

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

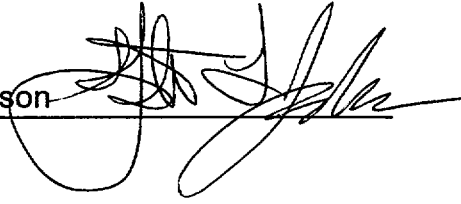
I. JPM Title: SRO Shift Turnover; Review Shift Log

JPM ID Number: SRO-A1.1

Revision: 0

II. Initiated:

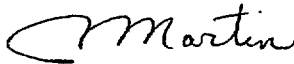
Steve Jackson
Developer



4/24/02
Date

III. Reviewed:

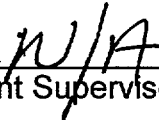
Technical Reviewer



6/18/02
Date

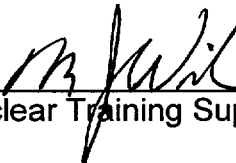
IV. Approved:

Cognizant Plant Supervisor (optional)



Date

Nuclear Training Supervisor



6/19/02
Date

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: SRO-A1.1

Revision: 0

Task Title: SRO Shift Turnover; Review Shift Log

System: Admin

Time Critical Task: () YES (X) NO

Validated Time (minutes): 10

Task Number(s): 119-03-208, Perform a Shift Relief and Turnover

Applicable To: SRO X RO PEO

K/A Number: GEN.2.1.18, Accurate, Clear, Concise, Logs K/A Rating: 2.9/3.0

Method of Testing: Simulated Performance: Actual Performance: X

Location: Classroom: X Simulator: In-Plant:

Task Standards: Perform a Shift Relief and Turnover

Required Materials: MP3 Shift Log
MP3 Tech Specs

General References: MP-14-OPS-GDL02, Operations Standards

READ TO THE STUDENT

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objectives for this JPM will be satisfied. You may use any approved reference material normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgements, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: SRO-A1.1

Revision: 0

Simulator Requirements: none

Initial Conditions: You are the relieving Shift Manager. You have been presented with the Shift Log for your review.

Initiating Cues: Review the Shift Log as prior to shift turnover. Report to the examiner when you are completed. The examiner will act as the off-going Shift Manager to answer any questions.

**** NOTES TO EVALUATOR ****

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

PERFORMANCE INFORMATION

JPM Number: SRO-A1.1

Revision: 0

Task Title: SRO Shift Turnover; Review Shift Log

Start Time:

STEP 1

Performance Step: Review pertinent information identified on applicable shift logs relating to the past 12 hours. If coming on shift after days off, consider reviewing the last 24 hours. (from MP-14-OPS-GDL02, Att. 3, sheet 11 of 32)

GRADE

Standards: Reviews logs relating to the past 12 hours for pertinent information which may include:

- Unusual event in last 24 hours
- Review of system status
- Inoperable equipment and ACTION statements
- Any work in progress

Grade: SAT UNSAT

STEP 2 X

Performance Step: Identify Inoperable equipment and ACTION statements

GRADE X

Standards: Candidate identifies that due to 3FWS*CTV41A inoperability, Tech Spec 3.6.3.a should have been entered on 7/14/02 at 21:45.

 X

Standards: Candidate should also identify that this condition would have required a plant shutdown if it had not been corrected prior to 7/15/02 at 01:45

Grade: SAT UNSAT

Cue: (If candidate identifies Tech Spec) Under what conditions would a plant shutdown be required?
If it had not been corrected prior to 7/15/02 at 01:45

PERFORMANCE INFORMATION

JPM Number: SRO-A1.1

Revision: 0

Task Title: SRO Shift Turnover; Review Shift Log

Cue: (If candidate identifies Tech Spec)

What times are specified under the action statement?

Restore valve to operable status in 4 hours or be in HOT STANDBY in 6 hours and COLD SHUTDOWN in the following 30 hours.

Termination cue: The evaluation for this JPM is complete.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: SRO-A1.1

Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? YES _____ NO X

Validated Time (minutes): 10

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number:

SRO-A1.1

Initial Conditions:

You are the relieving Shift Manager. You have been presented with the Shift Log for your review..

Initiating Cues:

Review the Shift Log prior to shift turnover. The examiner will act as the off-going Shift Manager to answer any questions.

Millstone Unit 3 Shift Log

07/15/02 05:58:02

Shift	A	B	C	D	E	F
SM						
STA						
US						
US						

<u>Date/Time</u>	<u>Entry</u>
07/14/02	Shift Hours: 1800-0600 Mode: 1 Reactor Power: 100% MWe: 1200 RCS Pressure: 2250 PSIA RCS Tav: 587 Degrees Shift Manager: Ray Martin Unit Supervisor: Rich Sadler STA: Brian Koshmerl Shift Tech: John Favreau Reactor Operator: Jeff Cote BOP Operator: Kelly Underwood Secondary Rounds Operator: Chris Chatman Outside Rounds Operator: Bill Forrestt Plant Equipment Operator: Mike Frechette Radwaste Operator: Ricky Kauffman Primary Rounds Operator: Rob Wade
07/14/02 19:50	Performed RCS Dilution, 50 gallons @ 80 GPM.
07/14/02 20:42	3VPS-P1A. A STATION VACUUM PRIMING PUMP, started
07/14/02 20:44	3VPS-P1B. B STATION VACUUM PRIMING PUMP, stopped for AWO's
07/14/02 21:07	3VPS-P1B. B STATION VACUUM PRIMING PUMP, started to troubleshoot seal water pressure indication on 3VPS-P1A
07/14/02 21:09	3VPS-P1B. B STATION VACUUM PRIMING PUMP, stopped
07/14/02 21:41	Performed RCS Dilution, 50 gallons @ 80 GPM.
07/14/02 21:45	Received the Accumulator Low Press annunciator (MB5B 1-2) for 3FWS*CTV41A.
07/14/02 21:55	Primary rounds operator reports both accumulator pressures are reading 4600 psig for 3FWS*CTV41A.
07/14/02 22:01	Placed D Condensate Demin on Recycle.
07/14/02 22:05	Evening maintenance investigating 3FWS*CTV41A hydraulic system.
07/14/02 22:10	Accepted procedure 3665.2-1 Intake Structure Condition Determination satisfactorily.
07/14/02 22:10	Accepted procedure 3670.1-1 Mode 1-4 Daily and Shiftly Control Room Rounds satisfactorily.
07/14/02 22:11	Accepted procedure 3670.2-10 Shiftly Primary PEO Tech Spec Rounds (Mode 1-4) satisfactorily.
07/14/02 22:11	Accepted procedure 3670.2-11 Shiftly Secondary PEO Tech Spec Rounds (Mode 1-4) satisfactorily.
07/14/02 22:11	Accepted procedure 3670.2-12 Shiftly Radwaste PEO Tech Spec Rounds (Mode 1-4) satisfactorily.
07/14/02 22:12	Accepted procedure C SP 600.11-002 Millstone Station Common Plant Equipment Operator Logs satisfactorily.
07/14/02 22:20	Selecting Check N2 on 3FWS*CTV41A for maintenance.
07/14/02 22:44	D condensate demineralizer placed in service, G demineralizer removed from service.
07/15/02 00:12	Performed RCS Dilution, 50 gallons @ 80 GPM.
07/15/02 00:30	Maintenance has completed the PM on 3FWS*CTV41A and all connections are tight.
07/15/02 00:45	Placed 3FWS*CTV41A Hydraulic system in Control (CONT) at MB5.
07/15/02 01:11	Accumulator Low Press annunciator (MB5B 1-2) 3FWS*CTV41A has cleared.
07/15/02 01:16	Accepted procedure 3604C.2-1 Boration Flow Path Verification, MODE 1, 2, 3 satisfactorily.
07/15/02 01:17	Accepted procedure 3680.1-1 Main Generator Hydrogen Use Rate satisfactorily.

Page Number _____

Shift Manager _____

Millstone Unit 3 Shift Log

07/15/02 05:58:02

07/15/02 01:17 Accepted procedure 3680.1-3 Containment Unidentified Leakage Trending satisfactorily.

07/15/02 01:21 Primary rounds operator reports both accumulator pressures are reading 5200 psig for 3FWS*CTV41A.

07/15/02 02:25 Performed RCS Dilution, 50 gallons @ 80 GPM.

07/15/02 04:07 3CNS-P3A, COMPONENT COOLING WATER MAKEUP PUMP, started to support CPF operations.

07/15/02 04:07 Chemistry placing TK11 on recirc for discharge.

07/15/02 04:40 Performed RCS Dilution, 50 gallons @ 80 GPM.

Millstone Unit 3 Shift Log

Active LCO's

07/15/02 05:58:02

Shift	A	B	C	D	E	F
SM						
STA						
US						
US						

<u>LCO</u>	<u>Action</u>	<u>EntryDate</u>	<u>ExpDate</u>	<u>Reason</u>
3TRM-3.7.12.1	a	07/10/02 10:20	07/17/02 10:20	Diesel fire pump is inoperable due to failed battery surveillance SP788A. Diesel fire pump remains available
3TRM-3.7.12.3	a	01/15/99 20:57	01/15/99 21:57	Cable spreading Room CO2 System disabled per Temp Mod 3-01-035
3TRM-3.7.13	a	07/05/02 14:51	07/05/02 15:51	Pyrocrete on ceiling in Terry Turbine room failed surveillance criteria.
3TRM-3.7.13	a	06/27/02 15:30	06/27/02 16:30	Impairment # 34525 -02-H Fire Damper 3HVQ*DMPF9 failed surveillance CR-02-03738,
3TRM-3.7.13	a	06/02/01 01:00	06/02/01 02:00	Fire Impairment #34510-02-H Fire Seals 1317-2 and 1316-2 between Aux Bldg and turbine bldg tunnel do not meet design, 34074-01-H
3TRM-7.4.1	c.2	06/26/02 07:44	07/09/02 08:44	ELUs AB-21,23,24,25,28,45,60,72,73 inop, temporary lighting installed, temporary log established
3TRM-7.4.1	c.2	06/22/02 00:00	07/05/02 00:00	ELUs AB-4, AB-8, AB-9, and AB-16 inop, temporary lighting installed, temporary log established
REMODCM V.C.1	b	07/15/02 13:56	08/15/02 13:56	3CND-RE07 inoperable due to failed surveillance SP3450F.11

Millstone Unit 3 Shift Log
Active LCO's

KEY

07/15/02 01:00:00

Shift	A	B	C	D	E	F
SM						
STA						
US						
US						

<u>LCO</u>	<u>Action</u>	<u>EntryDate</u>	<u>ExpDate</u>	<u>Reason</u>
3TRM-3.7.12.1	a	07/10/02 10:20	07/17/02 10:20	Diesel fire pump is inoperable due to failed battery surveillance SP788A. Diesel fire pump remains available
3TRM-3.7.12.3	a	01/15/99 20:57	01/15/99 21:57	Cable spreading Room CO2 System disabled per Temp Mod 3-01-035
3TRM-3.7.13	a	07/05/02 14:51	07/05/02 15:51	Pyrocrete on ceiling in Terry Turbine room failed surveillance criteria. Impairment # 34525 -02-H
3TRM-3.7.13	a	06/27/02 15:30	06/27/02 16:30	Fire Damper 3HVQ*DMPF9 failed surveillance CR-02-03738, Fire Impairment #34510-02-H
3TRM-3.7.13	a	06/02/01 01:00	06/02/01 02:00	Fire Seals 1317-2 and 1316-2 between Aux Bldg and turbine bldg tunnel do not meet design, 34074-01-H
3TRM-7.4.1	c.2	06/26/02 07:44	07/09/02 08:44	ELUs AB-21,23,24,25,28,45,60,72,73 inop, temporary lighting installed, temporary log established
3TRM-7.4.1	c.2	06/22/02 00:00	07/05/02 00:00	ELUs AB-4, AB-8, AB-9, and AB-16 inop, temporary lighting installed, temporary log established
REMODCM V.C.1	b	07/15/02 13:56	08/15/02 13:56	3CND-RE07 inoperable due to failed surveillance SP3450F.11
3.6.3	a	07/14/02 21:45	07/15/02 01:45	Restore the inoperable valve, 3FWS*CTV41A, to operable status within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

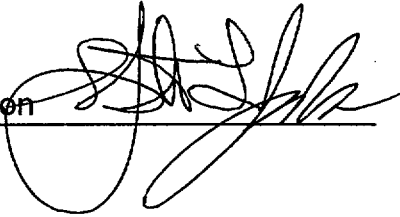
I. JPM Title: Evaluate Current Decay Heat Removal Requirements

JPM ID Number: SRO-A1.2

Revision: 0

II. Initiated:

Steve Jackson
Developer



2/26/02
Date

III. Reviewed:

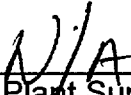
CMartin
Technical Reviewer



6/18/02
Date

IV. Approved:

N/A
Cognizant Plant Supervisor (optional)



Date

M. Paul
Nuclear Training Supervisor



6/19/02
Date

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: SRO-A1.2

Revision: 0

Task Title: Evaluate Current Decay Heat Removal Requirements

System: Admin

Time Critical Task: () YES (X) NO

Validated Time (minutes): 15

Task Number(s): 341-01-135, Evaluate Current Decay Heat Removal Requirements

Applicable To: SRO X RO PEO

K/A Number: GEN.2.1.25 K/A Rating: 2.8 / 3.1

Method of Testing: Simulated Performance: Actual Performance: X

Location: Classroom: X Simulator: In-Plant:

Task Standards: Maintaining defense in depth requirement for key safety systems and equipment associated with minimizing shutdown risk.

Required Materials: OP 3260A, Conduct of Outages, Rev. 013-04

General References: None

*****READ TO THE STUDENT*****

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objectives for this JPM will be satisfied. You may use any approved reference material normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgements, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: SRO-A1.2

Revision: 0

Initial Conditions:

Millstone Unit 3 is completing a refueling outage. Fuel has been reloaded and plant conditions are as described on the handout. A bus outage on 34C is being considered. SBO to Bus 34A Tie Breaker 34A1-2 (3NNS-ACB-AH) was damaged requiring replacement and repair of breaker electrical connections. The SBO may not be started or loaded during repair activities. Total duration of the bus outage is estimated as 2.5 hours.

Initiating Cues:

You are the Unit Supervisor. Using OP3260A, Conduct of Outages, evaluate the current decay heat removal requirements and make a recommendation to the Shift Manager regarding the proposed bus outage.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

PERFORMANCE INFORMATION

JPM Number: SRO-A1.2

Revision: 0

Task Title: Evaluate Current Decay Heat Removal Requirements

Start Time:

STEP 1

Performance Step: Locate correct procedure section.

GRADE

Standards: Candidate refers to OP 3260A and locates Section 1.3, Decay Heat Removal Requirements

Grade: SAT UNSAT

STEP 2

Performance Step: VERIFY one train of RHR in operation. (step 1.3.2)

GRADE

Standards: Refers to or remembers initial conditions and determines that the B RHR pump and train is in operation.

Grade: SAT UNSAT

STEP 3 X

Performance Step: IF in MODE 5, PERFORM one of the following to ensure a backup for decay heat removal (step 1.3.3)
 • MAINTAIN the non-operating RHR train available

GRADE X

Standards: Candidate analyses initial conditions and cues and determines that the non-operating RHR train will **NOT** be available.

Grade: SAT UNSAT

PERFORMANCE INFORMATION

JPM Number: SRO-A1.2

Revision: 0

Task Title: Evaluate Current Decay Heat Removal Requirements

STEP 4 X **Performance Step:** VERIFY all of the following are satisfied to ensure two steam generators available and proper RCS condition are established to support natural circulation

- Both available SG NR levels greater than 17%

GRADE X **Standards:** Candidate refers to initial conditions: **B & C S/Gs filled to >50% NR**

Grade: **SAT** **UNSAT**

Performance Step: VERIFY all of the following are satisfied to ensure two steam generators available and proper RCS condition are established to support natural circulation

- Capability to feed available SG's with a MD AFW pump

Grade: **SAT** **UNSAT**

GRADE X **Standards:** Candidate refers to initial conditions: **B MDFW pump available to fill S/Gs**

Performance Step: VERIFY all of the following are satisfied to ensure two steam generators available and proper RCS condition are established to support natural circulation

- Capability to release steam from available SGs

GRADE X **Standards:** Candidate refers to initial conditions: **Steam release capability available**

Grade: **SAT** **UNSAT**

Performance Step: VERIFY all of the following are satisfied to ensure two steam generators available and proper RCS

PERFORMANCE INFORMATION

JPM Number: SRO-A1.2

Revision: 0

Task Title: Evaluate Current Decay Heat Removal Requirements

condition are established to support natural circulation

- RCS pressurized or capable of being pressurized to between 170 psia and 330 psia prior to core boiling

GRADE X

Standards: Candidate refers to initial conditions: **RCS re-pressurization contingency plans prepared**

Grade: SAT UNSAT

Performance Step: VERIFY all of the following are satisfied to ensure two steam generators available and proper RCS condition are established to support natural circulation

- RCS openings being tracked

GRADE X

Standards: Candidate refers to initial conditions: **RCS openings being tracked**

Grade: SAT UNSAT

Performance Step: VERIFY all of the following are satisfied to ensure two steam generators available and proper RCS condition are established to support natural circulation

- RCS loops associated with the available SGs: filled, swept, vented and unisolated

GRADE X

Standards: Candidate refers to initial conditions: **RCS Loops B & C filled, swept, vented and unisolated**

Grade: SAT UNSAT

Performance Step: VERIFY all of the following are satisfied to ensure two steam

PERFORMANCE INFORMATION

JPM Number: SRO-A1.2

Revision: 0

Task Title: Evaluate Current Decay Heat Removal Requirements

generators available and proper RCS condition are established to support natural circulation

- Pressurizer cold calibrated level >50% unless a steam bubble is established in the pressurizer

GRADE X

Standards:

Candidate refers to initial conditions:
PZR Cold Calibrated Level >50%

Grade:

SAT **UNSAT**

STEP 5 X

Performance Step:

IF natural circulation is the only available backup for decay heat removal, (only 1 RHR pump is available) **PERFORM** the following:
IF the time to core boiling is less than one hour, **MAINTAIN** one of the following:

- RCS pressure greater than 170 psia
- Contingency plan to re-pressurize the RCS to greater than 170 psia prior to core boiling

GRADE X

Standards:

1. Candidate uses initial condition information and Attachment 20 of OP 3260A to determine Time of Boil After Fuel Shuffle Vented Case and determines time to boil 2.3 hours.
2. Determines time to boil >1 hour and steps need not be implemented (though the contingency plan does exist)

Grade:

SAT **UNSAT**

PERFORMANCE INFORMATION

JPM Number: SRO-A1.2

Revision: 0

Task Title: Evaluate Current Decay Heat Removal Requirements

STEP 6 X **Performance Step:** IF a Bus 34C or 34D bus outage is planned, PRESSURIZE the RCS to greater than 170 psia unless either:

- The outage Bus Recovery Time is less than the time to core boiling, or
- The non-outage bus can be re-energized by the SBO diesel generator prior to core boiling

GRADE _____ X **Standards:**

1. Candidate analyses time to core boil (from previous step or calculates) compared to Bus Recovery Time from initial conditions. Determines Bus Recovery Time to be greater than time to core boiling
2. Candidate evaluates availability of SBO diesel. Since bus outage work prohibits starting or loading SBO diesel, candidate determines that the non-outage bus cannot be re-energized by SBO.

Grade: **SAT** _____ **UNSAT** _____

STEP 7 X **Performance Step:** Make a recommendation to the Shift Manager regarding the proposed bus outage.

GRADE _____ X **Standards:**

Based on Bus Recovery Time to be greater than time to core boiling and the non-outage bus cannot be re-energized by SBO candidate recommends that the RCS should be pressurized to greater than 170 psia prior to commencing bus outage.

Grade: **SAT** _____ **UNSAT** _____

Cue: Make a recommendation to the Shift Manager regarding the proposed bus

PERFORMANCE INFORMATION

JPM Number: SRO-A1.2

Revision: 0

Task Title: Evaluate Current Decay Heat Removal Requirements

outage.

Cue (contingency): Are all conditions ready to support the bus outage?

Cue (contingency): Would you recommend any changes in the current plant conditions to support the bus outage?

Termination cue: The evaluation for this JPM is complete.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: SRO-A1.2

Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? YES _____ NO X

Validated Time (minutes): 15

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number:

SRO-A1.2

Initial Conditions:

Millstone Unit 3 is completing a refueling outage. Fuel has been reloaded and plant conditions are as described on the handout. A bus outage on 34C is being considered. SBO to Bus 34A Tie Breaker 34A1-2 (3NNS-ACB-AH) was damaged requiring replacement and repair of breaker electrical connections. The SBO may not be started or loaded during repair activities. Total duration of the bus outage is estimated as 2.5 hours.

Initiating Cues:

You are the Unit Supervisor. Using OP3260A, Conduct of Outages, evaluate the current decay heat removal requirements and make a recommendation to the Shift Manager regarding the proposed bus outage.

STUDENT HANDOUT

UNIT STATUS:

Millstone Unit 3 is completing a refueling outage. The plant is in Mode 5. Fuel has been reloaded and plant conditions are as described on the handout. A bus outage on 34C is being considered..

CRITICAL PARAMETERS		
	PARAMETER	VALUE
	B train of RHR in operation	
	B & C Steam Generators	filled to >50% NR
	B & C Steam Generators	Steam release capability available
	B MDFW pump	available to fill S/Gs
	Reactor Coolant System	<ul style="list-style-type: none"> • vented • openings being tracked • Loops B & C filled, swept vented and unisolated • RCS pressure = 45 psia • RCS temperature = 135°F
	PZR Cold Calibrated Level	>50%
	Rx Shutdown	for 30 days
	RCS re-pressurization contingency plans prepared	
	Outage Bus Recovery Time	2.5 hours
	SBO to Bus 34A Tie Breaker 34A1-2 (3NNS-ACB-AH) damaged requiring replacement and repair of breaker electrical connections	
	SBO may not be started or loaded during repair.	

1.3 Decay Heat Removal Requirements

1.3.1 IF the plant is in MODE 0, Go To step 1.3.9.

1.3.2 **VERIFY** one train of RHR in operation.

1.3.3 IF in MODE 5, **PERFORM** one of the following to ensure a *backup* for decay heat removal:

- **MAINTAIN** the non-operating RHR train available, or
- **VERIFY** all of the following are satisfied to ensure two steam generators available and proper RCS conditions are established to support natural circulation:
 - Both available SG NR levels greater than 17%
 - Capability to feed available SGs with a MD AFW pump
 - Capability to release steam from available SGs
 - RCS pressurized or capable of being pressurized to between 170 psia and 330 psia prior to core boiling
 - RCS openings being tracked
 - RCS loops associated with the available SGs; filled, swept, vented, and unisolated
 - Pressurizer cold calibrated level $\geq 50\%$ unless a steam bubble is established in the pressurizer

Level of Use
General



OP 3260A
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1.3.4 **IF** natural circulation is the only available backup for decay heat removal, (only 1 RHR pump is available) **PERFORM** the following:

- **IF** the time to core boiling is less than one hour, **MAINTAIN** one of the following:
 - RCS pressure greater than 170 psia.
 - Contingency plan to re--pressurize the RCS to greater than 170 psia prior to core boiling.
- **IF** a Bus 34C or 34D outage is planned, **PRESSURIZE** the RCS to greater than 170 psia unless either:
 - The outage Bus Recovery Time is less than the time to core boiling, or
 - The non--outage bus can be reenergized by the SBO diesel generator prior to core boiling
- **IF not** in a Bus 34C or 34D outage, **MAINTAIN** an additional charging pump available but racked down (pump on the non--protected train is preferred).

NOTE

The RHR loop may be removed from operation for up to 1 hour each 8 hour period during the performance of **CORE ALTERATIONS** in the vicinity of the reactor vessel hot legs as allowed by T/S 3.9.8.1, and T/S 3.9.8.2.

1.3.5 **IF** in **MODE 6**, **PERFORM** one of the following to ensure a *backup* for decay heat removal:

- **MAINTAIN** greater than or equal to 23 ft of water above the top of the reactor vessel flange, or
- **MAINTAIN** the non--operating RHR train **OPERABLE**

Level of Use
General



OP 3260A
Rev. 013-04
14 of 76

Attachment 20

Time To Boil After Fuel Shuffle Vented Case
(RCS Pressure = 45 psia, Temperature = 140°F)

(Sheet 1 of 1)

Shutdown Time (days)	RCS Vented or N ₂ Overpressure – Time to Boil (hours), RCS Loops Unisolated, Filled, Swept and Vented				
	0 Loop	1 Loop	2 Loops	3 Loops	4 Loops
1	0.4	0.5	0.6	0.6	0.7
2	0.5	0.6	0.7	0.8	0.9
3	0.5	0.7	0.8	0.9	1.0
4	0.6	0.8	0.9	1.0	1.2
5	0.7	0.9	1.0	1.1	1.3
6	0.7	1.0	1.1	1.2	1.4
7	0.8	1.0	1.2	1.3	1.5
8	0.8	1.1	1.3	1.4	1.6
9	0.9	1.2	1.3	1.5	1.6
10	0.9	1.2	1.4	1.6	1.7
12	1.0	1.3	1.5	1.7	1.9
14	1.1	1.4	1.6	1.8	2.0
16	1.1	1.5	1.7	1.9	2.1
18	1.2	1.6	1.8	2.0	2.3
20	1.3	1.7	1.9	2.1	2.4
25	1.4	1.9	2.1	2.4	2.6
30	1.6	2.0	2.3	2.6	2.9
35	1.7	2.2	2.5	2.8	3.1
40	1.8	2.4	2.7	3.0	3.4
45	1.9	2.6	2.9	3.3	3.6
50	2.1	2.7	3.1	3.4	3.8
60	2.3	3.0	3.4	3.8	4.2
70	2.5	3.3	3.7	4.2	4.6
80	2.7	3.6	4.0	4.5	5.0
90	2.9	3.8	4.4	4.9	5.4

Level of Use
General

STOP THINK ACT REVIEW

OP 3260A
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JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

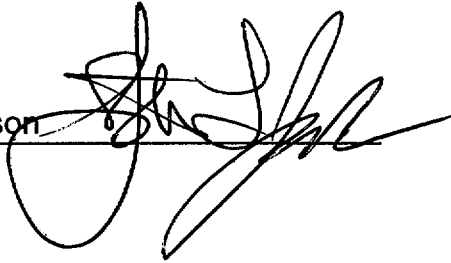
I. JPM Title: Given a completed clearance boundary and reference material, review, amend and approve the clearance boundary.

JPM ID Number: SRO-A2

Revision: 0

II. Initiated:

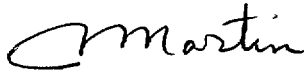
Steve Jackson
Developer



02/27/02
Date

III. Reviewed:

cmartin
Technical Reviewer



6/18/02
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor



6/19/02
Date

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: SRO-A2

Revision: 0

Task Title: Given a completed clearance boundary and reference material, review, amend and approve the clearance boundary.

System: Tagging and Clearance

Time Critical Task: () YES (X) NO

Validated Time (minutes): 10 min

Task Number(s): 341-01-079, Develop and/or modify, review, authorize, install, verify, and clear a tag clearance in accordance with plant and/or site procedural and safety requirements

Applicable To: SRO X RO PEO

K/A Number: GEN.2.2.13, Knowledge of Tagging and Clearance Procedures K/A Rating: 3.6/3.8

Method of Testing: Simulated Performance: Actual Performance: X

Location: Classroom: X Simulator: In-Plant:

Task Standards: Review and approve a tag clearance boundary

Required Materials: Completed work package boundary sheet
P&IDs
EE One-Line Electrical Drawings
OP 3300 series procedures

General References: WC 2, Tagging
OP 3250, Removing Equipment from Service for Maintenance

READ TO THE STUDENT

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objectives for this JPM will be satisfied. You may use any approved reference material normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgements, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: SRO-A2

Revision: 0

Simulator Requirements: NONE

Initial Conditions: You are a licensed SRO. A tagout clearance boundary for the impeller replacement for the "B" Auxiliary Feedwater (FWA) pump has been developed.

Initiating Cues: Your task is to review the recommended tagout clearance boundary using available references so that the work package boundary sheet is ready for approval.

**** NOTES TO EVALUATOR ****

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The student's performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

PERFORMANCE INFORMATION

JPM Number: SRO-A2

Revision: 0

Task Title: Given a completed clearance boundary and reference material,
review, amend and approve the clearance boundary.

Start Time:

STEP 1 _____ **Performance Step:** Reviews the Work Package Boundary Sheet and selects appropriate reference materials

GRADE _____ _____ **Standards:** Selects:
P&ID EM-130B, (FWA), EE Drawing.
1M, OP 3322

Grade: **SAT** _____ **UNSAT** _____

STEP 2 _____ **Performance Step:** Reviews FWA-P1B-CS, "B" AFW Pump Control Switch

GRADE _____ _____ **Standards:** Uses selected references and determines the Pump Control Switch tagging is **correct**.

Grade: **SAT** _____ **UNSAT** _____

STEP 3 X **Performance Step:** Reviews power supply 34D5-2, 3FWA*P1B breaker racked down and red tagged.

GRADE _____ X **Standards:** Uses selected references and determines power supply 34D5-2 is **INCORRECT**.
34D15-2 is the correct breaker (EE Drawing. 1M,).
Tag and tagged position are correct.

Grade: **SAT** _____ **UNSAT** _____

Cue: When error is identified: "What would you do to if you found this error?"

Cue: If the response is correct it then: "Correct the error."

PERFORMANCE INFORMATION

JPM Number: SRO-A2

Revision: 0

Task Title: Given a completed clearance boundary and reference material, review, amend and approve the clearance boundary.

STEP 4 X **Performance Step:** Reviews 3FWA*V16, SGAFW PP B DWST SUCT HDR ISOLATION, red tagged closed.

GRADE _____ X **Standards:** Uses selected references and determines that 3FWA*V16 selection, position and tagging is **correct**.

Grade: **SAT** _____ **UNSAT** _____

STEP 5 X **Performance Step:** **IDENTIFIES** that boundary 3FWA*V64, SGAFW PP B SUCT FM COND STOR TK is **missing**.

GRADE _____ X **Standards:** Uses selected references and determines that 3FWA*V64 should be **ADDED**.
3FWA*V64 is the correct boundary (P&ID EM-130B)
CLOSED position and RED tagging is the **correct** tag and position.

Grade: **SAT** _____ **UNSAT** _____

Cue: When error is identified: "What would you do to if you found this error?"
Cue: If the response is add the valve then: "Correct the error."

STEP 6 X **Performance Step:** Reviews 3FWA*V32, SGAFW PP B DISCHARGE HDR ISOLATION, red tagged closed.

GRADE _____ X **Standards:** Uses selected references and determines that 3FWA*V32 selection is **INCORRECT**.
3FWA*V18 is the correct boundary (P&ID EM-130B)
CLOSED position and RED tagging is **correct**.

PERFORMANCE INFORMATION

JPM Number: SRO-A2

Revision: 0

Task Title: Given a completed clearance boundary and reference material,
review, amend and approve the clearance boundary.

Grade: **SAT** **UNSAT**

Cue: When error is identified: "What would you do to if you found this error?"

Cue: If the response is correct it then "Correct the error."

STEP 7 X

Performance Step: Reviews 3FWA*V984 SGAFW PP B RTN TO DWST ISOL, red tagged closed.

GRADE X

Standards: Uses selected references and determines that 3FWA*V984 selection, position and tagging is **correct**.

Grade: **SAT** **UNSAT**

STEP 8 X

Performance Step: Reviews 3FWA*V976, SGAFW PP B SUCT HDR DRAIN, red tagged open.

GRADE X

Standards: Uses selected references and determines that 3FWA*V976 selection, position and tagging is **correct**.

Grade: **SAT** **UNSAT**

Comment: 3FWA*V960 could also be an acceptable drain path. Local observation would actually determine the best drain point. Candidate may comment on choice of drain point.

STEP 9 X

Performance Step: Reviews 3FWA*V965, SGAFW PP B DISCHARGE VENT, red tagged open.

GRADE X

Standards: Uses selected references and determines that 3FWA*V965 selection, position and tagging is **correct**.

Grade: **SAT** **UNSAT**

PERFORMANCE INFORMATION

JPM Number: SRO-A2

Revision: 0

Task Title: Given a completed clearance boundary and reference material, review, amend and approve the clearance boundary.

Comment: 3FWA*V970 could also be an acceptable vent path. Local observation would actually determine the best vent point. Candidate may comment on choice of vent point.

STEP 10 X **Performance Step:** Reviews SPOOLPIECE, SERVICE WATER TO SGAFW PP B, red tagged removed.

GRADE _____ X **Standards:** Uses selected references and determines that SPOOLPIECE selection, position and tagging is **correct**.

Grade: **SAT** _____ **UNSAT** _____

STEP 11 _____ **Performance Step:** Amend and approve the clearance boundary

GRADE _____ _____ **Standards:** Makes indicated changes to the clearance boundary, and recommends approval as amended.

Grade: **SAT** _____ **UNSAT** _____

Cue: "Are you recommending the tagout clearance boundary?"

Termination Cue: The Evaluation For This JPM is Complete.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: SRO-A2

Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? YES _____ NO X

Validated Time (minutes): 10

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number:

SRO-A2

Initial Conditions:

You are a licensed SRO. A tagout clearance boundary for the impeller replacement for the “B” Auxiliary Feedwater (FWA) pump has been developed.

Initiating Cues:

Your task is to review the recommended tagout clearance boundary using available references so that the work package boundary sheet is ready for approval.

WORK PACKAGE BOUNDARY SHEET

Clearance Number:

AWO Number: M30110525	Clearance Adequate for Personnel Safety: Contact Person / Designee Sign	Date:
---------------------------------	--	--------------

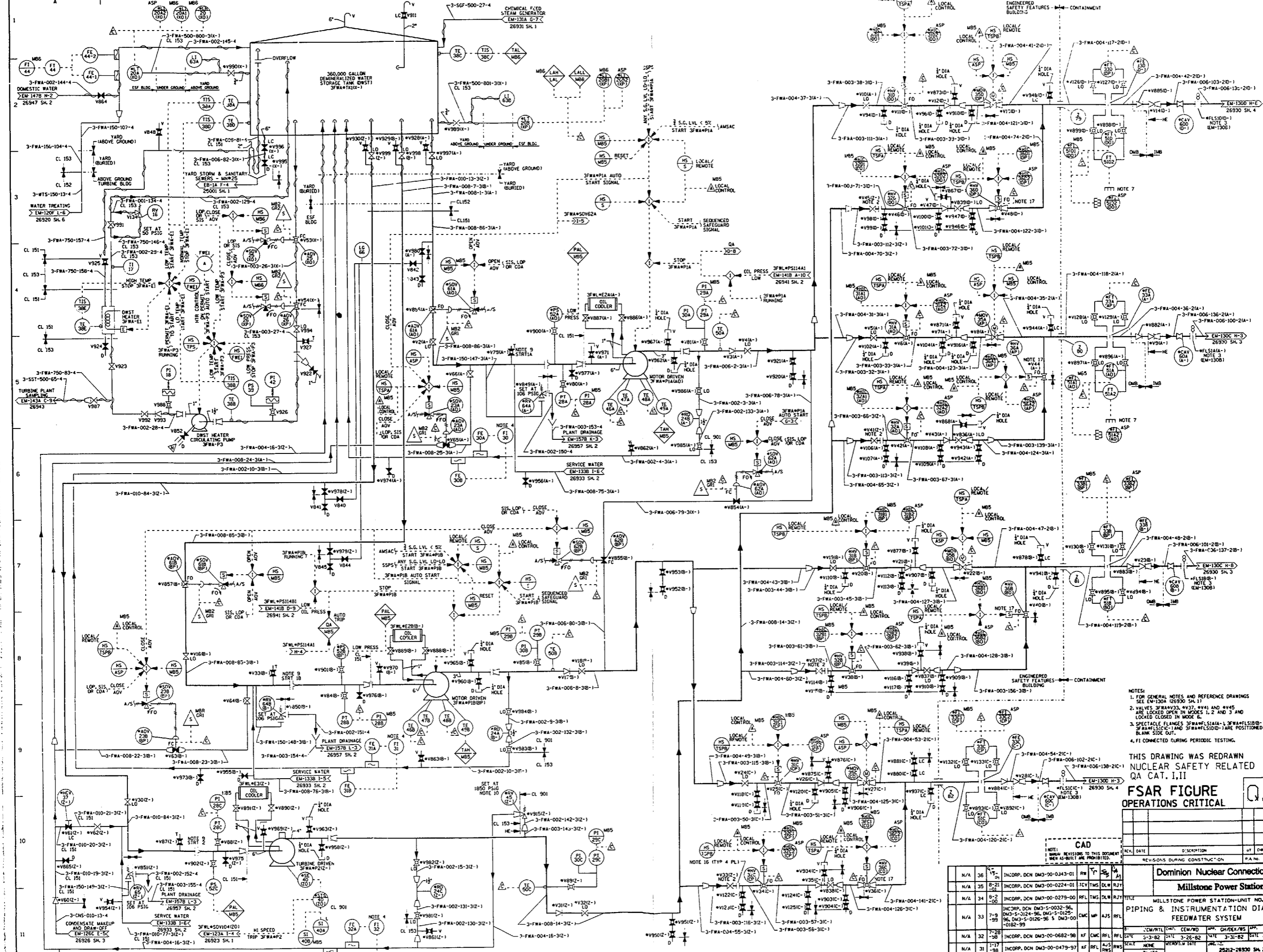
Step Number	Tag Type	Tagged Position	Tag Serial #	Equipment ID	Equipment Description	Equipment Location	Notes	Tag Placed	Tag Verified	Worker Verified
1	YEL			3FWA-P1B-CS	B AFW PUMP CONTROL SWITCH		POWER IS RED TAGGED OFF			
2	RED	RACKED DOWN		34D5-2	3FWA*P1B					
3	RED	CLOSED		3FWA*V16	SGAFW PP B DWST SUCT HDR ISOLATION					
4	RED	CLOSED		3FWA*V32	SGAFW PP B DISCHARGE HDR ISOLATION					
5	RED	CLOSED		3FWA*V984	SGAFW PP B RTN TO DWST ISOL					
6	RED	OPEN		3FWA*V976	SGAFW PP B SUCT HDR DRAIN					

KEY---WORK PACKAGE BOUNDARY SHEET ---KEY

Clearance Number:

AWO Number: M30110525	Clearance Adequate for Personnel Safety: Contact Person / Designee Sign	Date:
---------------------------------	--	--------------

Step Number	Tag Type	Tagged Position	Tag Serial Number	Equipment ID	Equipment Description	Equipment Location	Notes	Tag Placed	Tag Verified	Worker Verified
1	YEL			3FWA-P1B-CS	B AFW PUMP CONTROL SWITCH		POWER IS RED TAGGED OFF			
2	RED	RACKED DOWN		34D15-2	3FWA*P1B					
3	RED	CLOSED		3FWA*V16	SGAFW PP B DWST SUCT HDR ISOLATION					
4	RED	CLOSED		3FWA*V64	SGAFW PP B SUCT FM COND STOR TK					
5	RED	CLOSED		3FWA*V18	SGAFW PP B DISCHARGE HDR ISOLATION					
6	RED	CLOSED		3FWA*V984	SGAFW PP B RTN TO DWST ISOL					



- NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE EM-1300 SH. 1
 2. VALVES 3FWA003, 3FWA041 AND 3FWA045 ARE LOCKED OPEN IN MODES 1, 2 AND 3 AND LOCKED CLOSED IN MODE 6.
 3. SPECTACLE FLANGES 3FWA015A1A-1, 3FWA015B1B-1, 3FWA015C1C-1 AND 3FWA015D1D-1 ARE POSITIONED BLANK SIDE OUT.
 4. FI CONNECTED DURING PERIODIC TESTING.

THIS DRAWING WAS REDRAWN NUCLEAR SAFETY RELATED QA CAT. I, II

FSAR FIGURE OPERATIONS CRITICAL

REV	DATE	DESCRIPTION	BY	CHK	APP

CAD

NOTE: REVISIONS TO THIS DOCUMENT MUST BE MADE IN ACCORDANCE WITH THE REVISIONS DURING CONSTRUCTION.

N/A		36	INCORP. DCN DM3-00-0343-01	RM	YR	SA	JA
N/A		35	INCORP. DCN DM3-00-0224-01	ICV	TMS	DLN	RJT
N/A		34	INCORP. DCN DM3-00-0279-00	RFL	TMS	DLN	RJT
N/A		33	INCORP. DCN DM3-00-0032-96, DM3-00-0124-96, DM3-00-0125-96, DM3-00-0182-99	CMC	UP	AJS	RFL
N/A		32	INCORP. DCN DM3-00-0682-96	RF	CMC	AJS	RFL
N/A		31	INCORP. DCN DM3-00-0479-97	RF	RFL	AJS	RWS
N/A		30	INCORP. DCN DM3-00-1456-97	AC	UP	TJJ	RWS

Dominion Nuclear Connecticut Inc.

Millstone Power Station

MILLSTONE POWER STATION-UNIT NO. 3

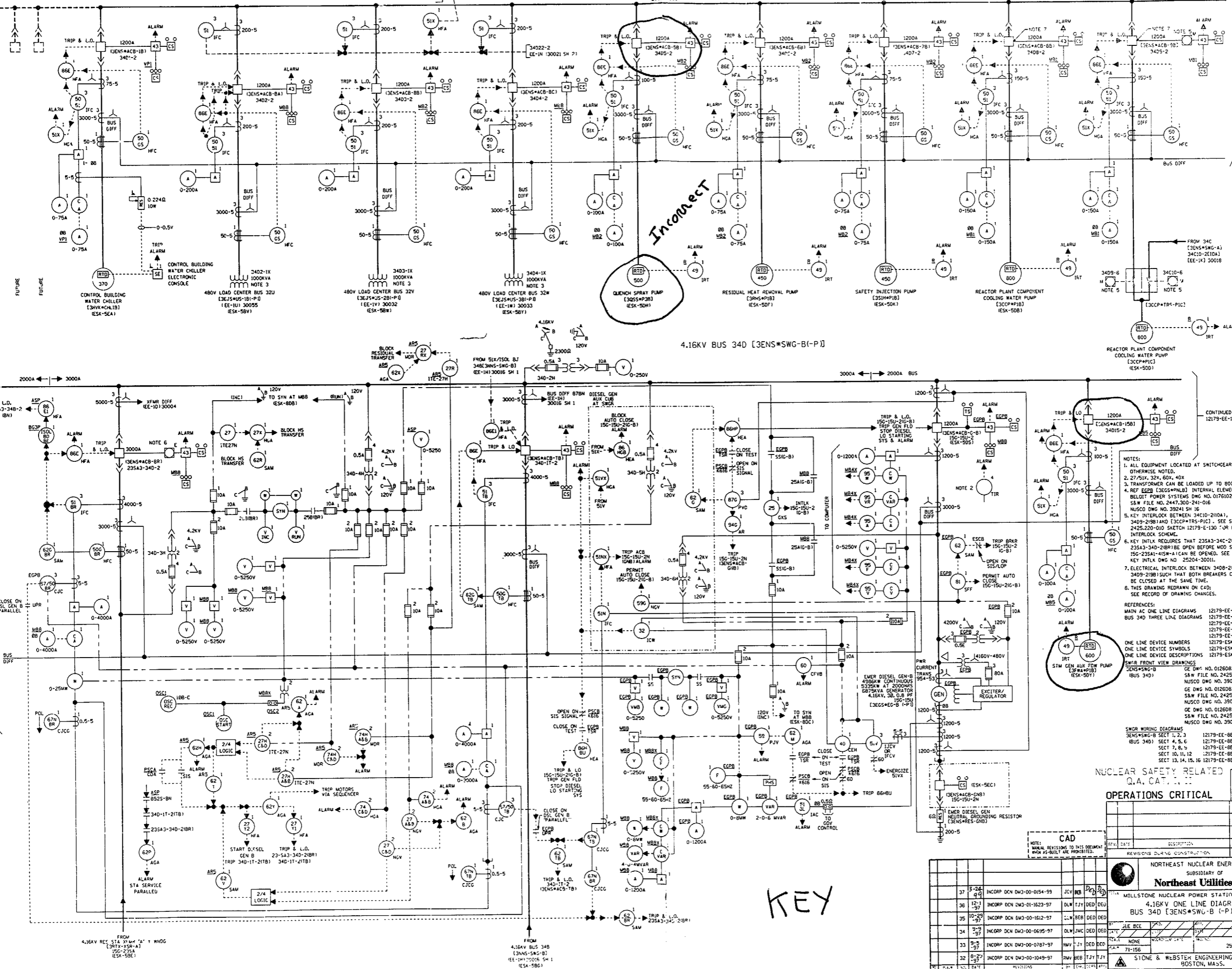
PIPING & INSTRUMENTATION DIAGRAM FEEDWATER SYSTEM

EM-1300 H-3
26930 SH. 4

DATE: 3-3-82
SITE: 3-31-82
DWT: 4-7-82

26212-26930 SH. 2 OF 4

ENGINEERING CORPORATION



4.16KV BUS 34D [3ENS*SWG-B(-P)]

- NOTES:
1. ALL EQUIPMENT LOCATED AT SWITCHGEAR UNLESS OTHERWISE NOTED.
 2. 27/51X, 32X, 60X, 40X
 3. TRANSFORMER CAN BE LOADED UP TO 100KVA.
 4. REF EGEB [3EGS*MBL3] INTERNAL ELEMENTARY BELOFT POWER SYSTEMS DWG NO. 01761022 SH 2 S&W FILE NO. 2447,300-241-016 NUSCO DWG NO. 39241 SH 16
 5. KEY INTERLOCK BETWEEN 34C10-210A1, 34D9-218B AND [3CCP*TR5-PI1]. SEE SPEC 2425,220-010 SKETCH 12179-E-130 FOR RIR KEY INTERLOCK SCHEME.
 6. KEY INTLK REQUIRES THAT 235A3-34C-218R1 AND 235A3-34D-218R1 BE OPEN BEFORE A00 SWITCH 150-255A1-151A-1 CAN BE OPENED. SEE SW10 KEY INTLK DWG NO. 25204-30011.
 7. ELECTRICAL INTERLOCK BETWEEN 34D8-218B1 & 34D9-218B1 SUCH THAT BOTH BREAKERS CANNOT BE CLOSED AT THE SAME TIME.
 8. THIS DRAWING REDRAWN ON CAD. SEE RECORD OF DRAWING CHANGES.

- REFERENCES:
- MAIN AC ONE LINE DIAGRAMS 12179-EE-1A (30001)
 - BUS 34D THREE LINE DIAGRAMS 12179-EE-21U (30136)
 - 12179-EE-21V (30136)
 - 12179-EE-21W (30137)
 - 12179-EE-21X (30136)
 - 12179-ESK-2A
 - 12179-ESK-2G THRU 2P
 - 12179-ESK-2L THRU 2K
- SWR FRONT VIEW DRAWINGS:
- GEN B DWG NO. 01260259 SH 1
 - GEN B DWG NO. 01260259 SH 2
 - GEN B DWG NO. 01260259 SH 3
 - GEN B DWG NO. 01260259 SH 4
 - GEN B DWG NO. 01260259 SH 5
 - GEN B DWG NO. 01260259 SH 6
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 - GEN B DWG NO. 01260259 SH 98
 - GEN B DWG NO. 01260259 SH 99
 - GEN B DWG NO. 01260259 SH 100

NUCLEAR SAFETY RELATED
Q.A. CAT. ...

OPERATIONS CRITICAL

CAD

REV.	DATE	DESCRIPTION	BY	CHKD	APP
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KEY

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

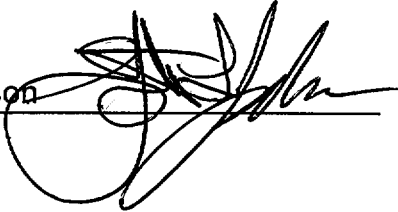
I. JPM Title: Review and Approve a Radioactive Liquid Waste Discharge Permit

JPM ID Number: SRO-A3

Revision: 0

II. Initiated:


Steve Jackson
Developer



02/25/02
Date

III. Reviewed:

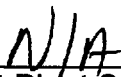
J. Martin
Technical Reviewer



6/18/02
Date

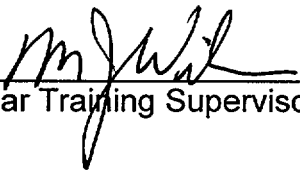
IV. Approved:

N/A
Cognizant Plant Supervisor (optional)



Date

M. J. Wal
Nuclear Training Supervisor



6/19/02
Date

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: SRO-A3

Revision: 0

Task Title: Review and Approve a Radioactive Liquid Waste Discharge Permit

System: Radioactive Liquid Waste System

Time Critical Task: () YES (X) NO

Validated Time (minutes): _____

Task Number(s): 068-01-064, Discharge the contents of a Low Level Waste Drain Tank
068-03-001, Adhere to the requirements of the Radwaste Management Program

Applicable To: SRO X RO _____ PEO _____

K/A Number: GEN- 2.3.6 K/A Rating: 2.1/3.1

Method of Testing: Simulated Performance: X Actual Performance: X

Location: Classroom: _____ In-Plant: X Simulator: X

Task Standards: Review and Approve a Radioactive Liquid Waste Discharge Permit

Required Materials: OP 3335D, Radioactive Liquid Waste System, Rev. 016-04
Liquid Discharge Permit
Screen Print of Rad Monitor LWS70-1

General References: None

READ TO THE STUDENT

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objectives for this JPM will be satisfied. You may use any approved reference material normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgements, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: SRO-A3

Revision: 0

Simulator Requirements: None

Initial Conditions: The unit is at 100% power with all systems in normal line-ups. The "A" and "B" Service Water pumps and all Circulating Water pumps are running.

Initiating Cues: The Radwaste PEO has presented OP 3335D sign off copy and a Liquid Discharge Permit for discharging the "A" Waste Test Tank to the Circulating Water discharge tunnel for your approval. Review the permit using the supporting documentation, approve the permit and report to the examiner.

**** NOTES TO EVALUATOR ****

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The student's performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

PERFORMANCE INFORMATION

JPM Number: SRO-A3

Revision: 0

1

Task Title: Review and Approve a Radioactive Liquid Waste Discharge Permit

Initials procedure after receiving the cue.

Cue: IF candidate identifies error, state that the setpoints have been corrected.

Grade: **SAT** **UNSAT**

STEP 3 X

Performance Step: Refer to CHEM Form 3800P-001 and CHECK "EST Activity this Discharge (Ci) on Liquid Discharge Permit is less than action level specified. [step 4.25.4.j.2)]

GRADE X

Standards: COMPARE CHEM Form 3800P-001 and CHECK "EST Activity this Discharge (Ci) to Discharge permit "Estimated activity this discharge (Ci)". Determines that values are below the limits. Initials procedure.

Grade: **SAT** **UNSAT**

Cue: Step 4.25.4.j.3) is N/A since no limits are exceeded

STEP 4 X

Performance Step: CHECK required dilution flowrate is met. [step 4.25.4.j.4)]

GRADE X

Standards: COMPARES permit requirement of 2 SWP and 3 CWP to actual plant condition of 2 SWP and 6 CWP. Determines that dilution flow is met. Initials procedure.

Grade: **SAT** **UNSAT**

Termination Cue: The Evaluation of this JPM is Complete

Stop Time:

VERIFICATION OF JPM COMPLETION

JPM Number: SRO-A3

Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? YES _____ NO X

Validated Time (minutes): 10

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number:

SRO-A3

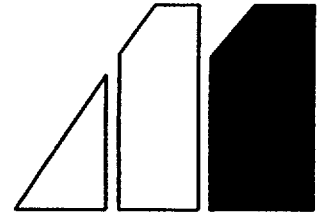
Initial Conditions:

The unit is at 100% power with all systems in normal line-ups. The "A" and "B" Service Water pumps and all Circulating Water pumps are running.

Initiating Cues:

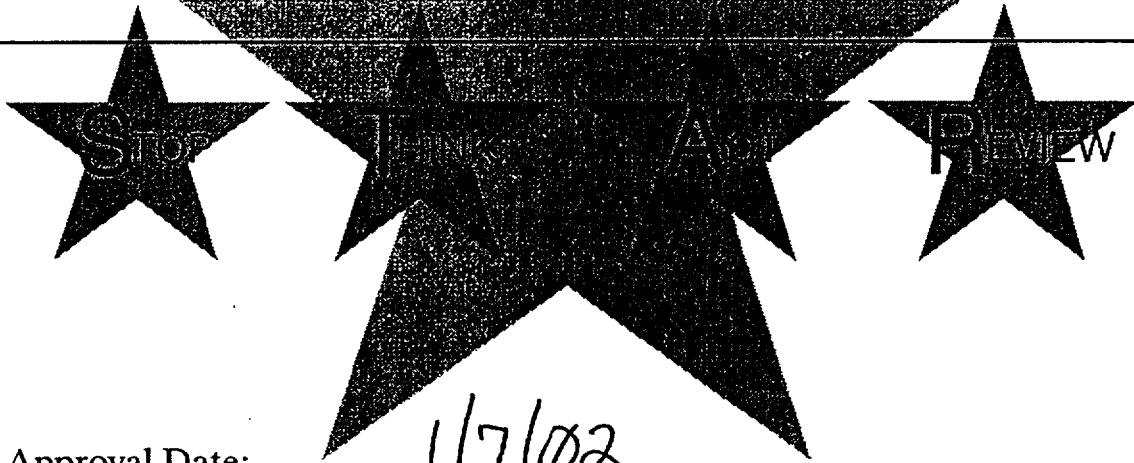
The Radwaste PEO has presented OP 3335D sign off copy and a Liquid Discharge Permit for discharging the "A" Waste Test Tank to the Circulating Water discharge tunnel for your approval. Review the permit using the supporting documentation, approve the permit and report to the examiner.

MILLSTONE NUCLEAR POWER STATION
SYSTEM OPERATING PROCEDURE



Radioactive Liquid Waste System

OP 3385D
Rev. 016-04



Approval Date:

1/7/02

Effective Date:

1/10/02

Level of Use
Continuous

- 14) PRESS "SELECT/REMOVE."
- 15) ENTER "2.00E-05" and PRESS "ENTER."
- 16) PRESS "END SELECT."
- 17) VERIFY key locked mode switch in "PROTECT."

NOTE

If initial check source fails, repeat check prior to declaring monitor inoperable. If second source check is satisfactory, monitor is to be considered in-service and functional.

- h. ENTER "ACS" and PRESS "ENTER" to perform source check (3RMS-CNSL1).
- i. CHECK "SOURCE CHECK FAILED" message *not received* (3RMS-CNSL1).
- j. REQUEST SM/US Refer To Discharge Permit and PERFORM the following:
 - 1) Independent Verification of liquid effluent monitor alarm and alert settings.
 - 2) Refer To CHEM Form 3800P-001, "Unit 3 Liquid Radwaste Discharge Goals," and CHECK "EST Activity this Discharge (Ci)" on Liquid Discharge Permit is less than action level specified.
 - 3) **IF** action levels or goals are met or exceeded, Refer To CP 3800P, "Unit 3 Liquid Waste Management," for guidance on further processing of the affected tank.
 - 4) CHECK required dilution flow rate is met.

Level of Use
Continuous



MILLSTONE UNIT #3 LIQUID DISCHARGE PERMIT NO. 4463 (2001-69338)

nk.....: WTT-A Date/time sampled...: 9-NOV-2001 17:35
 Sampled by.....: _____ Date/time on recirc.: 9-NOV-2001 14:00
 TSS (ppm)..: _____ (tank limit = 45 ppm) pH.: 4.7
 Boric acid conc (ppm)..: 4330.0

<<< 2 circulators must be in operation during a discharge >>>

Independent samples taken >>> yes no (circle one)

Isotope	Activity (uCi/ml)	MPC (uCi/ml)	Activity/MPC
CO-58	3.522E-07	1.000E-04	3.522E-03
CO-60	4.720E-07	5.000E-05	9.441E-03
SB-125	4.779E-06	1.000E-04	4.779E-02
XE-133	4.240E-07		
XE-135	1.920E-07		
CS-137	1.268E-07	2.000E-05	6.342E-03
H-3	1.720E-01	3.000E-03	5.733E+01
Totals	6.346E-06 (@)		5.740E+01

Dissolved gas conc (uCi/ml) = 6.161E-07 (limit = 4.0E-1) _____ Tech
 Minimum recirc time using 1 pump is 175. (min) _____ Tech
 Sample saved for composite.....: _____ Date _____ Tech
 Release limit (Ci).....: 6.700E-03
 Total activity released to date (Ci).....: 1.613E-03
 Estimated volume this discharge (gal).....: 21000.
 Estimated activity this discharge (Ci).....: 5.044E-04 (@)
 Estimated total activity released (Ci).....: 2.117E-03 (@)

(@) these values do not include activity due to tritium

- (1) Reduction factor.....: 1.742E-02 SM/US init
- (2) Required dilution flow rate.....: 480000. (gpm) _____
 3 circ water, 2 service water pump(s)
- (3) Normal rate limit (flow rate=#1*#2*0.1)...: 150. (gpm) _____
- (4) Liquid effluent monitor alert setting....: 1.500E-04 (uCi/ml) _____
- (5) Liquid effluent monitor alarm setting....: 2.000E-04 (uCi/ml) _____
- (6) Rad monitor source check completed at....: _____ Oper

Maximum approved rate.....: _____ (gpm) _____
 (Authorization required to exceed normal rate limit.)

Dual verification of release rate calculation --->>> yes no _____ (circle one)

*** DISCHARGE ***

DATE	TIME	DILUTION FLOW RATE (gpm)	TANK LEVEL (gallons)	DISCHARGE RATE (gpm)	OPERATOR
------	------	--------------------------	----------------------	----------------------	----------

Start _____

End _____

Liquid eff monitor reading 15 min after start of discharge _____ (uCi/ml)
(This shall be a 10 minute average reading)

Liquid eff monitor reading after chamber flush _____ (uCi/ml)

Total liquid waste discharged = _____ (gal) * 3785 = _____ (ml)

SM/US _____ Date _____ Time _____

CHEM FORM 3809A-1 REV.1

Jerry Matthews
Approval

10/20
Approval Date

10/25/97
Effective Date

N/A
PORC Mtg. No.

Unit 3 Liquid Radwaste Discharge Goals

Year: 2002

COPY

	Normal at Power Operations		Refueling and Cold Shutdown Outages		Annual Goal
	Action Level	Monthly Goal	Action Level	Monthly Goal	
Volume	150,000 gal/month	166,700 gal/month	150,000 gal/month	166,700 gal/month	2,000,000 gal
Activity	5.4E-03 Ci/month	5.4E-03 Ci/month	1.46E-02 Ci/month	1.46E-02 Ci/month	0.12 Ci
	1.1E-03 Ci/discharge		3.0E-03 Ci/discharge		

A. Johnston 1/7/02
Radwaste Coordinator / Date

Tank Limits : Using Mode 1-3 Ci/disch limit of 1.1E-03 Ci

Mode 1-3 LLWDT = 7.3E-05 mCi/ml

WTT = 1.4E-05 mCi/ml

Using Mode 4-6 Ci/disch limit of 3.0E-03 Ci

Mode 4-6 LLWDT = 2.0E-04 mCi/ml

WTT = 4.0E-05 mCi/ml

Checked by: cut
Date: 1/6/02

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

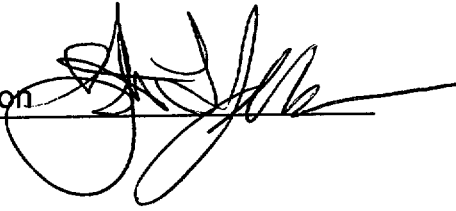
I. JPM Title: Provide the State a Protective Action Recommendation

JPM ID Number: SRO-A4

Revision: 0

II. Initiated:

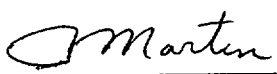
Steve Jackson
Developer



2/25/02
Date

III. Reviewed:

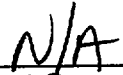
J. Marten
Technical Reviewer



6/18/02
Date

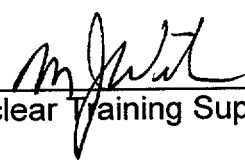
IV. Approved:

N/A
Cognizant Plant Supervisor (optional)



Date

M. J. [Signature]
Nuclear Training Supervisor



6/19/02
Date

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: SRO-A4

Revision: 0

Task Title: Provide the State a Protective Action Recommendation

System: Admin, SERO

Time Critical Task: () YES () NO

Validated Time (minutes): 10

Task Number(s): 345-05-006, Provide the State a Protective Action Recommendation

Applicable To: SRO RO PEO

K/A Number: GEN.2.4.44 K/A Rating: 4.0

Method of Testing: Simulated Performance: Actual Performance:

Location: Classroom: Simulator: In-Plant:

Task Standards: Provide the State a Protective Action Recommendation

Required Materials: MP-26-EPI-FAP01-001, Control Room DSEO, Rev. 000
MP-26-EPI-FAP06, Classification and PARs, Rev. 000
MP-26-EPI-FAP06-005, Control Room PARs, Rev. 000
MP-26-EPA-REF-08B, Millstone E-Plan Resource Book, Rev. 001
(Emergency Phone List / previously EPUG-08),

General References: MP-26-EPI-FAP06-001, EAL Tables, Rev. 000

READ TO THE STUDENT

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objectives for this JPM will be satisfied. You may use any approved reference material normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgements, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: SRO-A4

Revision: 0

Simulator Requirements: none

Initial Conditions: The Initial Conditions are covered in the Event Description.

Initiating Cues: You are the Shift Manager. You have assumed responsibility in the Control Room DSEO role. You are implementing EPI-FAP01-001, Control Room DSEO, section E. You have classified the event as a General Emergency - Alpha (GE-A) based on events in progress and the Incident Report Form (IRF) has been reviewed, approved and transmitted. Your task is to determine the State Protective Action Recommendation of the following event. Report to the examiner the conditions that support your recommendation, and inform the examiner when you have completed the task.

**** NOTES TO EVALUATOR ****

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, ALL critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

PERFORMANCE INFORMATION

JPM Number: SRO-A4

Revision: 0

Task Title: Provide the State a Protective Action Recommendation

Record Start Time:

STEP 1 **Performance Step:** Recognize that EPI-FAP06 is applicable

GRADE **Standards:** Reviews EPI-FAP01 section E, "bullet" 8 for applicability and transitions to EPI-FAP06-005, Control Room PARs

Grade: **SAT** **UNSAT**

Comments: Examinee may transition directly to EPI-FAP06-005.

STEP 2 X **Performance Step:** Refer to Section B: CR PAR Process Flowchart and determine the appropriate PAR

GRADE X **Standards:** Reviews flowchart and diagnoses that all 3 barriers are lost and transitions down to "ALPHA - 10 Mile PARs"

Grade: **SAT** **UNSAT**

STEP 3 X **Performance Step:** If PARs are warranted out to 10 miles:
1. Record the current wind direction in degrees (from):
2. Check the appropriate row on the PAR table

GRADE X **Standards:** Records **190°**

GRADE X **Standards:** Identifies correct zones to evacuate as **A** and **B** and **Montville** and **Waterford** in **C** and **Ledyard** in **E**, and shelter ALL other zones

Grade: **SAT** **UNSAT**

Comments: Evacuate and Shelter recommendations must **both** be identified

PERFORMANCE INFORMATION

JPM Number: SRO-A4

Revision: 0

Task Title: Provide the State a Protective Action Recommendation

Cue: (contingency) Are any "Shelter" recommendations indicated?

STEP 4 X

Performance Step: Contact the DEP Dispatcher in Hartford

GRADE _____ X

Standards: Obtains telephone number from EPUG-08B and attempts to call

Grade: **SAT** _____ **UNSAT** _____

Cue: Examiner acts as DEP Dispatcher

STEP 5 X

Performance Step: Identify self and read Evacuate and Shelter recommendations from Section B, "ALPHA - 10 Mile PARs."

GRADE _____ X

Standards: Identifies self and state recommended zones to evacuate as **A** and **B** and **Montville** and **Waterford** in **C** and **Ledyard** in **E**, and shelter ALL other zones

Grade: **SAT** _____ **UNSAT** _____

Cue: Acknowledge receipt of PARs

STEP 6 _____

Performance Step: Request the dispatcher inform the DEP Duty Officer that a PAR has been issued

GRADE _____ _____

Standards: Requests the dispatcher inform the DEP Duty Officer that a PAR has been issued

Grade: **SAT** _____ **UNSAT** _____

Cue: Acknowledge receipt of request

VERIFICATION OF JPM COMPLETION

JPM Number: SR0-A4

Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? YES _____ NO _____

Validated Time (minutes): 10

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number: SRO-A4

Initial Conditions: The Initial Conditions are covered in the Event Description.

Initiating Cues: You are the Shift Manager. You have assumed responsibility in the Control Room DSEO role. You are implementing EPI-FAP01-001, Control Room DSEO, section E. You have classified the event as a General Emergency - Alpha (GE-A) based on events in progress and the Incident Report Form (IRF) has been reviewed, approved and transmitted. Your task is to determine the State Protective Action Recommendation of the following event. Report to the examiner the conditions that support your recommendation, and inform the examiner when you have completed the task.

2/13/02
Approval Date

2/14/02
Effective Date

Document Action Request

SPG# 020306 - 101438

Initiated By: Tom Gilbert Date 3/6/02 Department: EPSD Ext.: 3465

Document No.: MP-26-EPI-FAP06-005 Rev. No.: 000 Minor Rev.: 01

Title: Control Room Protective Action Recommendations

For New Documents only → QA RI Title

Reason for Request/Action (attach commitments, CRs, ARs, OEs etc)
Feedback from LORT. Assignment 01007179-02
Add '142ft level' to section A, #2A
Add 'from' in section B #1 table

Select one (See MP-05-DC-SAP01 sect 2.3 to determine type of change) Continued

<input type="checkbox"/> Intent Change (SQR Independent, RCD, Env Screen Required) <small>Other reviews may be required. See MP-05-DC-FAP 01.1 att 3</small>	<input type="checkbox"/> Edit Corr.:	<input checked="" type="checkbox"/> Non-Intent Change <small>(Only SQR Independent Review and Env. screen Required)</small>
Editorial Correction Approval _____ Plant Mgmt Staff Member - Approval	TPC Interim Approval _____ (1) Plant Mgmt Staff Member Print/Sign/Date _____ (2) SM/SRO/CFH Print/Sign/Date	

Procedure Request/Feedback Disposition
Priority: Perform Now Perform Later

Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
See DC-GDL01 for guidance

Reviews continued <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			✓ H Comments
				Yes	No	Dept.	
<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		
RCD <input checked="" type="checkbox"/>	Tom Gilbert	<i>[Signature]</i>	3/7/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	
SD.54Q <input checked="" type="checkbox"/>	Tom Gilbert	<i>[Signature]</i>	3/7/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	
Env Screen <input checked="" type="checkbox"/>	Tom Gilbert	<i>[Signature]</i>	3/7/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	
Licensing Basis <input type="checkbox"/>							
Tech Independent <input checked="" type="checkbox"/>	KR Burgess	KR Burgess	3/7/02			EPD	✓

An NRRL Update Required YES

1. <input checked="" type="checkbox"/> SQR Program Final Review and Approval Approval <input checked="" type="checkbox"/> Disapproval <input type="checkbox"/> <i>Thomas Riquie</i> / 3-7-02 SQR Qualified Independent Reviewer / Date <i>Paul D. [Signature]</i> Dept Head / Responsible Individual 3/8/02 Approval Date	2 Final Review and Approval <input type="checkbox"/> SORC <input type="checkbox"/> RVDH (Ref Mans, GDLs, Handbooks) DH / RI Sign Meeting No _____ SORC Signature _____ DH / RI Signature _____ Approval Date _____
---	---

Effective Date: 3/13/02

3/8/02

Approval Date

3/13/02

Effective Date

Control Room Protective Action Recommendations

NOTE

The State must be notified within 15 minutes after a decision is made to issue or update PARs. Prior to State EOC activation:

- If a General Emergency BRAVO is declared, State officials automatically implement a PAR to evacuate a 2 mile radius. The Incident Report Form serves as PAR notification in this instance.
- If a General Emergency ALPHA is declared with actions only necessary out to 5 miles, State officials automatically implement a PAR to evacuate a 5 mile radius. The Incident Report Form serves as PAR notification in this instance.
- If a General Emergency ALPHA is declared with actions necessary out to 10 miles, PARs are verbally transmitted to the 24 hour DEP Dispatcher in Hartford.

Section A: Evaluating Protective Action Recommendations (PARs)

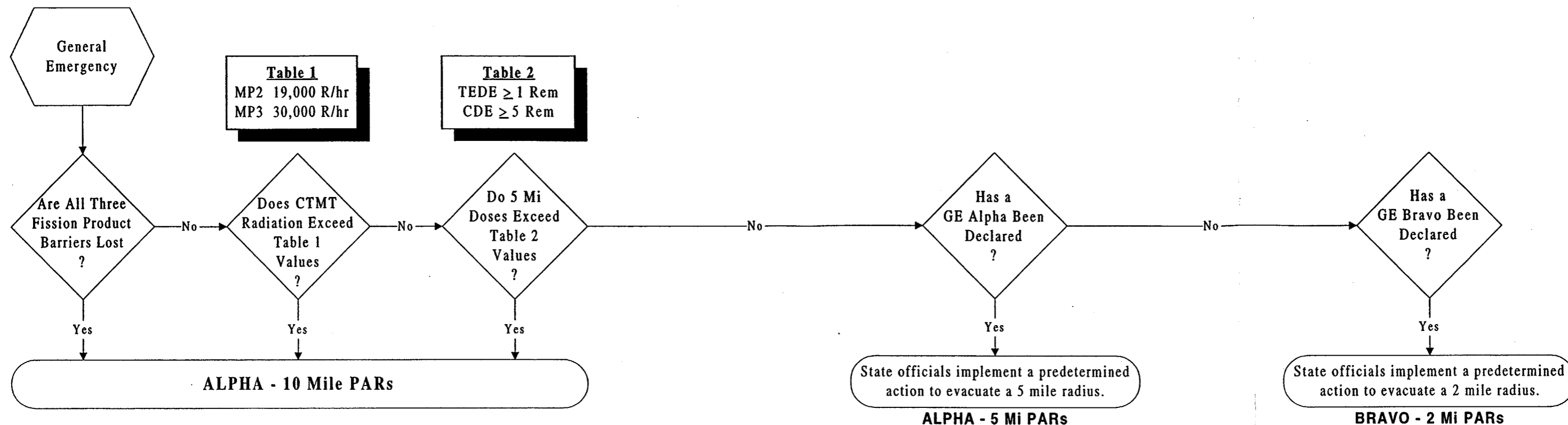
1. Refer To Section B, "CR PAR Process Flowchart" and determine the appropriate PAR.
2. IF PARs are warranted out to ten miles, perform the following:
 - a) Record the current wind direction in degrees (**from 142 ft level**): _____ ①
 - b) Check the appropriate row on the PAR table.
3. Perform PAR notification as follows:
 - a) IF conditions **do not** warrant PARs out to 10 miles, transmit the Incident Report Form to serve as notification of necessary PARs.
 - b) IF conditions **do** warrant PARs out to 10 miles, verbally transmit PARs to the DEP Dispatcher in Hartford as follows:
 - (1) Contact the DEP Dispatcher in Hartford (number is in EPA-REF08B). ①
 - (2) Identify yourself and read the applicable EVACUATE and SHELTER recommendations from Section B, "ALPHA - 10 Mile PARs."
 - (3) Request the dispatcher inform the DEP Duty Officer that a PAR has been issued.
 - (4) Log the date and time of notification.

NOTE

The DEP Duty Officer will call back to verify the PAR and obtain additional information relative to public safety.

3. IF necessary, Refer To and review EPI-FAP06 Att 4, "PAR Zone Descriptions."

Section B: Control Room PAR Process Flowchart



1. EVACUATE THE FOLLOWING ZONES

✓	Wind From	Zones to Evacuate
	030°-051°	A and B
	052°-088°	A and B and Old Lyme in D
	089°-093°	A and B and D
	094°-138°	A and B and D and East Lyme in C
	139°-154°	A and B and C and Lyme in D
	155°-177°	A and B and C
	178°-186°	A and B and Montville and Waterford in C
	187°-193°	A and B and Montville and Waterford in C and Ledyard in E
	194°-218°	A and B and E and Montville and Waterford in C
	219°-229°	A and B and E and Waterford in C
	230°-244°	A and B and E
	245°-257°	A and B and Groton City & Town in E
	258°-286°	A and B and F and Groton City & town in E
	287°-316°	A and B and F
	317°-339°	A and B
	340°-029°	A and B and Plum Island

2. SHELTER ALL OTHER ZONES

①

3.5. Government Agencies State

<u>Connecticut Department of Agriculture</u>	
<u>Shellfish Sanitation Unit</u>	203-874-0696 (Business hours)
	203-783-9976 (Fax)
(After hours call DEP Dispatch)	860-424-3333 (24 hr)
<u>Connecticut Department of Transportation (D.O.T) Highway Operations Center</u>	860-594-3447 (24 hr)
<u>Connecticut Department of Environmental Protection</u>	860-424-3333 (24 hr)
<u>Division of Radiation , Hartford,CT</u>	
Edward L. Wilds	860-424-3029 (B) Secretary answers
	860-376-3469 (H)
Denny Galloway	860-424-3525 (B)
	860-464-1627 (H)
	860-424-4065 (Fax) 4063 (Backup)
(If unavailable)	860-424-3029 (B) Secretary
<u>Water Management Hartford, CT</u>	860-424-3000 DEP office info.
	860-424-3018 Permitting
	860-424-3018 Water Management
	8:00 a.m. - 5:00 pm (Business hours)
	860-424-3704 Water Planning
	860-724-7135 Security Ext. 5200
<u>Oil and Chemical Spill Unit Hartford, CT</u>	860-424-3024 (Business hours, Director)
<u>DEP Dispatch (All divisions)</u>	*860-424-3338 (24 hr) Primary
	860-424-4066 (Fax)
<u>Governor's Office-</u>	860-566-4840 (B) (8:00 - 5:00) Main Switchboard
<u>Troop K</u>	
<u>Colchester, CT (Area 4 Coordinator) Anthony Scalora</u>	1-800-546-0713 Ext. 7560/7561
	Direct dial (860) 537-7560/7561
	Pager # 860-842-9753
	860-537-7564 (Fax)
<u>State Office of Emergency Management Hartford, Connecticut (Headquarters)</u>	860-566-3180 (24 hr)
John Wiltse	860-566-3180