BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO ____ DATE:_____

JPM NUMBER: 548

TASK NUMBER: Radiation Control

TASK TITLE: Locked High Radiation Entry

K/A NUMBER: 2.3.12 K/A RATING: RO _3.2_ SRO: 3.7

TASK STANDARD: Determine dress out requirements and estimate dose to verify within RWP and quarterly limits.

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: Handout JPM 548 RWP and Survey Map, SPP 5.1

VALIDATION TIME: 15 minutes

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

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES __ NO __

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

INITIAL CONDITIONS: You are a Browns Ferry employee who has obtained an accumulative yearly dose of 750 mrem.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 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 valve to manually close and install the mechanical restraining device, it should require 10 minutes to close the valve and another 15 minutes to install the mechanical restraining device. Assume the 30cm reading will be the whole body dose received at each location. Assume a total travel dose of 15 mrem will be received.

INITIATING CUES: Given the survey map and RWP, determine the following:

- Dress-out requirements for entry to perform your assigned task
- Whether you can complete the assigned task in the area without exceeding your TVA administrative dose limit
- Whether you can complete the assigned task in the area without exceeding the RWP dose entry limits both rate and total dose, i.e. will you receive an MG alarm.

START TIME_____

****

Performance Step: Critical X Not Critical__

Determines Dress Out requirements

Standard:

Shoe covers - one pair, Coveralls - one pair, Face Shield, Gloves – rubber - two pair, cloth inserts, Booties – plastic - 2 pair, Rain suit, and Hood

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical__

Calculates RWCU HX venting dose.

Standard:

30 minutes in a 250 mrem/hr area = 125 mrem

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical__

Calculates 69-2 valve work dose

Standard:

25 minutes in a 100 mrem/hr area = 42 mrem

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical__

Calculates total dose recieved

Standard:

15 mrem travel + 125 mrem venting + 42 mrem 69-2 = 182 mrem

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical__

Calculates total dose for quarter

Standard:

750 mrem + 182 mrem = 932 mrem

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical_ Not Critical_X_

Verifies RWP MG Setpoints

Standard:

MG setpoints: for Dose Rate alarm of 500 mrem/hr will **not** be exceeded and Dose alarm of 200 mrem will **not** be exceeded.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical_ Not Critical_X_

Verifies dose limits for quarter and RWP

Standard:

Verifies will have a total dose of less than 950 mrem which is below the TVA limit

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

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: RWCU HX Room Unit 3

DESCRIPTION OF WORK TO BE PERFORMED

Unit 3 Maintenance on RWCU (69) Systems (LHRA VARIOUS DRESS) 200 / 500

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

BRIEFING REQUIREMENTS

PRE-JOB BRIEFING	

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
6	06-727133-000
7	06-722556-000
8	06-722559-000
9	06-718308-002
10	06-722558-000

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 200 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 BOUNDRY 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.

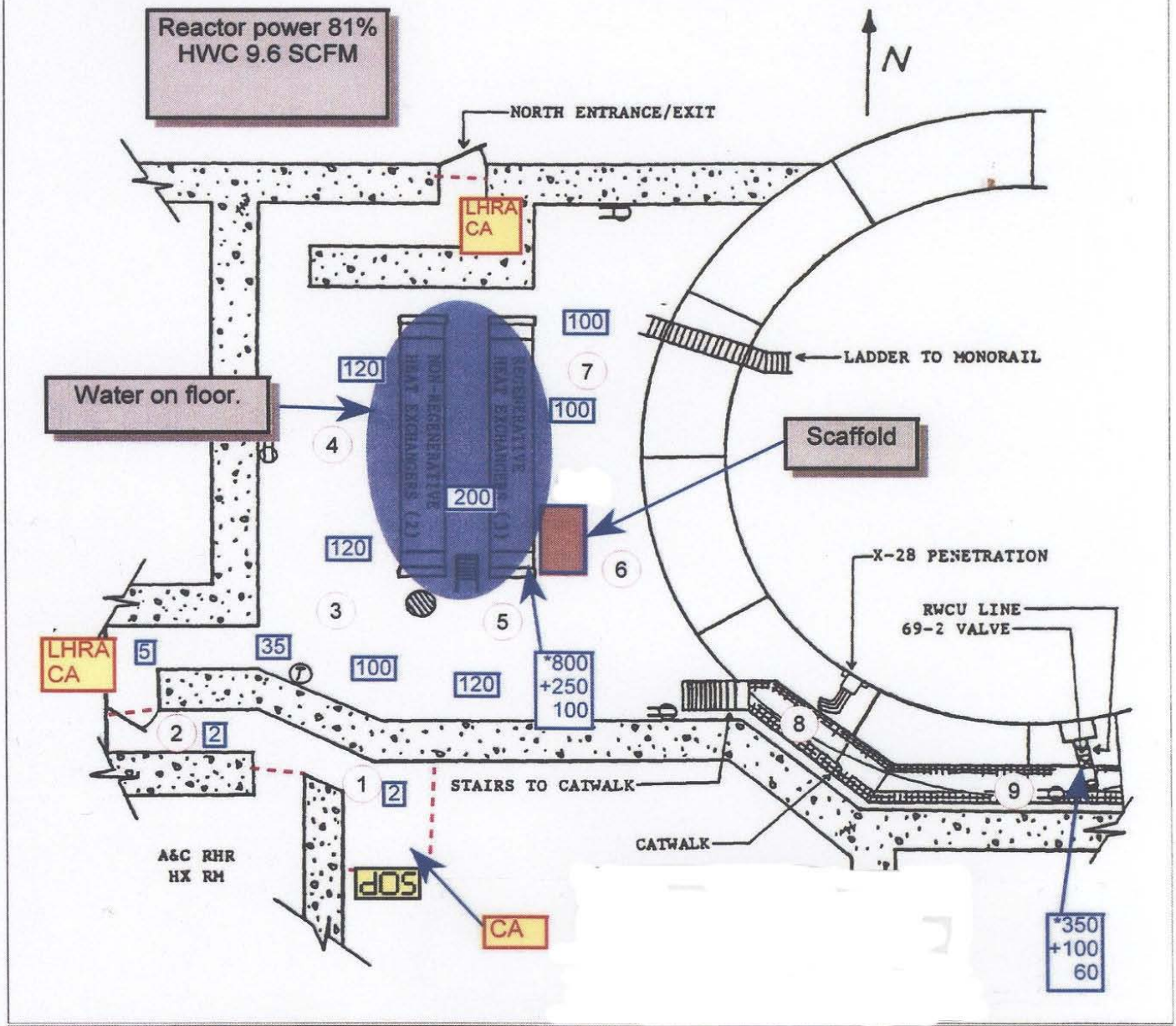
APPROVAL

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

End of RWP

Browns Ferry Radiological Survey

M0044.tif - M0044 Unit 3 RXB 593' RWCU Heat Exchanger Rc	Survey # 021407-2	Date/Time: Today



Postings	Contamination Results:
M0044 RX-3 593 RWCU HTX Room OPS venting heat exchangers. ND Beta HWC 9.6 scfm power @81%	1) 20000 DPM/100 cm2 2) 40000 DPM/100 cm2 3) 300000 DPM/100 cm2 4) 1300000 mrad/hr/100 cm2 5) 200000 DPM/100 cm2 6) 250000 DPM/100 cm2 7) 400000 DPM/100 cm2 8) 80000 DPM/100 cm2 9) 200000 DPM/100 cm2
Surveyed by: Rose, Edward D. Instrument Nos.: 534105,448,562898	

Date	Survey #	Surveyed By:

Symbol Legend (for example only)

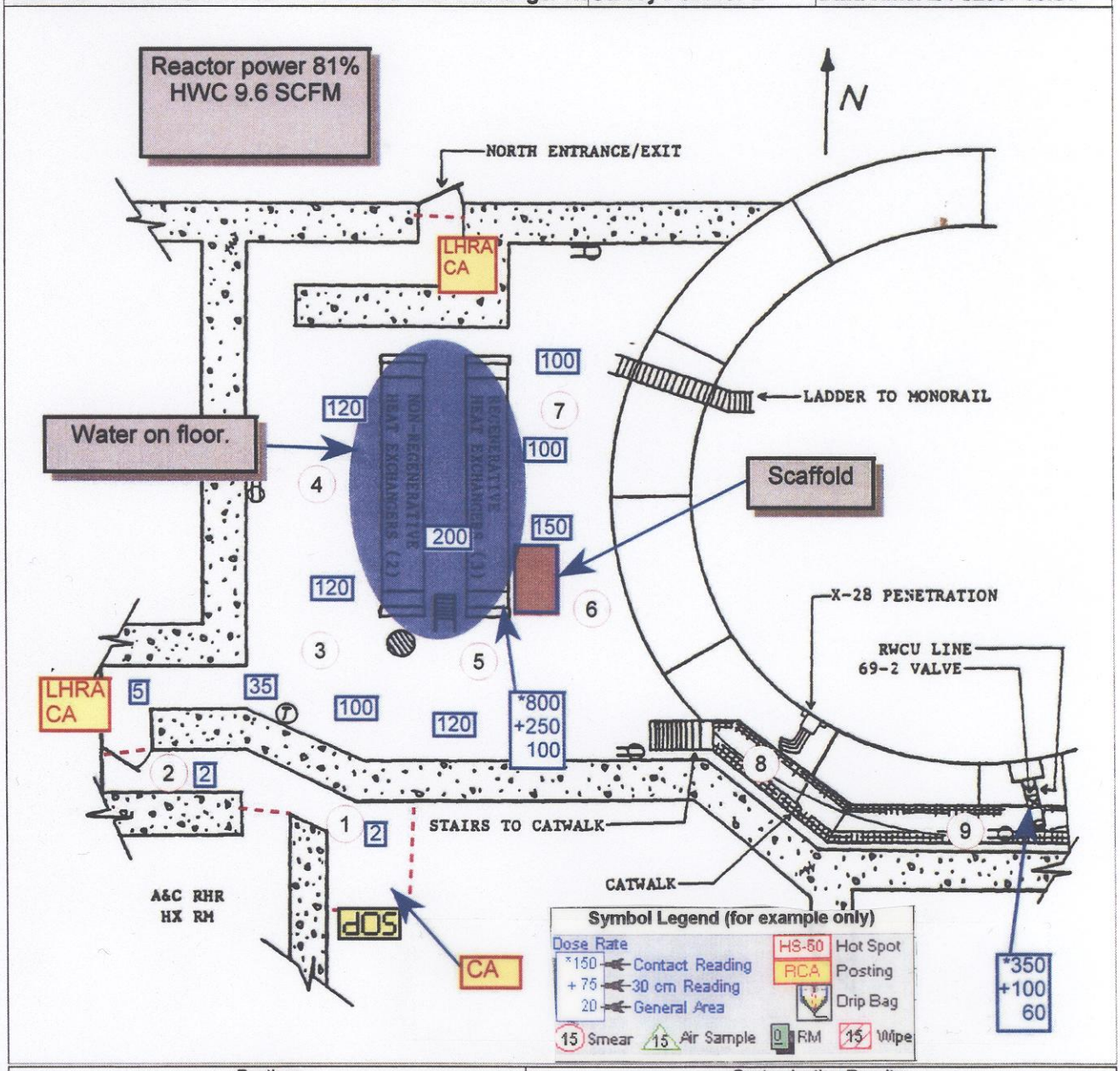
Dose Rate
*150 Contact Reading
+ 75 30 cm Reading
20 General Area

HS-50 Hot Spot
RCA Posting
Drip Bag
15 Smear
15 Air Sample
0 RM
15 Wipe

Survey printed on: Today

Browns Ferry Radiological Survey

M0044.tif - M0044 Unit 3 RXB 593' RWCU Heat Exchanger Rc	Survey # 021407-2	Date/Time: 2/14/2007 03:01



Postings	Contamination Results:	
M0044 RX-3 593 RWCU HTX Room OPS venting heat exchangers. ND Beta HWC 9.6 scfm power @81%	1) 20000 DPM/100 cm2 2) 40000 DPM/100 cm2 3) 300000 DPM/100 cm2 4) 1300000 mrad/hr/100 cm2 5) 200000 DPM/100 cm2 6) 250000 DPM/100 cm2 7) 400000 DPM/100 cm2 8) 80000 DPM/100 cm2 9) 200000 DPM/100 cm2	
Surveyed by: Rose, Edward D. Instrument Nos.: 534105,448,562898		

Date	Survey #	Surveyed By:

Survey printed on: 6/15/2007 at: 08:54

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 551

TASK NUMBER: Conduct of Operations

TASK TITLE: Work Hour Limitations

K/A NUMBER: 2.1.5 K/A RATING: RO 2.9 SRO: 3.9

TASK STANDARD: Determine Work Hour limitation will be exceeded and complete first part of attachment 1 of SPP 1.5.

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: SPP 1.5

VALIDATION TIME: 15 minutes

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

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES __ NO __

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

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 6/12.

INITIATING CUES: Review the work schedule to verify your working hours are within the guidelines of SPP 1.5 Fatigue Management and Work Hour Limits.

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/13	6/14	6/15	6/16	6/17	6/18	6/19
07-19	07-19	19-07	19-07	19-07	Off	07-19

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/20	6/21	6/22	6/23	6/24	6/25	6/26
07-19	07-19	Off	19-07	19-07	19-07	Off

START TIME_____

****

Performance Step: Critical X Not Critical__

3.2 Requirements

3.2.1 The 10 CFR 26 Overtime Limits

A. The following limits apply to covered individuals regardless of unit status:

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 period
4. At least a 10-hour break between successive work periods, or an 8-hour break when a break of less than 10 hours is necessary to accommodate a crew's scheduled transition between work schedules or shifts.
5. A 34-hour break in any 9-calendar day period (this limit may be incorporated into the following table of limits)

Standard:

Evaluates Schedule and determines he will need a need 10 CFR 26 Overtime Limits Waiver.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

CUE: Request Candidate complete page 1, up the point of identifying the work activity, of the 10 CFR 26 Overtime Limits Waiver

****

Performance Step: Critical _X_ Not Critical__

Cognizant Supervisor: _____

Date/Time Waiver Initiated: _____/_____

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

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

Standard:

Critical block required to be checked is < 34 hour break in any 9 day period

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

Attachment 1
(Page 1 of 3)
10 CFR 26 Overtime Limits Waiver

Section 1 – Request	To be completed by cognizant supervisor

Cognizant Supervisor: _____

Date/Time Waiver Initiated: _____/_____

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

Name:_____

Department:_____

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

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

Description:

Circumstances that cause need for exceeding limits:

Waiver is required to address conditions that are adverse to safety?
☐ Yes ☐ No
If no, waiver is not valid

Submitted by: _____ _____ _____ _____
Print Name Signature Date Time

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

SRO ____ DATE:_____

JPM NUMBER: 551 SRO

TASK NUMBER: Conduct of Operations

TASK TITLE: Work Hour Limitations

K/A NUMBER: 2.1.5 K/A RATING: SRO: 3.9

TASK STANDARD: Determine Work Hour limitation will be exceeded and complete first part of attachment 1 of SPP 1.5.

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: SPP 1.5

VALIDATION TIME: 20 minutes

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

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES __ NO __

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

INITIAL CONDITIONS: You are the Unit 2 Unit Supervisor, 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. Attached is the work schedule for 3 reactor operators for the Unit 2 startup. The attached list of operators are part of the Control Room crew.

INITIATING CUES: Review the work schedules of the Reactor Operators to verify that they are within the guidelines of SPP 1.5 Fatigue Management and Work Hour Limits.

Reactor Operator #1

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/13	6/14	6/15	6/16	6/17	6/18	6/19
07-19	07-19	19-07	19-07	19-07	Off	07-19

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/20	6/21	6/22	6/23	6/24	6/25	6/26
07-19	07-19	Off	19-07	19-07	19-07	Off

Reactor Operator #2

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/13	6/14	6/15	6/16	6/17	6/18	6/19
07-19	07-19	07-19	07-19	07-19	07-19	Off

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/20	6/21	6/22	6/23	6/24	6/25	6/26
19-07	19-07	19-07	19-07	19-07	Off	Off

Reactor Operator #3

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/13	6/14	6/15	6/16	6/17	6/18	6/19
07-19	07-19	07-21	07-19	Off	Off	19-09

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6/20	6/21	6/22	6/23	6/24	6/25	6/26
18-07	19-07	Off	19-07	19-07	Off	Off

These three operators were off on 6/12

START TIME_____

****

Performance Step: Critical X Not Critical__

3.2 Requirements

3.2.1 The 10 CFR 26 Overtime Limits

A. The following limits apply to covered individuals regardless of unit status:

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 period
4. At least a 10-hour break between successive work periods, or an 8-hour break when a break of less than 10 hours is necessary to accommodate a crew's scheduled transition between work schedules or shifts.
5. A 34-hour break in any 9-calendar day period (this limit may be incorporated into the following table of limits)

Standard:

Evaluates Schedule and determines that operators #1 and #3 will need a need 10 CFR 26 Overtime Limits Waiver and that operator #2 is with in the guidelines of SPP 1.5.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

CUE: Request Candidate complete page 1 of the 10 CFR 26 Overtime Limits Waiver as required.

****

Performance Step: Critical _X_ Not Critical__

Cognizant Supervisor: _____

Date/Time Waiver Initiated: _____/_____

Identify the individual who will exceed a 10 CFR 26 Overtime Limit:
Name:_____
Department:_____
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: ____

Standard:

Critical block for Reactor Operator #1 is < 34 hour break in any 9 day period
Critical block for Reactor Operator #3 is > 26 hours in any 48.

SAT__ UNSAT___ N/A ___COMMENTS:_____
_____

****

Performance Step: Critical _X_ Not Critical__

Shift schedule applied to individual: ____-hour shift

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

Circumstances that cause need for exceeding limits:

Waiver is required to address conditions that are adverse to safety?
□ Yes □ No

If no, waiver is not valid

Submitted by:
Print Name Signature Date Time

Standard:

Critical block for both operators #1 and #3 is the yes block for adverse to safety.

SAT__ UNSAT___ N/A ___COMMENTS:_____

END OF TASK

STOP TIME ___

ANSWER KEY for OPERATOR #1

Cognizant Supervisor: ____NAME_____

Date/Time Waiver Initiated: ____ _/_____

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

Name:_____REACTOR OPERATOR #1_____
Department:_____OPS_____
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: __12-hour shift

Identify the work activity for which the waiver will be issued:
Description: Plant Startup Unit 2

Circumstances that cause need for exceeding limits: Forced Outage

Waiver is required to address conditions that are adverse to safety?
■ Yes □ No

If no, waiver is not valid

Submitted by: NAME SIGNATURE
Print Name Signature Date Time

ANSWER KEY for OPERATOR #3

Cognizant Supervisor: ____NAME_____

Date/Time Waiver Initiated: ____ _/_____

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

Name:_____REACTOR OPERATOR #3_____
Department:_____OPS_____
Date/Time Waiver to Start: _____/_____
Date/Time Waiver to End: _____/_____

Waiver Duration (hours beyond limits): _____1 Hour_____

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: __12-hour shift

Identify the work activity for which the waiver will be issued:
Description: Plant Startup Unit 2

Circumstances that cause need for exceeding limits: Forced Outage

Waiver is required to address conditions that are adverse to safety?
■ Yes □ No

If no, waiver is not valid

Submitted by: NAME SIGNATURE
Print Name Signature Date Time

Attachment 1
(Page 1 of 3)
10 CFR 26 Overtime Limits Waiver

Section 1 – Request	To be completed by cognizant supervisor

Cognizant Supervisor: _____

Date/Time Waiver Initiated: _____/_____

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

Name:_____

Department:_____

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

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

Description:

Circumstances that cause need for exceeding limits:

Waiver is required to address conditions that are adverse to safety?
☐ Yes ☐ No
If no, waiver is not valid

Submitted by: _____ _____ _____ _____
Print Name Signature Date Time

Attachment 1
(Page 1 of 3)
10 CFR 26 Overtime Limits Waiver

Section 1 – Request	To be completed by cognizant supervisor

Cognizant Supervisor: _____

Date/Time Waiver Initiated: _____/_____

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

Name:_____

Department:_____

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

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

Description:

Circumstances that cause need for exceeding limits:

Waiver is required to address conditions that are adverse to safety?
☐ Yes ☐ No
If no, waiver is not valid

Submitted by: _____ _____ _____ _____
Print Name Signature Date Time

GENERAL EMERGENCY INITIAL NOTIFICATION FORM

1. [X] This is a Drill [ ] This is an Actual Event - Repeat - This is an Actual Event

2. This is **Shift Manager**, Browns Ferry has declared a **GENERAL EMERGENCY**
affecting: [ ] Unit 1 [X] Unit 2 [ ] Unit 3 [ ] Common

3. EAL Designator(s): **2.3-G.2**

4. Brief Description of the Event: **High drywell radiation levels with RCS barrier NOT intact Inside primary containment**

5. Radiological Conditions: (Check one under both Airborne and Liquid column.)

Airborne Releases Offsite	Liquid Releases Offsite
[ ] Minor releases within federally approved limits[1]	[X] Minor releases within federally approved limits[1]
[X] Releases above federally approved limits[1]	[ ] Releases above federally approved limits[1]
[ ] Release information not known	[ ] Release information not known
([1]Tech Specs)	([1]Tech Specs)

6. Event Declared: Time: **Current** Central Time Date: **Today**

7. The Meteorological Conditions are: (Use 91 meter data from the Met Tower)

Wind Direction is FROM: **216** degrees Wind Speed: **20** m.p.h

8. Provide Protective Action Recommendation: Check either 1 or 2 or 3.

[ ] Recommendation 1 • EVACUATE LISTED SECTORS (2 mile Radius & 10 miles downwind) • Shelter remainder of 10 mile EPZ. • Consider issuance of POTASSIUM IODINE in accordance with the State Plan.	REC 1	WIND FROM DEGREES (Mark wind direction from Step 7)	REC 2	[X] Recommendation 2 • EVACUATE LISTED SECTORS (2 mile radius & 5 mile downwind) • SHELTER remainder of 10 mile EPZ. • Consider issuance of POTASSIUM IODIDE in accordance with the State Plan.
A-2, B-2, F-2, G-2, E-5, -10, F-5, -10, G-5, -10		4 - 40		A-2, B-2, F-2, G-2, E-5, F-5, G-5
A-2, B-2, F-2, G-2, F-5, -10, G-5, -10, H-10		41- 73		A-2, B-2, F-2, G-2, F-5, G-5
A-2, B-2, F-2, G-2, G-5, -10, H-10, I-10		74 - 92		A-2, B-2, F-2, G-2, G-5
A-2, B-2, F-2, G-2, A-5, G-5, H-10, I-10, J-10,K-10		93 - 137		A-2, B-2, F-2, G-2, A-5, G-5
A-2, B-2, F-2, G-2, A-5, -10, I-10, J-10, K-10		138 - 203		A-2, B-2, F-2, G-2, A-5
A-2, B-2, F-2, G-2, A-5, -10, B-5, -10		204 - 282	X	A-2, B-2, F-2, G-2, A-5, B-5
A-2, B-2, F-2, G-2, B-5, -10, C-10, D-10, E-5, -10		283 - 326		A-2, B-2, F-2, G-2, B-5, E-5
A-2, B-2, F-2, G-2, C-10, D-10, E-5,-10, F-5,-10		327 - 3		A-2, B-2, F-2, G-2, E-5, F-5

[ ] Recommendation 3
- SHELTER all sectors
- CONSIDER issuance of Potassium Iodide in accordance with the State Plan.

9. Please repeat the information you have received to ensure accuracy.

Action: When completed, fax this appendix as prescribed by procedure.

Answer Key

GENERAL EMERGENCY INITIAL NOTIFICATION FORM

1. [X] This is a Drill [ ] This is an Actual Event - Repeat - This is an Actual Event

2. This is **Shift Manager**, Browns Ferry has declared a **GENERAL EMERGENCY**
affecting: [ ] Unit 1 [X] Unit 2 [ ] Unit 3 [ ] Common

3. EAL Designator(s): **2.3-G.1**

4. Brief Description of the Event: **High drywell radiation levels with RCS barrier NOT intact Inside primary containment**

5. Radiological Conditions: (Check one under both Airborne and Liquid column.)

Airborne Releases Offsite	Liquid Releases Offsite
[ ] Minor releases within federally approved limits[1]	[X] Minor releases within federally approved limits[1]
[X] Releases above federally approved limits[1]	[ ] Releases above federally approved limits[1]
[ ] Release information not known	[ ] Release information not known
([1]Tech Specs)	([1]Tech Specs)

6. Event Declared: Time: **Current** Central Time Date: **Today**

7. The Meteorological Conditions are: (Use 91 meter data from the Met Tower)

Wind Direction is FROM: **144** degrees Wind Speed: **20** m.p.h

8. Provide Protective Action Recommendation: Check either 1 or 2 or 3.

[ ] Recommendation 1 • EVACUATE LISTED SECTORS (2 mile Radius & 10 miles downwind) • Shelter remainder of 10 mile EPZ. • Consider issuance of POTASSIUM IODINE in accordance with the State Plan.	REC 1	WIND FROM DEGREES (Mark wind direction from Step 7)	REC 2	[ ] Recommendation 2 • EVACUATE LISTED SECTORS (2 mile radius & 5 mile downwind) • SHELTER remainder of 10 mile EPZ. • Consider issuance of POTASSIUM IODIDE in accordance with the State Plan.
A-2, B-2, F-2, G-2, E-5, -10, F-5, -10, G-5, -10		4 - 40		A-2, B-2, F-2, G-2, E-5, F-5, G-5
A-2, B-2, F-2, G-2, F-5, -10, G-5, -10, H-10		41- 73		A-2, B-2, F-2, G-2, F-5, G-5
A-2, B-2, F-2, G-2, G-5, -10, H-10, I-10		74 - 92		A-2, B-2, F-2, G-2, G-5
A-2, B-2, F-2, G-2, A-5, G-5, H-10, I-10, J-10,K-10		93 - 137		A-2, B-2, F-2, G-2, A-5, G-5
A-2, B-2, F-2, G-2, A-5, -10, I-10, J-10, K-10		138 - 203		A-2, B-2, F-2, G-2, A-5
A-2, B-2, F-2, G-2, A-5, -10, B-5, -10		204 - 282		A-2, B-2, F-2, G-2, A-5, B-5
A-2, B-2, F-2, G-2, B-5, -10, C-10, D-10, E-5, -10		283 - 326		A-2, B-2, F-2, G-2, B-5, E-5
A-2, B-2, F-2, G-2, C-10, D-10, E-5,-10, F-5,-10		327 - 3		A-2, B-2, F-2, G-2, E-5, F-5

[X] Recommendation 3
- SHELTER all sectors
- CONSIDER issuance of Potassium Iodide in accordance with the State Plan.

9. Please repeat the information you have received to ensure accuracy.

Action: When completed, fax this appendix as prescribed by procedure.

Applicant Handout

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

SRO ____ DATE:_____

JPM NUMBER: 552tc

TASK NUMBER: S-000-EM-25

TASK TITLE: Classify the Event per EPIP-1 (2.3 G.2)

K/A NUMBER: 2.4.44 K/A RATING: SRO: 4.4

TASK STANDARD: Correct Initial Notification issued and correct Protective Action Recommendation issued.

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: EPIP-1 and 5, Completed Notification Handout

VALIDATION TIME: 15 minutes

MAX. TIME ALLOWED: 15 minutes (Completed for Time Critical JPMs only)

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

INITIAL CONDITIONS: You are a Senior Reactor Operator on Unit 2. Unit 2 scrammed a short time ago on an MSIV isolation due to a complete loss of condenser vacuum. MSIV Line A failed to isolate and all attempts to isolate from the control room have failed. Current conditions are Drywell Pressure 10 psig and rising, Drywell Temperature 245°F and rising, All Control inserted on the scram, Reactor Level is at -100 inches and rising slowly, Reactor Pressure is currently at 900 psig and rising and being controlled on SRVs. Numerous High Radiation Alarms are in for all Turbine areas, and Drywell radiation levels are greater than 3000 R/hr on both radiation monitors and rising. Stack Noble Gas (WRGERMS) indicates 9.5 x e9 µci/sec. Chemistry has just completed a Dose projection at 5 miles and it indicates 500 mREM TEDE and 1500 mREM Thyroid CDE. Current wind speed is 20 mph from 216°

INITIATING CUES: The Shift Manager requests you to review General Emergency Initial Notification Form prior to notification of the State.

JPM is Time Critical

APPENDIX A
Page 1 of 1

GENERAL EMERGENCY INITIAL NOTIFICATION FORM

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, **Browns Ferry** has declared a **GENERAL EMERGENCY**
affecting: ☐ Unit 1 ☐ Unit 2 ☐ Unit 3 ☐ Common

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:** _____
_____
_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

Airborne Releases Offsite	**Liquid** Releases Offsite
☐ Minor releases within federally approved limits[1]	☐ Minor releases within federally approved limits[1]
☐ Releases above federally approved limits[1]	☐ Releases above federally approved limits[1]
☐ Release information not known	☐ Release information not known
([1]Tech Specs)	([1]Tech Specs)

6. **Event Declared:** Time: _____Central Time Date: _____

7. **The Meteorological Conditions are:** (Use 91 meter data from the Met Tower)

Wind Direction is FROM: _____degrees Wind Speed: _____ m.p.h

8. **Provide Protective Action Recommendation:** Check either 1 or 2 or 3.

☐ **Recommendation 1** • EVACUATE LISTED SECTORS (2 mile Radius & 10 miles downwind) • Shelter remainder of 10 mile EPZ. • Consider issuance of POTASSIUM IODINE in accordance with the State Plan.	REC 1	WIND FROM DEGREES (Mark wind direction from Step 7)	REC 2	☐ **Recommendation 2** • EVACUATE LISTED SECTORS (2 mile radius & 5 mile downwind) • SHELTER remainder of 10 mile EPZ. • Consider issuance of POTASSIUM IODIDE in accordance with the State Plan.
A-2, B-2, F-2, G-2, E-5, -10, F-5, -10, G-5, -10		4 - 40		A-2, B-2, F-2, G-2, E-5, F-5, G-5
A-2, B-2, F-2, G-2, F-5, -10, G-5, -10, H-10		41- 73		A-2, B-2, F-2, G-2, F-5, G-5
A-2, B-2, F-2, G-2, G-5, -10, H-10, I-10		74 - 92		A-2, B-2, F-2, G-2, G-5
A-2, B-2, F-2, G-2, A-5, G-5, H-10, I-10, J-10,K-10		93 - 137		A-2, B-2, F-2, G-2, A-5, G-5
A-2, B-2, F-2, G-2, A-5, -10, I-10, J-10, K-10		138 - 203		A-2, B-2, F-2, G-2, A-5
A-2, B-2, F-2, G-2, A-5, -10, B-5, -10		204 - 282		A-2, B-2, F-2, G-2, A-5, B-5
A-2, B-2, F-2, G-2, B-5, -10, C-10, D-10, E-5, -10		283 - 326		A-2, B-2, F-2, G-2, B-5, E-5
A-2, B-2, F-2, G-2, C-10, D-10, E-5,-10, F-5,-10		327 - 3		A-2, B-2, F-2, G-2, E-5, F-5

☐ **Recommendation 3**
- SHELTER all sectors
- CONSIDER issuance of Potassium Iodide in accordance with the State Plan.

9. Please repeat the information you have received to ensure accuracy.

Action: When completed, fax this appendix as prescribed by procedure.

APPENDIX G

Protective Action Recommendation Flowchart

PROTECTIVE ACTION RECOMMENDATIONS

Note 1: If conditions are unknown utilizing the flowchart, then answer NO.
Note 2: A short term release is defined as "a release that does not exceed a 15 minute duration".

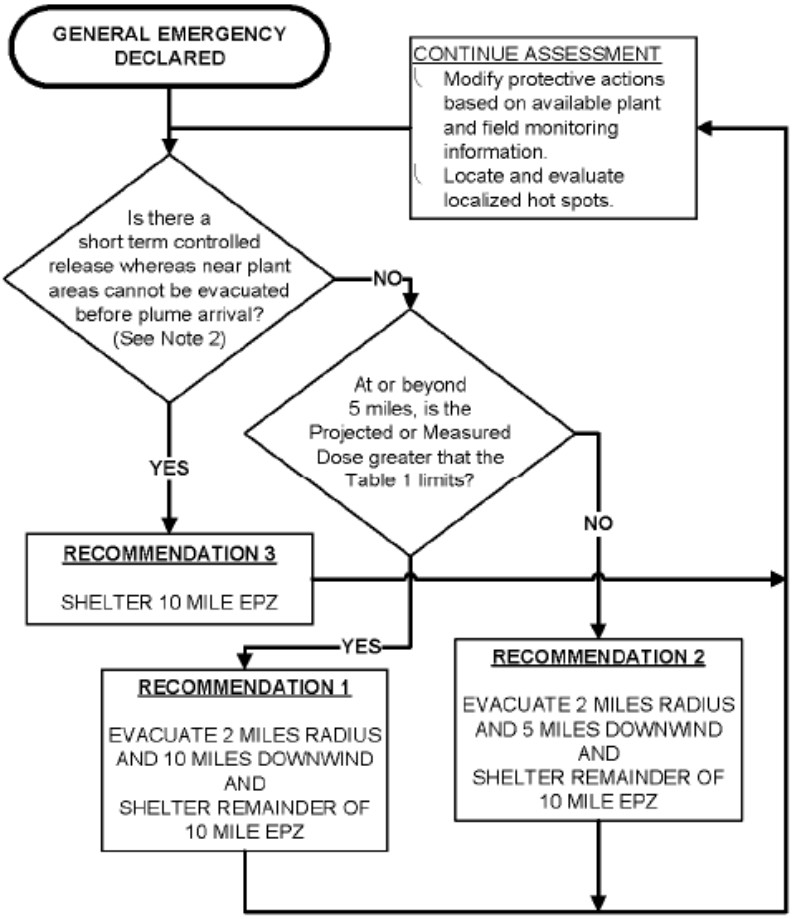


TABLE 1
Protective Action Guides

TYPE	LIMIT
Measured	3.9E-6 micro Ci/cc of Iodine 131 or 1 REM/hr External Dose
Projected	1 REM TEDE or 5 REM Thyroid CDE

START TIME_____

****

Performance Step: Critical X Not Critical___

Candidate reviews General Emergency Initial Notification Form

Standard:

Candidate determines that: Step #3 is incorrect; correct designator is 2.3-G.2
2.3-G.1 is not met, 2.3-S1, 2.3-S.2 and 4.1-S are met but exceeded by the GE classification 2.3-G.2

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical___

Candidate reviews General Emergency Initial Notification Form

Standard:

Candidate determines that: Step #7 Wind Direction is incorrect; should be 216°

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical___

Candidate reviews General Emergency Initial Notification Form

Standard:

Candidate determines that: Step #8 Protective Action Recommendation is incorrect; Recommendation 2 should be checked with the block next to 204 – 282 under column REC 2 checked. The answer to short term release is NO and the answer to table 1 limits is NO, for a protective action recommendation of 2.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

SRO ____ DATE:_____

JPM NUMBER: 553 SRO

TASK NUMBER: Conduct of Operations

TASK TITLE: NRC Event Notification

K/A NUMBER: 2.1.18 K/A RATING: SRO: 3.8

TASK STANDARD: Determine NRC Event Notification requirements

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: SPP 3.5

VALIDATION TIME: 10 minutes

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

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES __ NO __

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

INITIAL CONDITIONS: Unit 1 was conducting a shutdown in preparation for entering a refueling outage. The shutdown schedule called for power to be reduced to 20% and then a manual reactor scram was to be inserted.

Thirty minutes ago while lowering Reactor Recirculation Pump speed, a problem with the VFD on Reactor Recirculation Pump B developed. The Reactor Operator tripped Reactor Recirculation Pump B and inserted a manual reactor scram. Reactor Power was 35% at the time of the scram. All equipment operated as designed following the scram and plant conditions are now stable.

INITIATING CUES: As the Shift Manager evaluate this event for NRC Notification. Document any required notifications to the NRC Operations Center within the required time frame.

START TIME_____

****

Performance Step: Critical X Not Critical___

Evaluates SPP-3.5

Appendix A: 3.1.C 3

Standard:

Determines a 4-Hr Non-Emergency 10CFR50.72(b)(2)(iv)(B) notification is required.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical _X_ Not Critical___

Complete SPP-3.5-1 - NRC Event Notification Worksheet

Standard:

Under Event Classification a check in box for 50.72 Non-Emergency

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical __ Not Critical__X__

Complete SPP-3.5-1 - NRC Event Notification Worksheet

Standard:

Under 4-Hr Non-Emergency 10CFR50.72(b)(2) a check in box (iv)(B) RPS Actuation (scram) ARPS.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical __ Not Critical__X__

Complete SPP-3.5-1 - NRC Event Notification Worksheet

Standard:

Under 8-Hr Non-Emergency 10CFR50.72(b)(3) a check in box (iv)(A) Specified System Actuation AESF are the Critical Portions of the Form.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical __ Not Critical_X_

Complete SPP-3.5-1 - NRC Event Notification Worksheet

Standard:

Power/Mode Before will be 35%/Mode 1, Power/Mode After will be Shutdown/Mode 3 and a brief description of the event.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

CUE: JPM complete once an entry is made in description block on first page, Additional Information page not required to be completed.

END OF TASK

STOP TIME ___

SPP-3.5-1 - NRC Event Notification Worksheet

NRC EVENT NOTIFICATION WORKSHEET
Page 1 of 2

U.S. NUCLEAR REGULATORY COMMISSION
OPERATIONS CENTER

NRC EVENT NOTIFICATION WORKSHEET EN # _____

NRC OPERATION TELEPHONE NUMBER: PRIMARY - 301-816-5100 OR 800-532-3469, BACKUP - [1st] 301-951-0500 or 800-449-3694 [2nd] 301-415-0550 AND [3rd] 301-415-0553

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	NAME OF CALLER	CALL BACK #

EVENT TIME & ZONE	EVENT DATE	POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATIONS			1-Hr Non-Emergency 10 CFR 50.72(b)(1)							
☐	GENERAL EMERGENCY	Gen/AAEC	☐	TS Deviation		ADEV	☐	(v)(A)	Safe S/D Capability	AINA
☐	SITE AREA EMERGENCY	SIT/AAEC	4-Hr Non-Emergency 10 CFR 50.72(b)(2)				☐	(v)(B)	RHR Capability	AINB
☐	ALERT	ALE/AAEC	☐	(i)	TS Required S/D	ASHU	☐	(v)(C)	Control of Rad Release	AINC
☐	UNUSUAL EVENT	UNU/AAEC	☐	(iv)(A)	ECCS Discharge to RCS	ACCS	☐	(v)(D)	Accident Mitigation	AIND
☐	50.72 NON-EMERGENCY	*(see next columns)*	☐	(iv)(B)	RPS Actuation (scram)	ARPS	☐	(xii)	Offsite Medical	AMED
☐	PHYSICAL SECURITY (73.71)	DDDD	☐	(xi)	Offsite Notification	APRE	60-Day Optional 10 CFR 50.73(a)(1)			
☐	MATERIAL/EXPOSURE	B???	8-Hr Non-Emergency 10 CFR 50.72(b)(3)				☐		Invalid Specified System Actuation	AINV
☐	FITNESS FOR DUTY	HFIT	☐	(ii)(A)	Degraded Condition	ADEG	Other Unspecified Requirement (Identify)			
☐	Other Unspecified Reqmt.	*(see last column)*	☐	(ii)(B)	Unanalyzed Condition	AUNA	☐			NONR
☐	INFORMATION ONLY	NINF	☐	(iv)(A)	Specified System Actuation	AESF	☐			NONR

DESCRIPTION

Include: Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc. (Continue on page 2)

NOTIFICATIONS	YES	NO	WILL BE
NRC RESIDENT	☐	☐	☐
STATE(s)	☐	☐	☐
LOCAL	☐	☐	☐
Other Gov Agencies	☐	☐	☐
Media/Press Release	☐	☐	☐

Anything Unusual or Not Understood?	☐ Yes *(Explain above)*	☐ No	
Did All Systems Function As Required?	☐ Yes	☐ No*(Explain above)*	
Mode of Operation Until Corrected:	Estimated Restart Date:	Additional INFO on page 2? ☐ Yes ☐ No	

Attachment 1
(Page 2 of 2)
SPP-3.5-1 - NRC Event Notification Worksheet

NRC EVENT NOTIFICATION WORKSHEET
Page 2 of 2

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event description)					
☐ Liquid Release	☐ Gaseous Release	☐ Unplanned Release	☐ Planned Release	☐ Ongoing	☐ Terminated
☐ Monitored	☐ Unmonitored	☐ Offsite Release	☐ T.S. Exceeded	☐ RM Alarms	☐ Areas Evacuated
☐ Personnel Exposed or Contaminated		☐ Offsite Protective Actions Recommended		*State release path in description.	

	Release Rate (Ci/sec)	% T. S. Limit	HOO Guide	Total Activity (Ci)	% T.S. Limit	HOO Guide
Noble Gas			0.1 Ci/sec			1000 Ci
Iodine			10 uCi/sec			0.01 Ci
Particulate			1 uCi/sec			1 mCi
Liquid *(excluding tritum & dissolved noble gases)*			10 uCi/min			0.1 Ci
Liquid (tritium)			0.2 Ci/min			5 Ci
Total Activity						

	Plant Stack	Condenser/Air Ejector	Main Steam Line	SG Blowdown	Other
RAD Monitor Readings:					
Alarm Setpoints:					
% T.S. Limit *(if applicable)*					

RCS or SG Tube Leaks: Check or Fill in Applicable Items: *(specific details/explanations should be covered in event description)*

LOCATION OF THE LEAK *(e.g., SG #, valve, pipe, etc.)*

LEAK RATE	UNITS: gpm/gpd	T. S. LIMITS	SUDDEN OR LONG TERM DEVELOPMENT
LEAK START DATE	TIME	COOLANT ACTIVITY & UNITS	PRIMARY - SECONDARY -

LIST OF SAFETY RELATED EQUIPMENT NOT OPERATIONAL

EVENT DESCRIPTION *(Continued from page 1)*

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 554

TASK NUMBER: Conduct of Operations

TASK TITLE: Core Alts

K/A NUMBER: 2.1.36 K/A RATING: RO 3.0 SRO: 4.1

TASK STANDARD: Completion of SRM Operability surveillance.

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: 1-SR-3.3.1.2.4

VALIDATION TIME: 10 minutes

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

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES __ NO __

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

INITIAL CONDITIONS: You are a Reactor Operator on Unit 1. Unit 1 is in Mode 5, core alterations have been suspended for the past 12 hours due to bridge problems. Core quadrant A fuel moves are complete for the current off load schedule. No fuel assemblies remain around SRM A but 16 fuel assemblies remain in quadrant A. Core quadrants B, C, and D are completely fueled. Bridge repairs are complete and core alterations are scheduled to commence in core quadrant B for the next 24 hours. Core Alts can commence upon completion of 1-SR-3.3.1.2.4 Source Range Monitor System Count Rate and Signal to Noise Ratio Check. All data for 1-SR-3.3.1.2.4 has been obtained.

INITIATING CUES: The Unit Supervisor directs you to complete the calculations and acceptance criteria steps in 1-SR-3.3.1.2.4 and notify him of the results of the acceptance criteria..

START TIME_____

****

Performance Step: Critical X Not Critical__

[5.8] **COMPUTE** the signal to noise ratio as follows **AND RECORD** results below:

$$\frac{\text{Reading in Step 7.0[5.7]} - \text{Reading in Step 7.0[5.5]}}{\text{Reading in Step7.0[5.5]}}$$

The signal to noise ratio is_____.

[5.9] **VERIFY** signal to noise ratio is > 3.

[5.12] **VERIFY** that SRM A has ≥3 cps, **OR VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM **AND NO** other fuel assemblies in the associated core quadrant.

Standard:

Calculates a signal to noise ratio of 24 and verifies >3. Determines that SRM has less than the required 3 cps with fuel assemblies loaded in core quadrant A.

SAT__ UNSAT__ N/A __COMMENTS:_____

****

Performance Step: Critical X Not Critical__

[6.8] **COMPUTE** the signal to noise ratio as follows **AND** **RECORD** results below:

Reading in Step 7.0[6.7]− Reading in Step 7.0[6.5]
Reading in Step7.0[6.5]

The signal to noise ratio is_____.

[6.9] **VERIFY** signal to noise ratio is > 3.

[6.12] **VERIFY** that SRM B has ≥3 cps, **OR VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM **AND** **NO** other fuel assemblies in the associated core quadrant.

Standard:

Calculates a signal to noise ratio of 9 and verifies >3. Verifies SRM B has ≥ 3cps.

SAT__ UNSAT___ N/A ___COMMENTS:_____
_____

****

Performance Step: Critical X Not Critical___

[7.8] **COMPUTE** the signal to noise ratio as follows **AND**
RECORD results below:

Reading in Step 7.0[7.7]− Reading in Step 7.0[7.5]
Reading in Step7.0[7.5]

The signal to noise ratio is_____.

[7.9] **VERIFY** signal to noise ratio is > 3.

[7.12] **VERIFY** that SRM C has ≥3 cps, **OR VERIFY**
that ≤ 4 fuel assemblies are adjacent to the SRM **AND**
NO other fuel assemblies in the associated core quadrant.

Standard:

Calculates a signal to noise ratio of 2.75 and determines that the ratio is less than 3 cps. Verifies SRM C has ≥ 3cps.

SAT___ UNSAT___ N/A ___COMMENTS:_____
_____

****

Performance Step: Critical X Not Critical___

[8.8] **COMPUTE** the signal to noise ratio as follows **AND**
RECORD results below:

Reading in Step 7.0[8.7]− Reading in Step 7.0[8.5]
Reading in Step7.0[8.5]

The signal to noise ratio is_____.

[8.9] **VERIFY** signal to noise ratio is > 3.

[8.12] **VERIFY** that SRM D has ≥3 cps, **OR VERIFY**
that ≤ 4 fuel assemblies are adjacent to the SRM **AND**
NO other fuel assemblies in the associated core quadrant.

Standard:

Calculates a signal to noise ratio of 8 and verifies >3. Verifies SRM D has ≥ 3cps.

SAT___ UNSAT___ N/A ___COMMENTS:_____
_____

****

Performance Step: Critical _X_ Not Critical__

NOTE

The following section is required to be performed every 12 hours while core alterations are in progress **AND** within 12 hours prior to the beginning of core alterations. One SRM may be used to satisfy **MORE** than one of the following conditions.

[13] **COMPLETE** the following table by answering yes **OR NO** for each question for each core quadrant (Reference the previous procedure steps just completed).

Quad A	Quad B	Quad C	Quad D	
				Was count rate ≥ 3 cps?
				Was signal-to-noise ratio ≥ 3:1?
				Is the quadrant a fueled region?
				Are core alterations being performed **OR** expected within the next 12 hours?

Standard:

Quad A	Quad B	Quad C	Quad D	
NO	yes	yes	yes	≥ 3 cps
yes	yes	NO	yes	≥ 3:1 signal to noise
yes	yes	yes	yes	quadrant fueled
no	YES	no	no	

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step: Critical X Not Critical__

[14] **VERIFY** an operable SRM detector is located in each core quadrant in which core alterations are being performed (**OR** planned within 12 hours) **AND** an adjacent core quadrant. **CHECK MARK** the appropriate operable SRMs for each core Quad:

IF Quad A, **THEN** SRM A □ and either SRM B □ or SRM D □ _____(AC)

IF Quad B, **THEN** SRM B □ and either SRM A □ or SRM C □ _____(AC)

IF Quad C, **THEN** SRM C □ and either SRM B □ or SRM D □ _____(AC)

IF Quad D, **THEN** SRM D □ and either SRM A □ or SRM C □ _____(AC)

Standard:

Completes Step 14 for a minimum of Quadrant B, determines acceptance criteria not met.

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

CUE: If needed can ask Candidate if acceptance criteria is met for any core quadrant.

NOTE: NO CORE Alterations can commence

****

Performance Step: Critical X Not Critical__

[15] **RECORD** the appropriate test information on Attachment 1, Surveillance Procedure Review Form (located in Section 8.0), **AND COMPLETE** up to Unit Supervisor Review.

[16] **NOTIFY** UO that this SR test procedure is complete.

[17] **NOTIFY** US that this SR test procedure is complete.

Standard:

Critical Step: completes Attachment 1 and marks NO for acceptance criteria satisfied. Notifies UO and US.

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

CUE: Acknowledge communication as Unit Operator and Unit Supervisor

END OF TASK

STOP TIME ___

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

SRO ____ DATE:_____

JPM NUMBER: 555sro

TASK NUMBER: Equipment Control

TASK TITLE: Containment Penetration Isolation to meet 3.6.1.3

K/A NUMBER: 2.2.40 K/A RATING: SRO: 4.7

TASK STANDARD: Determine components to provide isolation for Containment penetration X-211B, due to failure of 2-FCV-74-72 to meet TS 3.6.1.3

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: TS 3.6.1.3, Drawing 2-47E811-1, SPP 10.2

VALIDATION TIME: 20 minutes

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

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES __ NO __

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

INITIAL CONDITIONS: The plant is in MODE 1. During performance of 2-SR-3.6.1.3.5 RHRII, RHR System MOV Operability Loop II, valve 2-FCV-74-72 RHR SYS II SUPPR CHBR SPRAY VALVE blew all main line fuses during its stroke time test. The valve is currently open and attempts to manually close 2-FCV-74-72 have been unsuccessful. The valve has been declared INOPERABLE and Technical Specification 3.6.1.3 (PCIVs), Condition A has been entered.

INITIATING CUES: The Shift Manager directs you as a Senior Reactor Operator, to determine the component(s) that will require isolation in order to comply with Technical Specification 3.6.1.3, Condition A. The Unit Supervisor is completing the required LCOs.

START TIME_____

****

Performance Step: Critical_ Not Critical_X_

Review print 2-47E811-1 to determine components that can isolate penetration X-211B due to failure of 2-FCV-74-72

Standard:

Locates and reviews print for designated CTMT Penetration and valves in flow path

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X_ Not Critical_ _

Identifies the following component to meet Technical Specification 3.6.1.3.

Standard:

2-FCV-74-71 needs Closed, De-activated and under Administrative Control

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

CUE: Not required to generate clearance. Identify component(s) that would be required to be listed on a clearance.

****

Performance Step: Critical X Not Critical__

Identifies the following component to meet Technical Specification 3.6.1.3.

Standard:

Test Valve 796B Closed and under Administrative Control

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical__ Not Critical_X_

May Identify the following components but they are **not** required to meet Technical Specification 3.6.1.3.

Standard:

2-FCV-74-73, 2-74-715B, and 2-VTV-74-711B

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

OPERATOR:_____

RO _____ SRO ____ DATE:_____

JPM NUMBER: 556

TASK NUMBER: U-000-SU-06

TASK TITLE: Drywell Leakage Calculation

K/A NUMBER: 2.2.38 K/A RATING: RO 3.6 SRO: 4.5

TASK STANDARD: Calculate Drywell Floor and Equipment Sump leakage using 2-SR-2 and determine unidentified leakage is outside the acceptance criteria.

LOCATION OF PERFORMANCE: Class Room / Unit 2 Simulator

REFERENCES/PROCEDURES NEEDED: 2-SR-2

VALIDATION TIME: 10 minutes

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

PERFORMANCE TIME: ____

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES __ NO __

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

BROWNS FERRY NUCLEAR PLANT
JOB PERFORMANCE MEASURE

****

Class Room

****

INITIAL CONDITIONS: Unit 2 is operating at 100% power after a Refuel Outage last month. The unit has been on line for 10 days. It is 0800 and the DW Floor and Equipment Drain have completed pumping down. The 0800 reading for Floor Drain is 60380 and for Equipment Drain is 44988.

INITIATING CUES: The Unit Supervisor directs you as a Reactor Operator to complete 2-SR-2 for the Drywell Floor and Equipment Drain Sumps and report results.

START TIME_____

****

Performance Step: Critical_ Not Critical_X_

Completes 2-SR-2 for Drywell Unidentified Leakage for 0800 Saturday morning.

Standard:

Completes 0800 readings for Saturday

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X_ Not Critical_ _

Calculates a current unidentified leakrate of 3.41 gpm

Standard:

Calculates a current unidentified leakrate of 3.41 gpm

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X_ Not Critical_ _

Calculates a change in leakrate of 2.02 gpm

Standard:

Calculates a change in leakrate of 2.02 gpm

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical__ Not Critical_X_

Completes 2-SR-2 for Drywell Identified Leakage and Total Leakage for 0800 Saturday morning

Standard:

Completes 0800 readings for Saturday

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical X_ Not Critical_ _

Calculates a current identified leakrate of 2.32 gpm

Standard:

Calculates a current identified leakrate of 2.32 gpm

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical___

Calculates a total leakrate of 5.73 gpm

Standard:

Calculates a total leak rate of 5.73 gpm

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step: Critical_X_ Not Critical___

Reports that the Unidentified increase in leakage does not meet the acceptance criteria of ≤2 gpm within the previous 24 hour period.

Standard:

Reports that the Unidentified increase in leakage does not meet the acceptance criteria of ≤2 gpm within the previous 24 hour period.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

Table 1.2 DRYWELL UNIDENTIFIED LEAKAGE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 2-9-4, 2-FQ-77-6

Preferred reading times are 0800, 1200 and 1600	Col. A.1	Col. B.1	Col. C.1	Col. D.1	Col. E.1	Col. F.1	Col. G.1	Col. H.1	Col. I.1	LIMITS (AC)	Review Init	
	Current 2-FQ-77-6 Reading (gals) (Notes 1, 2)	Previous Days 2-FQ-77-6 Reading from Col. A.1 (gals) (Note 2)	Gallons Pumped Col. A.1 - Col. B.1 (Note 2)	Current Time (Note 2)	Previous Days Time from Col. D.1 (Note 2)	Elapsed Time Col. D.1 - Col. E.1 (min) (Note 2)	Current Leakrate Col. C.1 ÷ Col. F.1 (gpm) (Note 2)	Previous Days Leakrate from Col. G.1 (gpm) (Note 2)	Change in Leakrate Col. G.1 - Col. H.1 (gpm) (Note 2, 3)		UO	Unit Supvr (Note 4)
Friday	55469	53461	2008	0800	0800	1440	1.39	1.09	+ .20	Col. G.1 ≤ 5.0 gpm and Col. I.1 ≤ 2 gpm (Note 3)	MS	
	57716	54182	3534	1200	1200	1440	2.45	1.11	+1.34		DZ	
	59010	54884	4126	1600	1600	1440	2.87	1.10	+1.77		BC	
Saturday												
Sunday												
		Student	**Handout**		**Student**	**Handout**		**Student**	**Handout**			
Monday												
		Student	**Handout**		**Student**	**Handout**		**Student**	**Handout**			

!

(1) Manually pump down sump per 2-OI-64 prior to reading. To record gallons, disregard the decimal position on integrator. Record only five digits including right-hand dial's hash marks as gallons of flow. Example: Record 0065432.1 as 54321.

(2) May be N/A'd if Surveillance Requirement is being met with the performance of 2-SR-3.4.4.1 or 2-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial integrator reading is taken and no previous reading exists, all other entries except for Col. A.1 and D.1 should be N/A'd.

(3) Acceptance Criteria for Col. I.1 is only applicable when in Mode 1 for > 24 hours.

(4) Unit Supervisor shall Independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

Table 1.3 DRYWELL IDENTIFIED and TOTAL LEAKAGE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 2-9-4, 2-FQ-77-16

Preferred reading times are 0800, 1200 and 1600	Col. A.2 Current 2-FQ-77-16 Reading (gals) (Notes 1, 2)	Col. B.2 Previous Days 2-FQ-77-16 Reading from Col. A.2 (gals) (Note 2)	Col. C.2 Gallons Pumped Col. A.2 - Col. B.2 (Note 2)	Col. D.2 Current Time (Note 2)	Col. E.2 Previous Days Time from Col. D.2 (Note 2)	Col. F.2 Elapsed Time Col. D.2 - Col. E.2 (min) (Note 2)	Col. G.2 Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) (Note 2)	Col. H.2 Current Unidentified Leakrate from Col. G.1 (gpm) (Notes 2 & 3)	Col. I.2 Total Leakrate Col. G.2 + Col. H.2 (gpm) (Note 2)	LIMITS (AC)	Review Init UO	Review Init Unit Supvr (Note 4)
Friday	41647	39756	1891	0800	0800	1440	1.31	1.39	2.70		MS	
	41957	40080	1877	1200	1200	1440	1.30	2.45	3.75		DZ	
	42266	40388	1878	1600	1600	1440	1.30	2.87	4.17		BC	
Saturday												
										Col. I.2 ≤ 30.0 gpm		
Sunday												
		Student	**Handout**		**Student**	**Handout**		**Student**	**Handout**			
Monday												
		Student	**Handout**		**Student**	**Handout**		**Student**	**Handout**			

!

(1) Manually pump down sump per 2-OI-64 prior to reading. To record gallons, disregard the decimal position on integrator. Record only five digits including right-hand dial's hash marks as gallons of flow. Example: Record 0065432.1 as 54321.
(2) May be N/A'd if Surveillance Requirement is being met with the performance of 2-SR-3.4.4.1 or 2-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial integrator reading is taken and no previous reading exists, all other entries except for Col. A.2 and D.2 should be N/A'd.
(3) G.1 reading is from Drywell Unidentified Leakage Col. G.1 on previous page.
(4) Unit Supervisor shall independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

Table 1.2 DRYWELL UNIDENTIFIED LEAKAGE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 2-9-4, 2-FQ-77-6

Preferred reading times are 0800, 1200 and 1600	Col. A.1	Col. B.1	Col. C.1	Col. D.1	Col. E.1	Col. F.1	Col. G.1	Col. H.1	Col. I.1	LIMITS (AC)	Review Init	
	Current 2-FQ-77-6 Reading (gals) (Notes 1, 2)	Previous Days 2-FQ-77-6 Reading from Col. A.1 (gals) (Note 2)	Gallons Pumped Col. A.1 - Col. B.1 (Note 2)	Current Time (Note 2)	Previous Days Time from Col. D.1 (Note 2)	Elapsed Time Col. D.1 - Col. E.1 (min) (Note 2)	Current Leakrate Col. C.1 ÷ Col. F.1 (gpm) (Note 2)	Previous Days Leakrate from Col. G.1 (gpm) (Note 2)	Change in Leakrate Col. G.1 - Col. H.1 (gpm) (Note 2, 3)		UO	Unit Supvr (Note 4)
Friday	55469	53461	2008	0800	0800	1440	1.39	1.09	+ .20	Col. G.1 ≤ 5.0 gpm and Col. I.1 ≤ 2 gpm (Note 3)	MS	
	57716	54182	3534	1200	1200	1440	2.45	1.11	+1.34		DZ	
	59010	54884	4126	1600	1600	1440	2.87	1.10	+1.77		BC	
Saturday	60380	55469	4911	0800	0800	1440	3.41	1.39	+2.02			
		ANSWER	**KEY**		**ANSWER**	**KEY**		**ANSWER**	**KEY**			
Sunday												
		ANSWER	**KEY**		**ANSWER**	**KEY**		**ANSWER**	**KEY**			
Monday												

!

(1) Manually pump down sump per 2-OI-64 prior to reading. To record gallons, disregard the decimal position on integrator. Record only five digits including right-hand dial's hash marks as gallons of flow. Example: Record 0065432.1 as 54321.
(2) May be N/A'd if Surveillance Requirement is being met with the performance of 2-SR-3.4.4.1 or 2-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial integrator reading is taken and no previous reading exists, all other entries except for Col. A.1 and D.1 should be N/A'd.
(3) Acceptance Criteria for Col. I.1 is only applicable when in Mode 1 for > 24 hours.
(4) Unit Supervisor shall Independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.

Table 1.3 DRYWELL IDENTIFIED and TOTAL LEAKAGE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY: Modes 1, 2 & 3 Readings are required at all times.

Surveillance Requirements: 3.4.4.1 LOCATION: Panel 2-9-4, 2-FQ-77-16

Preferred reading times are 0800, 1200 and 1600	Col. A.2	Col. B.2	Col. C.2	Col. D.2	Col. E.2	Col. F.2	Col. G.2	Col. H.2	Col. I.2		Review Init	
	Current 2-FQ-77-16 Reading (gals) (Notes 1, 2)	Previous Days 2-FQ-77-16 Reading from Col. A.2 (gals) (Note 2)	Gallons Pumped Col. A.2 - Col. B.2 (Note 2)	Current Time (Note 2)	Previous Days Time from Col. D.2 (Note 2)	Elapsed Time Col. D.2 - Col. E.2 (min) (Note 2)	Current Leakrate Col. C.2 ÷ Col. F.2 (gpm) (Note 2)	Current Unidentified Leakrate from Col. G.1 (gpm) (Notes 2 & 3)	Total Leakrate Col. G.2 + Col. H.2 (gpm) (Note 2)	LIMITS (AC)	UO	Unit Supvr (Note 4)
Friday	41647	39756	1891	0800	0800	1440	1.31	1.39	2.70		MS	
	41957	40080	1877	1200	1200	1440	1.30	2.45	3.75		DZ	
	42266	40388	1878	1600	1600	1440	1.30	2.87	4.17		BC	
Saturday	44988	41647	3341	0800	0800	1440	2.32	3.41	5.73			
		ANSWER	**KEY**		**ANSWER**	**KEY**		**ANSWER**	**KEY**			
										Col. I.2 ≤ 30.0 gpm		
Sunday												
		ANSWER	**KEY**		**ANSWER**	**KEY**		**ANSWER**	**KEY**			
Monday												

!

(1) Manually pump down sump per 2-OI-64 prior to reading. To record gallons, disregard the decimal position on integrator. Record only five digits including right-hand dial's hash marks as gallons of flow. Example: Record 0065432.1 as 54321.
(2) May be N/A'd if Surveillance Requirement is being met with the performance of 2-SR-3.4.4.1 or 2-SR-3.4.4.1-a and a note stating such shall be made in the remarks section of this SR. When initial integrator reading is taken and no previous reading exists, all other entries except for Col. A.2 and D.2 should be N/A'd.
(3) G.1 reading is from Drywell Unidentified Leakage Col. G.1 on previous page.
(4) Unit Supervisor shall independently Verify Inleakage Calculations and verify Inleakage Acceptance Criteria.