

Final Submittal

(Blue Paper)

1. Administrative Questions/JPMs
2. In-plant JPMs
3. Control Room JPMs (simulator JPMs)

FARLEY EXAM 2000-301

50-348, 50-364/2000-301

MAY 8 - 18, 2000

2000-301 \ Final \ 26 JPM Exams

JOB PERFORMANCE MEASURES

CRO-035

TITLE: Perform RCS Water Inventory Balance

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: Joel L. Deavers 5/21/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to PERFORM RCS WATER INVENTORY BALANCE. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1 at 100% power
- b. All initial conditions have been met
- c. RCDT is operable
- d. I&C support is not required for PRT level measurement
- e. The Shift Supervisor directs you to perform an RCS leakage test for Unit 1 per STP-9.0

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
1. Align the RCDT		
a. Check RCDT level in the normal operating band	Direct System Operator to check RCDT level. (CUE: RCDT level in normal range.)	S / U
b. Check RCDT pump disch line ISO Q1G21HV7136 closed	HV-7136 closed on MCB. (CUE: Green light illuminated on HV-7136.)	S / U
c. Check RCDT LCV Q1G21LCV1003 closed	LCV-1003 closed on MCB. (CUE: Green light illuminated on LCV-1003.)	S / U
2. Read and record initial readings. (CUE: Provide the following readings to the examinee as the indicators are referred to on the MCB.)	Readings recorded on Data Sheet	S / U
TI-453 = 653°F	LI-459 = 51%	
PI-455 = 2235 psig	LI-460 = 53%	
PI-456 = 2240 psig	LI-461 = 52%	
PI-457 = 2230 psig	LI-115 = 40%	
TI-412D = 576°F	LI-1003 = 30%	
TI-422D = 575°F	LI-470 = 70%	
TI-432D = 576°F	FIS-168 = 065663	

EVALUATION CHECKLIST

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

NOTE: THE 1 HOUR MAY BE WAIVED AS LONG AS THE EXAMINEE STATES AT LEAST 1 HOUR OF ELAPSED TIME IS PREFERRED.

- | | | | |
|-----|---|--|-------|
| 3. | Verify that RCS temperature and pressure and pressurizer temperature are same as recorded for initial reading | RCS temperature and pressure and pressurizer temperature verified to be same as initially recorded.
(CUE: Provide the following readings to the examinee as the indicators are referred to on the MCB.) | S \ U |
| | | TI-453 = 653°F LI-459 = 51%
PI-455 = 2235 psig LI-460 = 53%
PI-456 = 2240 psig LI-461 = 52%
PI-457 = 2230 psig LI-115 = 32%
TI-412D = 576°F LI-1003 = 30%
TI-422D = 575°F LI-470 = 71%
TI-432D = 576°F FIS-168 = 065663 | |
| 4. | Read and record final readings | Readings recorded on Data Sheet after 1 hour has elapsed. | S / U |
| *5. | Calculate identified and unidentified leakages | Identified = 1.72 ± 0.1 gpm
Unidentified = 0.15 ± 0.1 gpm | S / U |

NOTE: THE ABOVE STANDARDS ARE BASED ON TABLES FOUND IN THE TANK CURVE BOOK. IF THE ACTUAL CURVES ARE USED THEN THE FOLLOWING VALUES WILL BE THE STANDARD: TOTAL LEAKAGE = 1.87 gpm; IDENTIFIED LEAKAGE = 1.67 ± 0.4 gpm; UNIDENTIFIED LEAKAGE = 0.2 ± 0.4 gpm

- | | | | |
|-----|---|--|-------|
| *6. | Assess calculated leakage values are within acceptance criteria limits | Acceptance criteria limits are:
Unidentified leakage ≤ 1 gpm;
Identified leakage ≤ 10 gpm | S / U |
| 7. | Return the RCDT system to normal per SOP-50.0, ("A" Man directed by Operator) | "Radman" directed to return the RCDT system to normal. (CUE: "A" Man acknowledges instruction, reports RCDT aligned per SOP-50.0.) | S / U |
| 8. | Check unidentified leakage less than 0.097 gpm per Data Sheet 1 | Unidentified leakage determined to be greater than 0.097 gpm | S / U |

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
9. Check primary-to-secondary leakage within limits per STP-748	Chemistry contacted. (CUE: SG A < 1 gpd, SG B < 1 gpd, SG C < 1 gpd.)	S / U
*10. Verify the primary-to-secondary leakage rate is acceptable	Acceptance criteria limits are: ≤ 140 gpd through any one SG ≤ 420 gpd total through all SGs	S / U

STOP TIME

Terminate when acceptance criteria for primary-to-secondary leakage rate is determined to be met.

* **CRITICAL ELEMENTS:** 7, 8, 12

Should be 5, 6, 10

GENERAL REFERENCES

- | | |
|------------------------|---------------|
| 1. STP-9.0 | |
| 2. K/As: 000009 EA2.33 | RO-3.3SRO-3.8 |

GENERAL TOOLS AND EQUIPMENT

1. Calculator
2. Uncontrolled copy of STP-9.0
3. Tank Curve Book

COMMENTS

CONDITIONS

When I tell you to begin, you are to PERFORM RCS WATER INVENTORY BALANCE. The conditions under which this task is to be performed are:

- a. The plant is in Mode 1 at 100% power
- b. All initial conditions have been met
- c. RCDT is operable
- d. I&C support is not required for PRT level measurement
- e. The Shift Supervisor directs you to perform an RCS leakage test for Unit 1 per STP-9.0

FARLEY NUCLEAR PLANT
SURVEILLANCE TEST PROCEDURE

FNP-1-STP-9.0

RCS LEAKAGE TEST

S
A
F
E
T
Y

R
E
L
A
T
E
D

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

Approved:

C. D. COLLINS
Operations Manager

Date Issued 3-17-00

FARLEY NUCLEAR PLANT
SURVEILLANCE TEST REVIEW SHEET

SURVEILLANCE TEST NO. FNP-1-STP-9.0	TECHNICAL SPECIFICATION REFERENCE SR 3.4.13.1
TITLE RCS LEAKAGE TEST	MODE(S) REQUIRING TEST: 1, 2, 3, 4
<u>TEST RESULTS (TO BE COMPLETED BY TEST PERFORMER)</u>	
PERFORMED BY _____ DATE/TIME _____	
COMPONENT OR TRAIN TESTED (if applicable) _____	
<input type="checkbox"/> ENTIRE STP PERFORMED	<input type="checkbox"/> FOR SURVEILLANCE CREDIT
<input type="checkbox"/> PARTIAL STP PERFORMED:	<input type="checkbox"/> <u>NOT</u> FOR SURVEILLANCE CREDIT
REASON FOR PARTIAL: _____	
TEST COMPLETED:	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory
<input type="checkbox"/> The following deficiencies occurred: _____ _____	
<input type="checkbox"/> Corrective action taken or initiated: _____ _____ _____	
<u>SHIFT FOREMAN REVIEW</u>	
REVIEWED BY _____ DATE _____	
<input type="checkbox"/> Procedure properly completed and satisfactory	
<input type="checkbox"/> Comments: _____	

SYSTEMS PERFORMANCE GROUP SCREENING (IF APPLICABLE)	SCREENED BY _____ DATE _____ REVIEWED BY _____ DATE _____
<input type="checkbox"/> Satisfactory and Approved	
<input type="checkbox"/> Comments: _____	

TABLE OF CONTENTS

<u>Procedure Contains</u>	<u>Number of Pages</u>
Body.....	5
Data Sheet 1	1
STRS.....	1

FARLEY NUCLEAR PLANT
UNIT 1
SURVEILLANCE TEST PROCEDURE STP-9.0

RCS LEAKAGE TEST

1.0 Purpose

To determine identified and unidentified reactor coolant system leakage.

2.0 Acceptance Criteria

2.1 Unidentified leakage is ≤ 1 gpm.

2.2 Identified leakage ≤ 10 gpm.

2.3 Primary-to-secondary leakage is ≤ 150 gpd through any one SG and ≤ 450 gpd total leakage through all SGs.

NOTE: Asterisked steps (*) are those associated with Acceptance Criteria.

3.0 Initial Conditions

- ___ 3.1 The revision of this procedure has been verified to be the current revision and correct unit for the task. (OR 1-98-498)
- ___ 3.2 Reactor power and reactor coolant temperature should be stabilized and held constant for 1 hour prior to and during the test. (In Mode 3 or 4 not required until 12 hours of steady state operation.)
- ___ 3.3 The pressurizer level and pressure control systems are in automatic or are in manual control and are stable.
- ___ 3.4 The level of the VCT is near the top of the normal operating band.
- ___ 3.5 The CVCS system is aligned per FNP-1-SOP-2.1A, CHEMICAL & VOLUME CONTROL SYSTEM.
- ___ 3.6 Notify Chemistry department of the performance of the test to ensure that no sampling of the RCS or CVCS will be done during this test.

- _____ 3.7 IF required for step 5.2, THEN ensure the following instrument is in calibration.
- Calibrated Digital Voltmeter FNP I.D. # _____
Cal Due Date _____

- _____ 3.8 The zinc addition system (ZAS) has been secured for one hour prior to the test, and will remain secured during the test.

4.0 Precautions and Limitations

- 4.1 No sampling of the RCS or CVCS shall be done during this test.
- 4.2 Any of the following will render this test void:
- 4.2.1 Emergency boration
 - 4.2.2 Diversion of letdown to the recycle holdup tanks.
 - 4.2.3 Make up from any source which does not go through the boric acid blender.
 - 4.2.4 Boration of less than 10 gpm, due to Batch Integrator counter inaccuracies.
 - 4.2.5 Operation of ZAS
- 4.3 Pressurizer temperature and RCS temperature and pressure final values must equal initial values.
- 4.4 IF possible, THEN normal makeup to the VCT should be avoided to reduce measurement inaccuracy.
- 4.5 IF the RCDT or PRT level indication is invalid, THEN use 0 gpm for RCDT or PRT portion of identified leakage unless leakage into the RCDT or PRT is to be determined using another approved method.
- 4.6 IF ZAS system is rendered incapable of injecting solution per a tagging order, THEN steps 3.8 and 5.13 may be marked N/A.

5.0 Instructions

_____ 5.1 The RCDT system is aligned as follows:

- RCDT level is in the normal operating band
- RCDT PUMPS DISCH LINE ISO Q1G21HV7136 is closed
- RCDT LCV Q1G21LCV1003 is closed

NOTE: The following step is only required if increased accuracy is necessary for determination of leak rate into PRT or the MCB PRT level indicator has a problem.

 / 5.2 IF required, THEN have I&C connect a calibrated digital voltmeter
I&C/I&C across the output of LQY-470, location C5-231.

NOTE:

- Batch Integrator readings will be taken prior to and at the conclusion of each make up evolution.
- Record any verified Steam Generator Tube Leakage on data sheet 1.
- If the plant computer is available it is the preferred method for attaining PRZR LVL and VCT LVL data for data sheet 1.

_____ 5.3 Read and record initial readings on the data sheet.

NOTE: A time span of at least 1 hour should be used during normal plant operations, however if plant conditions dictate, a shorter time span may be used. (30 minutes minimum) IF a shorter time span is used, THEN readings must be taken with extreme exactness or the computer used where possible to preclude sacrificing accuracy.

_____ 5.4 After the desired time span (normally 1 hour) verify that RCS temperature and pressure and pressurizer temperature are the same as recorded for initial readings.

_____ 5.5 IF coolant temperature and pressure and pressurizer temperature are the same as recorded for initial values, THEN record final values on data sheet 1, mark step 5.6 as N/A and proceed to step 5.7, IF NOT, proceed to step 5.6.

- 5.6 IF any parameters in step 5.4 have changed, THEN proceed as follows:
 - 5.6.1 Adjust parameter to initial reading value.
 - 5.6.2 Allow conditions to stabilize (approximately 15 minutes).
 - 5.6.3 Record final values on the data sheet.
- *5.7 Calculate identified and unidentified leakages using the information recorded and the formula on the data sheet.

ACCEPTANCE CRITERIA: Unidentified leakage ≤ 1 gpm. Identified leakage ≤ 10 gpm.

- 5.8 IF unidentified leakage is more negative than -0.2, THEN repeat FNP-1-STP-9.0, RCS LEAKAGE TEST.
- 5.9 Return the RCDT system to normal per FNP-1-SOP-50.0, LIQUID WASTE PROCESSING SYSTEM, section 4.1.2.
- *5.10 Verify-the-primary to secondary leakage rate is acceptable by one of the following methods.

NOTE: The value of 0.1 gpm in the following step is based on the following relationships:

150 gpd is equal to 0.1042 gpm
450 gpd is equal to 0.3125 gpm

- 5.10.1 Unidentified leakage is less than 0.1 gpm per Data Sheet 1.

ACCEPTANCE CRITERIA: Unidentified leakage is < 0.1 gpm.

NOTE: Verifying that FNP-1-STP-748 is current and satisfactory ensures that Primary-to-Secondary leakage is ≤ 150 gpd through any one SG and ≤ 450 gpd total leakage through all SGs.

- 5.10.2 Primary-to-Secondary leakage is within the limits per FNP-1-STP-748, SECONDARY COOLANT SYSTEM GROSS ACTIVITY DETERMINATION.

ACCEPTANCE CRITERIA: Primary to secondary leakage is ≤ 150 gpd through any one SG and ≤ 450 gpd total leakage through all SGs.

- _____ 5.11 IF any abnormal leakage is detected, THEN perform an inspection and evaluation to identify and document the leakage path(s), any corrective actions, and the affects of the leakage.
- _____ 5.12 IF applicable, THEN have I&C remove the calibrated digital voltmeter installed
I&C/I&C in step 5.2.
- _____ 5.13 IF applicable, THEN have Chemistry restart the zinc addition system.

6.0 References

- 6.1 P&ID D-175037 - RCS, sheet 2.
- 6.2 P&ID D-175039 - CVCS, sheet 2.
- 6.3 P&ID D-175042 - Waste Processing System, sheet 1.

DATA SHEET 1
RCS LEAKAGE

INSTRUMENT	NAME	INITIAL	FINAL	FINAL - INITIAL
MCB (Computer)	TIME			A = Minutes
TI 453 (TE0453)	LIQ PRZR TEMP	°F	°F	No Change Allowed
PI 455, 456, 457 (PT0455, 0456, 0457 or PC0482)	PRZR PRESS (Note 3) (Avg. of Readings)	psig	psig	No Change Allowed
TI 412D, 422D, 432D (TY0412K, 0422K, 0432K or TC0484)	RCS TAVG (Note 3) (Avg. of Readings)	°F	°F	No Change Allowed
LI-459, 460, 461 (LT0459, 0460, 0461 or LC 1600)	PRZR LVL (Note 2) (Avg. of Readings)	%	%	B = 49.1 × % = Gal.
LI 115 (LT0115)	VCT LVL	%	%	C = 13.99 × % = Gal.
LI 1003 Waste Pnl or BOP LS261 Pos 6	RCDT LVL	% *Gal.	% *Gal.	D = Gal. (Enter 0 if negative)
LI 470 (LT0470)	PRT LVL (Note 4)	% *Gal.	% *Gal.	E = Gal. (Enter 0 if negative)
FIS 168	TOTAL FLOW BATCH INTEG	Gal. Gal.	Gal. Gal.	F = Gal. Dilution and Blended Makeup

*From Tank Curve Book

$$\text{Total Leakage} = \frac{F - B - C}{A} = \frac{(\quad) - (\quad) - (\quad)}{(\quad)} = \text{GPM}$$

$$\text{Identified Leakage} = \frac{D + E}{A} = \frac{(\quad) + (\quad)}{(\quad)} + \text{Other leakage} = \text{GPM}$$

Other Leakage: Source	Rate (GPM)
(Note 1)	
_____	_____
_____	_____
Total Other	_____

$$\text{Unidentified Leakage} = \frac{\text{Total Leakage} - \text{Identified Leakage}}{\text{(Note 5)}} = \text{GPM}$$

ACCEPTANCE CRITERIA:	Unidentified leakage ≤ 1 gpm. Identified leakage ≤ 10 gpm.
-----------------------------	---

NOTE:	<ol style="list-style-type: none"> 1 Steam Generator Tube Leakage shall be listed as Other Leakage. 2 Density corrected. 3 IF TAVG < 530°F, THEN use: PI-402A (PT0402) 2C and 2A Loop RCS WR PRESS PI-403A (PT0403) (Avg. of Readings) TR-410 (TE0410) RCS COLD AND HOT LEG TEMP TR-413 (TE0413) (Avg. of Readings) 4 Calibrated fluke may be used for PRT level determination if deemed necessary. 5 For reporting purposes (morning report, etc.), values between -0.2 and 0 gpm shall be reported as 0 gpm. Values more negative than -0.2 gpm indicate a potential problem and therefore shall be reported as is.
--------------	--

Facility: _____

Date of Examination: _____

Examination Level (circle one): **RO**

Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Parameter Verification	JPM CRO-410A 035
	Procedures	Q1
		Q2
A.2	Refueling	Q1
		Q2
A.3	ALARA	Q1
		Q2
A.4	E-Plan	JPM SS-059, operate ENS

APPLICANT:
RO OPERATING TEST NUMBER: R

EXAMINER:

RO
A.1.2
A.2

QUESTION NO. A.1 Q1
K/A 2.1.20 Ability to execute procedure steps [4.3/4.2]

QUESTION:

Without additional operator assistance, the Unit Operator (UO) is performing STP 80.1, Diesel Generator 1-2A Operability Test. The UO has reached step 5.2.3.

Describe the procedure usage, annotation of step completion, and information recording process that is required per Farley Station Management while performing steps 5.2.3 through 5.3. The DG was not previously run.

(ALLOW APPLICANT TO REFER TO A CONTROLLED COPY OF STP 80.1.)

ANSWER:

The procedure is a continuous use procedure, as noted on the title page. A continuous use procedure requires the UO to read, then perform, then initial completion of step 5.2.3.

However, steps 5.2.4 through 5.2.6 must be reviewed and then may be performed without referring to the procedure for each step due to the rapid succession of the steps and the need to monitor and control stop watches. When the DG has stabilized, the UO should initial the performance blanks and record the information of step 5.2.6.

Step 5.2.7 through step 5.3 must be performed one at a time; read before performing, perform, then initial completion, then perform the next step.

REFERENCE:

FNP-0-AP-6, Section 5.2.2.1 (excerpt below)

- 5.2.2.1.3 MUST read each step prior to performing it UNLESS this is not practicable (e.g., procedure requires steps to be performed in rapid succession) OR the steps are designated as "Immediate Action," in which case the steps MAY be performed from memory.
- 5.2.2.1.4 MUST initial each step that requires a signoff after performing it AND before performing further steps UNLESS the procedure specifically permits an exception to this, or UNLESS this is not practicable (e.g. procedure requires steps to be performed in rapid succession).
- 5.2.2.1.5 MUST perform the steps in the sequence given, UNLESS the procedure permits an exception to this.

COMMENTS:

APPLICANT:
RO OPERATING TEST NUMBER: R

EXAMINER:

EXCERPT STP 80.1

_____ 5.2.3 IF the diesel generator has NOT just been ran, THEN pre-lube the diesel generator, 10 minutes minimum.

NOTE: Step 5.2.4 may be initialed after completion of step 5.2.5.

_____ 5.2.4 Depress the DIESEL START pushbutton and observe the DIESEL CRANKING light illuminated.

_____ 5.2.5 WHEN DIESEL AT SYN SPEED light illuminates, THEN release the DIESEL START pushbutton.

_____ *5.2.6 Record the time from depressing start pushbutton to diesel speed indicator reaching 514 rpm {Deleted in ITS}, voltage reaching ≥ 3.952 kV and frequency reaching ≥ 57 Hz {60 Hz}.

Stopwatch Time to ≥ 57 Hz {60 Hz} = _____

Stopwatch Time to 514 rpm {Deleted in ITS} = _____

Stopwatch Time to ≥ 3.952 kV = _____

SST Time = _____

Time Started _____

ACCEPTANCE CRITERIA: Diesel reaches 514 rpm {Deleted in ITS}, ≥ 57 Hz { ≥ 60 Hz} and ≥ 3.952 kV in ≤ 12 seconds.

_____ 5.2.7 Adjust the generator voltage to 4160V or to match system voltage by positioning the VOLTAGE ADJUST switch to RAISE or LOWER as required.

_____ 5.2.8 Adjust the generator frequency to 60 Hz or to match system frequency by positioning the GOVERNOR MOTOR switch to RAISE or LOWER as required.

_____ 5.3 IF the time to reach 514 rpm {Deleted in ITS}, 57 Hz {60 Hz}, OR 3.952 kV exceeds 10.5 seconds for a single air header start, OR 9.5 seconds for a dual air header start, THEN generate a priority 2 Deficiency Report to have maintenance investigate the slow starting time.

_____ 5.4 Turn SST power switch to OFF.

APPLICANT:

EXAMINER:

RO OPERATING TEST NUMBER: R

QUESTION NO. A.1 Q2

K/A 2.1.21 Ability to obtain and verify controlled procedure copy. [3.1/3.2]

QUESTION:

Surveillance Test Procedure (STP), FNP-0-STP-80.1, Diesel Generator (DG) 1-2A Operability Test is being performed on Unit 1 following maintenance.

The operator at the controls (OATC) is coordinating the STP from the control room, and the system operator (SO) is performing the local steps. A working copy of the procedure has been made for the SO. (An excerpt of some of the STP 80.1 steps to be performed by the SO is attached for reference.)

- (a) During the performance of STP 80.1, how is the completion of each step of the STP recorded by the OATC and the SO?
- (b) At the completion of the STP, describe how the OATC's copy and the SO's copy of the STP are used to develop a final document package that is submitted as a record of the STP.

ANSWER:

- (a) The OATC will maintain the master copy of the STP because he/she is coordinating the procedure. The OATC will initial each step that he/she performs and will initial or annotate each step as it is performed by the SO. The OATC will record the information reported by the SO on the Master as each step is performed.
The SO will initial each step and record the necessary information on the working copy (and report the completion of the step and the required information to the OATC).
- (b) The SO will transfer his/her initials to the Master document by initialing the Master STP for each of the steps that he/she performed. Only the Master will be submitted as the permanent record of the STP, the working copy will be discarded.

REFERENCE: AP-16, Section 5.2

During some plant evolutions it may be beneficial to utilize multiple copies of a procedure so that participating individuals have direct access to procedural guidance for reference. Under such circumstances one procedure will be designated as the 'master' for purposes of documenting procedural step completion. As steps are completed the individual coordinating the procedure may initial or annotate the master copy in order to maintain an integrated status of procedure completion. Actual initials will be transferred subsequent to performance of steps or test. When using multiple procedure copies to coordinate performance of an evolution it is the responsibility of the individual coordinating the test to ensure all individuals with copies of the procedure are performing their procedural actions using the most current procedural guidance.

COMMENTS:

APPLICANT:
RO OPERATING TEST NUMBER: R

EXAMINER:

QUESTION NO. A.2 Q1

K/A 2.2.30 Knowledge of RO duties in the control room during fuel handling. [3.5/3.3]

QUESTION:

Fuel loading is in progress on Unit 2. Initial NI indications prior to the commencement of fuel loading were:

NI-31: 5 cps
NI-32: 7 cps

As fuel loading is nearing completion, the OATC observes the NI's during the sequential loading of two fuel bundles. The OATC recorded the following NI indications after the readings had stabilized and reported these to the Reactor Engineer. The Reactor Engineer reports to the following results to the Control Room:

<u>After bundle 301</u>			<u>After bundle 302</u>		
NI-31:	9 cps	1/M = 0.55	NI-31:	11 cps	1/M = 0.45
NI-32:	17 cps	1/M = 0.411	NI-32:	19 cps	1/M = 0.36

Describe the reactor core condition and the response, if any, of the OATC.

ANSWER:

After bundle 302:

NI-31: 11 cps 1/M = 5/11 = 0.45
NI-32: 19 cps 1/M = 7/19 = 0.36

The margin to core criticality is below expectations during the course of a fuel load because 1/M, or Inverse Count Rate Ratio is 0.36, which is less than the 0.4 requirement of UOP-4.1; therefore, notify the fuel crew and the Refueling SRO that fuel movement must be stopped.

REFERENCE: UOP-4.1, Step 3.6

With the exception of a core unload, the Inverse Count Rate Ratio will be monitored during all phases of the fuel shuffle/movement. At any time should the ICRR fall below 0.4, the shuffle/movement will be stopped, the situation analyzed and the Refueling SRO notified prior to proceeding.

COMMENTS:

APPLICANT:
RO OPERATING TEST NUMBER: R

EXAMINER:

QUESTION NO. A.2 Q2

K/A 2.2.28 Knowledge of new and spent fuel movement procedures. [2.6/3.5]

QUESTION:

Fuel loading is in progress on Unit 2. While the refueling crew is picking up the fuel bundle from the transfer tube, the NI's indicate:

NI-31: 5 cps and stable
NI-32: 10 cps and stable

As the fuel is being loaded into the core, the OATC observes the following:

NI-31: increases to 30 cps
NI-32: increases to 18 cps

Communications with the Reactor side fuel transfer system control panel has been lost.

Describe any required actions that the OATC should ensure are taken, and explain why the actions are taken?

ANSWER:

Fuel movement should be suspended because communications with the reactor side fuel transfer system control panel has been lost. (Fuel movement must be suspended until communications can be restored and permission of Senior Reactor Operator in charge of fuel handling.)

NI-31 has increased by a factor of 6, which is more than a factor of two and greater than a factor of 5.

NI-32 has increased by a factor of 1.8, which is less than a factor of two.

Therefore, fuel movement should be stopped if communications had not been lost.

REFERENCE: UOP-4.1, Steps 2.14 and 3.3

Per UOP Step

2.14 The direct communications system between the below listed stations is verified available for use within one hour prior to fuel movement.

2.14.1 Control Room

2.14.2 Manipulator Crane

2.14.3 Spent fuel pool side fuel transfer system control panel.

2.14.4 Reactor side fuel transfer system control panel.

Per UOP 4.1, Step:

3.3.1 An unexpected increase in the count rate by a factor of 2 on both channels (N31-N32) or by a factor of 5 on one channel.

COMMENTS:

APPLICANT:
RO OPERATING TEST NUMBER: R

EXAMINER:

QUESTION NO. A.3 Q1
K/A 2.3.2 Knowledge of facility ALARA program [2.5/2.9]

QUESTION:

Plant conditions:

- Unit 2 has just been shutdown.
- A cooldown is in progress.
- The operating shift is placing RHR in cooldown.
- RHR pump 1A is being isolated for repairs to leaking seal.
- RHR pump 1A ran for 15 minutes in the cooldown lineup.
- The operating shift is aligning RHR pump 1B for cooldown.

- (a) Other than time, distance, and shielding, describe two (2) additional activities that FNP normally uses in order to achieve ALARA doses while Operations personnel perform operations outside of the control room.
- (b) Again, other than time, distance, and shielding, describe two (2) additional activities FNP normally uses to reduce the radiation exposure of the maintenance team.

ANSWER:

- (a) Operators must be alert to changing radiological conditions due to changing lineups which result in radioactive primary coolant flow through RHR piping. (25%)
Pre-job briefings may be held to plan and prepare operators to coordinate the evolution in a timely manner (and to identify low radiation areas if equipment operators must wait for short periods of time near a significant radiation source, as well as other practices.) (25%)
- (b) Flushing of the RHR pump to be removed from service is an effective way of removing and reducing the radioactive particulate in the pump or its associated valves and piping. (25%)
Pre-job review to assess effective radiation controls and job performance methods and Pre-job briefings to prepare the maintenance team. (25%)

REFERENCE:

G004/401 Radiation Worker Training/Retraining, pg 24

COMMENTS:

ARE THESE THE ONLY ACCEPTABLE ANSWERS?

APPLICANT:
RO OPERATING TEST NUMBER: R

EXAMINER:

QUESTION NO. A.3 Q2
K/A 2.3.4 Knowledge of radiation exposure limits and contamination control including permissible levels in excess of those authorized. [2.5/3.1]

QUESTION:

An operator has frequently worked in an airborne radioactivity area without respiratory protection. The working conditions were as follows:

- 750 hours worked in the area this year.
- Airborne radioactivity was constantly at 1.5 DAC.
- This year, CEDE for the operator has been only from work in this area.
(Assume this is the only dose received this year)

Determine the maximum number of additional hours that the operator can work in this area, under the same conditions, without exceeding the Annual Limit on Intake (ALI)? (Assume appropriate approvals were obtained for the work.)

ANSWER:

$750 \times 1.5 = 1125$ DAC-HRs received. ALI equivalent is 2000 DAC-HRs. $2000 - 1125 = 875$ DAC-HRs remaining. $875 \text{ DAC-HRs} / 1.5 \text{ DAC} = 583 \text{ hrs}$

REFERENCE:

OPS 304/310, pg 3

COMMENTS:

JOB PERFORMANCE MEASURES

SS-059

TITLE: Operate The NRC ENS

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 2 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: _____
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to OPERATE THE NRC ENS. The conditions under which this task is to be performed are:

- a. A reactor trip on Unit 1 has occurred one hour ago due to the trip of both SGFPs.
- b. Instructed by the Unit 2 Shift Supervisor to make notification to the NRC using Figure 1 of FNP-0-EIP-8.0.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
1. Lift receiver and check for dial tone	Receiver lifted and dial tone verified. (CUE: Dial tone is heard.)	S / U
*2. Dial first number listed on sticker of ENS phone	301-816-5100 dialed. (CUE: Number dialed is busy.)	S / U
*3. Dial second number listed on sticker of ENS phone	301-951-0550 dialed. (CUE: "NRC Operations Center, John Smith".)	S / U
*4. Inform NRC of the reactor trip Using Figure 1 of FNP-0-EIP-8.0	NRC notified. (Cue; none.)	S / U

_____ STOP TIME

Terminate JPM when NRC is informed that a reactor trip has occurred on Unit 1.

*** CRITICAL ELEMENTS: 2, 3, 4**

GENERAL REFERENCES:

- 1. EIP-8.3, "Communications Equipment Operating Procedures"
- 2. EIP-9.0, "Emergency Classification and Actions"
- 3. KA 2.4.15 RO-3.0 SRO-3.5
- 4. KA 2.4.43 RO-2.8 SRO-3.5

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to OPERATE THE NRC ENS. The conditions under which this task is to be performed are:

- a. A reactor trip on Unit 1 has occurred one hour ago due to the trip of both SGFPs.
- b. Instructed by the Unit 2 Shift Supervisor to make notification to the NRC using Figure 1 of FNP-0-EIP-8.0.

FIGURE 1

FARLEY NUCLEAR PLANT INCIDENT NOTIFICATION FORM

A. DATE YY MM DD ____ / ____ / ____ TIME HH MM ____ / ____ CENTRAL

B. PERSON MAKING NOTIFICATION: _____
 UNIT 1 UNIT 2 SHIFT SUPERVISOR OTHER _____
 PHONE NUMBER 1-334-899-5156 EXT _____ FTS 2000 ENS 700-221-0807

C. EVENT CLASSIFICATION (check appropriate block and list EIP paragraph #* and CFR paragraph number if available)
 10 CFR 50.72 NON-EMERGENCY NOTIFICATION _____
 10 CFR 50.9(B) SIGNIFICANT EVENT, CONDITION OR INFORMATION _____
 10 CFR 73, APP. G REPORTABLE SAFEGUARDS EVENT _____
 10 CFR 26.73 FITNESS FOR DUTY EVENT _____
 10 CFR 71 SPECIAL NUCLEAR MATERIAL CONTROL _____
 MISCELLANEOUS NOTIFICATIONS _____

D. DESCRIPTION:
 WHAT HAPPENED: _____

 CAUSE: _____

 CONSEQUENCES: _____

 ACTIONS: _____

 CURRENT STATUS: _____

E. AGENCIES NOTIFIED PERSON NOTIFIED / TIME

<input type="checkbox"/> ALABAMA RADIATION CONTROL DIVISION	_____ / _____
<input type="checkbox"/> HOUSTON COUNTY EMA	_____ / _____
<input type="checkbox"/> GEORGIA EMA	_____ / _____
<input type="checkbox"/> EARLY COUNTY EMA	_____ / _____
<input type="checkbox"/> NRC OPERATIONS CENTER	_____ / _____
<input type="checkbox"/> NRC RESIDENT	_____ / _____
<input type="checkbox"/> EMERGENCY DIRECTOR	_____ / _____
<input type="checkbox"/> RECOVERY MANAGER	_____ / _____
<input type="checkbox"/> OPERATIONS MANAGER	_____ / _____
<input type="checkbox"/> EMERGENCY SUPPORT MANAGER	_____ / _____
<input type="checkbox"/> OTHER: _____	_____ / _____

F. HAS A PRESS RELEASE BEEN MADE OR PLANNED? YES NO
 *Paragraph number is for plant reference only

Facility: _____

Date of Examination: _____

Examination Level (circle one): **SRO**

Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shutdown Safety	JPM CRO-New
	Shift Staffing	Q1
		Q2
A.2	Refueling	JPM SO-139C
A.3	ALARA	Q1
		Q2
A.4	EALs	JPM SS-138C
		Classify and Notify

JOB PERFORMANCE MEASURES

SRO
A.1.1

CRO-NEW

TITLE: Conduct A Safety Shutdown Assessment and Determine Time to Saturation.

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: _____
Supervisor - Operations Training

CONDITIONS

When I ask you to begin, you are to CONDUCT A SAFETY SHUTDOWN ASSESSMENT AND DETERMINE THE TIME TO SATURATION. The conditions under which this task is to be performed are:

- a. Unit 1 is in a Refueling Outage, and has been shutdown for 120 hours.
- b. A S/G level 74%; B S/G level 75%; C S/G level 10%.
- c. RCS temperature is 120°F.
- d. The RCS is at mid-loop with a FULL core.
- e. Both trains of RHR are in operation in the cooldown mode.
- f. Mid-loop integrity per STP-18.4 has been verified current.

The Shift Supervisor directs you to prepare the Core Cooling section of the SHUTDOWN SAFETY ASSESSMENT including the time to saturation.

Note: Elements 5-13 can be performed in any order.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
START TIME		
1. Locate FNP-0-UOP-4.0 General Outage Operations Guidance.	Obtain UOP-4.0 from procedure rack, or the Shift Foreman's office, or off the LAN. (CUE; none.)	S / U
2. Implement SHUTDOWN SAFETY ASSESSMENT per Appendix 1 of UOP-4.0.	Goes to Appendix 1 of FNP-UOP-4.0 (CUE; none.)	S / U
3. Obtain a copy of the SHUTDOWN SAFETY ASSESSMENT form, figure 1 of Appendix 1 of FNP-0- UOP-4.0	Locates a copy of the form. (CUE; after the form is located provide candidate with a copy of the form.)	S / U
4. Locate the Core Cooling section of the SHUTDOWN SAFETY ASSESSMENT form.	Locates core cooling section. (Cue; none.)	S / U
*5. Determine what value will be placed in the Two or More SG's available block on figure 1 of Appendix 1 of FNP-0- UOP-4.0.	Places a ZERO (0) in the block for Two or More SG's available. (Cue; none.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*6. Determines what value will be placed in the Refueling cavity \geq 23 feet block on figure 1 of Appendix 1 of FNP-0- UOP-4.0.	Places a ZERO (0) in the block for Refueling cavity \geq 23 feet block. (Cue; none.)	S / U
*7. Determines what value will be placed in the RHR subsystems available block on figure 1 of Appendix 1 of FNP-0- UOP-4.0.	Places a TWO (2) in the RHR subsystems available block. (Cue; none.)	S / U
*8. Determines what value will be placed in the RCS level \geq 126' 6" block on figure 1 of Appendix 1 of FNP-0- UOP-4.0.	Places a ZERO (0) in the RCS level \geq 126' 6" block. (Cue; none.)	S / U
*9. Locates Table A for 120°F in FNP-0- UOP-4.0.	Locates Table A for 120°F in FNP-0- UOP-4.0 (Cue; none.)	S / U
*10. Determines time to saturation based on time after shutdown and the plant being at mid-loop.	Determines time to saturation to be 0hrs. 9.2 min. (Cue; none.)	S / U
11. Fills in time to saturation on bottom of figure 1 of Appendix 1 of FNP-0- UOP-4.0.	Fills in time to saturation (0hrs. 9.2 min.) on bottom of figure 1 of Appendix 1 of FNP-0- UOP-4.0 (Cue; none.)	S / U
*12. Determine value to be placed in Time to saturation block on figure 1 of Appendix 1 of FNP-0- UOP-4.0.	Places a ZERO (0) in the time to saturation block on figure 1 of Appendix 1 of FNP-0- UOP-4.0. (Cue; none.)	S / U
*13. Totals the values for the Core Cooling subtotal block on figure 1 of appendix 1 of FNP-0- UOP-4.0.	Places a TWO (2) in the subtotal block on figure 1 of appendix 1 of FNP-0- UOP-4.0. (Cue; none.)	S / U
14. Informs Shift Supervisor that the plant is in an ORANGE condition on Core Cooling.	Shift supervisor informed of ORANGE condition and FNP-0-AOP-42.0 should considered. (Cue; Shift supervisor acknowledges that we are in an orange condition on core cooling, and has OPS Manager permission to be at mid-loop.)	S / U

____ STOP TIME

EVALUATION CHECKLIST

ELEMENTS:

STANDARDS:

**RESULTS:
(CIRCLE)**

Terminate after Shift Supervisor is Informed.

*** CRITICAL ELEMENTS: 5, 6, 7, 8, 9, 10, 12, 13**

GENERAL REFERENCES:

- 1. FNP-0-UOP-4.0 General Outage Operations Guidance.
- 2. KA G2.1.25 RO-2.8 SRO-3.1

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I ask you to begin, you are to CONDUCT A SAFETY SHUTDOWN ASSESSMENT AND DETERMINE THE TIME TO SATURATION. The conditions under which this task is to be performed are:

- a) Unit 1 is in a Refueling Outage, and has been shutdown for 120 hours.
- b) A S/G level 74%; B S/G level 75%; C S/G level 10%.
- c) RCS temperature is 120°F.
- d) The RCS is at mid-loop with a FULL core.
- e) Both trains of RHR are in operation in the cooldown mode.
- f) Mid-loop integrity per STP-18.4 has been verified current.

The Shift Supervisor directs you to prepare the Core Cooling section of the SHUTDOWN SAFETY ASSESSMENT including the time to saturation.

SHUTDOWN SAFETY ASSESSMENT (Modes 5, 6 and Defueled)

Unit: _____ Prepared By: _____ Date: _____ Time: _____

SHUTDOWN SAFETY FUNCTION/ CRITERIA (No/False=0, Yes/True=1, Use number within range when required)		CONDITION (Circle Condition)		
REACTIVITY		Subtotal	Condition	AOP
1. No Core Alterations in Progress	<u>N/A</u>	0-1	RED	41
2. Number of Boration Flow Paths (0, 1 or 2) (Reference App. 1, step 2.10)	<u>N/A</u>	2	ORANGE	41
	<u>N/A</u>	3-4	YELLOW	41
3. RCS Boron: CSD/Refueling Concentration	<u>N/A</u>	5	GREEN	
4. Source Range Instrumentation Available	<u>N/A</u>	(GREEN if Defueled)		
Reactivity Subtotal	<u>NR</u>			
CORE COOLING		Subtotal	Condition	AOP
1. Two or More SGs Available (2 pts if Two or more S/G's Available AND time to saturation ≤ 30 min.)	_____	0-1	RED	42
	_____	2-3	ORANGE	42
2. Refueling Cavity ≥ 23 Feet (142'1") Above Fuel	_____	4	YELLOW	42
3. RHR Subsystems Available (0, 1 or 2)	_____	≥5	GREEN	
4. RCS level ≥ 126' 6"	_____	(GREEN if Defueled)		
5. Time to saturation > 30 minutes	_____			
Core Cooling Subtotal	_____			
POWER AVAILABILITY		Subtotal	Condition	AOP
1. 1 "A" Train DG Available	<u>N/A</u>	0-2	RED	43
2. 1 "B" Train DG Available	<u>N/A</u>	3	ORANGE	43
3. F 4160 V BUS alignment normal	<u>N/A</u>	4-5	YELLOW	43
4. G 4160 V BUS alignment normal	<u>N/A</u>	6	GREEN	
5. 2 Feeds available to the HV Switchyard (0, 1 or 2)	<u>N/A</u>			
Power Availability Subtotal	<u>NR</u>			
CONTAINMENT		Subtotal	Condition	AOP
1. Refueling Integrity Set	<u>N/A</u>	0-1	RED	44
2. CTMT Closure Set	<u>N/A</u>	2-4	ORANGE	44
3. No Core Alterations in Progress (2 pts)	<u>N/A</u>	5-6	YELLOW	44
4. Equipment Hatch & Air Locks Closed or Capable of Being Closed on Short Notice	<u>N/A</u>	7	GREEN	
5. RCS level ≥ 126' 6" (3 pts)	<u>N/A</u>	(GREEN if Defueled)		
Containment Subtotal	<u>NR</u>			
INVENTORY		Subtotal	Condition	AOP
1. Refueling Cavity ≥ 23 Feet (142'1") Above Fuel	<u>N/A</u>	0	RED	45
2. LHSI Pump/Flowpath Available	<u>N/A</u>	1	ORANGE	45
3. HHSI Pump/Flowpath Available	<u>N/A</u>	2	YELLOW	45
4. RCS is Intact below the Reactor Vessel Flange	<u>N/A</u>	3-4	GREEN	
Inventory Subtotal	<u>NR</u>	(GREEN if Defueled)		
RCS INTEGRITY		Subtotal	Condition	AOP
1. All S/G Manways or Nozzle Dams Installed	<u>N/A</u>	0-1	ORANGE	46
2. RCS is Intact below the Reactor Vessel Flange	<u>N/A</u>	2	YELLOW	46
3. Pressurizer level < 100%	<u>NR</u>	3	GREEN	
RCS Integrity Subtotal	<u>NR</u>	(GREEN if Defueled)		
SPENT FUEL COOLING		Subtotal	Condition	
1. SFP level ≥ 23 feet (151'6") above fuel (4 pts)	<u>N/A</u>	0-4	RED	47
2. A Trn SFP Cooling	<u>N/A</u>	5	ORANGE	47
3. B Trn SFP Cooling	<u>N/A</u>	6	YELLOW	47
4. ≥ 2 SFP Makeup Sources (RWST, DW, Blender)	<u>N/A</u>	7	GREEN	
SFP Subtotal	<u>NR</u>			
Time to saturation IF core cooling were lost:		hours		minutes

FIGURE 1
Page 4 of 13

APPLICANT:
SRO OPERATING TEST NUMBER: S

EXAMINER:

SRO
A.1. 2

QUESTION NO. A.1 Q1
K/A 2.1.4 Knowledge of shift staffing requirements [2.3/3.4]

QUESTION:

Unit 1 is shutdown with all rods inserted and Tave is 475 deg F.
Unit 2 is in a refueling outage and a core offload is in progress.

Describe the minimum staff required to support Unit 1 and Unit 2.

ANSWER:

Unit 1 is in Hot Standby (Mode 3). Unit 2 is in Mode 6. The minimum required staffing is:

NLO's	3	(1 on each unit, plus one assigned to Unit 1 control room)
RO's	2	(At least one present in the control room for each unit with fuel in reactor)
SRO's	1	(At least one present in the control room while unit is in Mode 1, 2, 3, 4)
HP Tech	1	(At least one on site when fuel is in the reactor)
STA	1	

REFERENCE:
TS 5.2.2

COMMENTS:

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the FSAR;
- b. The General Manager - Nuclear Plant shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;
- c. The Vice-President shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and
- d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

- a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator shall be assigned for each control room from which a reactor is operating in MODES 1, 2, 3, or 4. With both units in MODES 5 or 6 or defueled, a total of three non-licensed operators are required.

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

- b. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room. A single SRO may fill this position for both units.
- c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.
- d. A Health Physics Technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
- e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety related functions (e.g., licensed SROs, licensed ROs, health physicists, auxiliary operators, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work a nominal 40 hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time;
2. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7 day period, all excluding shift turnover time;

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

3. A break of at least 8 hours should be allowed between work periods, including shift turnover time;
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines for the minimum shift compliment defined in Specifications 5.2.2.a and b and health physics technicians shall be reviewed and approved by the General Manager - Nuclear Plant, his designee, or by higher levels of management.

Any deviation from the above guidelines for key maintenance personnel shall be reviewed and approved by the Maintenance Manager or his designee.

- f. The Assistant General Manager - Plant Operations or the Operations Manager shall hold an SRO license.
 - g. The Shift Technical Advisor (STA) shall provide advisory technical support to the responsible SRO in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift. The same individual may fill this position for both units.
-

APPLICANT:
SRO OPERATING TEST NUMBER: S

EXAMINER:

QUESTION NO. A.1 Q2
K/A 2.1.5 Ability to locate and use procedures and directives related to shift staffing and activities. [2.3/3.4]

QUESTION:

An on-coming Unit Operator (UO) has worked the following schedule during a refueling outage.

Day:	1	2	3	4	5	6	7	8	9	10	11	12	13
Hrs:	12	8	14	8	8	8		14	8	12	12	8	12

On day 14 the UO is scheduled to work 12 hours. Due to illness of several other UO's no other operator is available to work.

Explain why the UO WILL OR WILL NOT need authorization to work the scheduled 12 hour shift on Day 14.

ANSWER:

Day 8 through 13, the UO has worked a total of 66 hours. Per AP-64, Step 5.4.3.3, maximum allowed is 72 hours in 7 day period; therefore, the UO may work a maximum of 6 hours without additional permissions. To work the 12 hour shift, the plant manager (or designee) must approve the deviation in overtime rules. A form similar to Figure 1 of AP-64 should be used for this purpose.

REFERENCE:

Per AP-64, Section 3.0 and 4.0

COMMENTS:

13. An oncoming Plant Operator has worked the following schedule:

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Hours	12	8	12	8	12	8	12	8	10	8	12	8	12	?

Which **ONE** of the following is the maximum number of hours the individual may work on day 14 without obtaining special approval assuming the operator has a minimum of 8 hours off between each shift?

- A. 8 hours
- B. 10 hours
- C. 12 hours
- D. 14 hours

ANSWER:

C

Mike, this question was to be asked on the Audit Exam. However AP 64 has been changed. The new question is similar but tests some of the changes to AP 64. If it is not acceptable I will replace it.

WORK SCHEDULES FOR PERSONNEL

1.0 Purpose

This procedure establishes the administrative policy that the use of overtime will be minimized, to the extent practicable, in the development of working schedules for all plant staff and contractors.

2.0 References

- 2.1 NUREG-0737, Section I.A.1.3, "Shift Manning."
- 2.2 F. L. Clayton to Director, NRR, February 23, 1981, "Joseph M. Farley Nuclear Plant - Units 1 and 2, Clarification of TMI Action Plan Requirements (NUREG-0737)."
- 2.3 Technical Specification for FNP-1/2, Section 6.2.2 {5.2.2}.

3.0 Overtime Guidelines

- 3.1 All employees working at FNP (SNC and contractors) fall under the guidance of this procedure.
- 3.2 Normal permanent work schedules should not include the use of overtime unless specifically approved by management.
- 3.3 Overtime should be limited to the extent practical.
- 3.4 In the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance or major plant modifications, on a temporary basis the following guidelines shall apply:
 - 3.4.1 An individual will not be permitted to work more than 16 hours straight (not including shift turnover time).

3.4.2 There will be a break of at least 8 hours (which can include shift turnover time) between all work periods.

3.4.3 Except as provided in step 3.5, an individual will not work more than (all excluding shift turnover time):

3.4.3.1 16 hours in any 24 hour period

3.4.3.2 24 hours in any 48 hour period

(To comply with this requirement, a 16 hour shift shall not be worked preceding or following a 12 hour shift.)

3.4.3.3 72 hours in any 168 hour period (7 days)

To comply with the 72 hour rule when working a 6 day 12 hour schedule requires that a minimum of 36 hours rest be allowed from the end of the last shift worked to the start of the new shift. This is especially important when changing work schedules from 6-12 hour days to 6-12 hour nights (or vice versa).

For example, a person working 6-12 hour days starting on Monday at 0700 would complete his sixth day shift at 1900 on Saturday. To comply with the 72 hour rule, he could not start a 6 day-12 hour night shift until after 0700 on the following Monday, i.e. he would report to work at 1900 on Monday. If he was scheduled to start to work at 1900 on Sunday, it would be a violation of the 72 hour rule and would not be allowed without approval and documentation as described in 3.5. (If he worked from 1900 Sunday to 0700 on Monday, he would have worked 84 hours in the 168 hour time period from 0700 on Monday to 0700 on the following Monday.)

3.4.3.4 7 consecutive days without an off-day

3.4.4 Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

- 3.5 Any deviation from the guidelines established in section 3.4 shall be authorized by the Nuclear Plant General Manager or his designee (Emergency Director {title deleted for ITS}) prior to hours being worked. Prior verbal approval by one of the authorized levels is acceptable. Such authorization and its justification shall be recorded on a form similar to Figure 1 (CAR-2440).
- 3.6 It is management's expectation that an individual **not** work more than 12 hours in any 24 hour period. Prior authorization to deviate from this expectation can be approved by the group manager or designee. Prior verbal approval is acceptable. Such authorization and its justification shall be recorded on a form similar to Figure 1 (CAR-2440).
- 3.7 The deviation from overtime guideline form (Figure 1) shall be attached to the bi-weekly payroll time records (CAR-2440).
- 3.8 If a plant operator, shift foreman, or shift supervisor has been working for more than 16 hours during periods of extended shutdown (e.g., at duties away from his normal control room functions), such individuals shall not be assigned shift duty in the control room without at least a 8-hour break preceding such an assignment except as approved in accordance with 3.5.
- 3.9 If a plant operator is required to work in excess of 8 continuous hours, in the position of Operator At-The-Controls, he shall be periodically relieved of primary duties at the control board such that periods of duty at this position do not exceed approximately 4 hours at a time.
- 3.10 The Nuclear Plant General Manager or his designee may document approval of deviations to section 3.4.4 during strikes and walk-outs.

FIGURE 1

DEVIATION FROM OVERTIME GUIDELINE

Name	Department	Position	Date(s)
------	------------	----------	---------

1.

OVERTIME ANTICIPATED:

- > 16 HOURS STRAIGHT
- > 16 HOURS PER 24 HOUR PERIOD
- > 24 HOURS PER 48 HOUR PERIOD
- > 72 HOURS PER 7 DAY PERIOD
- < 8 HOURS BREAK BETWEEN WORK PERIODS
- > 7 DAYS CONSECUTIVE WITHOUT AN OFF-DAY
- > 12 HOURS IN ANY 24 HOUR PERIOD (GROUP MANAGER CAN AUTHORIZE)

2.

TYPE OF PROBLEM:

- UNFORESEEN
- REFUELING
- MAJOR MODIFICATION OR MAINTENANCE

3.

JUSTIFICATION:

4.

APPROVAL (Verbal or written approval should be obtained before overtime is required)

Approved By:	<input type="checkbox"/> Check if approval was verbal	Date/Time
Requested By:		

5.

DISTRIBUTION

Original: Bi-weekly Payroll Time Record Report

JOB PERFORMANCE MEASURES

SO-139C

TITLE: Perform Spent Fuel Bridge Crane Operability Test

PROGRAM APPLICABLE: SOT SORP OLT LRP

ACCEPTABLE EVALUATION METHOD: PERFORM SIMULATE DISCUSS

EVALUATION LOCATION: SIMULATOR CONTROL ROOM PLANT

PROJECTED TIME: 40 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH TIME CRITICAL PRA

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: W. D. OLDFIELD 7/2/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to PERFORM SPENT FUEL BRIDGE CRANE OPERABILITY TEST. The conditions under which this task is to be performed are:

- a. Two PRF systems are operable and aligned to SFP room.
- b. Plant is in Mode 5.
- c. Test weights have been located in SFP room.
- d. You have been directed by the SS to perform FNP-1-FHP-5.18A - Spent Fuel Bridge Crane, "Checkout." *(- not part of title)* " (K)
- e. The correct shackles and sling are available and tested per GMP-57.0.

NOTE: EVALUATOR SUPPLY AN UNCONTROLLED COPY OF FNP-1-FHP-5.18A.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
*1. Close PWR supply bkr HCQ2L	Locate breaker and close breaker. (CUE: When breaker switch has been rotated to closed position: bkr is closed.)	S / U
*2. Lower the hook until the lower limit actuates and verify adequate cable on drum	Depresses lower push button until hook stops, then observes cable. (CUE: Hook stopped at lower limit, two complete wraps on drum.)	S / U
3. Raise the spent fuel bridge overhead hoist until the hoist is automatically stopped by the hoist upper limit switch	Depress the raise button monitor hoist raising, release button when hoist stops due to actuating upper limit switch. (CUE: Hoist fully raised.)	S / U
*4. Using the main control, verify that the bridge will move in both forward (North) <u>AND</u> reverse (South) directions	Depress forward button and then reverse button verifying movement. (CUE: Crane moved.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*5. Verify that the bridge jog control will move the bridge in both directions, in discrete steps, each time the jog position is depressed	Jog position depressed for each direction movement verified. (CUE: Crane moves in discrete steps.)	S / U
6. Lower the spent fuel bridge hoist below the reset point of the hoist upper limit switch (approx. 6")	Depress lower button on controller, when hoist is below the hoist upper limit switch release button. (CUE: Hoist below upper limit.)	S / U
*7. Using the main control attempt to move the hoist forward and reverse	Depresses main control forward button and then reverse button, verify no movement. (CUE: No movement.)	S / U
*8. Using the jog control, attempt to move the bridge forward <u>AND</u> reverse	Jog position depressed for each direction. (CUE: Crane moves in each direction in discrete steps.)	S / U
*9. Visually check hoist cable for any signs of damage	Lowers hoist and inspects cable for damage such as kinks, broken strands, or evidence of being crushed. (CUE: No damage evident.)	S / U
10. Check calibration of load monitor	Reads calibration due date on sticker. (CUE: Calibration is due in 3 months.)	S / U
*11. Attach the two (2) ton test weight to the spent fuel bridge hoist using appropriate slings and shackles	Individual places hoist hook in sling eyes. (CUE: Weights attached.)	S / U
*12. Raise test load approx. 1 to 2 feet <u>AND</u> hold for approx. 5 minutes <u>THEN</u> lower and remove weight	Use appropriate buttons to raise weight approx. 1 to 2 ft. (CUE: Weight raised.) (CUE: 6 minutes have passed.)	S / U
	Uses appropriate buttons to lower weight and disconnect from hoist. (CUE: Weight lowered and disconnected.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
13. Secure SFP bridge crane	Using bridge and hoist controls move crane to extreme SOUTH location and raise hoist to the upper limits. (CUE: Crane is against SOUTH. Stop hoist is full up.)	S / U
14. Open power supply breaker HCQ2L if SFP crane is not to be used after checkout	(CUE: Crane is not to be used.) Breaker HCQ2L opened by rotating barrel switch. (CUE: Breaker open.)	S / U

STOP TIME

Terminate when breaker open.

* **CRITICAL ELEMENTS:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12

GENERAL REFERENCES:

1.	FHP-5.18A		
2.	KA	034A1.01	RO-2.4
		034A3.01	RO-2.5
		034A3.02	RO-2.5
			SRO-3.2
			SRO-3.1
			SRO-3.1

GENERAL TOOLS AND EQUIPMENT:

1. A copy of FHP-5.18A

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **PERFORM SPENT FUEL BRIDGE CRANE OPERABILITY TEST**.
The conditions under which this task is to be performed are:

- a. Two PRF systems are operable and aligned to SFP room.
- b. Plant is in Mode 5.
- c. Test weights have been located in SFP room.
- d. You have been directed by the SS to perform FHP-5.18A - Spent Fuel Bridge Crane Checkout.
- e. The correct shackles and sling are available and tested per GMP-57.0.

FARLEY NUCLEAR PLANT
FUEL HANDLING PROCEDURE
FNP-1-FHP-5.18

SPENT FUEL BRIDGE CRANE

S
A
F
E
T
Y

R
E
L
A
T
E
D

PROCEDURE USAGE REQUIREMENTS PER FNP-0-AP-6	SECTIONS
Continuous Use	
Reference Use	
Information Use	ALL

Approved:

C. D. COLLINS
Operations Manager

Date Issued 1-18-00

UNIT 1

TABLE OF CONTENTS

<u>Procedure Contains</u>	<u>Number of Pages</u>
Body	3
Table 1	1
System Checklist	2

FARLEY NUCLEAR PLANT
UNIT 1
FUEL HANDLING PROCEDURE FHP-5.18

SPENT FUEL BRIDGE CRANE

1.0 Purpose

This procedure provides Initial Conditions, Precautions, Limitations and Instructions required for the operation of the spent fuel bridge crane. Instructions are included in the following sections:

- 4.1 Spent Fuel Bridge Crane Operation.
- 4.2 Removing and installing weir (transfer slot) gate in the SFP transfer canal.
- 4.3 Spent Fuel Bridge Crane Shutdown.

2.0 Initial Conditions

- 2.1 600/208/120V motor control center 1C is energized and breaker HCQ2L is closed.
- 2.2 IF it has been ≥ 6 months since last crane checkout, THEN perform checklist FNP-1-FHP-5.18A.
- 2.3 IF removing the weir gate in the SFP transfer canal per section 4.2, THEN ensure the transfer canal water level is greater than or equal to the SFP water level.

3.0 Precautions and Limitations

- 3.1 Refer to Table 1 for crane bridge and hoist speeds.
- 3.2 DO NOT operate the hoist and bridge simultaneously.
- 3.3 The bridge is interlocked with the hoist. WHEN the hoist is at its lower limit, THEN the bridge must be jogged into position.
- 3.4 Movement of loads in excess of 3000 lbs over fuel assemblies in the storage pool is prohibited. This will be verified by monitoring the load cell indication.
- 3.5 Two penetration room filtration systems shall be verified to be aligned to the spent fuel pool room within 12 hours prior to fuel handling OR crane operations in the storage pool room AND at least once per 24 hours thereafter until fuel movement operations are suspended. { Verify two PRF trains aligned to the SFP Room prior to the movement of irradiated fuel assemblies in the SFP Room. }

4.0 Instructions

4.1 Spent Fuel Bridge Crane Operation.

- 4.1.1 Perform FNP-1-STP-12.0, SPENT FUEL BRIDGE CRANE LOAD LIMIT, should be performed in conjunction with the movement of any loads over fuel assemblies in SFP.
- 4.1.2 Position the bridge in slow by pressing the NORTH (SOUTH) pushbutton to the first position.
- 4.1.3 Position the bridge in fast by pressing the NORTH (SOUTH) pushbutton to the second position.
- 4.1.4 Position the hoist in slow by pressing the RAISE (LOWER) pushbutton to the first position.
- 4.1.5 Position the hoist in fast by pressing the RAISE (LOWER) pushbutton to the second position.
- 4.1.6 Position the trolley as desired with the hand chain.

4.2 Removing and installing weir (transfer slot) gate in the SFP transfer canal.

CAUTION: The spent fuel bridge crane load limit is 4000 lbs. The weir gate weighs approximately 3600 lbs. **WHEN** removing the weir gate, **IF** the transfer canal water level is not greater than or equal to the SFP water level, **THEN** a ΔP across the weir gate could increase the force required to lift the weir gate, and the spent fuel bridge crane load limit could be exceeded.

- 4.2.1 Install a shackle on the weir gate. (The shackle and sling if required should be rated for a minimum of 2 tons.)
- 4.2.2 Position the crane hoist directly over the weir gate and connect to the shackle. A sling maybe required because of clearance between the hoist hook and the weir gate.

CAUTION: Do not move the weir gate over fuel assemblies.

- 4.2.3 Raise the weir gate while monitoring the load cell. The weir gate should weigh approximately 3600 lbs.
- 4.2.4 Jog the crane North or South as required to clear the weir gate slots.
- 4.2.5 Trolley the crane East or West as required.

4.2.6 Lower the weir gate into designated slots and disconnect the crane.

4.3 Spent Fuel Bridge Crane Shutdown

CAUTION: To prevent inadvertent fuel damage due to accidental movement of the hoist or hook, **DO NOT** park the crane over stored fuel, or over open water in the Spent Fuel Pool (Commitment 94-13-02, NRC IN 94-13).

4.3.1 Move the bridge to the extreme North position. (Can be positioned elsewhere IF necessary)

4.3.2 Raise the hoist to the upper limit.

4.3.3 Open power supply breaker HCQ2L.

5.0 References

5.1 WE 101E8198, Rev. C Wiring Diagram - Spent Fuel Bridge Crane

5.2 U-199304, Technical Manual - Spent Fuel Bridge Crane

5.3 FSAR, Section 9.1.

5.4 U-199304A, Technical Manual - Spent Fuel Bridge Crane Load Cell

5.5 NUREG 0612 and BL 96-02

5.6 Unit 1 Technical Specification 4.9.7.1 (Technical Requirements Manual TRS 13.9.4.1)

TABLE 1

SPENT FUEL CRANE BRIDGE AND HOIST SPEEDS

<u>ZONE</u>	<u>HOIST/SPEED</u>
A. Guiding and seating of handling tool onto fuel assembly	Slow Speed
B. When the fuel assembly bottom nozzle is approximately 10" above to 10" below top of cell or within 10" of full down	Slow Speed
C. Outside above zones	Fast Speed

<u>ZONE</u>	<u>BRIDGE/SPEED</u>
A. Cask Wash Area	Slow Speed
B. Transfer Canal	Slow Speed
C. Traversing Weir Gate Area	Slow Speed
D. Open Water *	Fast Speed

* Slow speed should be used when in close proximity to any structure. The limiting factor is the ability of the operator to control the fuel assembly when stopping and starting. It is prudent to use slow speed when approaching objects that may contact the fuel assembly if it were to "swing" due to stopping from fast speed.

FARLEY NUCLEAR PLANT
UNIT 1
SYSTEM CHECKLIST 5.18A
SPENT FUEL BRIDGE CRANE CHECKOUT

Completed by: _____ Date: _____

Reviewed by: _____ Date: _____

This checklist consists of 2 pages.

SPENT FUEL BRIDGE CRANE CHECKOUT

Initials

_____ The revision of this procedure has been verified to be the current revision and correct unit for the task. (OR 1-98-498)

1.0 Spent Fuel Crane

_____ 1.1 Close power supply breaker HCQ2L.

_____ 1.2 Lower the hook until the lower limit switch is actuated AND verify that there are at least two complete wraps of cable remaining on the drum.

_____ 1.3 Raise the spent fuel bridge overhead hoist until the hoist is automatically stopped by the hoist upper limit switch.

_____ 1.4 Using the main control, verify that the bridge will move in both forward (north) AND reverse (south) directions.

_____ 1.5 Verify that the bridge jog control will move the bridge in both directions, in discrete steps, each time the jog position is depressed.

_____ 1.6 Lower the spent fuel bridge hoist below the reset point of the hoist upper limit switch (Approx. 6").

_____ 1.7 Using the main control, attempt to move the bridge forward AND reverse. The bridge should not move in either direction.

_____ 1.8 Using the jog control, attempt to move the bridge forward AND reverse. The bridge should move in either direction, in discrete steps, each time the jog pushbutton is depressed.

_____ 1.9 Visually check hoist cable for any signs of damage such as kinks, broken strands or evidence of having been crushed.

_____ 1.10 Verify load cell calibration is current, if not, submit a MSR to have load cell calibrated.

_____ 1.11 Attach the two (2) ton test weight to the spent fuel bridge hoist using appropriate slings AND shackles.

_____ 1.12 Raise test load approximately 1 to 2 feet AND hold for approximately 5 minutes then lower AND remove weight.

CAUTION: To prevent inadvertent fuel damage due to accidental movement of the hoist or hook, **DO NOT** park the crane over stored fuel, or over open water in the Spent Fuel Pool (Commitment 94-13-02, NRC IN 94-13).

_____ 1.13 If spent fuel crane is not to be used after checkout, Then open power supply breaker HCQ2L.

JOB PERFORMANCE MEASURES

SS-138C

TITLE: Classify An Emergency Event And Make Initial Notifications As Required

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH X TIME CRITICAL X PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: W. D. OLDFIELD 7/28/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to CLASSIFY AN EMERGENCY EVENT AND MAKE INITIAL NOTIFICATIONS INCLUDING PREPARATION OF THE MESSAGE AS REQUIRED PER THE EIP'S. The conditions under which this task is to be performed are:

- a. An automatic reactor trip and safety injection (SI) has occurred (10 minutes ago) on Unit 1.
- b. Steam generator 1A has been identified as ruptured.
- c. R15A is offscale high. R15B had been reading greater than ten (10) times normal and is now trending down.
- d. 4160V buses F, K, G, J, and L are being supplied from the S/U transformers.
- e. The MSIVs are closed due to high steam flow with Lo-Lo Tavg.
- f. Transition to EEP-2 is in progress due to 1A SG pressure dropping in an uncontrolled manner.
- g. Containment parameters are normal.
- h. Request has been made by the Unit 1 Shift Supervisor to classify the event and make initial notifications.
- i. No meteorological or radiological release data available at this time.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
*1. Classify the event	Event classified as an Alert per EIP-9.0.	S / U
NOTE TO EXAMINER: ACCURATE COMPLETION OF CERTAIN STEPS EIP-9.0, FIGURE 6, ARE ESSENTIAL TO ENSURE ADEQUATE NOTIFICATION OF STATE AND LOCAL AGENCIES. THESE STEPS ARE SHOWN AS THE STANDARDS FOR ELEMENT NUMBER 2.		
*2. Complete EIP-9.0, Figure 6	Line five; Box "B" marked for "Alert".	S / U
	Line six; Declaration time must be the same time as approval time as entered on line 16.	S / U
	Line fifteen; Box "A" marked for "There are no recommended protective actions."	S / U

NOTE TO EXAMINER: THE TIME IT TAKES TO PERFORM STEPS 3 THROUGH 11 IS

EVALUATION CHECKLIST

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

TIME CRITICAL AND SHOULD BE COMPLETED IN 15 MINUTES.

_____ CRITICAL ELEMENT START TIME

- | | | |
|---|--|-------|
| *3. Initiate initial notifications using the Emergency Notification Network (ENN) | Dial ALL CALL (**) to alert all stations, then wait 10 seconds for audible tone to stop. Appropriate message announcement made over ENN. ("This is _____" per Step 18.1 of EIP-9.0, Fig. 6.) | S / U |
| *4. Verify manning of ENN by state agencies | Evaluate at least one agency in each state acknowledges. (CUE: "Alabama Radiation Control Division acknowledges manning the ENN." No response from GEMA or any other Georgia agency.) | S / U |

NOTE TO EXAMINER: EXAMINEE SHOULD NOT DELAY INITIAL TRANSMITTAL TO ALABAMA.

- | | | |
|---|--|-------|
| 5. Pre-message announcement made | Initial notification preparation message is read per Step 18.5 of EIP-9.0, Fig. 6. | S / U |
| *6. Slowly read initial notification message over the ENN | EIP-9.0, Fig. 6 read. | S / U |

NOTE TO EXAMINER: IN STEPS 7 AND 13, THE EXAMINEE MAY ENSURE THE TELECOPIERS ARE READY TO RECEIVE. IF SO, PROVIDE THE APPROPRIATE CUE.

- | | | |
|---------------------------------------|---|-------|
| *7. Verifies acknowledgment from ARCD | Ensures ARCD acknowledges receipt of initial notification message. (CUE: "ARCD acknowledges receipt of initial notification message <u>OR</u> ARCD acknowledges receipt of initial notification message and telecopier is ready to receive".) | S / U |
|---------------------------------------|---|-------|

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*8. GEMA contacted attempted by commercial phone or OPX	GEMA phone number obtained from EIP-8.1 or back of EIP-9.0, Fig. 6 and number dialed. (CUE: No answer.)	S / U
*9. Georgia Forward EOC contacted by commercial telephone or OPX	Georgia Forward EOC phone number obtained from EIP-8.1 or back of EIP-9.0, Fig. 6 and number dialed. (CUE: "Georgia Forward EOC on the line.")	S / U
10. Pre-message announcement made	Initial notification preparation message is read per Step 18.5 of EIP-9.0, Fig. 6.	S / U
*11. Verifies Georgia Forward EOC ready to receive message	Ensures Georgia Forward EOC acknowledges ready to receive initial notification message. (CUE: "Georgia Forward EOC ready to receive initial notification message.")	S / U

CRITICAL ELEMENT STOP TIME

*12. Slowly read initial notification message over telephone	EIP-9.0, Fig. 6 read.	S / U
*13. Verifies acknowledgment from Georgia Forward EOC	Ensure Georgia Forward EOC acknowledges receipt of initial notification message. (CUE: "Georgia Forward EOC acknowledges receipt of initial notification message <u>OR</u> Georgia Forward EOC acknowledges receipt of initial notification message and telecopier is ready to receive.")	S / U

STOP TIME

Terminate JPM when initial notification message is acknowledged by Georgia Forward EOC.

* **CRITICAL ELEMENTS:** 1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13

GENERAL REFERENCES:

1. EIP-8.1
2. EIP-9.0
3. KA 2.4.38 RO-2.2 SRO-4.4

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to CLASSIFY AN EMERGENCY EVENT AND MAKE INITIAL NOTIFICATIONS INCLUDING PREPARATION OF THE MESSAGE AS REQUIRED PER THE EIP'S. The conditions under which this task is to be performed are:

- a. An automatic reactor trip and safety injection (SI) has occurred (10 minutes ago) on Unit 1.
- b. Steam generator 1A has been identified as ruptured.
- c. R15A is offscale high. R15B had been reading greater than ten (10) times normal and is now trending down.
- d. 4160V buses F, K, G, J, and L are being supplied from the S/U transformers.
- e. The MSIVs are closed due to high steam flow with Lo-Lo Tavg.
- f. Transition to EEP-2 is in progress due to 1A SG pressure dropping in an uncontrolled manner.
- g. Containment parameters are normal.
- h. Request has been made by the Unit 1 Shift Supervisor to classify the event and make initial notifications.
- i. No meteorological or radiological release data available at this time.

EMERGENCY NOTIFICATION

1. This is a Drill Actual Emergency Initial Follow-up* Message Number _____
2. Site: Farley Nuclear Plant Unit: _____ Reported By: _____
3. Transmittal Time/Date: _____ / _____ / _____ Confirmation Phone Numbers: (334)899-5156 or (334)794-0800 Ext. _____
(central) mm dd yy
- Teletype Phone Number: (205) 257-1155 (205) 257-1035 _____
TSC EOF Other
4. Authentication (if required): N/A N/A
(Number) (Codeword)
5. Emergency Classification:
 Notification Of Unusual Event Alert Site Area Emergency General Emergency
6. Emergency Declaration At: Termination At: Time/Date _____ / _____ / _____ (If B go to item 16)
(central) mm dd yy
7. Emergency Description/Remarks: _____

Problems Include: RCS Leaking Containment Leaking Fuel Damage Indicated Heat Removal Systems Inadequate Additional comments on following page

8. Plant Condition: Improving Stable Degrading RMTs Dispatched Site Evacuation
9. Reactor Status: Shutdown Time/Date: _____ / _____ / _____ _____ % Power
(central) mm dd yy

10. Emergency Releases:
 None (go to item 14) Potential (go to item 14) Is Occurring Has Occurred

- **11. Type of Release Ground Level Mixed Mode
 Airborne: Started: _____ / _____ / _____ Stopped: _____ / _____ / _____
Time (central) Date Time (central) Date
- Liquid: Started: _____ / _____ / _____ Stopped: _____ / _____ / _____
Time (central) Date Time (central) Date

- **12. Release Magnitude μ Curie per Sec. Curies Tech. Specification Limits Below Above
- Noble Gases Iodines
 Particulates Other

- **13 Estimate Of Projected Off Site Dose New Unchanged Estimated Duration: _____ Hrs.
TEDE (mrem) Thyroid CDE (mrem)
- Site Boundary _____ _____
 2 miles _____ _____
 5 miles _____ _____
 10 miles _____ _____

- **14. Meteorological Data Wind Direction (from) _____ ° Speed(mph) _____
 Stability Class _____ Precipitation (type) _____

15. Actions:
 There are no recommended protective actions.
 We would like to discuss recommended protective actions.

Not to be read over the ENN except for initial notifications and notifications of General Emergency
Recommended Protective Actions:
 Evacuate and control access in down wind zone(s) _____
 Shelter and control access in down wind zone(s) _____
 In all affected areas: Monitor environmental radiation levels, locate and evacuate hot spots and implement control and possible confiscation of food and water supplies and consider evacuation of children and pregnant women.
 Other _____

16. Approved By: _____ Time/Date _____ / _____ / _____
(Name) (Title) (central) mm dd yy

* If items 8 - 14 have not changed, only items 1 - 7 and 15 - 16 are required to be completed
 ** Information may not be available on initial notifications.

DO NOT TELECOPY THIS SIDE

COMMUNICATIONS MEANS

17.0 Telecopy side one of this form to State and Local Agencies per figure 3 while performing the remaining steps of this form

18.0 Make Initial/Upgrade ENN Emergency Notification using the following message:

18.1 DIAL ** on the ENN, wait 10 seconds and announce "This is name/title at Farley Nuclear Plant. Please be prepared to initiate your radiological notification procedure and manning of the ENN."

NOTE: When the first agency at the state level for each state, and the County level for each County (if required) acknowledge, no further acknowledgment is required.

18.2 For all Emergency declarations, request a state level agency for Alabama (step 21.1) and Georgia (step 21.2) acknowledge manning of the ENN. As a courtesy notification request AEMA acknowledge manning of the ENN.

18.3 If a State level agency in step 21.1 or 21.2 does not acknowledge manning of the ENN, contact a county level agency in step 21.5 or 21.6 to acknowledge for the state.

NOTE: If ARCD has moved to the Forward EOC in Houston County, then HCEMA will be notified of the General Emergency at the same time in step 18.2. Additional notification of HC EMA is not required

18.4 For a General Emergency request a county level agency for Houston County (step 21.5) and a county level agency for Early county (step 21.6) acknowledge manning of the ENN.

18.5 Announce on the ENN "Please prepare to receive an initial notification message with acknowledgment."

18.6 Slowly read side one of this form

18.7 Have the agencies that acknowledged in steps 18.2, 3 and 4, acknowledge receipt of the message.

19.0 If at least one agency in each state (State Level Preferred) has not acknowledged receipt, contact them through other means, such as OPX, commercial, etc using numbers listed below or in EIP-8.1, and read side one of the message to them.

20.0 Notify NRC Headquarters. Read side one of this form. (Immediately after State Notification, within one hour of Declaration.)

ENS (301-816-5100; 301-951-0550; 301-415-0550)

Commercial (1-301-816-5100; 1-301-951-0550; 1-301-415-0550) Person Contacted _____ Date/Time _____

NOTE: Only the underlined phones and phone numbers listed below are manned 24 hours a day. The other numbers listed below are for use during dayshift hours and for when the facilities are staffed during an emergency.

21.0 State agencies to be notified

Required for all declarations

STATE LEVEL AGENCIES

21.1 ALABAMA

Alabama Radiation Control Division at Montgomery EOC

ENN (11) OPX (6628) Telecopy (334-264-4396)

Commercial (334-242-4378)

Person contacted _____

Date/Time _____

OR

State Troopers in Montgomery

ENN (12) Commercial (334-242-4378, 4379)

Person contacted _____

Date/Time _____

OR

Alabama Radiation Control Division at Alabama Forward EOC

ENN (13) OPX (6621) Telecopy (8-257-1535)

Commercial (334-793-1565)

Person contacted _____

Date/Time _____

21.4 AEMA COURTESY NOTIFICATION

This is an ENN courtesy notification only and is not required to be completed in the time specified by the Guideline.

CAUTION: This Notification does not meet the requirements for notifying a state level agency in the State of Alabama

AEMA ENN (51)

Person contacted _____

Date/Time _____

21.2 GEORGIA

Georgia Emergency Management Agency at Atlanta EOC

ENN (21) OPX (6629) Telecopy (404-627-4850)

Commercial (404-635-7200)

Person contacted _____

Date/Time _____

OR

Georgia Emergency Management Agency at Georgia Forward EOC

ENN (22) OPX (6626) Telecopy (8-257-2455)

Commercial (912-723-4764, 4826,4956)

Person contacted _____

Date/Time _____

21.3 FLORIDA

This is a Telecopy notification only to be followed up by a phone call to verify that the telecopy was received. Verification is not required for follow-up messages.

This notification is not required to be completed in the time in the guideline for the declared classification.

Telecopy to be sent at the same time as message is sent to other states

Florida Department of Emergency Management

Telecopy (904-488-7841)

Verification (800-320-0519) (904-413-9910, 9911)

Person contacted _____

Date/Time _____

Required for General Emergency declarations

LOCAL LEVEL AGENCIES

Contact if state agencies cannot be contacted

21.5 HOUSTON COUNTY

Houston County EMA or Sheriff in Dothan

ENN(31) ENN(13) OPX (6621) Telecopy (8-257-1535)

Commercial (334-794-9720, 793-9655, 334-677-4807, 4808)

Person contacted _____

Date/Time _____

21.6 EARLY COUNTY

Early County EMA in Early Co. EOC or Early Co. Sheriff in Blakely

ENN(42) ENN(41) OPX (6622) Telecopy (8-257-2455)

ENN(22) Commercial (912-723-3577, 3578, 4746, 4826, 4956)

Person contacted _____

Date/Time _____

NOTE: Checking box indicates acknowledgment and telecopy received

Facility: _____		Date of Examination: _____	
Exam Level (circle one): SRO		Operating Test No.: _____	
B.1 Control Room Systems			
	System / JPM Title	Type Code*	Safety Function
F	a. CRDS / CRO-033B - Recover Rod	M,S,A	1
A	b. CVCS / CRO-343J - Control charging after SI	D,S,A	2
A	c. ECCS / NRC-002 - Hot and Cold Leg Recirc	N,S,A	3
F	d. RHR / CRO-066C - Place RHR in cooldown	D,S,L	4P
F	e. Steam Dumps / CRO-169 -	D,S	4S
W	f. AC / CRO-254 - loss of 120V AC	D, C	6
F	g. NIs / CRO-355A - Containment ventilation	D,S	5
B.2 Facility Walk-Through			
A	a. PRT / SO-65 - PRT cooldown	D,R	5
A	b. CCW / SO-605 - backup cooling to Charging Pumps from Fire Protection	D,R	8
A	c. EDG / SO-351 Mod - Manual EDG start	M,A	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			

Facility: _____
 Exam Level (circle one): **RO**

Date of Examination: _____
 Operating Test No.: _____

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. CVCS / CRO-139 - dilute with BTRS	D, S C	1
b. CVCS / CRO-343J - Control charging after SI	D,S,A	2
c. ECCS / NRC-002 - Hot and Cold Leg Recirc	N,S,A	3
d. RHR / NRC-001 -Shift RHR trains	N, S, L	4P
e. Main Feed / CRO-358B - place SGFP in service	D,S	4S
f. EDG / CRO-359E - Start 1C EDG	D,S,A	6
g. NIs / CRO-126B - IR Functional Check	D, S S	7

B.2 Facility Walk-Through

a. PRT / SO-65 - PRT cooldown	D,R	5
b. CCW / SO-605 - backup cooling to Charging Pumps from Fire Protection	D,R	8
c. EDG / SO-351 Mod - Manual EDG start	M,A	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

F

Th

Th

W

W

W

W

Th

Th

Th

JOB PERFORMANCE MEASURES

CRO-139

TITLE: Dilute The RCS Using BTRS Without Using the BTRS Chillers

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP ___

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: Joel Deavers 8/24/98
Supervisor - Operations Training

CONDITIONS

When I ask you to begin, you are to DILUTE THE RCS USING BTRS without using BTRS chillers. The conditions under which this task is to be performed are:

- a. Plant is in Mode 1
- b. It has been determined that an RCS dilution is needed to maintain reactor power at 100%
- c. The Shift Supervisor has directed you to perform the dilution using the BTRS system
- d. The duration time of this dilution has been determined to be approximately 10 minutes through the Demineralizers *w/ ID Demin.*

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Adjust BTRS controllers to perform a BTRS dilution	MCB controllers adjusted per MCB labels and SOP-3.0. (CUE: TK-381A and 381B at 2.4.)	S / U /
*2. Adjust BTRS demin flow control valve HCV-387 to zero percent	HCV-387 adjusted. (CUE: HCV-387 indicates zero percent.)	S / U
3. Verify that the A BTRS chiller and pump handswitches are in stop	Chiller and pump handswitches checked. (CUE: Both switches are in stop.)	S / U
4. Verify that the 1A, 1B, and 1C demineralizer inlet valves are closed.	Valves 1-BTR-HV07010A, B, and C (Q1G21V027A, B, and C) are closed.	S / U
*5. Verify the BTRS bypass valve switch in the open position	HV-8547 verified in the open position. (CUE: Switch for HV-8547 in the open position and the red light is lit.)	S / U
*6. Place the BTRS mode selector switch in DIL	BTRS mode selector switch placed in DIL. (CUE: Mode selector switch in DIL.)	S / U
*7. Verify the BTRS inlet isolation valve is open (HV-7054)	BTRS inlet isolation valve HV-7054 verified open. (CUE: HV-7054 red light is lit.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*8. Place BTRS bypass valve HV-8547 switch in AUTO to establish flow through the BTRS system	HV-8547 placed in AUTO and valve verified closed. (CUE: HV-8547 red light lit.)	S / U
9. Verify the BTRS demineralizers are fully bypassed by verifying flow on FI-385 and zero flow on FI-2977	FI-385 and FI-2977 checked. (CUE: FI-385 indicates 130 gpm and FI-2977 indicates zero.)	S / U
10. Verify letdown temperature is approximately equal to BTRS to CVCS return header temperature	Letdown temperature, TI's 143 or 144 and BTRS to CVCS return header TI 386 temperature both checked. (CUE: TI-143 indicates 95 deg and TI-386 indicates 94 deg.)	S / U
11. Energize the pressurizer heaters	Pressurizer backup heaters energized. (CUE: All backup heater switches red lights lit.)	S / U
*12. Establish flow through the BTRS demineralizers by adjusting HCV-387 to the DILUTE position	HCV-387 adjusted. (CUE: Scale on pot indicates fully in the DILUTE position.)	S / U
13. Verify operator monitors parameters associated with reactivity control	Demineralizer flow on FI-2977, RCS Tave, Control rod position monitored throughout evolution.	S / U
CUE: THE TEN MINUTE TIME PERIOD HAS ELAPSED, BTRS CAN NOW BE SECURED.		
*14. Open the BTRS bypass valve HV-8547	BTRS bypass valve HV-8547 opened.	S / U
*15. Place the BTRS mode selector switch to OFF	BTRS mode selector switch placed in the OFF position.	S / U
16. Verify the BTRS is shutdown by indication of no flow on FI-385 and 1-BTR-HV-7054 is closed.	FI-385 and HV 7054 checked. (CUE: FI-385 indicates zero flow and HV 7054 closed.)	S / U

____ **STOP TIME**

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
Terminate after HV-7054 is verified closed.		

*** CRITICAL ELEMENTS:** 1, 2, 5, 6, 7, 12, 14, 15

GENERAL REFERENCES:

- | | | | | |
|----|---------------|--------|---------|--|
| 1. | FNP-1-SOP-3.0 | | | |
| 2. | KA 004A1.12 | RO-2.8 | SRO-3.2 | |
| | 004A4.07 | RO-3.9 | SRO-3.7 | |
| | 004A4.17 | RO-2.7 | SRO-2.7 | |

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I ask you to begin, you are to DILUTE THE RCS USING BTRS without using BTRS chillers. The conditions under which this task is to be performed are:

- a. Plant is in Mode 1
- b. It has been determined that an RCS dilution is needed to maintain reactor power at 100%
- c. The Shift Supervisor has directed you to perform the dilution using the BTRS system
- d. The duration time of this dilution has been determined to be approximately 10 minutes through the Demineralizers

JOB PERFORMANCE MEASURES

CRO-343J

TITLE: Place Normal Charging In Service And Control Pressurizer Level As Required In Response To A Spurious Safety Injection

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 10 MIN SIMULATOR IC NUMBER: JPM IC-54
(IF APPLICABLE)

ALTERNATE PATH X TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: Joel L. Deavers 5/22/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to PLACE NORMAL CHARGING IN SERVICE AND CONTROL PRESSURIZER LEVEL AS REQUIRED IN RESPONSE TO A SPURIOUS SAFETY INJECTION. The conditions under which this task is to be performed are:

- a. Plant has experienced a safety injection and met SI termination criteria.
- b. ESP-1.1 is in progress and has been completed through Step 6.
- c. Only the A charging pump is running.
- d. Directed by Shift Supervisor to perform Step 7 of ESP-1.1.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
NOTE TO EXAMINER: IF DONE ON ACTIVE SIMULATOR, INFORM EXAMINEE R-2 AND R-7 IN ALARM AND RISING WHEN ALARMS ANNUNCIATE. IF SIMULATED, INFORM EXAMINEE R-2 AND R-7 IN ALARM WHEN HHSI VALVES CLOSED.		
1. Verify charging pump miniflow valves open	Valves 8109A, B, C and 8106 position indication checked. (CUE: Valve position indicators' red light lit.)	S / U
*2. Close charging flow control valve	Charging flow controller FK-122 placed in manual and adjusted closed. (CUE: FK-122 controller output indicates zero (0).)	S / U
3. Discharge header cross-connects checked open	MOVs 8132A, B; 8133A, B position indication checked. (CUE: Valve position red indicator lights lit for each valve checked.)	S / U
*4. Charging header isolation valves opened	Handswitch for MOV-8107 and MOV-8108 taken to open. (CUE: Red indicator light lit for each valve opened.)	S / U
5. Verify only one charging line open	Indications check for HV-8146 and HV-8147. (CUE: HV-8146 red indicator light lit HV-8147 green indicator light lit.)	S / U

EVALUATION CHECKLIST**ELEMENTS:****STANDARDS:****RESULTS:
(CIRCLE)**

→ CONT RND
ALARM

NOTE TO EXAMINER: IF R-2 OR R-7 ALARM BEFORE THE HHSI VALVES ARE CLOSED, IT IS ACCEPTABLE FOR THE EXAMINEE TO LEAVE THE VALVES OPEN AND STATE HE WOULD TRANSITION TO ESP-1.2.

- | | | | |
|-----|-------------------------------------|---|-------|
| *6. | Isolate HHSI flow. | Handswitches for valves 8803A, B closed. (CUE: Valve position indicators' green light lit/red light out.) | S / U |
| 7. | Maintain pressurizer level 15 - 50% | Pressurizer level indication checked. (CUE: Pressurizer level 15% and falling.) | S / U |

NOTE TO EXAMINER: IT MAY BE NECESSARY TO CUE EXAMINEE RISING VALUES FOR CHARGING FLOW AND FALLING VALUES FOR PRESSURIZER LEVEL UNTIL EXAMINEE DETERMINES THAT HE CANNOT MAINTAIN PRESSURIZER LEVEL.

- | | | | |
|----|-----------------------|--|-------|
| 8. | Control charging flow | FK-122 adjusted to raise charging flow. (CUE: Charging flow 150 gpm, pressurizer level 14% and falling.) | S / U |
|----|-----------------------|--|-------|

NOTE TO EXAMINER: IF EXAMINEE STATES THAT HE WOULD INFORM SHIFT SUPERVISOR OF R-2 AND R-7 AND/OR INABILITY TO CONTROL PRESSURIZER LEVEL THEN CUE: SHIFT SUPERVISOR SAYS PERFORM THE RNO ACTIONS FOR THE STEP.

- | | | | |
|-----|----------------------------|---|-------|
| *9. | Open HHSI isolation valves | Handswitches for MOVs 8803A, B taken to open. (CUE: Red indicating lights lit for each valve checked, FI-943 = 50 gpm.) | S / U |
|-----|----------------------------|---|-------|

____ STOP TIME

Terminate when HHSI established.

*** CRITICAL ELEMENTS: 4, 6, 9**

GENERAL REFERENCES:

1. ESP-1.1
2. K/As: 004 A2.02 RO-3.9 SRO-4.2
004 A2.15 RO-3.5 SRO-3.7

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

JOB PERFORMANCE MEASURES

NRC-002 ALT/ALT

EXCISE FROM ENR
path for ESP-1.4 BOTH B.I.C

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

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 15 MIN SIMULATOR IC NUMBER: JPM IC-
(IF APPLICABLE)

ALTERNATE PATH X TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: _____

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.
- b. EEP-1.0 has been completed through Step 22.
- c. Seven and one-half hours have passed since the LOCA event started.
- d. 1B Chg Pump is aligned to A train.
- e. 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.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> 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 ✓
*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 ✓
5. Verify closed RHR TO RCS HOT LEGS ISO Q1E11MOV8889	Light for MOV8889 checked. (Cue: MOV8889 green light lit, valve is closed.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*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 TO EXAMINER: 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 green light lit, valve remains closed.)	S / U ✓

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
	Below step may be skipped due to having just verified this valve above.	
16. Verify closed CHG PUMP RECIRC TO RCS HOT LEGS valve Q1E21MOV8884	Light for MOV8884 checked. (Cue: MOV8884 green light lit, valve is closed.)	S / U ✓
*17. Open CHG PUMP RECIRC TO RCS COLD LEGS valve Q1E21MOV8885	Handswitch for MOV8885 taken to OPEN. (CUE: MOV 8885 red light lit, valve is open.)	S / U ✓
*18. Start 1C HHSI Pump	Handswitch for 1C HHSI Pump taken to START. (CUE: Pump red light lit, amps increase.)	S / U ✓

NOTE TO EXAMINER: 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:RHR aligned to cold legs and one Train of 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 stable at 600 gpm. FI-940 at zero ⁶⁰⁰ , FI-605B at zero FI-605A stable at 2600 gpm.)	S / U

change this

STOP TIME

Terminate JPM.

*** CRITICAL ELEMENTS:** Steps with * indicates critical elements

GENERAL REFERENCES:

1. EEP-1.0
2. ESP-1.4
3. 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.
- b. EEP-1.0 has been completed through Step 22.
- c. Seven and one-half hours have passed since the LOCA event started.
- d. 1B Chg Pump is aligned to A Train.
- e. 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.

R 0
13.1.d

JOB PERFORMANCE MEASURES

NRC-001

TITLE: Shift Cooldown to RHR Train "A"

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT ___ LRP ___

ACCEPTABLE EVALUATION METHOD: X PERFORM ___ SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR ___ CONTROL ROOM ___ PLANT

PROJECTED TIME: 15 MIN SIMULATOR IC NUMBER: JPM IC-15
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS TO SHIFT COOLDOWN TO "A" RHR TRAIN. The conditions under which this task is to be performed are:

- a. CCW system is in operation and aligned per SOP-23.0
- b. Plant is in Mode 4
- c. Unit 1 "B" train RHR is in cooldown operation with letdown from RHR to CVCS
- d. RCS temperature is 340°F
- e. RCS pressure is 365 psig
- f. Directed by the Shift Supervisor to shift cooldown to RHR "A" train in accordance with SOP-7.0, Steps 4.9 and 4.10

NOTE TO EXAMINER: THIS JPM AS WRITTEN MUST BE PERFORMED ON UNIT 1.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
*1. Close 1A RHR heat exchanger discharge valve.	HIK 603A adjusted to closed (HIK-603 controller output indicates zero).	S / U
*2. Open 1C RCS loop to 1A RHR pump valves.	MOV-8701A and MOV-8701B handswitches taken to open (red light lit; green light out).	S / U
3. Verify open 1A RHR heat exchanger to RCS cold legs isolation valve.	MOV-8888A position indication checked (valve position indicator red light lit).	S / U
*4. Open 1A RHR heat exchanger bypass valve 10-15%.	FK-605A open pushbutton depressed until demand is 10-15% (FK-605A controller output indicates 12).	S / U
*5. Start 1A RHR pump.	RHR pump A handswitch taken to start (pump breaker position indicator red light lit, ammeter indicates approximately 35 amps).	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
6. Verify 1A RHR pump miniflow valve open.	FCV 602A verified open (valve position indicator red light lit).	S / U
7. Slowly open 1A RHR heat exchanger bypass valve to establish >1500 gpm.	FCV-605A open pushbutton depressed until flow indicates >1500 gpm on FI-605A.	S / U
8. Verify 1A RHR pump miniflow valve closed.	FCV-602A closed (valve position indicator green light lit).	S / U
*9. Open 1A RHR heat exchanger 1A bypass until flow indicates ≥ 3000 gpm.	FCV-605A open pushbutton depressed until flow indicates >3000 gpm on FI-605A.	S / U
10. Direct System Operator to open RHR heat exchanger 1A to CVCS letdown isolation valve.	SO directed to open valve 8720A. NOTE: Simulator instructor to open 8720A when order given to SO by candidate.	S / U
11. Maintain desired letdown flow from RHR to CVCS by adjusting RHR to letdown heat exchanger flow control valve.	HIK-142 adjusted to maintain approximately 120 gpm flow.	S / U
*12. Adjust 1A RHR heat exchanger discharge valve and 1A RHR heat exchanger bypass valve as necessary to control RCS temperature and maintain RHR flow ≥ 3000 gpm.	603A and 605A adjusted to maintain RCS temperature with RHR flow >3000 gpm.	S / U
*13. Isolate letdown from RHR train B to CVCS.	Direct the SO to shut 8720B. NOTE: Simulator instructor to shut 8720B when order given to SO by candidate.	S / U
14. Slowly close 1B RHR discharge valve and 1B RHR heat exchanger bypass valve.	603B and 605B slowly closed until RHR flow < 1000 gpm.	S / U
*15. Stop 1B RHR pump when RHR loop flow decreases to < 1000 gpm.	1B RHR pump stopped when flow < 1000 gpm.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
16. Place 1B RHR heat exchanger bypass valve in manual and close.	FK-605B placed in manual and closed.	S / U
17. Fully open 1B RHR heat exchanger discharge valve.	HIK-603B fully open.	S / U
*18. Adjust 1A RHR heat exchanger discharge valve and 1A RHR heat exchanger bypass valve as required to control RCS temperature and to maintain total RHR flow > 3000 gpm.	RCS temperature and total RHR flow maintained at desired points.	S / U

_____ **STOP TIME**

• **CRITICAL ELEMENTS:**

1, 2, 4, 5, 9, 12, 13, and 18

GENERAL REFERENCES

- | | | | |
|----|-----------------|--------|---------|
| 1. | SOP-7.0 | | |
| 2. | K/As: 005 A1.02 | RO-3.3 | SRO-3.4 |
| | 005 A4.01 | RO-3.6 | SRO-3.4 |
| | 005 A4.02 | RO-3.4 | SRO-3.1 |

GENERAL TOOLS AND EQUIPMENT

None

COMMENTS

CONDITIONS

When I tell you to begin, you are to PERFORM THE REQUIRED ACTIONS TO SHIFT COOLDOWN TO "A" RHR TRAIN. The conditions under which this task is to be performed are:

- a. CCW system is in operation and aligned per SOP-23.0
- b. Plant is in Mode 4
- c. Unit 1 "B" train RHR is in cooldown operation with letdown from RHR to CVCS
- d. RCS temperature is 340°F
- e. RCS pressure is 365 psig
- f. Directed by the Shift Supervisor to shift cooldown to RHR "A" train in accordance with SOP-7.0, Steps 4.9 and 4.10

JOB PERFORMANCE MEASURES

CRO-358B

TITLE: Place A SGFP On Service

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 8 MIN SIMULATOR IC NUMBER: JPM IC-60
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: Joel L. Deavers 5/21/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to PLACE A SGFP ON SERVICE. The conditions under which this task is to be performed are:

- a. An emergency event is in progress and the associated procedure foldout page is met to enter FRP-H.1. Feed and bleed criteria is being monitored by other team members.
- b. Steam generator pressures and steam header pressure on PI-464 are at 880 psig.
- c. Directed by Shift Supervisor to perform Steps 9.9 through 9.19 of FRP-H.1 for A SGFP.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Verify SGFP speed control manually adjusted to 0% demand	SGFP MASTER CONT SK-509A manual pushbutton depressed.	S / U
NOTE TO EXAMINER: THE SLAVE CONTROLLERS NOT BEING PLACED IN MANUAL IS NOT A CRITICAL ELEMENT IF MASTER CONTROLLER IS RUN TO MINIMUM.		
	A SGFP SPEED CONT SK-509B manual pushbutton depressed.	S / U
	B SGFP SPEED CONT SK-509C manual pushbutton depressed. (CUE: For each controller checked provide the following: MAN pushbutton lit, controller output indicator at zero (0).)	
2. Verify EH pumps started.	Checks EH pump lights, and pressure. (CUE: A EH pump running 1500 psig)	S / U
*3. Latch A SGFP turbine	A SGFP TURBINE LATCH pushbutton depressed. (CUE: TURBINE TRIPPED light off, TURBINE LATCH pushbutton lit.)	S / U
*4. Open A SGFP low pressure stop valve	A SGFP LOW PRESS STOP VALVE OPEN pushbutton depressed. (CUE: Pushbutton lit.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*5. Open A SGFP high pressure stop valve	A SGFP HIGH PRESS STOP VALVE OPEN pushbutton depressed. (CUE: Pushbutton lit.)	S / U
*6. Raise A SGFP to minimum speed	A SGFP INCREASE SPEED PUSHBUTTON depressed. (CUE: A SGFP RPM indicator increases to 3200 rpm, BOILER CONTROL light lit, INCREASE SPEED pushbutton lit.)	S / U
*7. Open A SGFP discharge valve	A SGFP DISCH N1(2)N21V503A handswitch placed to open. (CUE: Valve position indicator red light lit/green light is off.)	S / U
*8. Verify main feedwater to SG stop valves open for all intact steam generators	Main FW TO A (B, C) SG STOP VLV N1(2)N21MOV3232A (B, C) handswitches taken to open. (CUE: For each valve operated valve position indicator red light lit/green light is off.)	S / U
*9. Place A SGFP speed controller in AUTO	A SGFP SPEED CONT, SK-509B AUTO. pushbutton depressed. (CUE: AUTO pushbutton lit.)	S / U
*10. Adjust feedwater discharge header pressure to 50 psi greater than steam header pressure	SK-509A increase button depressed until feedwater header pressure 50 psi greater than steam header pressure. (CUE: FW HDR PRESS (PI-508) increases to 930 psig/PI-464 reads 880 psig.)	S / U
*11. Control feedwater regulating bypass valves to supply main feedwater to intact SGs	A (B, C) SG FW BYP FLOW FK-479, 489, 499 open, pushbuttons depressed. (CUE: For each controller adjusted, provide the following: controller output indicates 15% and its associated valve position indicator green and	S / U

EVALUATION CHECKLIST

ELEMENTS:

STANDARDS:

**RESULTS:
(CIRCLE)**

red light lit.)

____ **STOP TIME**

Terminate when bypass valves are throttled.

*** CRITICAL ELEMENTS:** 1, 3, 4, 5, 6, 7, 8, 9, 10, 11

GENERAL REFERENCES:

1. FRP-H.1

2. K/As: APE AA2.05 RO-3.5 SRO-3.7

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **PLACE A SGFP ON SERVICE**. The conditions under which this task is to be performed are:

- a. An emergency event is in progress and the associated procedure foldout page is met to enter FRP-H.1. Feed and bleed criteria is being monitored by other team members.
- b. Steam generator pressures and steam header pressure on PI-464 are at 880 psig.
- c. Directed by Shift Supervisor to perform Steps 9.9 through 9.19 of FRP-H.1 for A SGFP.

JOB PERFORMANCE MEASURES

CRO-359E

TITLE: Start 1C DG From The EPB And Align To Supply 1F 4160V Bus

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP X

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 6 MIN SIMULATOR IC NUMBER: IC-61
(IF APPLICABLE)

ALTERNATE PATH X TIME CRITICAL X PRA X

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: W. D. OLDFIELD 9/9/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to START 1C DG FROM THE EPB AND ALIGN TO SUPPLY 1F 4160V BUS. The conditions under which this task is to be performed are:

- a. Unit 1 has experienced a loss of all AC power, no previous SI signal.
- b. 1-2A DG is tagged out.
- c. 1B DG failed to start when attempted.
- d. 1C failed to auto start.
- e. 2C DG tripped on essential engine protection when started as SBO diesel.
- f. Load shed of emergency buses has been verified complete.
- g. Unit 2 has no "A" train power.
- h. Directed by Shift Supervisor to restore power to 1F 4160V AC Bus using 1C DG per ECP-0.0, Step 5.2.9, RNO.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Place 1C DG in Mode 2	1C MSS placed in Mode 2.	S / U
*2. Depress 1C DG start pushbutton	1C DG start pushbutton depressed. (CUE: DG cranking light on, then DG at sync speed light on.)	S / U

NOTE TO EXAMINER: PERFORMANCE OF ELEMENTS 3 THROUGH 15 ARE TIME CRITICAL AND MUST BE COMPLETED IN \leq 3 MINUTES.

<u> </u> START CRITICAL TIME		
3. Verify 1C DG frequency 58 - 62 Hz	1C DG frequency checked. (CUE: 1C DG frequency meter indicates 60 Hz.)	S / U
4. Verify 1C DG voltage 4.0 KV - 4.3 KV	1C DG voltage checked. (CUE: 1C DG voltmeter reads 4.1 KV AC.)	S / U
5. Check 1C DG output breaker closed	1C DG output breaker DH07 checked. (CUE: DH07 is open.)	S / U
6. Verify 1C DG in Mode 2	1C DG MSS placed in Mode 2.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*7. Place 1C DG output breaker DH07-1 sync switch in MAN	DH07-1 sync switch placed in MAN. (CUE: A train DG sync lights on and syncroscope in operation.)	S / U
*8. Close DH07-1	DH07-1 handswitch taken to close. (CUE: 1H 4160V AC bus potential lights on.)	S / U
9. Check 1F 4160V AC bus energized	1F 4160 supply DF13-1 checked closed or 1F 4160V AC bus potential lights checked on. (CUE: DF13-1 open or 1F 4160V AC bus potential lights off.)	S / U
10. Reset SI, if present	Checks MLB1 1-1 and MLB1 11-1. (CUE: MLB1 1-1 and 11-1 not lit.)	S / U
*11. Place BKR DF13-1 sync switch in MAN	DF13-1 sync switch placed in MAN. (CUE: A train syncroscope on and sync lights illuminated.)	S / U
*12. Place DF13-1 handswitch to close	BKR DF13-1 handswitch taken to close. (CUE: 1F 4160V AC bus AC potential lights on.)	S / U
13. Verify breaker DF02 closed	1F to 1K 4160V bus tie breaker DF02 checked. (CUE: DF02 closed.)	S / U
14. Monitor 1C DG load	1C DG MW meter check. (CUE: 1C DG load at 1 MW.)	S / U
*15. Verify two SW pumps in A train running	Handswitch for 1A, 1B, or 1C (if aligned) SW pump taken to start. (CUE: Red pump running light on for pump(s) started DG load increased .45 MW per pump.)	S / U

____ STOP CRITICAL TIME WHEN FIRST SW PUMP RUNNING.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
16. Verify SW to/from DG BLDG A HDR Q1P16V519/537 open	Valves checked. (CUE: Red lights on for V519/V537.)	S / U
17. Checks 1C DG lube oil temperature alarm clear	Directs SO to check 1C DG lube oil temperature alarm clear. (CUE: SO reports alarm clear.)	S / U

STOP TIME

Terminate when 1C DG temperature alarm checked.

* **CRITICAL ELEMENTS:** 1, 2, 7, 8, 11, 12, 15

GENERAL REFERENCES:

- | | | | |
|----|----------------|--------|---------|
| 1. | ECP-0.0 | | |
| 2. | K/As 055EA1.02 | RO-4.3 | SRO-4.4 |
| | 055EA1.06 | RO-4.1 | SRO-4.6 |
| | 055EA2.03 | RO-3.9 | SRO-4.7 |

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to START 1C DG FROM THE EPB AND ALIGN TO SUPPLY 1F 4160V BUS. The conditions under which this task is to be performed are:

- a. Unit 1 has experienced a loss of all AC power, no previous SI signal.
- b. 1-2A DG is tagged out.
- c. 1B DG failed to start when attempted.
- d. 1C failed to auto start.
- e. 2C DG tripped on essential engine protection when started as SBO diesel.
- f. Load shed of emergency buses has been verified complete.
- g. Unit 2 has no "A" train power.
- h. Directed by Shift Supervisor to restore power to 1F 4160V AC Bus using 1C DG per ECP-0.0, Step 5.2.9, RNO.

JOB PERFORMANCE MEASURES

CRO-126B

TITLE: Perform Intermediate Range Functional Check

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT X LRP ___

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: X SIMULATOR X CONTROL ROOM ___ PLANT

PROJECTED TIME: 30 MIN SIMULATOR IC NUMBER: Any Mode 3
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: W. D. OLDFIELD 6/22/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to **PERFORM INTERMEDIATE RANGE FUNCTIONAL CHECK**. The conditions under which this task is to be performed are:

- a. Plant is in Mode 3 with the 120 VAC distribution system aligned.
- b. Directed by the Shift Supervisor to perform STP-41.2 "Intermediate Range Functional Check on Channel N35".

NOTE TO EXAMINER: THIS JPM MAY BE PERFORMED ON UNIT 1 OR 2.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
1. Verifies NI-35 energized	Checks instrument control power lights. (CUE: Both lights are on, drawer has been energized for > 30 minutes.)	S / U
2. Records required data	Obtains data from surveillance test data book and records it in appropriate step	S / U
3. Check GENERAL WARNING not on in SSPS	Check GENERAL WARNING off, depresses lit and checks bulb lights on both A and B SSPS cabinets. (CUE: Light is out, light bulb test satisfactory.)	
*4. Align SSPS for test	In train A or B SSPS, depresses and holds MULTIPLEXER INHIBIT DEFEAT, places MULTIPLEXER TEST in A+B, then releases push button, and records train in A+B. (CUE: Momentary GENERAL WARNING in A+B.)	

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*5. Place LEVEL TRIP switch in BYPASS	Switch in BYPASS. (CUE: Switch is in BYPASS position, annunciator FA4 in alarm; NC-35F permissive light on, LEVEL TRIP BYPASS drawer light on.)	S / U
*6. Place test mode selector switch in FIXED position and operation selector switch in 10^{-11} amps position	Switches in FIXED and 10^{-11} amps position. (CUE: In FIXED and 10^{-11} amps position, annunciator FA5 in alarm, CHANNEL ON TEST drawer light on.)	S / U
NOTE TO EXAMINER: IF THIS JPM IS BEING SIMULATED, REFER TO THE APPROPRIATE DATA SHEETS TO DETERMINE VALUES TO PLACE PEN ON METER IN ORDER TO SIMULATE NEEDLE POSITION FOR THE EXAMINEE TO READ.		
*7. Rotate operations selector switch through each position and record data on Table 1	Selector switch rotated through each position per Table 1 and data recorded. (CUE: Place pen on meter for the indicated readings.)	S / U
*8. Verify readings within tolerances	Readings compared to tolerances of Table 1.	S / U
*9. Turn variable adjust fully counterclockwise	Pot adjusted full counterclockwise. (CUE: Pot reading is 0.)	S / U
*10. Turn operation selector switch to 10^{-10} amp position	Switch indicating 10^{-10} amps. (CUE: Switch is in 10^{-10} amp position.)	S / U
*11. Place TEST MODE switch in VARIABLE position	Switch in VARIABLE position. (CUE: Switch is in the VARIABLE position.)	S / U
*12. Adjust variable pot to obtain the P-6 set point and record neutron level	Variable pot adjusted. (CUE: Place pen at 9×10^{-11} amps. Drawer permissive light is on, IR P6 NC35D bistable light on.)	S / U
13. Verify P6 reading within tolerance	Reading compared to tolerances	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*14. Adjust variable pot to reset P6 bistable, record neutron level, and adjust pot fully CCW	Variable pot adjusted. (CUE: Place pen at 5×10^{-11} amps, IR P6 NC35D bistable reset, drawer permissive light off, then pot taken fully CCW.)	S / U
*15. Place operation selector switch to 10^{-4} or 10^{-5} position, adjust pot until HI LEVEL ROD STOP drawer light illuminated	Switch in position, pot adjusted. (CUE: HI LEVEL ROD STOP, drawer light is on solid.)	S / U
*16. Record neutron level in drawer meter and verify within limits	Readings recorded and verified. (CUE: N35 Data Surveillance Test Data Book max _____ amps, min _____ amps.)	S / U
*17. Adjust pot until HI LEVEL ROD STOP reset	Pot adjusted. (CUE: Bistable light is off, meter reading _____ amps.)	S / U
*18. Adjust pot until HIGH LEVEL TRIP drawer light on and bistable light on	Pot adjusted. (CUE: HIGH LEVEL TRIP, drawer light is on. IR HI Q NC35F bistable light on solid.)	S / U
*19. Record neutron level on drawer meter and verify within limits	Readings recorded and verified. (CUE: Trip setpoint _____ amps, Tech Spec limit _____ amps.)	S / U
*20. Adjust pot until HIGH LEVEL TRIP reset	Pot adjusted. (CUE: Bistable light is off; meter reading _____ amps.)	S / U
21. Adjust pot fully counterclockwise	Pot adjusted. (CUE: Pot is reading 0.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
22. Realign SSPS	In the previously recorded train depresses and holds MULTIPLEXER INHIBIT DEFEAT, places MULTIPLEXER TEST in NORMAL then releases push button. Checks listed LOGIC CABINET SWITCHES. (CUE: As appropriate for proper alignment.)	S / U
*23. Place TEST MODE switch to FIXED and OPERATION SELECTOR switch to 10 ⁻¹¹ positions	Switches properly aligned. (CUE: TEST MODE switch in FIXED, OPERATION SELECTOR switch in 10 ⁻¹¹ position.)	S / U
*24. Allows test current to decay then places OPERATIONS SELECTOR switch and LEVEL TRIP switch to NORMAL	Switches in NORMAL. (CUE: Switches are in NORMAL.)	S / U

STOP TIME

Terminate JPM when switch realignment is complete.

* **CRITICAL ELEMENTS:** 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 20

GENERAL REFERENCES

- | | | | | |
|----|----------|--|--------|---------|
| 1. | STP-41.2 | Intermediate Range Functional Check Channel N-35 | | |
| 2. | KA | 015A3.01 | RO-3.8 | SRO-3.8 |
| | | 015A3.02 | RO-3.7 | SRO-3.7 |
| | | 015A3.03 | RO-3.9 | SRO-3.9 |
| | | 015A4.02 | RO-3.6 | SRO-3.6 |
| | | 015A4.03 | RO-3.8 | SRO-3.9 |

GENERAL TOOLS AND EQUIPMENT

Blank copy of STP-41.2

COMMENTS

CONDITIONS

When I tell you to begin, you are to **PERFORM INTERMEDIATE RANGE FUNCTIONAL CHECK**. The conditions under which this task is to be performed are:

- a. Plant is in Mode 3 with the 120 VAC distribution system aligned.
- b. Directed by the Shift Supervisor to perform STP-41.2 "Intermediate Range Functional Check on Channel N35".

JOB PERFORMANCE MEASURES

SO-065

TITLE: PRT Cooldown Using Normal Method

PROGRAM APPLICABLE: SOT X SORP OLT X LRP

ACCEPTABLE EVALUATION METHOD: X PERFORM X SIMULATE DISCUSS

EVALUATION LOCATION: SIMULATOR CONTROL ROOM X PLANT

PROJECTED TIME: 10 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH TIME CRITICAL PRA

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: W. D. OLDFIELD 9/2/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to **ALIGN THE PRT FOR NORMAL COOLDOWN USING FNP-1-SOP-1.2**. The conditions under which this task is to be performed are:

- a. The PRT contents are at a temperature of 160°F following a discharge into the PRT from a PORV.
- b. You are requested by the Unit Operator to cooldown the contents of the PRT using the normal method.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
*1. Stop the reactor coolant drain tank pump(s)	Handswitch for the A(B) reactor coolant drain tank pump(s) verified to be in/or taken to TRIP-PULL OUT position. (CUE: Handswitch for reactor coolant drain tank pump A(B) in TRIP-PULL OUT position and the red and green indicating lights are off. If a pump was running then the RCDT recirc lo flow annunciator will alarm.)	S / U
<p>NOTE: EXAMINEE SHOULD INDICATE THAT THE CONTROL ROOM OPERATOR HAS TO TAKE THE MCB HANDSWITCH FOR LCV-1003 TO OPEN TO GAIN LOCAL CONTROL OVER LCV-1003 AT THE LIQUID WASTE PANEL. PROVIDE THE FOLLOWING CUE: THE CONTROL ROOM OPERATOR HAS GONE TO OPEN ON THE MCB HANDSWITCH FOR LCV-1003.</p>		
*2. Close reactor coolant drain tank LCV 1-LWP-LCV-1003 (Q1G21V064)	Controller for reactor coolant drain tank LCV 1-LWP-LCV-1003 (Q1G21V064) taken to manual and to closed position. (CUE: Valve in manual with 0% demand.)	S / U

NOTE TO EXAMINER: IF EXAMINEE INDICATES THAT THE PLANT OPERATORS WOULD BE CALLED TO DETERMINE MCB INDICATION FOR LCV-1003 PROVIDE THE FOLLOWING CUE: MCB INDICATION FOR LCV-1003 IS RED LIGHT OFF AND GREEN LIGHT ON.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*3. Close the RCDT recirc valve 1-LWP-HV-7144 (N1G21V106)	RCDT recirc valve 1-LWP-HV-7144 (N1G21V106) handswitch taken to close. (CUE: Handswitch in close position; red indicating light is off and green indicating light is on.)	S / U
*4. Close RCDT pump suction valve 1-LWP-HV-7127 (N1G21V006)	RCDT pump suction valve 1-LWP-HV-7127 (N1G21V006) handswitch taken to close position. (CUE: Handswitch in close position; red indicating light is off and green indicating light is on.)	S / U
*5. Open the pressurizer relief tank drain 1-RC-HV-8031 (N1B13V002)	Control room operator called to open pressurizer relief tank drain 1-RC-HV-8031 (N1B13V002). (CUE: Control room operator informs that pressurizer relief tank drain 1-RC-HV-8031 handswitch in open position; green indicating light is off and red indicating light is on.)	S / U
*6. Open the RCDT pump to the PRT valve 1-LWP-HV-7141 (N1G21V020)	RCDT pump to the PRT valve 1-LWP-HV-7141 (N1G21V020) handswitch taken to open position. (CUE: Valve handswitch in open position; green indicating light is off and red indicating light is on.)	S / U
*7. Start RCDT pump A(B) to recirculate the contents of the PRT	Handswitch for RCDT pump A(B) taken to CLOSE. (CUE: Handswitch for RCDT pump A(B) in neutral position; green indicating light is off and red indicating light is on.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<p>NOTE TO EXAMINER: AT THIS POINT EXAMINEE SHOULD MENTION THAT HE IS WAITING FOR THE PRT TEMPERATURE DECREASE TO STABILIZE AND HE WOULD BE COMMUNICATING WITH THE CONTROL ROOM OPERATORS REGARDING THE PRT TEMPERATURE TREND; AT THAT TIME THE FOLLOWING CUE SHOULD BE PROVIDED: CUE: THE PRT TEMPERATURE DECREASE HAS STABILIZED AND IS READING APPROXIMATELY 116°F.</p>		
*8. WHEN the PRT temperature decrease has stabilized, THEN stop RCDT pump A(B)	Handswitch for the A(B) RCDT pump taken to TRIP-PULL OUT . (CUE: Handswitch for the A(B) RCDT pump in the TRIP-PULL OUT position; red and green indicating lights are off. RCDT recirc lo flow annunciator will alarm.)	S / U
*9. Close the pressurizer relief tank drain 1-RC-HV-8031 (N1B13V002)	Control room operator called to close handswitch for the pressurizer relief tank drain 1-RC-HV-8031 (N1B13V002). (CUE: Control room operator informs that handswitch HV-8031 in close position; red light is off and green light is on.)	S / U
*10. Close the RCDT pump to the PRT 1-LWP-HV-7141 (N1G21V020)	RCDT pump to the PRT 1-LWP-HV-7141 (N1G21V020) handswitch is taken to the close position. (CUE: Handswitch is in the close position; red light is off and green light is on.)	S / U
*11. Open the RCDT recirc valve 1-LWP-HV-7144 (N1G21V106)	Handswitch for the RCDT recirc valve 1-LWP-HV-7144 (N1G21V106) taken to the open position. (CUE: Handswitch is in the open position; green light is off and red light is on.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*12. Open RCDT pump suction valve 1-LWP-HV-7127 (N1G21V006)	RCDT pump suction valve 1-LWP-HV-7127 (N1G21V006) handswitch taken to open. (CUE: Handswitch is in the open position; green light is off and red light is on.)	S / U

NOTE TO EXAMINER: IF EXAMINEE INDICATES THAT THE RCDT PUMP ARE NORMALLY IN THE TRIP-PULL OUT POSITION RECORD TASK COMPLETION TIME NOW, OTHERWISE CONTINUE WITH REMAINING STEPS OF PROCEDURE.

____ STOP TIME

13. Start RCDT pump A(B)	RCDT pump A(B) handswitch taken to close. (CUE: RCDT pump A(B) handswitch spring returned to neutral position; green light is off and red light is on. RCDT recirc lo flow annunciator clears.)	S / U
14. Place reactor coolant drain tank LCV 1-LWP-LCV-1003 (Q1G21V006) in AUTO	Reactor coolant drain tank LCV 1-LWP-LCV-1003 (Q1G21V006) handswitch placed in AUTO. (CUE: Handswitch for LCV-1003 in AUTO.)	S / U

NOTE: EXAMINEE MAY INDICATE THAT THE CONTROL ROOM OPERATOR WOULD BE CALLED TO GO TO CLOSE ON THE MCB HANDSWITCH FOR LCV-1003 TO REGAIN CONTROL OF LCV-1003 IN THE MAIN CONTROL ROOM (NOT REQUESTED TO SATISFY THIS JPM).

____ STOP TIME

Terminate when all elements of the task have been completed.

*** CRITICAL ELEMENTS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12**

GENERAL REFERENCES:

1. SOP-1.2
2. K/A 010A1.03 RO-2.9 SRO-3.2

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **ALIGN THE PRT FOR NORMAL COOLDOWN USING FNP-1-SOP-1.2**. The conditions under which this task is to be performed are:

- a. The PRT contents are at a temperature of 160°F following a discharge into the PRT from a PORV.
- b. You are requested by the Unit Operator to cooldown the contents of the PRT using the normal method.

JOB PERFORMANCE MEASURES

SO-605

TITLE: Align Backup Cooling To The Charging Pumps From Fire Protection

PROGRAM APPLICABLE: SOT X SORP X OLT X LRP 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
(IF APPLICABLE)

ALTERNATE PATH ___ TIME CRITICAL X PRA X

DIRECTIONS TO TRAINEE:

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, in the judgment of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

JPM Approved: Joel L. Deavers 5/11/98
Supervisor - Operations Training

CONDITIONS

When I tell you to begin, you are to **ALIGN BACKUP COOLING TO THE CHARGING PUMPS FROM FIRE PROTECTION**. The conditions under which this task is to be performed are:

- a. Unit 1 (2) is in Mode 1
- b. The on-service train is Train A
- c. The 1(2)B charging pump is aligned to the A train, with 1(2)B charging pump in operation
- d. 1(2)B CCW pump is tagged out for bearing replacement
- e. 1(2)C CCW pump has tripped on overload
- f. 1(2)A CCW pump would not start due to a problem with the breaker
- g. You have been directed to align backup cooling to the 1(2)A charging pump in accordance with AOP-9.0, Attachment 1.

NOTE TO EXAMINER: IT IS NOT INTENDED FOR THE EXAMINEE TO ACTUALLY PERFORM THE CONNECTIONS TO THE CCW LINES. THE INTENT OF THIS JPM IS TO SHOW THE ABILITY TO LOCATE THE ADAPTERS AND THE PROPER VALVES TO WHICH THE ADAPTERS AND DRAIN HOSES ARE TO BE ATTACHED. THIS JPM IS ALSO INTENDED TO PROVE THE EXAMINEE CAN LOCATE THE APPROPRIATE LOCAL FLOW AND TEMPERATURE INDICATORS REQUIRED TO PERFORM THIS JPM.

NOTE TO EXAMINER: ELEMENTS 1 - 6 ARE TIME CRITICAL AND MUST BE COMPLETED IN 20 MINUTES.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
_____ START TIME CRITICAL TIME		
*1. Isolate CCW to the train A charging pumps	Q1(2)P17V290 and Q1(2)P17V292 are turned clockwise until closed. (CUE: Both valves travel stopped/stems are down.)	S / U
*2. Isolate CCW to the 1(2)B charging pump	Q1(2)P17VC1B and Q1(2)P17VC2B are turned clockwise until closed. (CUE: Both valves travel stopped/stems are down.)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*3. Install fire hose from hose cabinet N1(2)V43D110 to supply header drain valve on the A train using the temporary adapter	Fire hose connected to Q1P17V302 (Q2P17V319) using the temporary adapter.	S / U
4. Install drain hose to the A train return header drain and route to floor drain.	Drain hose installed on drain valve Q1P17V304 (Q2P17V320) and routed to floor drain	S / U
*5. Open supply and return header drain valves on train A	Q1P17V302 (Q2P17V319) and Q1P17V304 (Q2P17V320) turned counterclockwise until open (CUE: both valves travel stopped/stems are up.	S / U
*6. Open hose cabinet isolation valve and establish 20-60 gpm flow to the charging pump.	Hose cabinet isolation valve turned counterclockwise until proper flow rate verified on flow indicator FI-3322A. (CUE: FI-3322A indicates 40 gpm.)	S / U

____ STOP TIME CRITICAL TIME

7. Inform the control room that firewater is aligned to 1(2)A CHG pump.	Control room informed (CUE: The operator states, "1(2)A CHG pump is started, 1(2)B is stopped, monitor 1(2)A CHG pump temperature.")	S / U
8. Control charging pump oil temperature to maintain less than 160 degrees F by adjusting the hose cabinet isolation valve	Hose cabinet isolation valve adjusted to maintain oil temperature less than 160 degrees (CUE: TISH-3306AA indicates 125 degrees with both readings stable.)	S / U

____ STOP TIME

Terminate when temperatures are checked and verified to be less than 160 degrees

* **CRITICAL ELEMENTS:** 1, 2, 3, 5, 6

GENERAL REFERENCES:

1. AOP-9.0, Attachment 1
2. P&ID 175002 (205002) Sheet 3 of 3
3. K/A: 008A2.01 RO-3.3 SRO-3.6

GENERAL TOOLS AND EQUIPMENT:

None

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **ALIGN BACKUP COOLING TO THE CHARGING PUMPS FROM FIRE PROTECTION**. The conditions under which this task is to be performed are:

- a. Unit 1 (2) is in Mode 1
- b. The on-service train is Train A
- c. The 1(2)B charging pump is aligned to the A train, with 1(2)B charging pump in operation
- d. 1(2)B CCW pump is tagged out for bearing replacement
- e. 1(2)C CCW pump has tripped on overload
- f. 1(2)A CCW pump would not start due to a problem with the breaker
- g. You have been directed to align backup cooling to the 1(2)A charging pump in accordance with AOP-9.0, Attachment 1.

JOB PERFORMANCE MEASURES

SO-351-MODIFIED

TITLE: Start A 4075 KW Diesel Generator From The DLCP In Mode 4

PROGRAM APPLICABLE: SOT ___ SORP ___ OLT ___ LRP ___

ACCEPTABLE EVALUATION METHOD: ___ PERFORM X SIMULATE ___ DISCUSS

EVALUATION LOCATION: ___ SIMULATOR ___ CONTROL ROOM X PLANT

PROJECTED TIME: 10 MIN SIMULATOR IC NUMBER: N/A
(IF APPLICABLE)

ALTERNATE PATH X TIME CRITICAL ___ PRA ___

DIRECTIONS TO TRAINEE:

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, in the judgement of the evaluator, the trainee is significantly deficient in knowledge, (based on the questions being asked), a JPM/QR Comment Sheet should be submitted to the program administrator summarizing the weaknesses.

STANDARDS

To successfully complete this JPM, you must satisfy each of the following criteria:

- 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.

CONDITIONS

When I tell you to begin, you are to START DIESEL GENERATOR 1-2A FROM THE DLCP IN MODE 4. The conditions under which this task is to be performed are:

- a. A loss of all AC power has occurred on Unit 1.
- b. ECP-0.0 is in progress.
- c. Diesel generator 1-2A tripped on autostart.
- d. Directed by Unit 1 Shift Supervisor to start 1-2A diesel generator from the diesel local control panel per SOP-38.1. >

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
<u> </u> START TIME		
1. Check engine for any damage	Engine walked down. (CUE: No damage indicated.)	S / U
2. Check air reservoir pressure adequate	Air reservoir pressure indicators checked. (CUE: Pressure is 400 psig.)	S / U
3. Prime the fuel oil system	Hand priming pump operated. (CUE: Resistance felt during priming.)	S / U
*4. Place diesel generator in MODE 4	MODE 4 selector switch turned to Mode 4. (CUE: Mode 4 selector switch indicator light for Mode 4 illuminated.)	S / U
*5. Check essential engine protection shutdown	Annunciator panel DLCP checked. (CUE: Annunciator lights 35 and 43 are lit, all other lights are out.)	S / U
*6. Check 86 relay for essential generator protection.	86 relay checked. (CUE: Light is on/flag is visible)	S / U
7. Notify control room of condition.	Control room notified. (CUE: SS directs you to reset the relay and continue with DG start)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*8. Reset generator differential relay.	Handle on relay turned to reset. (CUE: Flag is clear, light is out, Annunciator window 35 cleared)	S / U
*9. Depress the engine reset pushbutton	Pushbutton depressed.	S / U
10. Verify associated 4160V bus deenergized and supply breaker opened	Operator calls to have bus verified deenergized and supply breaker opened on the EPB or locally. (CUE: Bus is deenergized and supply breaker is open.)	S / U
8. Verify that diesel ready for auto start light is illuminated	Operator checks ready for auto start light illuminated. (CUE: Ready for auto start light is on.)	S / U
*9. Start diesel generator	Start pushbutton depressed until engine is running and then released. (CUE: Engine starts.)	S / U
10. Determine generator voltage regulator control mode.	Auto/Manual voltage regulator selector switch position checked. (CUE: Switch is in AUTO)	S / U
11. Check generator voltage and frequency.	Voltage and frequency meters checked. (CUE: 0 volts and 0 Hz indicated)	S / U
12. Report diesel generator output voltage indication to control room.	Zero diesel generator output voltage reported to control room. (CUE: SS directs you to reset the exciter)	S / U
*13. Reset the exciter at the local control panel.	Exciter reset. (CUE: Exciter reset)	S / U
14. Check generator voltage and frequency.	Voltage and frequency checked. (CUE: Voltmeter reads 4150 V AC; frequency meter reads 60.5 Hz)	

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*15. Adjust generator voltage to 4160V AC	Operates AUTO voltage adjust switch in the raise direction until meter reads 4160V AC. (CUE: Generator voltmeter reads 4160V AC.)	S / U
*16. Adjust frequency to 60 Hz.	Operates generator speed control switch in the lower direction until meter reads 60 Hz. (CUE: Generator frequency meter reads 60 Hz.)	S / U

CUE: THE SHIFT SUPERVISOR DIRECTS CONTROL TO BE SHIFTED TO THE EPB.

NOTE TO EXAMINER: OBTAINING THE MODE 4 SELECTOR SWITCH KEY MAY BE SIMULATED. PROVIDE THE FOLLOWING CUE IF THE SWITCH IS OPERATED WITHOUT KEY.

CUE: SWITCH WILL NOT MOVE OUT OF MODE 4 POSITION.

*17. Shift control of diesel generator to EPB	MODE 4 selector switch turned OFF. (CUE: Mode 4 selector switch indicator light out.)	S / U
---	---	-------

____ STOP TIME

Terminate when control of diesel generator has been shifted to EPB.

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

GENERAL REFERENCES:

1. ECP-0.0
2. SOP-38.1
3. K/A 064A4.01 RO-4.0 SRO-4.3

GENERAL TOOLS AND EQUIPMENT:

1. Key

COMMENTS:

CONDITIONS

When I tell you to begin, you are to START A 4075 KW DIESEL GENERATOR FROM THE DLCP IN MODE 4. The conditions under which this task is to be performed are:

- a. A loss of all AC power has occurred on Unit 1.
- b. ECP-0.0 is in progress.
- c. Diesel generator 1-2A tripped on autostart.
- d. Directed by Unit 1 Shift Supervisor to start 1-2A diesel generator from the diesel local control panel per SOP-38.1.

Facility: <u>Farley Nuclear Plant</u>		Date of Examination: <u>May, 2000</u>
Examination Level (Circle One): <u>RO / SRO</u>		Operating Test Number: <u>S (B)</u>
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shutdown Safety Assessment.	JPM-CRO-(NEW)-Complete a Shutdown Safety Assessment - 2.1.25 (2.8/3.1) (Determine Time to Saturation)
		NA
	Shift Staffing	Question on shift staffing requirements - 2.1.4 (2.3/3.4)
		Question on procedures and directives related to shift staffing - 2.1.5 (2.3/3.4)
A.2	Refueling	JPM SO-139C, Perform Spent Fuel Bridge Crane Operability Test - 2.2.27 (2.6/3.5)
		NA
A.3	Ctmt Purge	JPM CRO-355A, Perform Containment Vent Operation - 2.3.9 (2.5/3.4)
		NA
A.4	EALs and Classification	JPM SS-138C, Classify an Emergency Event and Make Initial Notifications – 2.4.41 (2.3/4.1)
		NA

Examiner: _____

Chief Examiner: _____