directed you to complete Step 20.3 by recording the maximum venting time per TABLE 1 (Maximum Reactor Head Vent Time (Minutes-Seconds)).

Terminating Cues:

When the applicant completes Step 20.3 and indicated the maximum vent time.

NOTE: Provide applicant with a working copy of FNPP-1-FRP-1.3, Response to Voids in Reactor Vessel.

K/A 2.1.25 2.8/3.1

JOB PERFORMANCE MEASURES
FORMAL OJT REQUIRED PRIOR TO EVALUATION

CRO-025A

TITLE: Perform An Estimated Critical Condition Calculation

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 40 MIN SIMULATOR IC NUMBER: N/A

ALTERNATE PATH ___ TIME CRITICAL ___ PRA

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: 2003 NRC EXAM
Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Perform An Estimated Critical Condition Calculation

LESSON NO.: JPM CRO-025A

[illegible]

STANDARDS

Apply the following criteria during the performance of this JPM:

- The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to PERFORM AN ESTIMATED CRITICAL CONDITION CALCULATION. The conditions under which this task is to be performed are:

- The Unit tripped 48 hours ago.
- Prior to the trip, the unit had been operating at 100% power for 2 months.
- Conditions at time of trip: 100% power, Bank D rods at 227 steps, 185 ppm boron, 18,000 MWD/MTU burnup.
- The Unit is presently in Mode 3 with T_{avg} at 547°F.
- Plans are to perform a reactor startup now with a critical rod height of 150 steps on Bank D.
- DBW, XENON, and SAMARIUM programs are attached.

NOTE: THIS JPM HAS BEEN DESIGNED FOR UNIT 1 CYCLE 18 CORE PHYSICS CURVES. DBW, XENON, AND SAMARIUM PROGRAMS ARE ATTACHED.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
1. Determine total reactivity associated with prior critical conditions.	Reactivity total 2200 pcm.	S / U
2. Determine xenon reactivity change.	Correct reactivity change calculated using xenon worth program (+2260 pcm).	S / U
3. Determine samarium reactivity change.	Correct reactivity change calculated using samarium worth program. (-85 pcm).	S / U
4. Determine the reactivity associated with the desired critical rod height.	Current reactivity determined for desired rod height. (-502 pcm).	S / U
5. Determine the reactivity change due to temperature.	Correct reactivity determined for temperature. (0 pcm).	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
6. Add algebraically the xenon, samarium, rod, and temperature reactivity.	Total reactivity calculated correctly. (+1673 pcm).	S / U
*7. Determine the critical boron concentration.	Boron concentration calculated correctly. (551 to 581 ppm).	S / U
8. Determine the minimum critical rod height.	Correct rod height determined. (D at 21).	S / U
9. Determine the maximum critical rod height.	Correct rod height determined. (D at 227).	S / U
10. If ECP computer program is used, attach completed ECC Calculation worksheet to Appendix 1.	ECC Calculation Worksheet is Worksheet to Appendix 1.	S / U
____ STOP TIME		

Terminate when maximum critical rod height is determined.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES

1. Core Physics Curve Book, Unit 1, Cycle 18
2. FNP-1-STP-29.6 Revision 2.0
3. K/A: 001A4.10 RO-3.5 SRO-3.9

GENERAL TOOLS AND EQUIPMENT

1. STP-29.6
2. Xenon Worth Program
3. Samarium Worth Program
4. Core Physics Curves
5. Calculator
6. DBW and/or ECP Computer Program

COMMENTS

CONDITIONS

When I tell you to begin, you are to PERFORM AN ESTIMATED CRITICAL CONDITION CALCULATION. The conditions under which this task is to be performed are:

- a. The Unit tripped 48 hours ago.
- b. Prior to the trip, the unit had been operating at 100% power for 2 months.
- c. Conditions at time of trip: 100% power, Bank D rods at 227 steps, 185 ppm boron, 18,000 MWD/MTU burnup.
- d. The Unit is presently in Mode 3 with T_{avg} at 547°F.
- e. Plans are to perform a reactor startup now with a critical rod height of 150 steps on Bank D.
- f. Initial conditions given to examinee
- g. The ECC has been completed up through Section A, Step 1
- h. The startup date and time has been entered in Section B, Step 1
- i. Access to DBW and ECP computer programs may or may not be available. (Determined by the examiner.)

DRAFT

Equipment Control: Maintenance Retest of 1B RHR Pump

Initial Conditions:

Following work on the RHR system a maintenance retest of 1B RHR pump requires FNP-1-STP-11.2, 1B RHR Pump Quarterly Inservice Test, to be conducted.

Set the IC so that normal full power conditions are set.

FNP-1-STP-11.2 steps 3.1 through 3.11 have been completed.

1B RHR standstill oil reservoir levels are between the MAX and 1/4 inch below the MAX.

Referenced Documents:

FNP-1-STP-11.2, 1B RHR Pump Quarterly Inservice Test

Task Standard:

FNP-1-STP-11.2, 1B RHR Pump Quarterly Inservice Test meets acceptance Criteria.

Initiating Cues:

The SRO has directed you to complete FNP-1-STP-11.2, 1B RHR Pump Quarterly Inservice Test. FNP-1-STP-11.2 steps 3.1 through 3.11 have been completed.

Terminating Cues:

When all arrangements have been made to enter the very high radiation area.

NOTE: Provide applicant with a working copy of FNP-1-STP-11.2, 1B RHR Pump Quarterly Inservice Test.

Pump seal leakage is calculated to be 10 cc/min

K/A 2.2.12 3.0/3.4

DRAFT

Radiation Control: Perform A Shielding Calculation

Initial Conditions:

You have been directed to work in an area where the Gamma Radiation intensity is 10,000 Rad/ Hr. with no shielding. You cannot work in the area unless the field is reduced to no greater than 200 Rad/ Hr.

Referenced Documents:

Basic Rad worker training

Task Standard:

The examinee will determine the Tenth value layer and the Half value layer of shielding required for adequate protection of a worker. Operator determines 6 HVLs are required to reduce intensity to less than 200 Rad/ hr. Operator determines 3 TVLs are required to reduce intensity to less than 100 Rad/ hr.

Initiating Cues:

You are to calculate the minimum number of half- value layers (HVLs) required to reduce the Gamma level to no greater than 200 Rad/ hr.

You are also to calculate the minimum number of tenth- value layers (TVLs) required to reduce the Gamma level to no greater than 100 Rad/ hr.

Terminating Cues:

The JPM is terminated when the applicant has determined the minimum number of half-value layers and the minimum number of tenth-value layers required.

NOTE: Applicant may use intensity equation. If Examinee uses equation then cue him/her that lead will be used as shielding and the " μ ", the total linear attenuation coefficient for lead is 0.772 cm⁻¹

K/A 2.4.41 (2.3/4.1)

Validation Time: 15 mins

THIS INFORMATION FOR USE AND REFERENCE BY EXAMINER

$$I_{\text{shielded}} = I_{\text{unshielded}} (1/2)^{\text{\#HVL}} (1/10)^{\text{\#TVL}}$$

$$\text{where } \text{\#HVL} = \frac{\text{Shield Thickness (cm)}}{\text{HVL (cm)}}$$

and

$$\text{\#TVL} = \frac{\text{Shield Thickness (cm)}}{\text{TVL (cm)}}$$

Shielding Equation $I = I_0 e^{-\mu x}$

Where: I - the exposure rate with the shield (Rad/ hr)

I_0 - the unshielded exposure rate (Rad/ hr)

x - the shield thickness (cm)

μ - the total linear attenuation coefficient (cm⁻¹).

DRAFT

Emergency Plan: Classification of an Emergency Event

Initial Conditions:

For the scenario event that the SRO applicants are in the SRO position, at the end of the scenario the applicant will be required to make a classification based on the scenario conditions.

Referenced Documents:

Each of the 4 scenarios

Emergency Classification and Actions, FNP-0-EIP-9.0

Task Standard:

Applicant has declared the event classification based on scenario conditions.

Initiating Cues:

As the SRO complete the event classification and make the appropriate declaration based on your scenario conditions.

Terminating Cues:

When the applicant has made the event declaration.

Note: There should be a specific classification for each of the scenarios.

K/A 2.4.29 2.6/4.0

Facility: <u>Farley</u>		Date of Examination: <u>5/19-27/2003</u>
Exam Level (circle one): RO / <u>SRO(I)</u> / SRO(U)		Operating Test No.: <u>1</u>
Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
a. Operate Service Water pumps in Various Modes. CRO-289 K/A 076A4.01 2.9/2.9	M,A,S	8
b. Start Containment Cooling System K/A 22A4.01 3.6/3.6 CRO-133A.	D,S,L	5
c. Perform required actions in response to RCP Seal Failures. CRO-047A K/A 003A2.02 3.7/3.9	M,A,S	2
d. Perform actions for a Liquid Waste Release. CRO-277 K/A 068A4.01 3.8/3.7	D,S	9
e. Perform the required actions for transfer to simultaneous cold leg and hot leg recirculation. CRO-333C K/A 006EA4.07 4.4/4.4	D,A,S	3
f. Shift Auxiliary buses between UA transformers and SU transformers. CRO-245 K/A 062A2.01 3.4/3.9	D,S,L	6
g. Perform an emergency boration. CRO-65B K/A 024AA2.02 3.9/4.4	M,S,A	1
h. N/A		
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. Align SGBD from Ruptured SG to Main Condenser Bypassing the SGBD Demineralizers. SO-151B K/A 035K1.13 2.7/2.8	R,D	4P
j. Shift AFW pump suction emergency supply. SO-311 K/A 061A10.1 3.9/3.9	D	4S
k. Startup an Instrumentation Inverter. SO-344 K/A 057AA1.01 3.7/3.7	D	6
* 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		

DRAFT

ES-301

Control Room/In-Plant Systems
Outline

Form ES-301-2

Facility: <u>Farley</u>		Date of Examination: <u>5/19-27/2003</u>
Exam Level (circle one): <u>RO</u> / SRO(I) / SRO(U)		Operating Test No.: <u>1</u>
Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
a. Start an RCP. CRO-043A K/A 003A2.01 3.5/3.9	D,A,L,S	4
b. Start Containment Cooling System K/A 22A4.01 3.6/3.6 CRO-133A.	D,S,L	5
c. Perform required actions in response to RCP Seal Failures. CRO-047A K/A 003A2.02 3.7/3.9	M,A,S	2
d. Perform actions for a Liquid Waste Release. CRO-277 K/A 068A4.01 3.8/3.7	D,S	9
e. Perform the required actions for transfer to simultaneous cold leg and hot leg recirculation. CRO-333C K/A 006EA4.07 4.4/4.4	D,A,S	3
f. Shift Auxiliary buses between UA transformers and SU transformers. CRO-245 K/A 062A2.01 3.4/3.9	D,S,L	6
g. Perform an emergency boration. CRO-65B K/A 024AA2.02 3.9/4.4	M,S,A	1
h. Corrective actions in response to an Excore NIS failure. CRO-127A K/A 015A4.02 3.9/3.9	D,S	7
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. Align SGBD from Ruptured SG to Main Condenser Bypassing the SGBD Demineralizers. SO-151B K/A 035K1.13 2.7/2.8	R,D	4P
j. Shift AFW pump suction emergency supply. SO-311 K/A 061A10.1 3.9/3.9	D	4S
k. Startup an Instrumentation Inverter. SO-344 K/A 057AA1.01 3.7/3.7	D	6
* 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		

JOB PERFORMANCE MEASURES
FORMAL OJT REQUIRED PRIOR TO EVALUATION

CRO-289

TITLE: Operate SW Pumps In Various Combinations

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 15 MIN **SIMULATOR IC NUMBER:** IC-20 EXM

ALTERNATE PATH X **TIME CRITICAL** ___ **PRA**

1A SWP = 55 degraded head, 1B SWP = BREAKER CLOSE/FAIL, 1C SWP = broken shaft

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: Modified for NRC EXAM
Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Operate SW Pumps In Various Combinations

LESSON NO.: JPM CRO-289

[illegible]

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1.
- b. Proper lube and cooling flow and oil levels have been verified.
- c. You are directed by Shift Supervisor to start the 'C' SW pump for vibration analysis and secure the 'B' SW pump.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
-----------	------------	----------------------

START TIME

- | | | |
|--|---|-------|
| 1. Verify the Systems Operator is standing by at the SWIS to observe pump conditions | Personnel are stationed at SWIS.
(CUE: A Systems Operator is stationed at the SWIS.) | S / U |
|--|---|-------|

NOTE: EXAMINEE SHOULD MENTION THAT HE WOULD ANNOUNCE THE STARTING OF 'C' SW PUMP AND SECURING 'B' SW PUMP.

- | | | |
|---|---|-------|
| *2. Start the 'C' SW pump, and as soon as the red "breaker closed" indicating light is lit, secure the 'B' SW pump. | 'C' SW pump is verified to have started by the red "breaker closed" indication light being lit; then 'B' SW pump is secured. (CUE: 'C' SW pump started, the red "breaker closed" indication light is lit; 'B' SW pump is secured, the green indication light is lit.) | S / U |
|---|---|-------|

**ANNUNCIATOR AD4 WILL COME INTO ALARM:
THE FOLLOWING TWO STEPS MAY NOT BE ACCOMPLISHED**

- | | | |
|---|---|-------|
| 3. Immediately verify that all isolation MOV's for SW to and from the Turbine Building remain open:
Q1P16V514, SW TO TURB BLDG 'B' TRN | SW to Turb Bldg and SW from Turb Bldg isolation valves are verified to remain open.
(CUE: SW to Turb Bldg and SW | S / U |
|---|---|-------|

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
Q1P16V515, SW TO TURB BLDG 'A' TRN Q1P16V516, SW TO TURB BLDG 'A' TRN Q1P16V517, SW TO TURB BLDG 'B' TRN Q1P16V540, SW FROM TURB BLDG 'A' HDR ISO Q1P16V541, SW FROM TURB BLDG 'B' HDR ISO Q1P16V542, SW FROM TURB BLDG 'A' HDR ISO Q1P16V543, SW FROM TURB BLDG 'B' HDR ISO	from the Turb Bldg isolation valves remained open.)	
*4. Check indications to verify that pressure in A Train SW header is maintained between 70 and 115 psig as indicated by PI3001AA	PI-3001AA, SW to CCW Hx discharge pressure is checked. (CUE: PI-3001AA reads 55 psig.)	S / U
<u>Alternate path starts here</u>		
*5. IAW ARP- AD4, transition should be made to AOP-10.0, Loss of Service Water	AOP-10.0 referenced	S / U
6. Verify affected 4160v breakers closed.	DF02 IS CHECKED CLOSED (Cue: DF02 red light is lit)	S / U
7. IF a SW pump trips, THEN verify Standby SW pump started.	Verify 1B SW pump started. (Cue: 1B SW pump is tripped on overload.)	S / U
8. IF SW pressure in both trains > 60 psig, THEN go to procedure and step in effect.	A train SW pressure will be < 60 psig. (Cue: A train SW pressure = 55 psig.)	S / U
9. Check DG running.	DGs checked. (Cue: No DG running.)	S / U
10. Verify all available SW Pumps in nonaffected train running	D/E SW Pumps are checked. (Cue: D & E SW Pumps are running with red light lit and proper SW pressure for conditions.)	S / U
11. Check SW pressure in nonaffected train > 60 psig.	PI-3001BA, SW to CCW Hx discharge pressure is checked. (CUE: PI-3001BA reads 80 psig.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*12. Verify operating CCW train supplied from affected train. Start 1A CCW pump.	A Train is affected. 1A CCW pump is started. (Cue: 1A CCW pump red light lit with flow, if checked.)	S / U
*13. Verify Charging pump operating in nonaffected train. Start 1C Chg pump.	1A Chg pump is running. Start Charging pump operating in nonaffected train. Start 1C Chg pump.	S / U
*14. Secure 1A Chg pump.	1A Charging pump handswitch is taken to stop. (Cue: 1A Chg pump green light lit, amps will go to 0.)	S / U

STOP TIME

Terminate when 1C Chg pump is secured.
--

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-24.0, Version 50.0
2. FNP-1-ARP-1.1, Version 35.0
3. FNP-1-AOP- 10.0, Version 11.0
4. K/A 076A2.01 RO-3.5 SRO-3.7
076A2.02 RO-2.7 SRO-3.1

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1.
- b. Proper lube and cooling flow and oil levels have been verified.
- c. You are directed by Shift Supervisor to start the 'C' SW pump for vibration analysis and secure the 'B' SW pump.

JOB PERFORMANCE MEASURES

CRO-133A

TITLE: Start Up The Containment Cooling System

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT ___

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 10 MIN SIMULATOR IC NUMBER: IC-13 EXM

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

Approved By: JOE POWELL 09/07/01
Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Start Up The Containment Cooling System

LESSON NO.: CRO-133A[illegible]

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to START UP THE CONTAINMENT COOLING SYSTEM PER SOP 12.1. The conditions under which this task is to be performed are:

- a. The unit is in Mode 5.
- b. Repairs and modifications to the Containment Air Cooling System have been completed.
- c. Testing has been completed satisfactory.
- d. All preparations have been completed.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
*1. Open the service water containment cooler inlet valves Q1P16MOV3019A, B, C and D (Q1P16V010A, B, C and D).	Takes handswitch for SW TO CTMT CLR CLR 1A, B, C, and D AND CTMT FPS MOV3019A, B, C, and D to open. (CUE: MOV3019A, B, C, & D are open.)	S / U
*2. Open the service water containment cooler outlet valves Q1P16MOV3441A, B, C, & D.	Takes handswitch for SW FROM 1A, B, C, and D Q1P16MOV3441A, B, C, and D to open. (CUE: MOV3441A, B, C, and D are open.)	S / U
*3. Open the service water containment cooler discharge valves Q1P16MOV3023A, B, C, and D (Q1P16V044A, B, C, and D.)	Takes handswitch for 1A, B, C, and D CTMT CLR SW DISCH Q1P16MOV3023A, B, C, and D to open. (CUE: MOV3023A, B, C, and D are open.)	S / U
4. Verify service water flow through A&B containment coolers ≥ 2000 gpm.	Verifies service water flow through A&B containment coolers ≥ 2000 gpm on FI-3013A and 3014A. (CUE: Flow is as read or > 2000 gpm whichever is higher.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
5. Verify service water flow through C&D containment coolers ≥ 2675 gpm.	Verifies service water flow through C&D containment coolers ≥ 2675 gpm on FI-3013B and FI-3014B. (CUE: Flow is as read or > 2675 gpm whichever is higher.)	S / U
*6. Start containment coolers 1A, 1B, 1C and 1D in FAST (SLOW) speed.	Starts containment coolers 1A, 1B, 1C and 1D in FAST speed by turning switches H001A, B, C, and D to start. (CUE: The coolers are running in FAST speed.)	S / U
7. Verify CTMT CLR 1A(B) and 1C(D) DISCH 3186A(B) and 3186C(D) OPEN light illuminated.	Verifies CTMT CLR 1A(B) and 1C(D) DISCH 3186A(B) and 3186C(D) OPEN light illuminated. (CUE: The light is illuminated.)	S / U
*8. Place containment dome recirculation fans 1A, 1B, 1C, and 1D in HIGH (LOW) speed.	Places containment dome recirculation fans 1A, 1B, 1C, and 1D in HIGH speed by turning switches M001A, B, C, and D to HIGH. (CUE: The dome recirculation fans are running in HIGH speed.)	S / U
9. Operate the containment dome recirculation fans and containment coolers as necessary to maintain CTMT temperature $< 120^{\circ}\text{F}$.	Operates the containment dome recirculation fans as necessary to maintain containment temperature $< 120^{\circ}\text{F}$. (CUE: CTMT temperature is 90°F and falling slowly.)	S / U
*10. Open 1A and 1B RX CAV CLG DMPR Q1E12HV3999A and B (Q1E12V001A and B).	Open HV3999A and B by taking the handswitch to the open position. (CUE: HV3999A and B are open.)	S / U

STOP TIME

Terminate when 1A and 1B reactor cavity cooling dampers are open.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-12.1, Version 23.0
2. KAs: 022A4.01 RO-3.6 SRO-3.6
022A4.03 RO-3.2 SRO-3.2
022A4.04 RO-3.1 SRO-3.2
022A4.05 RO-3.8 SRO-3.8

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to START UP THE CONTAINMENT COOLING SYSTEM PER SOP 12.1. The conditions under which this task is to be performed are:

- a. The unit is in Mode 5.
- b. Repairs and modifications to the containment air cooling system have been completed.
- c. Testing has been completed satisfactory.
- d. All preparations have been completed.

JOB PERFORMANCE MEASURES**CRO-047A NRC MODIFIED**

TITLE: Perform The Required Actions In Response To RCP Seal Failures

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT XACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSSEVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANTPROJECTED TIME: 5 MIN SIMULATOR IC NUMBER: JPM IC-8ALTERNATE PATH X TIME CRITICAL ___ PRA**JPM DIRECTIONS:**

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: JOE POWELL 09/07/01**Supervisor - Operations Training or Operations**

JPM CORRECTION FORM

LESSON TITLE: Perform The Required Actions In Response To RCP Seal FailuresLESSON NO.: JPM CRO-047A

DATE	PAGE	NEEDED CORRECTION (Typo, DCP, Tech. Error, Etc.)	INITIAL Developer
9/19/02	3 & 5	Take the statement out that says: This is a pre-job brief: in the condition section.	mgr

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS IN RESPONSE TO RCP SEAL FAILURES. The conditions under which this task is to be performed are:

- a. Plant is in Mode 1 at 100% power with Bank D rods at fully withdrawn.
- b. RCP No. 1 seal leakoff flow Hi (DC2) MCB annunciator in alarm
- c. RCP seal injection flow Lo (DD1) MCB annunciator in alarm

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Determine value of #1 seal leakoff	FR-154A check. (CUE: 1A = 2.6; 1B = 2.6; 1C = 7.5) INSERT Next Page	S / U
*2. Manually trip the reactor	Rx trip switch taken to trip. (CUE: Rx trip breakers indicate open, all rod bottom lights lit.)	S / U
*3. Secure RCP C	C RCP handswitch taken to stop. (CUE: RCP C breaker indicator green light lit, amps = 0.)	S / U
4. Determine if C RCP has come to a complete stop	Checks RCS loop flow indication. (CUE: Loop C flow falls to 0% and then returns to approx. 10%.)	S / U

Elements

Check #1 Seal Leakoff – Less Than 6 GPM

Check RCP Lower Seal Water Bearing and
Seal water outlet temperatures – Stable and
Less than 225°F

Standards

#1 Seal Leakoff is 7.5 GPM go to step 3, 4, 5

Temperature is greater than 225°F. Perform Element
Step 2.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*5. Close RCP seal leakoff Q1E21HV8141C	C RCP seal leakoff isolation handswitch taken to close. (CUE: Q1E21HV8141C green light lit.)	S / U

____ STOP TIME

Terminate when Q1E21HV8141C is closed

CRITICAL ELEMENTS: Critical Elements are denoted with an Asterisk (*) before the element number.

GENERAL REFERENCES

1. FNP-1- ARP-1.4, Version 33
2. K/As: 003 A2.01 RO-3.5 SRO-3.9
003 A2.02 RO-3.7 SRO-3.9

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS IN RESPONSE TO RCP SEAL FAILURES. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1 at 100% power with Bank D rods at fully withdrawn.
- b. RCP No. 1 seal leakoff flow Hi (DC2) MCB annunciator in alarm.
- c. RCP seal injection flow Lo (DD1) MCB annunciator in alarm.

JOB PERFORMANCE MEASURES
FORMAL OJT REQUIRED PRIOR TO EVALUATION

CRO-277

TITLE: Perform Control Room Operations For A Liquid Waste Release

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE
DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 15 MIN SIMULATOR IC NUMBER: IC-18 EXM

ALTERNATE PATH ___ TIME CRITICAL ___ PRA

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: 2003 NRC exam
Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Perform Control Room Operations For A Liquid Waste Release

LESSON NO.: JPM CRO-277

[illegible]

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to PERFORM CONTROL ROOM OPERATIONS FOR A LIQUID WASTE RELEASE. The conditions under which this task is to be performed are:

- a. A liquid waste release permit has been issued for the release of #1 WMT.
- b. The System Operator has requested that you perform a test on radiation monitor R-18 per SOP-50.1, Section 4.3.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
-----------	------------	----------------------

____ START TIME

If candidate asks about WMT pump maintenance being performed, tell them, "NO pump maintenance has been performed."

- | | | |
|--|---|-------|
| 1. Verify WMT #1 and #2 discharge valves locked closed | Direct SO to verify: Q1G21V111 and Q1G21V114 locked closed.
(CUE: SO reports that both valves are locked closed.) | S / U |
| 2. Source check R-18 | Place switch for R-18 to check source and verify upscale reading.
(CUE: R-18 up scales, BLUE channel test light illuminates on the R-18 drawer and MCB annunciator FH3 alarms) | S / U |
| 3. Open RCV-18[N1(2)G21V113] | Direct SO to open RCV-18.
(CUE: SO reports RCV-18 is open.) | S / U |

NOTE: <u>SIMULATOR OPERATOR</u> : INITIATE MK4 ALARM WHEN CANDIDATE IS TURNING R-18 POT COUNTER CLOCKWISE.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*4. Initiate a high alarm on R-18 by lowering potentiometer setpoint	Potentiometer adjusted counter-clockwise to alarm. (CUE: Red HIGH ALARM light is on. MCB annunciator FH1 alarms. RMS panel alarm sounds.)	S / U
5. Verify RCV-18 automatically closed	Direct SO to check RCV-18 closed. (CUE: SO reports RCV-18 closed.)	S / U
6. Attempts to open RCV-18	Direct SO to attempt to open RCV-18. (CUE: SO reports that RCV-18 did not open when control switch was placed in OPEN.)	S / U

NOTE: SIMULATOR OPERATOR: CLEAR MK4 ALARM PRIOR TO CALLING CONTROL ROOM WITH ABOVE INFORMATION.

7. Adjust potentiometer to original setpoint which was 6.0.	Potentiometer adjusted clockwise. (CUE: Potentiometer adjusted to original setpoint, 6.0.)	S / U
*8. Reset the high alarm on R-18	Operation selector switch placed in RESET position. (CUE: Red HIGH ALARM light is off. Blue CHANNEL TEST light is on. MCB annunciator FH1 is clear and annunciator FH3 is in alarm.)	S / U
*9. Restore R-18 to normal	Operation Selector switch returned to OPERATE position. (CUE: Blue CHANNEL TEST light is off. MCB annunciator FH3 is clear.)	S / U

CUE: SIMULATOR OPERATOR: Call CR as the Rad side SO to REQUEST THAT R-18 SETPOINT BE ADJUSTED FOR $\leq 10,000$ CPM WITH $\geq 20,000$ GPM SERVICE WATER DILUTION FLOW.

*10. Adjust R-18 setpoint to value obtained from discharge permit	Potentiometer adjusted to ≤ 5.70 per Figure 1 or Curve Book. (CUE: Potentiometer is set at 5.70.)	S / U
---	--	-------

EVALUATION CHECKLIST

ELEMENTS:

STANDARDS:

RESULTS: (CIRCLE)

NOTE: IF SERVICE WATER FLOW RECORDER IS NOT WORKING, THEN CUE EXAMINEE THAT FLOW IS INDICATED AT 28,000 GPM.

11. Verify SW dilution flow acceptable for release

Dilution flow recorder check.
(CUE: SW dilution flow recorder
FR-4107 indicates 28,000 gpm.)

S / U

____ STOP TIME

Terminate when dilution flow is verified.

CRITICAL ELEMENTS: Critical elements are denoted with an Asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1- SOP-50.1, Version 48.0
2. K/As: 068A4.01 RO-3.8 SRO-3.7

GENERAL TOOLS AND EQUIPMENT:

1. FNP-1- SOP-50.1, Figure 1
2. Operating Curve Book Volume III

COMMENTS:

CONDITIONS

When I tell you to begin, you are to PERFORM CONTROL ROOM OPERATIONS FOR A LIQUID WASTE RELEASE. The conditions under which this task is to be performed are:

- a. A liquid waste release permit has been issued for the release of #1 WMT.
- b. The System Operator has requested that you perform a test on radiation monitor R-18 per SOP-50.1, Section 4.3.

JOB PERFORMANCE MEASURES
FORMAL OJT REQUIRED PRIOR TO EVALUATION

CRO-333C

TITLE: Perform The Required Actions For Transfer to Simultaneous Cold Leg and Hot Leg Recirculation

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 15 MIN **SIMULATOR IC NUMBER:** IC-14 EXM

ALTERNATE PATH X **TIME CRITICAL** ___ **PRA** ___

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:		Trainee:	
Evaluator/Date:			
Overall JPM Performance:	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)			

JPM Approved: C F Barefield 09/07/01
Supervisor – Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Perform The Required Actions For Transfer to Simultaneous Cold Leg and Hot Leg Recirculation

LESSON NO.: JPM CRO-333C

[illegible]

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS FOR TRANSFER TO SIMULTANEOUS COLD LEG AND HOT LEG RECIRCULATION. The conditions under which this task is to be performed are:

- a. A safety injection is in progress following a Large Break LOCA on Unit 1.
- b. Seven and one-half hours have passed since the LOCA event started.
- c. 1B Chg Pump is aligned to A train.
- d. Directed by Shift Supervisor to align ECCS for Transfer To Simultaneous Cold Leg and Hot Leg Recirculation starting at Step 1 of ESP-1.4.

Make sure ESP-1.4 rev 12 is in SIMULATOR PROCEDURE BOOK PRIOR TO RUNNING THIS.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
*1. Close 1A(B) RHR HX TO RCS COLD LEGS ISO Q1E11MOV8888A and 8888B.	Handswitch for MOV8888A & B are taken to CLOSED. (CUE: MOV8888A & B green lights lit, valves are closed)	S / U
*2. Open RHR TO RCS HOT LEGS XCON Q1E11MOV8887A and 8887B.	Handswitch for MOV8887A & B are taken to OPEN. (CUE: MOV8887A & B red lights lit, valves are open)	S / U
<i>Alternate path starts here.</i>		
*3. Open RHR TO RCS HOT LEGS ISO Q1E11MOV8889.	Handswitch for MOV8889 taken to OPEN. (CUE: MOV 8889 green light lit, valve remains closed.)	S / U
*4. Close RHR TO RCS HOT LEGS XCON Q1E11MOV8887A and 8887B	Handswitch for MOV8887A & B are taken to CLOSED. (CUE: MOV8887A & B green lights lit, valves are closed)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
5. Verify closed RHR TO RCS HOT LEGS ISO Q1E11MOV8889	Light for MOV8889 checked. (CUE: MOV8889 green light lit, valve is closed.)	S / U
*6. Open 1A(B) RHR HX TO RCS COLD LEGS ISO Q1E11MOV8888A and 8888B.	Handswitch for MOV8888A & B are taken to OPEN. (CUE: MOV8888A & B red lights lit, valves are open.)	S / U
*7. Stop 1A Chg Pump.	Handswitch for 1A Chg Pump taken to OFF. (CUE: 1A Chg Pump amps go to "0" and green light lit.)	S / U
*8. Close HHSI TO RCS CL ISO valves Q1E21MOV8803A and B	Handswitch for HHSI TO RCS CL ISO valves Q1E21MOV8803A & B taken to CLOSED. (CUE: MOV8803A & B green lights lit, valves are closed)	S / U
*9. Open CHG PUMP RECIRC TO HOT LEGS valve Q1E21MOV8886.	Handswitch for MOV8886 taken to OPEN. (CUE: MOV 8886 red light lit, valve is open.)	S / U
*12. Start either 1A or 1B HHSI Pump.	Handswitch for 1A or 1B HHSI Pump taken to START. (CUE: Pump red light lit, amps increase.)	S / U
NOTE: IF EXAMINEE OBSERVES CHG PUMP AMPS - CUE: CHG PUMP AMPS 170 AND STABLE.		
*13. Stop 1C Chg Pump	Handswitch for 1C Chg Pump taken to OFF. (CUE: 1C Chg Pump amps go to "0" and green light lit.)	S / U
*14. Close CHG PUMP RECIRC TO RCS COLD LEGS valve Q1E21MOV8885	Handswitch for MOV8885 taken to CLOSE. (CUE: MOV 8885 green light lit, valve is closed.)	S / U
*15. Open CHG PUMP RECIRC TO RCS HOT LEGS valve Q1E21MOV8884	Handswitch for MOV8884 taken to OPEN. (CUE: MOV 8884 red light lit, valve is open.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*16. Start 1C HHSI Pump	Handswitch for 1C HHSI Pump taken to START. (CUE: Pump red light lit, amps increase.)	S / U

NOTE: IF EXAMINEE OBSERVES CHG PUMP AMPS - CUE: CHG PUMP AMPS 170 AND STABLE.

17. Check RHR pumps aligned to the hot legs and at least one train HHSI aligned to cold legs OR RHR pumps aligned to cold legs and at least one train HHSI aligned to hot legs.	Alignment checked for proper RHR and HHSI line-up. (CUE: Both Trains RHR aligned to cold legs and both Trains HHSI is aligned for hot legs.)	S / U
18. Verify SI flow stable	Flow checked on FI-943, 940, HHSI Flow A (B) train recirc flow and FI-605A/605B RHR HDR flow. (CUE: FI-943 and FI-940 stable at 600 gpm. FI-605A and FI-605 stable at 2600 gpm.)	S / U

____ STOP TIME

Terminate JPM.

*** CRITICAL ELEMENTS:** Critical elements are denoted with an Asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1- ESP-1.4, Rev. 12
2. K/A: 006 EA4.07 RO-4.4 SRO-4.4

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS FOR TRANSFER TO SIMULTANEOUS COLD LEG AND HOT LEG RECIRCULATION. The conditions under which this task is to be performed are:

- a. A safety injection is in progress following a Large Break LOCA on Unit 1.
- b. Seven and one-half hours have passed since the LOCA event started.
- c. 1B Chg Pump is aligned to A Train.
- d. Directed by Shift Supervisor to align ECCS for Transfer To Simultaneous Cold Leg and Hot Leg Recirculation starting at Step 1 of ESP-1.4.

JOB PERFORMANCE MEASURES

CRO-245

TITLE: Shift Auxiliary Buses Between The Unit Auxiliary Transformer And The Startup Transformers

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 5 MIN SIMULATOR IC NUMBER: JPM IC-26

ALTERNATE PATH ___ TIME CRITICAL ___ PRA

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: C F Barefield 09/07/01
 Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Shift Auxiliary Buses Between The Unit Auxiliary Transformer And The
Startup Transformers

LESSON NO.: JPM CRO-245

DATE	PAGE	NEEDED CORRECTION (Typo, DCP, Tech. Error, Etc.)	INITIAL Developer
5/08/02	5	Updated version number for SOP-36.2	CVR
5/15/02	4 & 5	E11 & 13 Changed typo from 1A to the proper 1B & 1C where appropriate.	CVR
9/23/02	3 & 6	Take the statement out that says: "This is a pre- job brief:" in the condition section.	mgr

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to SHIFT AUXILIARY BUSES BETWEEN THE UNIT AUXILIARY TRANSFORMER AND THE STARTUP TRANSFORMERS. The conditions under which this task is to be performed are:

- a. Plant startup in progress per UOP-1.2
- b. Reactor power is 20 - 25%
- c. Unit auxiliary and startup transformers are prepared for operation per SOP-36.1
- d. Directed by Shift Supervisor to place 4160V Bus A, B, and C on their normal supply per SOP-36.2.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
1. Turn voltmeter selector switch to bus A position	Bus A selected on switch. (CUE: Voltmeter indicates 4160V.)	S / U
*2. Turn A bus synchronizing switch to the MAN position	MAN selected. (CUE: Synchronizing meter indicates 12 o'clock position, white indicating light not lit.)	S / U
*3. After 10 seconds then close the normal supply breaker	Breaker DA01 handswitch taken to close. (CUE: Breaker position indicator red light lit.)	S / U
4. Verify alternate supply breaker opens	Breaker DA07 position checked. (CUE: Breaker position indicator green light lit.)	S / U
5. Checks bus energized	Voltmeter and/or potential light for 1A bus checked. (CUE: For each one checked voltmeter indicates 4160V and potential light is on.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
6. Turn synchronizing switch to OFF	OFF selected. (CUE: Synchroscope goes to fail position.)	S / U
7. Turn voltmeter selector switch to bus B position	Bus B selected on switch. (CUE: Voltmeter indicates 4160V.)	S / U
*8. Turn bus synchronizing switch to the MAN position	MAN selected. (CUE: Synchronizing meter indicates 12 o'clock position, white indicating light not lit.)	S / U
*9. After 10 seconds then close the normal supply breaker	Breaker DB01 handswitch taken to close. (CUE: Breaker position indicator red light lit.)	S / U
10. Verify alternate supply breaker opens	Breaker DB05 position checked. (CUE: Breaker position indicator green light lit.)	S / U
11. Checks bus energized	Voltmeter and/or potential light for 1B bus checked. (CUE: For each one checked voltmeter indicates 4160V and potential light is on.)	S / U
12. Turn synchronizing switch to OFF	OFF selected. (CUE: Synchroscope goes to fail position.)	S / U
13. Turn voltmeter selector switch to bus C position	Bus C selected on switch. (CUE: Voltmeter indicates 4160V.)	S / U
*14. Turn bus synchronizing switch to the MAN position	MAN selected. (CUE: Synchronizing meter indicates 12 o'clock position, white indicating light not lit.)	S / U
*15. After 10 seconds then close the normal supply breaker	Breaker DC04 handswitch taken to close. (CUE: Breaker position indicator red light lit.)	S / U
16. Verify alternate supply breaker opens	Breaker DC01 position checked.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
	(CUE: Breaker position indicator green light lit.)	
17. Checks bus energized	Voltmeter and/or potential light for 1C bus checked. (CUE: For each one checked voltmeter indicates a 4160V and potential light is on.)	S / U
18. Turn synchronizing switch to OFF	OFF selected. (CUE: Synchroscope goes to fail position.)	S / U

STOP TIME

Terminate when synchronizing switch is selected to OFF.

CRITICAL ELEMENTS: Critical elements are denoted with an Asterisk (*) preceding the element number

GENERAL REFERENCES:

1. FNP-1- SOP-36.2 Version 8
2. K/As 062A2.01 RO-3.4 SRO-3.9
062A2.04 RO-3.1 SRO-3.4

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to SHIFT AUXILIARY BUSES BETWEEN THE UNIT AUXILIARY TRANSFORMER AND THE STARTUP TRANSFORMERS. The conditions under which this task is to be performed are:

- a. Plant startup in progress per UOP-1.2
- b. Reactor power is 20 - 25%
- c. Unit auxiliary and startup transformers are prepared for operation per SOP-36.1
- d. Directed by Shift Supervisor to place 4160V Bus A, B, and C on their normal supply per SOP-36.2.

JOB PERFORMANCE MEASURES

CRO-065 NEW

TITLE: Perform An Emergency Boration

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 5 MIN SIMULATOR IC NUMBER: IC-15 EXM

Place HOLD TAG on 1A BAT PUMP HS

ALTERNATE PATH _____ TIME CRITICAL ___ PRA

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance:	Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: 2003 NRC EXAM

Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Perform An Emergency Boration

LESSON NO.: JPM CRO-065 NEW

[illegible]

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to PERFORM AN EMERGENCY BORATION. The conditions under which this task is to be performed are:

- a. The Chemical and Volume Control System is in operation.
- b. 1A BAT pump is OOS for maintenance; 1B BAT pump is on service.
- c. The Plant is in Mode 3 at normal operating temperature.
- d. An error in the shutdown margin calculation has been discovered and it has been determined that actual shutdown margin is less than the requirement of Technical Specifications.
- e. The Shift Supervisor directs you to perform the actions of AOP-27.0.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
*1. Start 1B BAT pump.	1B BAT Pump handswitch taken to start. (CUE: Breaker indication red light lit.)	S / U
*2. Align normal emergency boration flowpath.	Handswitch for MOV-8104 taken to open. (CUE: Valve position indicator goes from green to red. FI-110A indicates 0 gpm.)	S / U
3. Verify at least one charging pump started.	Charging pump indications checked. (CUE: Pump breaker indicator red light lit; pump amps are 85, FI-122 flow is 108 gpm.)	S / U
4. Establish adequate letdown.	45 gpm LTDN orifice isolation valve 8149A and either 8149B or C verified open. (CUE: Valve position indicator red lights lit for 8149A and either 8149B or C letdown flow gpm 120.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
5. Establish adequate charging flow.	Verify charging flow greater than 40 gpm by checking FI-122. (CUE: Charging flow on FI-122 indicates 108 gpm.)	S / U
6. Verify emergency boration flow adequate.	Checks emergency boration flow greater than 30 gpm. (CUE: FI-110 indicates 0 gpm.)	S / U
<i>Alternate path starts here</i>		
7. Verify boration flow path using ATTACHMENT 1	ATTACHMENT 1 opened.	S / U
8. Verify running charging pump header valves open. (checks 1A charging pump running)	Verifies CHG PUMP SUCTION HDR ISO Q1E21MOV-8130A,8130B,8131A,8131B open. (CUE: For each item checked, valve is open, red light is lit.)	S / U
*9. Check emergency boration > 30 gpm.	Checks emergency boration flow greater than 30 gpm. (CUE: FI-110 indicates 0 gpm.)	S / U
<i>ATTACHMENT 1 alternate path starts here</i>		
*10. Align charging pump suction to RWST	Open RWST TO CHG PUMP Q1E21LCV115B and Q1E21LCV115D. Close VCT OUTLET ISO Q1E21LCV115C and Q1E21LCV115E (CUE: LCV 115B/D breaker indicator red light lit and LCV 115C/E breaker indicator Green light lit)	S / U
11. Verify CHG PUMPS TO REGENERATIVE HX MOV8107/8108 are open.	MOV 8107/8108 checked. (CUE: MOVs are open, Red light is lit.)	S / U
12. Verify only one charging line valve open, either MOV 8146 or 8147.	MOV 8146 and 8147 checked. (CUE: red light is lit on only one of the valves.)	S / U
13. Verify charging flow > 92 gpm.	Charging flow checked. (Cue: charging flow is 108 gpm.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
14. Notify the shift supervisor of boration status.	SS notified.	S / U

STOP TIME

Terminate when SS notified.

CRITICAL ELEMENTS: Critical Elements are denoted by an Asterisk (*) before the element number.

GENERAL REFERENCES

1. FNP-1-AOP-27.0, Version 8.0
2. Technical Specifications
3. K/As: 024 AA1.17 RO-3.9 SRO-3.9
024 AA2.01 RO-3.8 SRO-4.1

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS

CONDITIONS

When I tell you to begin, you are to PERFORM AN EMERGENCY BORATION. The conditions under which this task is to be performed are:

- a. The Chemical and Volume Control System is in operation.
- b. 1A BAT pump is OOS for maintenance; 1B BAT pump is on service.
- c. The Plant is in Mode 3 at normal operating temperature.
- d. An error in the shutdown margin calculation has been discovered and it has been determined that actual shutdown margin is less than the requirement of Technical Specifications.
- e. The Shift Supervisor directs you to perform the actions of AOP-27.0.

JOB PERFORMANCE MEASURES

CRO-127A

TITLE: Perform Corrective Actions In Response To A Malfunction Of The Excore NIS - Power Range Failure

PROGRAM APPLICABLE: SOT ___ SOCT ___ OLT X LOCT X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 10 MIN SIMULATOR IC NUMBER: IC-17 EXM

ALTERNATE PATH ___ TIME CRITICAL ___ PRA

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: MODIFIED FOR 2003 NRC EXAM
Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Perform Corrective Actions In Response To A Malfunction of the Excore
NIS - Power Range Failure

LESSON NO.: JPM CRO-127A

[illegible]

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to PERFORM CORRECTIVE ACTIONS IN RESPONSE TO A MALFUNCTION OF THE EXCORE NIS - POWER RANGE FAILURE. The conditions under which this task is to be performed are:

- a. The Plant is at 100% power with the ramp on hold for a calorimetric.
- b. N44 upper detector current indicator has failed low.
- c. You are to perform annunciator FB4 supplementary actions.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
1. Verify rod control is in manual.	Rod control is placed in manual. (CUE: The rods are in manual.)	S / U
*2. Defeat the rod stop bypass for N-44.	Rod stop bypass switch taken to N-44. (CUE: Selector switch in N-44 position.)	S / U
*3. Defeat the channel comparator for N-44.	N-44 selected on comparator channel defeat switch. (CUE: Annunciator FC5 has cleared.)	S / U
*4. Defeat the upper and lower detector on the detector current comparator drawer for N-44.	N-44 selected on the upper and lower detector current comparator switches. (CUE: Annunciators FB4 and FB5 cleared.)	S / U

EVALUATION CHECKLIST

ELEMENTS:

STANDARDS:

RESULTS: (CIRCLE)

- *5. Remove the control power fuses from the
"A" drawer for N-44.

Correct fuses removed. (CUE:
Annunciators FC1 & FC3 alarm &
the drawer bistable lights go dark.
Examinee should recognize that
7300 cabinet test switches are not
required to be operated for NI-44
failure.)

S / U

____ STOP TIME

Terminate after the fuses are removed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES

1. FNP-1-ARP-1.6, Version 37.0
2. FNP-2-ARP-1.6, Version 31.0
3. K/As: 015A4.02 RO-3.9 SRO-3.9
015A2.01 RO-3.5 SRO-3.9

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS

CONDITIONS

When I tell you to begin, you are to **PERFORM CORRECTIVE ACTIONS IN RESPONSE TO A MALFUNCTION OF THE EXCORE NIS - POWER RANGE FAILURE**. The conditions under which this task is to be performed are:

- a. The Plant is at 100% power with the ramp on hold for a calorimetric.
- b. N44 upper detector current indicator has failed low.
- c. You are to perform annunciator FB4 supplementary actions.

JOB PERFORMANCE MEASURES**SO-151B**

TITLE: Align SGBD From Ruptured SG To Main Condenser Bypassing The SGBD Demineralizers

PROGRAM APPLICABLE: SOT X SOCT OLT LOCTACCEPTABLE EVALUATION METHOD: PERFORM SIMULATE DISCUSSEVALUATION LOCATION: SIMULATOR CONTROL ROOM PLANTPROJECTED TIME: 45 MIN SIMULATOR IC NUMBER: N/AALTERNATE PATH TIME CRITICAL PRA**JPM DIRECTIONS:**

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:	Trainee:
Evaluator/Date:	
Overall JPM Performance: Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)	

JPM Approved: JOE POWELL 10/09/01
Supervisor - Operations Training or Operations

JP M CORRECTION FORM

LESSON TITLE: Align SGBD From Ruptured SG To Main Condenser Bypassing The SGBD Demineralizers

LESSON NO.: JPM SO-151B

DATE	PAGE	NEEDED CORRECTION (Typo, DCP, Tech. Error, Etc.)	INITIAL Developer
9/30/02	3 & 7	Take the statement out that says: This is a pre-job brief: in the condition section.	mgr

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin you are to ALIGN SGBD FROM RUPTURED SG TO MAIN CONDENSER BYPASSING THE SGBD DEMINERALIZERS PER SOP-16.1. The conditions under which this task is to be performed are:

- a. Unit 1 has experienced a tube rupture in the 'B' steam generator and ESP-3.2 is in progress.
- b. The SGBD system was previously secured per SOP-16.1.
- c. All other systems are aligned per the appropriate step.
- d. All initial conditions of SOP-16.1 have been met.
- e. The control room instructs you to align SGBD from the 'B' SG bypassing the demineralizers to the main condenser.
- f. RCV-023B has been verified closed per ESP-3.2.

NOTE: THIS JPM MAY BE PERFORMED ON EITHER UNIT. THE UNIT TWO NUMBERS ARE [BRACKETED].

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Place range selector switch in HIGH RANGE	Range selector switch taken to high range. (CUE: Range selector is in high range.)	S / U
*2. Verify demin temperature divert valve N1[2]G24V086(TCV-1150) closes	TCV-1150 green closed light lit. (CUE: TCV-1150 is closed.)	S / U
3. Open demin bypass valve N1[2]G24V026(HV-7604)	The handswitch for HV-7604 is taken to the open position. (CUE: HV-7604 is open)	S / U
*4. Set SGBD heat exchanger temperature controller HIK-1150 to maintain $\leq 190^{\circ}\text{F}$	HIK-1150 adjusted to maintain $\leq 190^{\circ}\text{F}$. (CUE: HIK-1150 properly adjusted.)	S / U
5. Open SGBD inlet filter bypass N1[2]G24V005(V-7641)	N1[2]G24V005 is turned counter-clockwise. (CUE: V005 is open.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
6 Close SGBD inlet filter inlet and outlet isolation.	N1[2]G24V007 and N1[2]G24V009V is turned clockwise. (CUE: V007 and V009 are closed.)	S / U
7. Open SGBD to main condenser.	The handswitch for HV-7607 is placed in the open position. (CUE: V013 is open.)	S / U
NOTE TO EXAMINER: IT IS PERMISSABLE TO CONTACT TB SYSTEMS OPERATOR TO VERIFY V501 OPEN IN THE FOLLOWING STEP. EXAMINEE MAY POINT OUT V501 WHEN JPM COMPLETED. (CUE: TB SYSTEMS OPERATOR HAS VERIFIED V501 OPEN.)		
8. Verify open main condenser isolation.	N1[2]G24V501 is turned counter-clockwise and verified open. (CUE: V501 is open.)	S / U
9. Set SGBD heat exchanger outlet pressure controller N1[2]G24V136(PIC-1151) to maintain differential pressure (stm/hdr inlet) ≤ 200 PSID	PIC-1151 is placed in manual by pushing the A/M button to display M. Press the SEL button until the blue dot is over the setpoint section. Use the up/down arrows to adjust the setpoint to 200 PSID. (CUE: PIC-1151 is set at 200 PSID.)	S / U
*10. On the Main Control Board, open the 'B' Steam Generator CTMT Isolation Valve	Contact control to open N1[2]G24HV-7614B. (CUE: CRO acknowledges and informs you that HV-7614B is open.)	S / U
*11. Verify open PRIP isolation valves for the 'B' SG.	Q1[2]G24HV-7698A and Q1[2]G24HV-7698B handswitches taken to close and held until the green light goes out. (CUE: HV-7698A and HV-7698B red lights are lit.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
12. Open the SGBD heat exchanger outlet auto trip valve	N1[2]G24FCV-1152 handswitch taken to open, Red open light lit and returned to auto. (CUE: FCV-1152 red open light lit and handswitch is in auto)	S / U
CUE: SHIFT SUPERVISOR REQUEST SGBD FLOW FROM 'B' SG TO BE 40 GPM.		
*13. Adjust SGBD flow control valve to proper flowrate	N1[2]G24HV1172 Controller adjusted until \approx 40 gpm indicated on flow indicator. (CUE: Flow from 'B' SG indicating 40 gpm.)	S / U
14. Place SGBD surge tank level control valve in auto and set to maintain \approx 50%	N1[2]G24LCV-1158 is placed in auto and setpoint adjusted to maintain \approx 50%. (CUE: LCV-1158 is in auto and setpoint at \approx 50%)	S / U
*15. Start SGBD pump	Check the surge tank level greater than 10% and start a pump. (CUE: Surge tank level is 60 % and SGBD pump 'A' is running)	S / U

____ STOP TIME

Terminate JPM when SGBD pump is running.

CRITICAL ELEMENTS: CRITICAL ELEMENTS ARE DENOTED BY AN ASTERISK (*) IN FRONT OF THE ELEMENT NUMBER.

GENERAL REFERENCES:

1. FNP-1-SOP-16.1, Version 22.0
2. FNP-2-SOP-16.1, Version 19.0
3. K/As: 035K1.03 RO-2.4 SRO-2.9
4. FNP-1-ESP-3.2, Version 16.0
5. FNP-2-ESP-3.2, Version 13.0

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin you are to ALIGN SGBD FROM RUPTURED SG TO MAIN CONDENSER BYPASSING THE SGBD DEMINERALIZERS PER SOP-16.1. The conditions under which this task is to be performed are:

- a. Unit 1 has experienced a tube rupture in the 'B' steam generator and ESP-3.2 is in progress.
- b. The SGBD system was previously secured per SOP-16.1.
- c. All other systems are aligned per the appropriate step.
- d. All initial conditions of SOP-16.1 have been met.
- e. The control room instructs you to align SGBD from the 'B' SG bypassing the demineralizers to the main condenser.
- f. RCV-023B has been verified closed per ESP-3.2.

JOB PERFORMANCE MEASURES

SO-311

TITLE: Shift Auxiliary Feed Pump Suction Emergency Supply

PROGRAM APPLICABLE: SOT X SOCT X OLT X LOCT X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE DISCUSS

EVALUATION LOCATION: SIMULATOR CONTROL ROOM X PLANT

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A

ALTERNATE PATH _____ TIME CRITICAL _____ PRA _____

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

[illegible]

JPM Approved: JOE POWELL 03/05/02
Supervisor - Operations Training or Operations

JPM CORRECTION FORM

LESSON TITLE: Shift Auxiliary Feed Pump Suction Emergency SupplyLESSON NO.: JPM SO-311

DATE	PAGE	NEEDED CORRECTION (Typo, DCP, Tech. Error, Etc.)	INITIAL Developer
04/04/02	3 & 5	Changed low CST level alarm to a LO-LO CST level alarm	MHL
04/08/02	TITLE	Removed the "To" from title to accurately reflect actual task	JMP
10/3/02	3 & 5	Take the statement out that says: This is a pre-job brief: in the condition section	mgr

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to SHIFT AUXILIARY FEED PUMP

SUCTION EMERGENCY SUPPLY. The conditions under which this task is to be performed are:

- a. AFW pump suctions have been shifted to service water because of CST lo-lo level alarm.
- b. A loss of 'A' TRAIN SW has occurred.
- c. You are directed by the Control Room Operator (CRO) to align 'B' TRAIN SW to the TDAFW Pump Suction per SOP-22.0.

NOTE: THIS JPM MAY BE PERFORMED ON EITHER UNIT. THE UNIT TWO NUMBERS ARE [BRACKETED].

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
1. Obtain keys for "A" and "B" Train SW supply valves to TDAFWP suction	Obtain the needed keys. Simulating or discussing key checkout satisfies this standard. (CUE: Keys Z-142, Z-159, Z-158, & Z-149 [V-42G, V-66, V-74, & V-88] have been obtained.)	S / U
*2. Unlock and open "B" TRAIN SW to TDAFWP suction valves Q1[2]N23V015D and Q1[2]N23V015C	Q1[2]N23V015D and Q1[2]N23V015C are unlocked and turned counterclockwise until opened. (CUE: V015C and V015D are open.)	S / U
*3. Unlock and close "A" TRAIN SW to TDAFWP suction valves Q1N23V015B and Q1N23V15A	Q1[2]N23V015B and Q1[2]N23V015A are unlocked and turned clockwise until closed. (CUE: V015B and V015A are closed.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
4. Notify the CRO that "B" TRAIN SW is aligned to the TDAFW Pump suction.	The control room is notified. (CUE: The CRO acknowledges.)	S / U

____ **STOP TIME**

Terminate when the control room has been notified.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-22.0, Version 46.0
2. FNP-2-SOP-22.0, Version 42.0
3. K/As: 061A1.04 RO-3.9 SRO-3.9

GENERAL TOOLS AND EQUIPMENT:

1. Keys
2. Gloves
3. Safety spanner

COMMENTS:

CONDITIONS

When I tell you to begin, you are to SHIFT AUXILIARY FEED PUMP SUCTION EMERGENCY SUPPLY. The conditions under which this task is to be performed are:

- a. AFW pump suction has been shifted to service water because of CST lo-lo level alarm.
- b. A loss of 'A' TRAIN SW has occurred.
- c. You are directed by the Control Room Operator (CRO) to align 'B' TRAIN SW to the TDAFW Pump Suction per SOP-22.0.

JOB PERFORMANCE MEASURES **FORMAL OJT REQUIRED PRIOR TO EVALUATION**

SO-344

TITLE: Start Up An Instrumentation Inverter

PROGRAM APPLICABLE: SOT X SOCT X OLT X LOCT

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE DISCUSS

EVALUATION LOCATION: SIMULATOR CONTROL ROOM X PLANT

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A

ALTERNATE PATH TIME CRITICAL PRA

JPM DIRECTIONS:

1. Access to tools, equipment, and references normally used to perform this task are allowed.
2. During initial training, it is encouraged that questions be asked as part of this OJT process to assess the extent of trainee knowledge related to this task.
3. If the trainee is significantly deficient in knowledge or does not adhere to management expectations as outlined below, then a re-examination of the JPM is warranted.
 - Potential physical harm could occur to the trainee or others
 - Potential damage to equipment could occur
 - A procedure step is missed in a continuous use procedure
 - Significant margin to reactor safety is eroded
 - Wrong unit/train/component is potentially operated
4. All unsuccessful attempts, deficiencies, and other comments must be documented in the space below and forwarded to a Training Administrative Assistant for tracking.

Trainer/Date:		Trainee:	
Evaluator/Date:			
Overall JPM Performance:	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>	
Evaluator Comments (attach additional sheets if necessary)			

JPM Approved: JOE POWELL 08/24/01
Supervisor - Operations Training or Operations

JPM CORRECTION FORMLESSON TITLE: Start Up An Instrumentation InverterLESSON NO.: JPM SO-344

DATE	PAGE	NEEDED CORRECTION (Typo, DCP, Tech. Error, Etc.)	INITIAL Developer
10/3/02	3 & 6	Take the statement out that says: This is a pre-job brief: in the condition section	mgr

STANDARDS

Apply the following criteria during the performance of this JPM:

- a. The task must be performed using the appropriate plant procedures, Technical Specifications, or other references.
- b. All critical elements must be performed, simulated, or discussed without error, prompting or unnecessary queuing.
- c. Management expectations regarding human performance tools (three way communications, STAR, procedural adherence, etc.), radiological controls, and industrial safety.

CONDITIONS

When I tell you to begin, you are to START UP AN INSTRUMENTATION INVERTER. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1.
- b. Instrumentation inverter 'A' is being returned to service after maintenance.
- c. Directed by Control Room Operator (CRO) to place instrumentation inverter 'A' in service per SOP-36.4.

NOTE: THIS JPM MAY BE PERFORMED ON EITHER UNIT. THE UNIT TWO NUMBERS, IF DIFFERENT, ARE [BRACKETED].

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
1. Verify the battery input breaker OPEN	Breakers verified open. (CUE: Battery input breaker is open.)	S / U
2. Verify the inverter output breaker OPEN	Breaker is verified open. (CUE: Inverter output breaker is open.)	S / U
3. Verify closed respective inverter bypass AC supply breaker	In 120VAC Distribution Panel 'G' breaker #8 [#7] is verified closed. (CUE: Breaker #8 [#7] is closed.)	S / U
*4. Close the inverter 'A' DC supply breaker	LA-10 handswitch is taken to the closed position. (CUE: The indicating light changed from green to red and the mechanical indicator indicates closed. LA-10 is closed.)	S / U
*5. Close battery input breaker	The battery input breaker is taken to 'ON'. (CUE: Battery input breaker is closed.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*6. Close inverter output breaker	The inverter output breaker is taken to 'ON'. (CUE: Inverter output breaker is closed.)	S / U
*7. Verify that the inverter is in sync with the bypass source	The Inverter 'In Sync' light should be lit and the 'Out Of Sync' light should be out. (CUE: In SYNC lamp is lit and OUT OF SYNC lamp is not.)	S / U
*8. Transfer the MANUAL BYPASS switch to the NORMAL OPERATION position	The Manual Bypass Switch is transferred. (CUE: The Manual Bypass Switch is in the "NORMAL OPERATION" position.)	S / U
*9. Press the INVERTER TO LOAD pushbutton	The INVERTER TO LOAD pushbutton is depressed. (CUE: The INVERTER POWERING LOAD lamp is lit.)	S / U
10. Report to the CRO that inverter 'A' has been placed in service	The CRO is notified. (CUE: The CRO acknowledges.)	S / U

STOP TIME

Terminate after Control Room Operator is informed that inverter A has been placed in service.

* **CRITICAL ELEMENTS:** Critical Elements are denoted with an asterisk (*) preceding the element number.

GENERAL REFERENCES:

1. FNP-1-SOP-36.4, Rev/Version 48.0
2. FNP-2-SOP-36.4, Rev/Version 35.0
3. K/As: 062A2.03 RO-2.9 SRO-3.4
 057AA1.01 RO-3.7 SRO-3.7

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **START UP AN INSTRUMENTATION INVERTER**. The conditions under which this task is to be performed are:

- a. The Plant is in Mode 1.
- b. Instrumentation inverter 'A' is being returned to service after maintenance.
- c. You are directed by Control Room Operator (CRO) to place instrumentation inverter 'A' in service per SOP-36.4.