



Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	Work Hour Limitations	
JPM NUMBER:	551	REVISION:	1	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):				
K/A RATINGS:	RO 2.9* SRO 3.9			
K/A STATEMENT:	2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	Admin - Conduct of Operations			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input checked="" type="checkbox"/> Other - List	Classroom		

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by:

Developer *Date*
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

Validator *Date*

Approved by:

Site Training Management *Date*

Approved by:

Site Training Program Owner *Date*

Reid
12/1/14



Job Performance Measure (JPM)

OPERATOR: _____

RO ____ SRO ____ DATE: _____

TASK STANDARD: Determine Work Hour limitation will be exceeded and complete first part of Attachment 2 of NPG-SPP-03.21.

PRA: NA

REFERENCES/PROCEDURES NEEDED: NPG-SPP-03.21

VALIDATION TIME: 15 Minutes

PERFORMANCE TIME: _____

COMMENTS: _____

Additional comment sheets attached? YES ____ NO ____

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER



Job Performance Measure (JPM)

INITIAL CONDITIONS: You are a Reactor Operator on Unit 2. Unit 1 is operating at 100%, Unit 3 is coming out of a Refuel Outage and startup is planned for tomorrow. Unit 2 has just pulled critical after a forced outage. Below is your work schedule. You were off on Saturday 10/12. You have worked **NO** hours outside your schedule prior to 10/12.

INITIATING CUES: Review the upcoming work schedule to verify your working hours are within the guidelines of NPG-SPP-03.21 Fatigue Management and Work Hour Limits. If the schedule needs 10 CFR 26 Overtime Limits Waiver, complete one.

Sun	Mon	Tues	Wed	Thu	Fri	Sat
10/13	10/14	10/15	10/16	10/17	10/18	10/19
0700-1900	0700-1900	1900-0700	1900-0700	1900-0700	OFF	0700-1900

Sun	Mon	Tues	Wed	Thu	Fri	Sat
10/20	10/21	10/22	10/23	10/24	10/25	10/26
0700-1900	0700-1900	OFF	1900-0700	1900-0700	1900-0700	OFF



Job Performance Measure (JPM)

START TIME _____

STEP / STANDARD	SAT / UNSAT
<u>Step 1:</u> 3.2 Requirements 3.2.1 10 Code of Federal Regulations (CFR) 26 Overtime Limits [R.21] A. The following limits apply to covered individuals regardless of unit status [R.22, 23]: 1. No more than 16 work hours in any 24 hour period 2. No more than 26 work hours in any 48 hour period 3. No more than 72 work hours in any 7 day (168 hour) period 4. At least a 10 hour break between successive work periods. 5. A continuous break of at least 34 hours in any 9 day (216 hour) period. <u>Standard:</u> Evaluates Schedule and determines he will need a need 10 CFR 26 Overtime Limits Waiver.	Critical Step ___ SAT ___ UNSAT ___ N/A



Job Performance Measure (JPM)

Step 2:

Attachment 2

10 CFR 26 Overtime Limits Waiver

Identify the individual who will exceed a 10 CFR 26 Overtime Limit:

Name: His Name

Department: Operations

Cognizant Supervisor: His Supervisor

Date/Time Waiver Initiated: _____ / _____

Date/Time Waiver to Start: _____ / _____

Date/Time Waiver to End: _____ / _____

Waiver Duration (hours beyond limits): _____

Identify all the limit(s) that will be exceeded by placing a check mark by the limit(s):

- ☐ > 16 work hours in any 24-hour period
- ☐ > 26 work hours in any 48-hour period
- ☐ > 72 work hours in any 7-day period
- ☐ < 10-hour (consecutive hours) break between successive work periods
- ☒ < 34-hour (consecutive hours) break in any 9-day period
- ☐ Minimum Days Off (MMD) required
- ☐ Online ☐ Outage

Required numbers of days off: _____

Shift schedule applied to individual: _____-hour shift

Standard:

Critical block required to be checked is < 34 (consecutive hours) break in any 9 day period.

Critical Step

___ SAT

___ UNSAT

___ N/A

STOP TIME _____

END OF TASK



Job Performance Measure (JPM)

Provide to Applicant

INITIAL CONDITIONS: You are a Reactor Operator on Unit 2. Unit 1 is operating at 100%, Unit 3 is coming out of a Refuel Outage and startup is planned for tomorrow. Unit 2 has just pulled critical after a forced outage. Below is your work schedule. You were off on Saturday 10/12. You have worked **NO** hours outside your schedule prior to 10/12.

INITIATING CUES: Review the upcoming work schedule to verify your working hours are within the guidelines of NPG-SPP-03.21 Fatigue Management and Work Hour Limits. If the schedule needs 10 CFR 26 Overtime Limits Waiver, complete one.

Sun	Mon	Tues	Wed	Thu	Fri	Sat
10/13	10/14	10/15	10/16	10/17	10/18	10/19
0700-1900	0700-1900	1900-0700	1900-0700	1900-0700	OFF	0700-1900

Sun	Mon	Tues	Wed	Thu	Fri	Sat
10/20	10/21	10/22	10/23	10/24	10/25	10/26
0700-1900	0700-1900	OFF	1900-0700	1900-0700	1900-0700	OFF



Job Performance Measure (JPM)

Attachment 1

(Page 1 of 3)

10 CFR 26 Overtime Limits Waiver

Section 1 – Request

To be completed by cognizant supervisor

Identify the individual who will exceed a 10 CFR 26 Overtime limit:

Name: _____

Department _____

Cognizant Supervisor: _____

Date/Time Waiver Initiated: _____ / _____

Date / Time Waiver to Start: _____ / _____

Date / Time Waiver to End: _____ / _____

Waiver Duration (hours beyond limits): _____

Identify all the limit(s) that will be exceeded by placing a check mark by the limit(s):

- ☐ > 16 work hours in any 24-hour period
- ☐ > 26 work hours in any 48-hour period
- ☐ > 72 work hours in any 7-day period
- ☐ < 10-hour (consecutive hours) break between successive work periods
- ☐ < 34-hour (consecutive hours) break in any 9-day periods
- ☐ Minimum Days Off (MMD) required
 - ☐ Online ☐ Outage
 - Required numbers of days off: _____
 - Shift schedule applied to individual: _____-hour shift

Identify the work activity for which the waiver will be issued:

Description: N/A

Circumstances that cause need for exceeding limits: N/A

Waiver is required to address conditions that are adverse to safety, or 10 maintain site security?

☐ Yes ☐ No

If no, waiver is not valid

Submitted by: _____
Print Name Signature Date Time



Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	3-SR-3.4.9.3&4 Reactor Recirculation Pump Start Limitations	
JPM NUMBER:	639	REVISION:	0	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-068-SU-04 / Perform Reactor Recirculation Pump Start Limitations SI			
K/A RATINGS:	2.1.20	RO 4.6	SRO 4.6	
K/A STATEMENT:	Ability to interpret and execute procedure steps			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:				

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input checked="" type="checkbox"/> Other - List	Classroom		

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by:

Developer *Date*
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

Validator *Date*

Approved by:

Site Training Management *Date*

Approved by:

Site Training Program Owner *Date*

Rec'd
12/11/14



Job Performance Measure (JPM)

OPERATOR: _____

RO ____ SRO ____ DATE: _____

TASK STANDARD: Upon performing 3-SR-3.4.9.3&4, determine that Recirculation Pump 3A can be started and that Recirculation Pump 3B can NOT be started

PRA: NA

REFERENCES/PROCEDURES NEEDED: 3-SR-3.4.9.3&4

VALIDATION TIME: 15 Minutes

PERFORMANCE TIME: _____

COMMENTS: _____

Additional comment sheets attached? YES ____ NO ____

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER



Job Performance Measure (JPM)

INITIAL CONDITIONS:

You are the Unit 3 Unit Operator. Unit 3 is in Mode 4 preparing for startup. Forced reactor coolant circulation has been lost. It is required to restore forced circulation. RWCU is in service.

INITIATING CUE:

The Unit Supervisor has directed you to perform 3-SR-3.4.9.3&4 up through step 7.0[10] using the attached SPDS display and determine which Recirculation Pump can be started if any, and if not, give the reason it cannot be started.



Job Performance Measure (JPM)

START TIME _____

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p>7.0 PROCEDURE STEPS</p> <p style="text-align: center;">NOTE</p> <p>Notification of the US AND UO upon start AND finish of this SR is NOT required since it involves only data recording AND calculations.</p> <p>[1] VERIFY that the following initial conditions are satisfied:</p> <p style="padding-left: 40px;">[1.1] VERIFY ALL precautions AND limitations in Section 3.0 have been reviewed.</p> <p style="padding-left: 40px;">[1.2] VERIFY ALL prerequisites listed in Section 4.0 are satisfied.</p> <p><u>Standard:</u></p> <p style="padding-left: 40px;">Reviews P&L's in Section 3.0 Verifies all prerequisites in section 4.0 are satisfied.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>[2] RECORD the start date AND time started, reason for test, plant conditions, AND ANY pre-test remarks on the Surveillance Task Sheet (STS).</p> <p><u>Standard:</u></p> <p style="padding-left: 40px;">Records the start date, time started on the STS.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 3:</u></p> <p style="text-align: center;">NOTE</p> <p>The following steps are required to be completed within 15 minutes of starting a recirc pump. On occasions where RWCU is out of service, the Bottom Head Drain temperature is required to be obtained using a Contact Pyrometer (Step 7.0[6.2.2]). This is required to be coordinated in advance AND the data taker is required to be in place AND ready to record the temperature prior to continuing with Step 7.0[3].</p> <p>[3] RECORD Recirc Loop temperature(s) in Table 1 AND RECORD the time the Recirc Loop temperature(s) data was taken (IF applicable, THEN N/A the loop temperature for the loop NOT being started).</p> <p>Record time _____</p> <p><u>Standard:</u></p> <p>Records the recirc loop 3A temperature of 172.2 °F and/or 164.4°F in table 1, records recirc loop 3B temperature of 160 °F and/or 151.8°F and records current time.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 4:</u></p> <p>[4] RECORD Reactor Steam Dome pressure in Table 1.</p> <p><u>Standard:</u></p> <p>Records Reactor Steam Dome Pressure of 0 psig in Table 1.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>[5] DETERMINE Reactor Coolant temperature as follows using the first step that satisfies its conditional requirement: (N/A the steps NOT used.):</p> <p>[5.1] If the Reactor Coolant System is producing steam, (in a saturated steam condition.</p> <p><u>Standard:</u></p> <p>Step 5.1 is NA</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<u>Step 6:</u> [5.2] IF one Recirculation Loop is in operation AND the reactor is NOT in Mode 1, THEN <u>Standard:</u> Step is N/A.	___ SAT ___ UNSAT ___ N/A
<u>Step 7:</u> [5.3] IF Shutdown Cooling is in service, THEN <u>Standard:</u> Step is N/A.	___ SAT ___ UNSAT ___ N/A
<u>Step 8:</u> [5.4] IF the reactor is in cold shutdown at zero pressure with NO forced circulation, THEN RECORD 212°F in Table 1. <u>Standard:</u> Records 212°F in Table 1.	Critical Step ___ SAT ___ UNSAT ___ N/A
<u>Step 9:</u> [6] DETERMINE Reactor Bottom Head Drain temperature as follows using EITHER step that satisfies its conditional requirement (N/A the step NOT used): [6.1] IF RWCU is in service, THEN RECORD 3-TR-56-4, Point 7 (3-TE-56-8) OR RECORD Integrated Computer System (ICS) Point 56-8 as the bottom Head Drain temperature in Table 1. <u>Standard:</u> Records Bottom Head Drain temperature of 123.2°F in Table 1 using the Integrated Computer System (ICS) Point 56-8.	Critical Step ___ SAT ___ UNSAT ___ N/A



Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 10:</u></p> <p>[6.2] IF RWCU is out of service, or Step [6.1] cannot be performed, THEN PERFORM the following (OTHERWISE, N/A):</p> <p><u>Standard:</u></p> <p>Step is N/A.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 11:</u></p> <p>[7] CALCULATE the difference between Bottom Head Coolant temperature AND the RPV Coolant Temperature by SUBTRACTING Reactor Bottom Head Drain temperature from RPV coolant temperature AND RECORD this value in Table 1.</p> <p><u>Standard:</u></p> <p>Subtracts 123.2°F from 212°F and records 88.8°F in Table 1.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 12:</u></p> <p>[8] VERIFY the difference between the Bottom Head Coolant temperature AND the RPV Coolant temperature is $\leq 145^{\circ}\text{F}$, AND RECORD the time of verification.</p> <p>Record time _____</p> <p><u>Standard:</u></p> <p>Verifies the temperature difference is less than 145°F and signs AC step and records time.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 13:</u></p> <p>[9] CALCULATE the difference between the Coolant temperature in the Recirculation Loop to be started AND the RPV Coolant temperature by SUBTRACTING the Recirculation Loop to be started from the RPV Coolant temperature AND RECORD this value in Table 1. (N/A the other loop on occasions where only one loop is being started).</p> <p><u>Standard:</u></p> <p>Subtracts recirc loop 3A temperature of either 172.2°F or 164.4°F from 212°F and records 39.8°F or 47.6°F for Loop A and then subtracts loop 3B temperature of either 160°F or 151.8°F from 212°F and records 52°F or 60.2°F for Loop B.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 14:</u></p> <p>[10] VERIFY the difference between the Coolant temperature in the Recirculation Loop to be started the AND the RPV Coolant is $\leq 50^{\circ}\text{F}$. OR In Mode 2 AND Both Recirc Pumps are NOT in operation, the difference may be $\leq 75^{\circ}\text{F}$.</p> <p>Record time _____</p> <p><u>Standard:</u></p> <p>Determines that the 3A recirc pump can be started ($< 50^{\circ}\text{F } \Delta$ Temp) and that the 3B recirc pump can NOT be started ($> 50^{\circ}\text{F } \Delta$ Temp).</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STOP TIME _____

END OF TASK



Job Performance Measure (JPM)

Provide to Applicant

INITIAL CONDITIONS:

You are the Unit 3 Unit Operator. Unit 3 is in Mode 4 preparing for startup. Forced reactor coolant circulation has been lost. It is required to restore forced circulation. RWCU is in service.

INITIATING CUE:

The Unit Supervisor has directed you to perform 3-SR-3.4.9.3&4 up through step 7.0[10] using the attached SPDS display and determine which Recirculation Pump can be started if any, and if not, give the reason it cannot be started.

Provide to Applicant

POINT DISPLAY				
Menu: Alarm Graphics Trends Points ZoomLayers Print Help				
3 SELECT FUNC. KEY OR TURN-ON CODE GD >				09-OCT-2014 11:58:25
				SPDS
GROUP DISPLAY FOR @3493&4				Page 1 of 2
RECIRC PUMP START LIMITATIONS				LIMITS
				Update rate 1.0 seconds
PID	QUAL	VALUE	UNITS	DESCRIPTION
3-54	LOLO	0	PSIG	RX PRESSURE-WIDE RANGE
3-61	LOLO	0	PSIG	RX PRESSURE-WIDE RANGE
CALC046	NCAL	-9999.0	DEG F	RX STEAM TEMP (IF PRESS>10 PSIG)
.	GOOD	-----		-----
56-8	GOOD	123.2	DEG F	REACTOR VESSEL DRAIN TO RWCU
CALC074	NCAL	-9999.0	DEG F	RX DOME TO BOTTOM HEAD DELTA-T
.	GOOD	-----		-----
68-2	LOLO	164.4	DEG F	RECIRC PMP A DISCHARGE TEMP
.	GOOD	-----		-----
68-78	LOLO	151.8	DEG F	RECIRC PMP B DISCHARGE TEMP
CALC080	NCAL	-9999.0	DEG F	RX DOME TO RECIRC A DSCH DELTA-T
CALC081	NCAL	-9999.0	DEG F	RX DOME TO RECIRC B DSCH DELTA-T
68-6A	LOLO	172.2	DEG F	RECIRC PMP A SUCT TEMP (1 OF 2)
68-6B	LOLO	172.2	DEG F	RECIRC PMP A SUCT TEMP (2 OF 2)
68-83A	LOLO	160.0	DEG F	RECIRC PMP B SUCT TEMP (1 OF 2)
68-83B	LOLO	160.0	DEG F	RECIRC PMP B SUCT TEMP (2 OF 2)
CALC293	NCAL	-9999.0	DEG F	RX DOME TO REC A SUCT DELTA-T 1
CALC294	NCAL	-9999.0	DEG F	RX DOME TO REC A SUCT DELTA-T 2
CALC295	NCAL	-9999.0	DEG F	RX DOME TO REC B SUCT DELTA-T 1
CALC296	NCAL	-9999.0	DEG F	RX DOME TO REC B SUCT DELTA-T 2

PREVIOUS (F7)	CANCEL (ESC)	F1-SET RATE	F2-PTS-->	F3-HISTORY	F4-PTS<--	F5-	F6-LOCAL ARCH
PG UP PG DN TT045 WK=001/win=1 SEC LVL=3 PRIM/BACKCPU S SHUTDOWN3FN U3 S1							



Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	1-SI-4.7.A.2.A Primary Containment Nitrogen Consumption and Leakage	
JPM NUMBER:	638	REVISION:	0	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-064-SU-05 / Perform Primary Containment Nitrogen Consumption and Leakage SI			
K/A RATINGS:	RO 3.7 SRO 4.1			
K/A STATEMENT:	2.2.12 / Knowledge of surveillance procedures			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:				

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input checked="" type="checkbox"/> Other - List	Classroom		

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by: _____
Developer *Date*
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____
Validator *Date*

Approved by: _____
Site Training Management *Date*

Approved by: _____
Site Training Program Owner *Date*

*Rec'd
12/1/14*



Job Performance Measure (JPM)

OPERATOR: _____

RO _____ SRO _____ DATE: _____

TASK STANDARD: Perform sections 7.3 through 7.8 of 1-SI-4.7.A.2.A and determine
Average Leakage meets the Acceptance Criteria

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure 1-SI-4.7.A.2.A

VERIFICATION TIME: 20 Min

PERFORMANCE TIME:

COMMENTS: _____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____ (Retain entire JPM
for records)

SIGNATURE: _____ DATE: _____
EXAMINER



Job Performance Measure (JPM)

SIMULATOR SETUP

IC	
Exam IC	

Batch File or Pref file	
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Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s):



Job Performance Measure (JPM)

CLASSROOM:

INITIAL CONDITIONS:

You are an Operator. The time is 2400 hours on 10/2/2014. 1-SI-4.7.A.2.A, Primary Containment Nitrogen Consumption and Leakage, is in progress.

INITIATING CUE:

The Unit Supervisor (US) directs you to complete 1-SR-4.7.A.2.A, Primary Containment Nitrogen Consumption and Leakage, using data collected at 2400 and provided on the handout.



Job Performance Measure (JPM)

START TIME

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p style="text-align: center;">NOTE</p> <p>The correction for level changes is based on the assumption that the Suppression Chamber level change is relatively small (-1" to -7.25" indicated level) allowing the effect of Suppression Chamber curvature to be neglected. Therefore, the 909.8 cubic feet change in volume per one inch change in Suppression Chamber level is assumed constant.</p> <p>7.3 Suppression Chamber Level</p> <p>7.3.1 Attachment 1 – Section A – Suppression Chamber Level Corrections Data</p> <p>[1] At the beginning of the surveillance (0000) hours), RECORD the level from SUPPR POOL WATER LEVEL, 1-LI-64-54A and 1-LI-64-66 on Panel 1.9-3, in column (1) for each available instrument.</p> <p>[2] At the end of the surveillance (2400 hours), RECORD the Suppression Chamber level from indicators SUPPR POOL WATER LEVEL, 1-LI-64-54A and 1-LI-64-66 on Panel 1.9-3, in column (2) for each available instrument.</p> <p><u>Standard:</u></p> <p>Performs step 7.3.1[2] and Records (-) 5.0 inches in column 2 for 1-LI-64-54A and (-) 3.7 inches in column 2 for 1-LI-64-66 on Attachment 1.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 2:</u></p> <p>[3] If both instruments are available, 1-LI-64-54A and 1-LI-64-66, SUBTRACT column (2) from column (1) to determine the amount of change in Suppression Chamber level and RECORD in column (3) (negative numbers are possible).</p> <p><u>Standard:</u></p> <p>Subtracts column 2 from column 1 and records (-) 0.3 inches in column 3 of attachment 1 for both 1-LI-64-54A and 1-LI-64-66.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 3:</u></p> <p>[4] For each instrument 1-LI-64-54A and 1-LI-64-66, CALCULATE the change in Suppression Chamber free volume as standard cubic feet (SCF) by multiplying column (3) by column (4) (909.8 ft³/in.) and RECORD in column (5).</p> <p><u>Standard:</u></p> <p>Multiplies column 3 by 909.8 and records (-) 272.94 in column 5 for both 1-LI-64-54A and 1-LI-64-66.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 4:</u></p> <p>7.3.2 Attachment 1 – Section B – Total Suppression Chamber Level Correction</p> <ul style="list-style-type: none"> • IF both (64-54A & 64-66) instruments are available, THEN <p>ADD column (5) for each instrument and DIVIDE by two (for calculating the average) and RECORD results in the Total Suppression Chamber Level Correction blank.</p> <ul style="list-style-type: none"> • If an instrument is unavailable, THEN <p>USE only the operable instrument and ENTER the column (5) value for the operable instrument in Total Suppression Chamber Level Correction blank.</p> <p><u>Standard:</u></p> <p>Adds -272.94 and -272.94 and divides by 2 and records -272.94 on Attachment 1.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>7.4 Calculating the Drywell Control Air leakage.</p> <p>7.4.1 Attachment 2 – Calculate the Drywell Control Air Line A Leakage</p> <p>[1] At the beginning of the surveillance (0000 hours), RECORD the DW CONT AIR TO X-50, 1-FIQ-032-0092, (Drywell Control Air Loop A) in the column (2) "INITIAL" (0000 hours)</p> <p>[2] At the end of the surveillance (2400 hours), RECORD the DW CONT AIR TO X-50, 1-FIQ-032-0092, (Drywell Control Air Loop A) in the column (1) "ENDING" (2400 hours)</p> <p><u>Standard:</u></p> <p>Performs step 7.4.1[2] and records 1252903 in column 1 of attachment 2 for 1-FIQ-032-0092.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 6:</u></p> <p>[3] CALCULATE the daily difference for DW CONT AIR TO X-50, 1-FIQ-032-0092, (Drywell Control Air Loop A)</p> <p>Column (1) – Column (2) = Difference (Column 3)</p> <p><u>Standard:</u></p> <p>Subtracts Column (2) from Column (1) and records <u>1676</u> in Column 3 of Attachment 2.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 7:</u></p> <p>7.4.2 Attachment 2 – Calculate the Drywell Control Air Line B Leakage</p> <p>[1] At the beginning of the surveillance (0000 hours), RECORD the DW CONT AIR TO X-22, 1-FIQ-032-0075, (Drywell Control Air Loop B) in the column (2) "INITIAL" (0000 hours)</p> <p>[2] At the end of the surveillance (2400 hours), RECORD the DW CONT AIR TO X-22, 1-FIQ-032-0075, (Drywell Control Air Loop B) in the column (1) "ENDING" (2400 hours)</p> <p><u>Standard:</u></p> <p>Performs step 7.4.2[2] and records 347673 in column 1 of attachment 2 for 1-FIQ-032-0075.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 8:</u></p> <p>7.4.2 Attachment 2 – Calculate The Drywell Control Air Line B Leakage</p> <p>[3] CALCULATE the daily difference for DW CONT AIR TO X-22, 1-FIQ-032-0075, (Drywell Control Air Loop B)</p> <p>Column (1) – Column (2) = Difference (Column 3)</p> <p><u>Standard:</u></p> <p>Subtracts Column (2) from Column (1) and records 493 in Column 3 of Attachment 2.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 9:</u></p> <p>7.4.3 Calculate The Total Drywell Control Air Leakage</p> <p>SUM the DW CONT AIR TO X-50, 1-FIQ-032-0092, (Drywell Control Air Loop A) Difference and DW CONT AIR TO X-22, 1-FIQ-032-0075, (Drywell Control Air Loop B) Difference.</p> <p>1-FIQ-032-0092 (Difference) + 1-FIQ-032-0075 (Difference) = Total.</p> <p><u>Standard:</u></p> <p>Adds 1676 plus 493 and records 2169 for a total Drywell Control Air Leakage on Attachment 2.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 10:</u></p> <p>7.5 Air Temperature Correction</p> <p style="text-align: center;">NOTES</p> <ol style="list-style-type: none"> 1) Drywell/Suppression Chamber Venting Correction Factor are absolute values. (No Negative totals) 2) TSB 3.3.3.1 (PAM instrumentation) states that for DW temperature that two wide range drywell atmosphere temperature signals are transmitted from separate temperature sensors and are continuously recorded and displayed on one CR recorder (XR-64-50) and one control room indicator (TI-64-52AB). Therefore, it's reasonable that either indicator should be adequate for use in the calculation of N2 consumption. 3) It is assumed in 3.6F.6 that the suppression chamber water and atmospheric temperatures are in equilibrium, therefore the use of the average suppression pool water temperature is an acceptable substitute in place of the suppression chamber air temperature. IF SUPP CHBR TEMP, 1-TE-64-52B on SUPPRESSION CHAMBER TEMPERATURE/PRESSURE, 1-XR-64-52 (point 1), is unavailable, THEN Suppression Pool Water Temperature, 1-TR-64-161 (Point 10) can be substituted.[BFNPER 607653-002] <p>7.5.1 Attachment 3 – Section A – Drywell and Suppression Chamber Data</p> <p>[2] At the end of the surveillance (2400 hours), RECORD on Attachment 3 in the 2400 Hours column the following data.</p> <ul style="list-style-type: none"> • DRYWELL PRESSURE 1-PI-64-135 • DRYWELL PRESSURE 1-PI-64-136 • DRYWELL TEMPERATURE 1-TI-64-52AB or 1-XR-64-50 • DW/SUPPR CHBR DIFF PRESS 1-DPI-64-137 • DW/SUPPR CHBR DIFF PRESS 1-DPI-64-138 • SUPP CHBR TEMP, 1-TE-64-52B on SUPPRESSION CHAMBER TEMPERATURE/PRESSURE, 1-XR-64-52 (point 1) <p style="text-align: center;">OR</p>	

STEP / STANDARD	SAT / UNSAT
<p>IF SUPP CHBR TEMP, 1-TE-64-52B on SUPPRESSION CHAMBER TEMPERATURE/PRESSURE, 1-XR-64-52 (point 1), is unavailable, THEN</p> <p>Suppression Pool Water Temperature, 1-TR-64-161 (Point 10) can be substituted. [BFNPER 607653-002]</p> <ul style="list-style-type: none"> Suppression Pool Level 1-LI-64-54A or 1-LI-64-66 <p><u>Standard:</u></p> <p>In the 2400 hours row, records in column 1 (1.44), column 2 (1.40), in column 3 (141), in column 4 (1.28), in column 5 (1.25), in column 6 (94.2) and in column 7 (-5.0).</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 11:</u></p> <p>[3] IF the Drywell Temperature has changed by 2°F or more, THEN</p> <p>PERFORM the calculation using Section B for Drywell and enter the result in column (8) of Section A. (Otherwise enter "0" (Zero) for the calculation.)</p> <p><u>Standard:</u></p> <p>Refers to Attachment 3 and determines that Drywell Temperature has NOT changed by more than 2 °F and records 0 in column 8 of attachment 3.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 12:</u></p> <p>[4] IF the Suppression Chamber Air Temperature has changed by 2°F or more THEN</p> <p>PERFORM the calculation using Section C for Suppression Chamber and enter the result in column (9) of Section A. (Otherwise enter "0" (Zero) for the calculation.)</p> <p><u>Standard:</u></p> <p>Refers to Attachment 3 and determines that Suppression Chamber Air Temperature has NOT changed by more than 2 °F and records 0 in column 9 of attachment 3.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 13:</u></p> <p>[5] Calculate the Total Correction Factor as follows SUM the Drywell (Column 8) and Suppression Chamber (Column 9) and entering the results in Column (10).</p> <p><u>Standard:</u></p> <p>Adds (Column 8) and (Column 9) and enters 0 in Column (10) of Attachment 3.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p>NRC: Step 7.6, Nitrogen Makeup is NA. There is no Makeup from the Nitrogen Storage Tank and CAD has not been cross-tied to drywell control air.</p>	
<p><u>Step 14:</u></p> <p>7.6 Nitrogen Makeup</p> <p>7.6.1 Attachment 4 – Section A – Nitrogen Makeup Data</p> <p><u>Standard:</u></p> <p>Reviews Attachment 4 for Nitrogen additions, step is NA.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 15:</u></p> <p>7.7 Containment Venting</p> <p style="text-align: center;">NOTE</p> <p>Drywell/Suppression Chamber Venting Correction Factor are absolute values. (No Negative totals)</p> <p>7.7.1 Attachment 5 - Section A - Containment Venting Data using 1-FIC-84-20</p> <p><u>Standard:</u></p> <p>Venting data previously entered on attachment 5 (data is recorded while venting).</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 16:</u></p> <p style="text-align: center;">NOTES</p> <p>1) Alternate Containment Venting Data is performed when 1-FIC-84-20 indication is not available.</p> <p>2) It is assumed in 3.6F.6 that the suppression chamber water and atmospheric temperatures are in equilibrium, therefore the use of the average suppression pool water temperature is an acceptable substitute in place of the suppression chamber air temperature.</p> <p>IF SUPP CHBR TEMP, 1-TE-64-52B on SUPPRESSION CHAMBER TEMPERATURE/PRESSURE, 1-XR-64-52 (point 1), is unavailable, THEN</p> <p>Suppression Pool Water Temperature, 1-TR-64-161 (Point 10) can be substituted.[BFNPER 607653-002]</p> <p>7.7.2 Attachment 6 – Section A – Alternate Containment Venting Data</p> <p><u>Standard:</u></p> <p>Venting data recorded, step is NA.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 17:</u></p> <p>[2] AFTER the Venting Event is completed</p> <p><u>Standard:</u></p> <p>Venting data recorded, step is NA.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 18:</u></p> <p>7.7.3 Attachment 6 – Section B – Alternate Containment Venting Correction</p> <p><u>Standard:</u></p> <p>Venting data recorded, step is NA.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 19:</u></p> <p>7.8.1 Attachment 7 - Section A - Net Nitrogen Leakage</p> <p>[1] Total Drywell Control Air Leakage, - RECORD the Total Drywell Control Air Leakage from Attachment 2 Section A in the Gas Addition to the Drywell table.</p> <p><u>Standard:</u></p> <p>Refers to Attachment 2 and records 2169 ft³ for Total Drywell Control Air Leakage on Attachment 7.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 20:</u></p> <p>[2] Cumulative Nitrogen Makeup, - RECORD the total cumulative nitrogen makeup from Attachment 4 Section A in the Gas Addition to the Drywell table.</p> <p><u>Standard:</u></p> <p>Refers to Attachment 4 and records 0 ft³ for cumulative nitrogen makeup on attachment 7.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 21:</u></p> <p>[3] CALCULATE the Total Gas Addition as follows:</p> <p>ADD all the Gas addition types together from the Gas Addition Table and RECORD the sum as the Total Gas Addition in the Gas Addition to the Drywell table.</p> <p><u>Standard:</u></p> <p>Adds the Total Drywell Control Air Leakage and the Cumulative Nitrogen Makeup and determines the Total Gas Addition is 2169 ft³.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 22:</u></p> <p>[4] Total Drywell and Suppression Chamber Temperature Correction, - RECORD the TOTAL VENTING CORRECTION from Attachment 3, Section A in the Correction Factor table.</p> <p><u>Standard:</u></p> <p>Refers to Attachment 3 and records 0 ft³ for Total DW and SC Temperature Correction on Attachment 7.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 23:</u></p> <p>[5] Total Suppression Chamber Level Correction, - RECORD the total Suppression Chamber level correction from Attachment 1, Section A in the Correction Factor table.</p> <p><u>Standard:</u></p> <p>Refers to Attachment 1 and records (-)272.94 ft³ for Total Suppression Chamber Level Correction on Attachment 7.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 24:</u></p> <p>[6] Total Venting Correction using 1-FIC 84-20, - RECORD the total Drywell Venting Correction from Attachment 5, Section A in the Correction Factor table</p> <p><u>Standard:</u></p> <p>Refers to Attachment 5 and records 2600 ft³ for Total Venting Correction.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 25:</u></p> <p>[7] Total Alternate Venting Correction, - RECORD the total Drywell Venting Correction from Attachment 6, Section B in the Correction Factor table.</p> <p><u>Standard:</u></p> <p>Refers to Attachment 6 and records 0 for Total Alternate Venting Correction on Attachment 7.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 26:</u></p> <p>[8] CALCULATE the Total Correction Factor as follows</p> <p>ADD all the Correction Factor Types together from the Correction Factor Table and RECORD the sum as the Total Correction Factor in the Correction Factor table.</p> <p><u>Standard:</u></p> <p>Adds the Total Suppression Chamber Level Correction, the Total Venting Correction, and the Total Alternate Venting Correction together and determines the Total Correction Factor is 2327.06 ft³.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 27:</u></p> <p>[9] CALCULATE the Net Nitrogen Leakage as follows</p> <p>Total Gas Addition for the Net Nitrogen Leakage and SUBTRACT the Air Temperature calculation and SUBTRACT the Total Correction Factor.</p> <p><u>Standard:</u></p> <p>Subtracts the Total DW and SC Temperature Correction and the Total Correction Factor from the Total Gas Addition and determines the Net Nitrogen Leakage is (-) 158.06 ft³.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 28:</u></p> <p style="text-align: center;">NOTE</p> <p>Leakage rates, for comparison purposes, should always be converted to standard flow rate conditions (flow at 70°F, one standard atmosphere). Since nitrogen gas is supplied by evaporating liquid nitrogen and heating it to approximately 70°F then reducing the pressure to 2.0 psig the conversion is:</p> $\frac{14.7\text{psia} + 2.0\text{psig}}{14.7\text{psi}} \times \frac{460^{\circ}\text{R} + 70^{\circ}}{460^{\circ}\text{R} + 70^{\circ}\text{F}} = 1.136$ <p>Where: 14.7 psia = 1 standard atmosphere 2.0 psig = nitrogen supply pressure 460°R = Fahrenheit to Rankine conversion factor 70°F = degrees Fahrenheit of nitrogen, actual and standard</p> <p>For calculation purposes, a day consist of 24-hours. During the days when the time changes to Daylight Savings Time (DST) 23-hours will be used. When returning to Central Standard Time (CST) 25-hours will be used. To average the net nitrogen usage (in ft³) for a day, a 24 hour period is normally used and the result are expressed in standard cubic feet per hour. The net nitrogen leakage is multiplied by a conversion factor 1.136, then divided by the number of hours in the day. The result gives the average nitrogen leakage in standard cubic feet per hour for that day. When Daylight Savings Time and Central Standard Time changes take place, the appropriate number of hours will be used instead of 24 (hours).</p> <p>[1] MULTIPLY the net nitrogen leakage from Attachment 6, Section A, (Nitrogen Leakage table) by (1.136/Hours during the day).</p> <p>[2] RECORD the result on the Average Nitrogen Leakage line.</p> <p><u>Standard:</u></p> <p>Multiplies Net Nitrogen Leakage of (-) 158.06 ft³ by 1.136 and divides by 24 hours to determine an Average Nitrogen Leakage of (-) 7.48 SCFH. Determines that the Average Nitrogen Leakage is less than 542 SCFH (AC) and initials for the Acceptance Criteria.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
CUE: ANOTHER OPERATOR WILL CONTINUE FROM HERE	



Job Performance Measure (JPM)

STOP TIME _____

END OF TASK



Job Performance Measure (JPM)

Provide to Applicant

INITIAL CONDITIONS:

You are an Operator. The time is 2400 hours on 10/2/2014. 1-SI-4.7.A.2.A, Primary Containment Nitrogen Consumption and Leakage, is in progress.

INITIATING CUE:

The Unit Supervisor (US) directs you to complete 1-SR-4.7.A.2.A, Primary Containment Nitrogen Consumption and Leakage, using data collected at 2400 and provided on the handout.



Job Performance Measure (JPM)

Provide to Applicant

Data recorded at 2400 on 10/02/2014

To be used to complete 1-SI-4.7.A.2.A

Primary Containment Nitrogen Consumption and Leakage

Suppression Chamber Level

1-LI-64-159A 14.8 Ft

1-LI-64-54A (-) 5.0 inches

1-IL-64-66 (-) 3.7 inches

Drywell Control Air Line Flow

1-FIQ-032-0092 1252903 Ft³

1-FIQ-032-0075 347673 Ft³

Drywell Pressure

1-PI-64-135 1.44 psig

1-PI-64-136 1.40 psig

1-PI-64-67B 0 psig

Drywell Temperature

1-XR-64-50 133 °F

1-TI-64-52AB 141 °F

Drywell-Suppression Chamber Differential Pressure

1-PDI-64-137 1.28 psid

1-PDI-64-138 1.25 psid

Suppression Chamber Air Temperature

1-TR-64-161 Point 10 94.2 °F

1-XR-64-52 Point 1 90.8

Containment venting data was recorded in Attachment 5 when venting was completed.



Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	LCO Determination and Manual Active LCO Record
JPM NUMBER:	637	REVISION:	0

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input checked="" type="checkbox"/> STA	<input type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	S-000-AD-27 / Assess LCO/TRM Actions Required for Inoperable Equipment			
K/A RATINGS:	2.2.23	K/A RATING:	SRO 4.3	
K/A STATEMENT:	Ability to track Technical Specification limiting conditions for operations			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	N/A			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input checked="" type="checkbox"/> Other - List	Classroom		

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by:

Developer *Date*
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

Validator *Date*

Approved by:

Site Training Management *Date*

Approved by:

Site Training Program Owner *Date*

Re'd
12/1/14



Job Performance Measure (JPM)

OPERATOR: _____

RO _____ SRO _____ DATE: _____

TASK STANDARD: Record LCO entry manually for Inoperable Primary Containment
Isolation Valve 1-FCV-69-2

PRA: NA

REFERENCES/PROCEDURES NEEDED: OPDP-8, Tech Spec 3.6.1.3, and 1-SR-
3.6.1.3.5(RWCU)

VALIDATION TIME: 30 Minutes

PERFORMANCE TIME: _____

COMMENTS: _____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____ (Retain entire JPM
for records)

SIGNATURE: _____ DATE: _____
EXAMINER



Job Performance Measure (JPM)

CLASSROOM

INITIAL CONDITIONS:

Unit 1 is In Mode 1. Timing of RWCU valves in accordance with 1-SR-3.6.1.3.5(RWCU) RWCU System PCIV Operability Test is complete.

eSOMs LCO Tracking Log Computer system is out of service, so manual entries on a hard copy of the log must be made.

INITIATING CUE:

Complete the surveillance 1-SR-3.6.1.3.5, start at step 5.2[1] in Appendix A for 1-FCV-69-1, and Appendix B for 1-FCV-69-2.

Record the completion of the surveillance and any other required entry on the sheet provided.



Job Performance Measure (JPM)

START TIME _____

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p>Appendix A 5.2 Review of Data from Periodic Tests</p> <p>[1] IF the As Found stroke time (Closing) for 1-FCV-69-1 recorded in the Section 1.0 Stroke Time Data Table is in Stroke Time Code Criteria, THEN</p> <p>PERFORM the following: (Otherwise N/A)</p> <p>[1.1] MARK Stroke Time Acceptance Criteria Satisfied as "Yes" in the Section 1.0 Stroke Time Data Table</p> <p><u>Standard:</u></p> <p>Marks 'YES' for stroke time acceptance criteria satisfied.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>[1.2] MARK remaining steps in Section 5.2 N/A</p> <p><u>Standard:</u></p> <p>Marks steps in section 5.2 as NA.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 3:</u></p> <p>Appendix B 5.2 Review of Data from Periodic Tests</p> <p>[1] IF the As Found stroke time (Closing) for 1-FCV-69-2 recorded in the Section 1.0 Stroke Time Data Table is in Stroke Time Code Criteria, THEN</p> <p>PERFORM the following: (Otherwise N/A)</p> <p>[1.1] MARK Stroke Time Acceptance Criteria Satisfied as "Yes" in the Section 1.0 Stroke Time Data Table</p> <p><u>Standard:</u></p> <p>Marks 'No' for stroke time acceptance criteria satisfied.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>

STEP / STANDARD	SAT / UNSAT
<p><u>Step 3:</u></p> <p>2.0 1-FCV-69-2 AS FOUND STROKE TIME</p> <p>[8] If the As Found Measured Stroke Time for 1-FCV-69-2 recorded in Section 1.0 Stroke Time Data Table is greater than the Limiting Value listed, THEN PERFORM the following:</p> <p>[8.1] DECLARE valve 1-FCV-69-2 Inoperable</p> <p><u>Standard:</u></p> <p>Declares valve 1-FCV-69-2 INOPERABLE.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 4:</u></p> <p>[8.2] INITIATE the appropriate LCO actions</p> <p><u>Standard:</u></p> <p>Initiates appropriate LCO actions by evaluating Technical Specifications and OPDP-8. Determines that LCO Tracking Log entries are required.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>[8.3] MARK Acceptance Criteria Satisfied as 'NO' in the Section 1.0 Stroke Time Data Table and the STS.</p> <p><u>Standard:</u></p> <p>Marks 'NO' for stroke time acceptance criteria satisfied.</p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



Job Performance Measure (JPM)

STEP / STANDARD			SAT / UNSAT
<p><u>Step 6:</u></p> <p>Writes the LCO Entry on the provided sheet.</p> <p><u>Standard:</u></p> <p>Writes the following on the sheet provided.</p> <ul style="list-style-type: none">• 1-FCV-69-2 Inoperable• Date and Time of entry• Tech Spec 3.6.1.3 Action Statements A.1 and A.2• Completion Time			<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
CONDITION	REQUIRED ACTION	COMPLETION TIME	
A. ----NOTE----- Only applicable to penetration flow paths with two PCIVs. ----- One or more penetration flow paths with one PCIV inoperable except due to MSIV leakage not within limits.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. <u>AND</u>	4 hours except for main steam line AND 8 hours for main steam line (continued)	
	A.2 ----NOTE----- Isolation devices in high radiation areas may be verified by use of administrative means. ----- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside primary cont. <u>AND</u> Prior to entering MODE 2 or 3 from MODE 4, if Pri. Cont. was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside Pri. Cont.	

STOP TIME _____

END OF TASK

INITIAL CONDITIONS:

eSOMs LCO Tracking Log Computer system is out of service, so manual entries on a hard copy of the log must be made.

If AC is not met, then identify all required actions

Blank lined paper with horizontal ruling lines.



Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	Classify the event per REP (Uncontrolled water level decrease in SFSP)	
JPM NUMBER:	621TC	REVISION:	1	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	S-000-EM-21 / Classify and Declare an Abnormal/Emergency Event			
K/A RATINGS:	2.4.41	K/A RATING: SRO 4.6		
K/A STATEMENT:	Knowledge of the emergency action level thresholds and classifications			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	N/A			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input checked="" type="checkbox"/> Other - List	Classroom		

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: 15+15 TIME CRITICAL (Y/N) Y ALTERNATE PATH (Y/N) N

Developed by:	_____	_____
	<i>Developer</i>	<i>Date</i>
	(Ensure validator is briefed on exam security per NPG-SPP-17.8.1) (See JPM Validation Checklist in NPG-SPP-17.8.2)	
Validated by:	_____	_____
	<i>Validator</i>	<i>Date</i>
Approved by:	_____	_____
	<i>Site Training Management</i>	<i>Date</i>
Approved by:	_____	_____
	<i>Site Training Program Owner</i>	<i>Date</i>

*Rec'd
12/1/14*



Job Performance Measure (JPM)

OPERATOR: _____

RO _____ SRO _____ DATE: _____

TASK STANDARD: The event is classified as an ALERT based on uncontrolled water level decrease in the spent fuel pool with irradiated fuel assemblies expected to result in irradiated fuel assemblies being uncovered

PRA: NA

REFERENCES/PROCEDURES NEEDED: EPIP-1, EPIP-3

VALIDATION TIME: 15 min. to classify and 15 minutes to notify

PERFORMANCE TIME: _____

COMMENTS: _____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER

CLASSROOM

INITIAL CONDITIONS:

You are the Shift Manager (SM). Unit 1 and Unit 2 are at 100% power. The Unit 1 board operator has just acknowledged alarm "Start of Strong Motion Accelerograph," 1-XA-55-22C, Window 5 and multiple personnel in the Unit 1/2 Control Room felt the ground shake. The Unit 2 board operator then acknowledged alarm, "Fuel Pool Skimmer Surge Tank Level Lo/Lo-Lo," and referred to ARP 2-XA-55-4C, Window 4. An AUO was dispatched to panels 25-15 and 25-16. Subsequently, alarms, "Fuel Pool System Abnormal," 2-XA-55-4C, Window 1 AND "Fuel Pool Floor Area Radiation High," 2-XA-55-3A, Window 1 were received. The AUO determines the cause of the alarms to be lowering level in the Spent Fuel Storage Pool. The AUO reports that the Fuel Pool liner appears to be leaking and level is slowly trending downward. Condensate makeup valve 2-SHV-078-0532 is danger tagged closed and all other methods of makeup to the Spent Fuel Storage Pool are unavailable. System Engineering has determined that it will be one (1) hour before the fuel in the Spent Fuel Pool will be in danger of being uncovered. 2-SHV-078-0532, Condensate makeup valve, cannot be untagged for another (2) hours to provide an adequate makeup source. The TSC and CECC are not staffed.

Reactor Water Level	(+33 inches on normal range) and steady
Reactor Pressure	1035 psig and steady
DW Pressure	1.35 psig and steady
DW Temperature	148° F and steady
DW Radiation	RR-90-256 reading normal
Torus Temperature	89 F° and steady
Torus Pressure	0.20 psig and steady
Torus Level	-1 inch on narrow range and steady
Fuel Pool Level	2 feet below normal (trending down slowly at
approximately	4 inches/minute)
Radiation around fuel pool	2-RI-90-1A indicates 21 mR/HR and slowly rising
	2-RI-90-2A indicates 20 mR/HR and slowly rising
	2-RI-90-3A indicates 20 mR/HR and slowly rising
Wind Direction	105°
Wind Speed	20 mph
NOTE:	No abnormal radiological release is expected offsite.

INITIATING CUE:

Identify the HIGHEST REQUIRED emergency classification, and complete the associated initial notification form. Raise your hand immediately once you have classified the event, and the examiner will then provide you with the EPIP you've chosen so you can begin completing the initial notification form.

JPM IS TIME CRITICAL



Job Performance Measure (JPM)

START TIME: _____

STEP / STANDARD	SAT / UNSAT
<u>Step 1:</u> Refers to EPIP-1 to classify the emergency event <u>Standard:</u> Classifies an ALERT, EAL 1.1-A2, based on uncontrolled water level decrease in Spent Fuel Storage Pool expected to result in irradiated fuel assemblies being uncovered.	Critical Step ___ SAT ___ UNSAT ___ N/A

TIME CLASSIFIED: _____

START TIME: _____

STEP / STANDARD	SAT / UNSAT
<u>Step 2:</u> Refers to EPIP-3 to classify the emergency event <u>Standard:</u> Completes Appendix A of EPIP-3 within 15 minutes of event classification.	Critical Step ___ SAT ___ UNSAT ___ N/A

TIME APPENDIX COMPLETE: _____

<u>Step 3:</u> Completes Appendix A of EPIP-3 <u>Standard:</u> Completes classification of an ALERT, EAL 1.1-A2 within 15 minutes, and completes Appendix A of EPIP-3 within 15 minutes of event classification.	Critical Step ___ SAT ___ UNSAT ___ N/A
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End of Task

Provide to Applicant**INITIAL CONDITIONS:**

You are the Shift Manager (SM). Unit 1 and Unit 2 are at 100% power. The Unit 1 board operator has just acknowledged alarm "Start of Strong Motion Accelerograph," 1-XA-55-22C, Window 5 and multiple personnel in the Unit 1/2 Control Room felt the ground shake. The Unit 2 board operator then acknowledged alarm, "Fuel Pool Skimmer Surge Tank Level Lo/Lo-Lo," and referred to ARP 2-XA-55-4C, Window 4. An AUO was dispatched to panels 25-15 and 25-16. Subsequently, alarms, "Fuel Pool System Abnormal," 2-XA-55-4C, Window 1 AND "Fuel Pool Floor Area Radiation High," 2-XA-55-3A, Window 1 were received. The AUO determines the cause of the alarms to be lowering level in the Spent Fuel Storage Pool. The AUO reports that the Fuel Pool liner appears to be leaking and level is slowly trending downward. Condensate makeup valve 2-SHV-078-0532 is danger tagged closed and all other methods of makeup to the Spent Fuel Storage Pool are unavailable. System Engineering has determined that it will be one (1) hour before the fuel in the Spent Fuel Pool will be in danger of being uncovered. 2-SHV-078-0532, Condensate makeup valve, cannot be untagged for another (2) hours to provide an adequate makeup source. The TSC and CECC are not staffed.

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Reactor Pressure	1035 psig and steady
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DW Temperature	148° F and steady
DW Radiation	RR-90-256 reading normal
Torus Temperature	89 F° and steady
Torus Pressure	0.20 psig and steady
Torus Level	-1 inch on narrow range and steady
Fuel Pool Level	2 feet below normal (trending down slowly at approximately 4 inches/minute)
Radiation around fuel pool	2-RI-90-1A indicates 21 mR/HR and slowly rising 2-RI-90-2A indicates 20 mR/HR and slowly rising 2-RI-90-3A indicates 20 mR/HR and slowly rising
Wind Direction	105°
Wind Speed	20 mph
NOTE:	No abnormal radiological release is expected offsite.

INITIATING CUE:

The Unit Supervisor directs you as the Reactor Operator to determine Primary Containment water level in accordance with 2-EOI Appendix-9, Primary Containment Water Level Monitoring and Equipment Control.

Raise your hand immediately once you have classified the event, and the examiner will then provide you with the EPIP you've chosen so you can begin completing the initial notification form.

JPM IS TIME CRITICAL



Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	Review a Radiological Survey Map
JPM NUMBER:	544	REVISION:	2

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	A-000-AD-35 / Use a Radiation Work Permit			
K/A RATINGS:	2.3.7 K/A RATING: RO 3.5 SRO 3.6			
K/A STATEMENT:	Ability to comply with radiation work permit requirements during normal or abnormal conditions.			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	N/A			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input checked="" type="checkbox"/> Other - List	Classroom		

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by: _____
Developer *Date*
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____
Validator *Date*

Approved by: _____
Site Training Management *Date*

Approved by: _____
Site Training Program Owner *Date*

Re'd
12/1/14



Job Performance Measure (JPM)

OPERATOR: _____

RO _____ SRO _____ DATE: _____

TASK STANDARD: Review a Radiological Survey Map to determine if a task can be completed without exceeding exposure limits

PRA: NA

REFERENCES/PROCEDURES NEEDED: Handout

VALIDATION TIME: 20 Minutes

PERFORMANCE TIME: _____

COMMENTS: _____

Additional comment sheets attached? YES _____ NO _____

RESULTS: SATISFACTORY _____ UNSATISFACTORY _____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER



Job Performance Measure (JPM)

Classroom

INITIAL CONDITIONS:

You are a Browns Ferry employee who has obtained an accumulative yearly dose of 850 mrem.

INITIATING CUE:

Given the following survey map, DETERMINE if you can complete the assigned task in the area without exceeding your TVA-administrative yearly dose limit or RWP entry limits.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 (RWCU OUTBD SUCTION ISOLATION) valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 30 minutes for venting. Then proceed to 3-FCV-69-2 (RWCU OUTBD SUCTION ISOLATION) valve to manually close and install the mechanical restraining device, it will require 10 minutes to close the valve and another 10 minutes to install the mechanical restraining device. The map of the room has radiological survey information you must interpret to successfully complete this JPM. Assume the 30cm reading will be the whole body dose received at each location.

EXAMINER KEY

ANSWER:

2 Hx's at 30 min

$$30/60 = .5 \text{ hrs}$$

$$.5 \times 250 = 125 \text{ mrem to vent Hx}$$

10 min to close valve + 10 min to install device = 20 min

$$20/60 = .33 \text{ hrs}$$

$$.33 \times 100 = 33.3 \text{ mrem to close valve \& install device}$$

$$125 + 33.3 = 158.3$$

$$158.3 + 850 = 1008.3 \text{ (NO - not within TVA annual limit of 1Rem) (Critical)}$$

Work areas at 30cm dose rate 250 & 100 are both < 500mrem rate alarm

158.3 < 200 dose alarm limit of RWP **but not within remaining rad margin of 150**

Therefore (NO - not within the limits of the RWP)

(Critical)

i.e. DO NOT EXCEED 250 mrem PER ENTRY OR DOSE MARGIN (RAD-REMAINING ALLOWABLE DOSE)



Job Performance Measure (JPM)

Provide to Applicant

INITIAL CONDITIONS:

You are a Browns Ferry employee who has obtained an accumulative yearly dose of 850 mrem.

INITIATING CUE:

Given the following survey map, DETERMINE if you can complete the assigned task in the area without exceeding your TVA administrative yearly dose limit or RWP entry limits.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 (RWCU OUTBD SUCT ISOLATION) valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 30 minutes for venting. Then proceed to 3-FCV-69-2 (RWCU OUTBD SUCT ISOLATION) valve to manually close and install the mechanical restraining device, it will require 10 minutes to close the valve and another 10 minutes to install the mechanical restraining device. The map of the room has radiological survey information you must interpret to successfully complete this JPM. Assume the 30cm reading will be the whole body dose received at each location.



Job Performance Measure (JPM)

Provide to Applicant

BROWNS FERRY NUCLEAR PLANT

Unit: 3

Permit Number: Training

Page: 1

RADIOLOGICAL WORK PERMIT **BRIEFING REQUIRED EVERY ENTRY**

GENERAL DESCRIPTION

Status: Active	Start Date: 01-Jan-This year	End Date: 01-Jan-Next year
Type: SPECIFIC	MAP ID:	Outage: Y Name:
Task: ROUTINE PLANT MAINTENANCE		PSE: N
HP	CONTINUOUS	Authorization Type: INDIVIDUAL
ALARA Review Number: 0A-0010	Primary Work Doc:	
Person-mrem Estimate: 1904	Person-Hrs Estimate: 1082	
Dose Alarm: 200	Dose Rate Alarm: 500	
DAC-Hrs Tracked: N		
Work Area Description: Unit 3 Areas All Elevations		

DESCRIPTION OF WORK TO BE PERFORMED

Unit 3 Maintenance on RWCU (69) Systems	(LHRA VARIOUS DRESS) 200 / 250 / 500
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ANTI-CONTAMINATION CLOTHING REQUIREMENTS

1	LAB COAT	1,2	BOOTIES, CLOTH, ONE PAIR
1,2	GLOVES, RUBBER, ONE PAIR	1,2,3	CLOTH INSERTS
1,2,3	SHOE COVERS, ONE PAIR	1,2,3	MODESTY CLOTHING
1,2,3	NO PERSONAL OUTER CLOTHING	1,2,3	SURGEON'S CAP
2,3	COVERALLS, ONE PAIR	3	BOOTIES, PLASTIC, TWO PAIR
3	FACE SHIELD	3	RAIN SUIT
3	GLOVES, RUBBER, TWO PAIR	3,4	HOOD

DOSIMETRY REQUIREMENTS

ELECTRONIC DOSIMETER	TLD
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BRIEFING REQUIREMENTS

PRE-JOB BRIEFING	
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EQUIS

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WORK STEPS

- | | |
|---|---|
| 1 | MANAGEMENT / WO WALKDOWN |
| 2 | 3-CI-412 |
| 3 | OPS VALVE LINEUP - 3-OI-69 & HX VENTING |
| 4 | 07-712928-000 |
| 5 | 06-722560-000 |



Job Performance Measure (JPM)

Provide to Applicant

BROWNS FERRY NUCLEAR PLANT

Unit: 3
Permit Number: Training
Page: 1

RADIOLOGICAL WORK PERMIT BRIEFING REQUIRED EVERY ENTRY

WORKER INSTRUCTIONS

- 1 DRESSOUT CODE APPLICATIONS
 - 1) FLOOR LEVEL INSP, LOW TO MODERATE CONTAMINATION.
 - 2) MINOR MAINTENANCE, NO PRIMARY SYSTEM BREACH.
 - 3) PRIMARY SYSTEM BREACH, HEAT EXCHANGER VENTING.
 - 4) ANY WORK ABOVE FLOOR LEVEL REQUIRES SAFETY BELT W/ LIFELINE.
 - 5) REQUIRED TO WEAR HEADGEAR OTHER THAN PERSONAL HARDHAT.
- 2 MONITOR YOUR ED (DAD) FREQUENTLY, EXIT THE AREA PRIOR TO REACHING THE DOSE ALARM SET POINT OR UPON RECEIVING ANY UNEXPECTED ALARMS.
- 3 DO NOT EXCEED 250 mrem PER ENTRY OR DOSE MARGIN (RAD-REMAINING ALLOWABLE DOSE).
- 4 REMOTE MONITORING , PEA , OR SIMILAR DEVICE REQUIRED.
- 5 ED (DAD) TO BE BAGGED (WRAPPED) AND WORN OUTSIDE OF C-ZONE CLOTHING.
- 6 REVIEW PLANNED WORK OR INSPECTIONS WITH RAD PROTECTION PRIOR TO ENTRY.
- 7 UTILIZE TIME, DISTANCE, AND SHIELDING ALARA PRINCIPLES.
- 8 REVIEW APPROPRIATE SURVEY DATA PRIOR TO ENTRY. NOTE AND AVOID POSTED HOT SPOTS. LOCATE AND UTILIZE LOW DOSE WAITING AREAS.
- 9 RADWORKER SHALL ADHERE TO ANY SPECIAL INSTRUCTIONS (APR, ETC) ON WHICH HE/SHE HAS BEEN BRIEFED BY RAD PROTECTION.
- 10 NOTIFY RADCON PRIOR TO ANY SYSTEM BREACH.
- 11 RAD PROTECTION COVERAGE MAY BE PROVIDED FROM OUTSIDE THE C-ZONE.
- 12 SECURE ALL HOSES, ELECTRICAL CORDS, WELDING LEADS AND OTHER SERVICES ENTERING THE C-ZONE AT THE C-ZONE BOUNDARY AND NOTIFY RAD PROTECTION.
- 13 NOTIFY RAD PROTECTION OF ANY UNUSUAL RADIOLOGICAL CONDITIONS (FOR EXAMPLE: WATER, LEAKS, RADIATION MONITOR ALARMS).
- 14 RAD PROTECTION PERMISSION REQUIRED PRIOR TO WELDING, GRINDING, BUFFING OR OTHER SURFACE DISTURBING ACTIVITIES.
- 15 DURING PERIODS WHEN HIS-20 IS IN THE LOCAL MODE, THE DEFAULT SETPOINT FOR THIS RWP IS 100 mrem/hr DOSE RATE ALARM, 50 mrem DOSE ALARM, AND 60 mrem LIMIT PER ENTRY.

APPROVAL

Prepared by: TJFRANK
Approved by: MJHAZEL
Final Approval: JWSMITH3

End of RWP

Provide to Applicant

Browns Ferry Radiological Survey

