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

**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 35 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.

**********

**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 35 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 (Electronic Dosimeter).

**START TIME_____**

**********

Performance Step 1: 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 2: Critical X Not Critical__

Calculates RWCU HX venting dose.

Standard:

35 minutes in a 250 mrem/hr area = 146 mrem

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 3: 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 4: Critical X Not Critical__

Calculates total dose received

Standard:

15 mrem travel + 146 mrem venting + 42 mrem 69-2 = 203 mrem

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 5: Critical X Not Critical__

Calculates total dose for quarter

Standard:

750 mrem + 203 mrem = 953 mrem

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 6: *Critical_X Not Critical__

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 be exceeded.**

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 7: Critical_X_ Not Critical__

Verifies dose limits for quarter and RWP

Standard:

Verifies will have a total dose of greater than 950 mrem which is **above** the TVA limit

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

**STOP TIME ___**

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

**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. You have worked NO hours outside your schedule prior to 6/12.

**INITIATING CUES**: Review the upcoming 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 |
| 0700-1900 | 0700-1900 | 1900-0700 | 1900-0700 | 1900-0700 | Off | 0700-1900 |

| Sun | Mon | Tues | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 6/20 | 6/21 | 6/22 | 6/23 | 6/24 | 6/25 | 6/26 |
| 0700-1900 | 0700-1900 | Off | 1900-0700 | 1900-0700 | 1900-0700 | Off |

**********

**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. You have worked NO hours outside your schedule prior to 6/12.

**INITIATING CUES**: Review the upcoming 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 |
| 0700-1900 | 0700-1900 | 1900-0700 | 1900-0700 | 1900-0700 | Off | 0700-1900 |

| Sun | Mon | Tues | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 6/20 | 6/21 | 6/22 | 6/23 | 6/24 | 6/25 | 6/26 |
| 0700-1900 | 0700-1900 | Off | 1900-0700 | 1900-0700 | 1900-0700 | 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

**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. None of the operators have worked any hours outside their scheduled hours prior to 6/12.

**INITIATING CUES**: Review the upcoming 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 |
| 0700-1900 | 0700-1900 | 1900-0700 | 1900-0700 | 1900-0700 | Off | 0700-1900 |

| Sun | Mon | Tues | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 6/20 | 6/21 | 6/22 | 6/23 | 6/24 | 6/25 | 6/26 |
| 0700-1900 | 0700-1900 | Off | 1900-0700 | 1900-0700 | 1900-0700 | 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 |
| 0700-1900 | 0700-1900 | 0700-1900 | 0700-1900 | 0700-1900 | 0700-1900 | Off |

| Sun | Mon | Tues | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 6/20 | 6/21 | 6/22 | 6/23 | 6/24 | 6/25 | 6/26 |
| 1900-0700 | 1900-0700 | 1900-0700 | 1900-0700 | 1900-0700 | 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 |
| 0700-1900 | 0700-1900 | 0700-2100 | 0700-1900 | Off | Off | 1900-0900 |

| Sun | Mon | Tues | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 6/20 | 6/21 | 6/22 | 6/23 | 6/24 | 6/25 | 6/26 |
| 1800-0700 | 1900-0700 | Off | 1900-0700 | 1900-0700 | Off | Off |

**These three operators were off on 6/12**

**********

**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. None of the operators have worked any hours outside their scheduled hours prior to 6/12.

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

**START TIME_____**

**********

Performance Step 1: 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 2: 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 3: 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

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

**INITIAL CONDITIONS**: You are a Senior Reactor Operator on Unit 2. Unit 2 scrammed a short time ago on an MSIV isolation. 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 Rods inserted on the scram
- Reactor Level is at -100 inches and rising slowly
- Reactor Pressure is currently at 900 psig and rising being controlled on SRVs
- Numerous High Radiation Alarms are in for all Turbine areas
- 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**

**********

**Class Room**

**********

**INITIAL CONDITIONS**: You are a Senior Reactor Operator on Unit 2. Unit 2 scrammed a short time ago on an MSIV isolation. 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 Rods inserted on the scram
- Reactor Level is at -100 inches and rising slowly
- Reactor Pressure is currently at 900 psig and rising being controlled on SRVs
- Numerous High Radiation Alarms are in for all Turbine areas
- 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**<br>• EVACUATE LISTED SECTORS (2 mile Radius & 10 miles downwind)<br>• Shelter remainder of 10 mile EPZ.<br>• Consider issuance of POTASSIUM IODINE in accordance with the State Plan. | REC 1 | WIND FROM DEGREES<br>(Mark wind direction from Step 7) | REC 2 | ☐ **Recommendation 2**<br>• EVACUATE LISTED SECTORS (2 mile radius & 5 mile downwind)<br>• SHELTER remainder of 10 mile EPZ.<br>• 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".

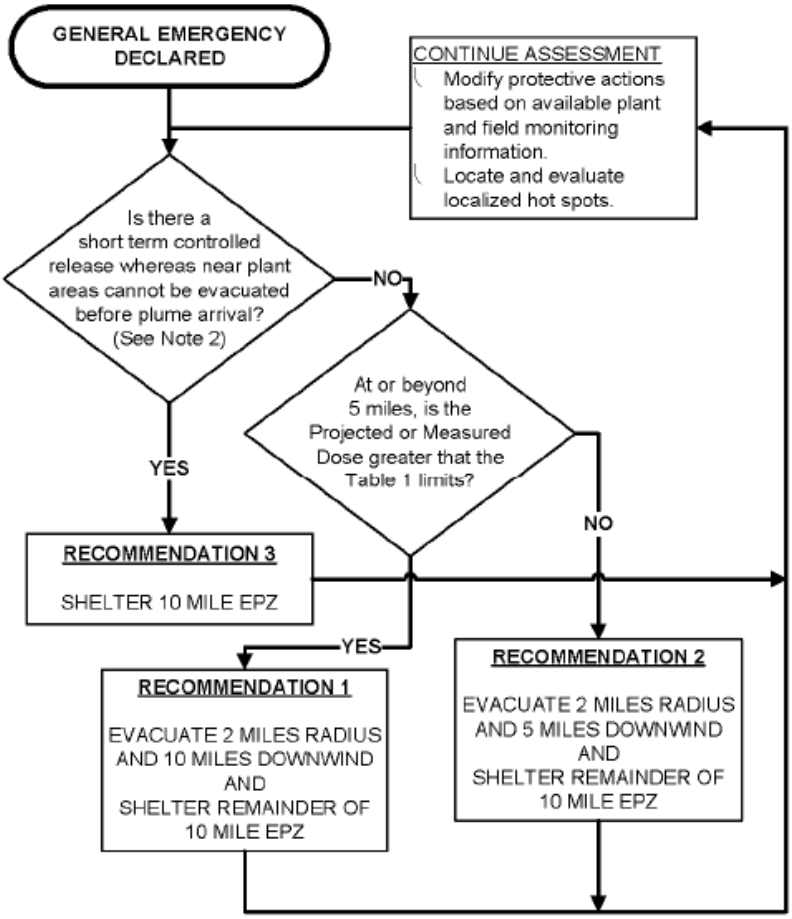


**TABLE 1**
**Protective Action Guides**

| 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 1: 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 2: 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 3: 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

**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.

**********

**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 1: 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 2: 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 3: Critical _X_ Not Critical__

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 4: 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.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 5: 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: 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

**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, core alterations are scheduled to commence **only** 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 **all** the calculations and acceptance criteria steps in 1-SR-3.3.1.2.4 and notify him of the results of the acceptance criteria..

**********

**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, core alterations are scheduled to commence **only** 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 **all** 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 1: *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.

[5.10] **IF** applicable,

[5.11] **UN-BYPASS** SRM (**OR** FLC) A.

*[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 intials acceptance criteria for step 5.9. **Determines that SRM has less than the required 3 cps with fuel assemblies loaded in core quadrant A. Does not initial acceptance criteria for step 5.12.**

SAT__ UNSAT___ N/A ___COMMENTS:_____
_____

**********

Performance Step 2: *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.

[6.10] **IF** applicable,

[6.11] **UN-BYPASS** SRM (**OR** FLC) B.

*[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. Initals acceptance criteria for step 6.9 and step 6.12.

SAT__ UNSAT__ N/A __COMMENTS:_____
_____

**********

Performance Step 3: *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.

[7.10] **IF** applicable,

[7.11] **UN-BYPASS** SRM (**OR** FLC) C.

*[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, determines that the ratio is less than 3 cps and does not initial acceptance criteria for step 7.9** . Verifies SRM C has ≥ 3cps and initials acceptance criteria for step 7.12.

SAT__ UNSAT___ N/A ___COMMENTS:_____

**********

Performance Step 4: *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.

[8.10] **IF** applicable, **THEN**

[8.11] **UN-BYPASS** SRM (**OR** FLC) D.

*[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. Initals acceptance criteria for step 8.9 and step 8.12.

SAT__ UNSAT__ N/A __COMMENTS:_____
_____

**********

Performance Step 5: *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? |

**NOTE**

SRM Operability is established when the count rate ≥ 3 cps with a signal-to-noise ratio ≥ 3:1 (**NOT** required when ≤ 4 fuel assemblies adjacent to the SRM **AND NO** other fuel assemblies in the associated core quadrant) Step 7.0[14] may be **N/A**'ed for each core quad where **NO** core alterations are being performed **AND NONE** 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 6: 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 and does not initial for acceptance criteria 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 7: 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

**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.

**********

**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 1: 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 2: 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 3: 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 4: 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: 561

TASK NUMBER: S-000-AD-55

TASK TITLE: PCS Head Tank Pump 2B Isolation Boundary

K/A NUMBER: 2.2.41 K/A RATING: RO 3.5 SRO: 3.9

TASK STANDARD: Determine the isolation boundary for PCS Head Tank Pump 2B

LOCATION OF PERFORMANCE: Class Room / Unit 2 Simulator

REFERENCES/PROCEDURES NEEDED: 2-47E814-1, 2-45E779-19, 2-47E610-75-1, 2-45E2750-4, and 2-45E751-3 and 5

VALIDATION TIME:

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

**INITIAL CONDITIONS**: PCS Head Tank Pump 2B has a cracked weld on the discharge line where 2-75-SHV-76 ties into the line.

**INITIATING CUES**: The Unit Supervisor directs you as a Reactor Operator to determine the isolation points for the repair work on PCS Head Tank Pump 2B discharge line.

**********

**Class Room**

**********

**INITIAL CONDITIONS**: PCS Head Tank Pump 2B has a cracked weld on the discharge line where 2-75-SHV-76 ties into the line.

**INITIATING CUES**: The Unit Supervisor directs you as a Reactor Operator to determine the isolation points for the repair work on PCS Head Tank Pump 2B discharge line.

**START TIME_____**

**********

Performance Step 1: Critical_ Not Critical_X_

Review prints to determine required isolation boundary: 2-47E814-1, 2-45E779-19, 2-47E610-75-1, 2-45E2750-4, and 2-45E751-3 and 5

Standard:

Locates and reviews prints for 2B PSC Head Tank Pump

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 2: Critical X_ Not Critical_ _

Determines Isolation boundary

Standard:

2-75-SHV-599 Pump Suction Valve Closed

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

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

**********

Performance Step 3: Critical X Not Critical__

Determines Isolation boundary

Standard:

2-75-SHV-603 Pump Discharge Valve Closed

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 4: Critical__ Not Critical_X_

Determines Isolation boundary

Standard:

2-75-HS-75-75A Control Room Handswitch Pull to Lock

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 5: Critical X Not Critical__

Determines Isolation boundary

Standard:

2B Pump Power Supply, 480 Volt RMOV Board 2B Disconnect 11D Open

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

**********

Performance Step 6: Critical_ Not Critical_X_

Determines Isolation Boundary

Standard:

The following drain valves may be identified but are not critical for personnel protection, 2-75-DRV-76, 2-75-DRV-604 and 2-75-DRV-605.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

**STOP TIME ___**