JOB PERFORMANCE MEASURE

NRC Exam 2004-301-A1.1

Job Position RO/SRO	No. NRC Exam 2004-301-A1.1	Revision 0
JPM Title Jet Pump Operability Test	Duration 25 ~~10~~ min	Page COVER SHEET

NOTE: Validation time was inadequate. Actual time to reasonably complete the surveillance and associated paper work was approximately 30-40 minuets.

Examinee: _____ SRO / RO

Evaluator: _____

Evaluation Method: Perform / Simulator / Plant

Start Time _____

Stop Time _____

Total Time _____

PERFORMANCE EVALUATION SUMMARY

Step #	S	U	Comments	Step #	S	U	Comments
1				*17			
2				18			
3				19			
4				*20			
5				*21			
6				*22			
7				*23			
*8				*24			
*9				*25			
10				*26			
11				*27			
12				28			
13							
14							
15							
*16							

_____ SATISFACTORY _____ UNSATISFACTORY

ORAL EVALUATION (Not Required for ILO Exams)

Question #	S	U	Comments
			TIME:
			TIME:

_____ SATISFACTORY _____ UNSATISFACTORY

OVERALL EVALUATOR COMMENTS:

Evaluator Signature / Date: _____

JOB PERFORMANCE MEASURE

NRC Exam 2004-301-A1.1

Jet Pump Operability Test	No.: NRC Exam 2004-301-A1.1 Revision: 0 Page 1

References: Required (R) / Available (A)

24.138.06, Jet Pump Operability Test (R)

Tools and Equipment Required:

None

Preferred Evaluation Method:

Perform	X	Walkthrough		Discuss	
Plant		Simulator		Classroom	

Evaluator Notes:
This JPM can be performed in the Simulator or the Control Room.

ENSURE ALL INDUSTRIAL AND PERSONNEL SAFETY PRACTICES ARE USED AND ENFORCED AT ALL TIMES.

K/A
SYSTEM: 202001 Recirculation System
A1. Ability to predict and/or monitor changes in parameters associated with operating the RECIRCULATION SYSTEM controls including:
A1.02 Jet Pump Flow (3.4/3.4)

Task Standard:

24.138.06, Jet Pump Operability Test, completed correctly.

Initial Conditions:

The plant is operating steady state at 100% power.
Post Accident Sampling is NOT in progress

Initiating Cue(s):

The CRS directs you to perform 24.138.06, Jet Pump Operability Test.

Jet Pump Operability Test	No.: NRC Exam 2004-301-A1.1 Revision: 0 Page 2

Start Time _____

Stop Time _____

Total Time _____

Elements	Standards
PREREQUSITES	
1. Verify reactor is operating steady state	1. Yes, given in Initial Conditions
CUE: Loop A and B flows are matched	
2. Verify Jet Pumps (1-10) Loop B and Jet Pumps (11-20) are matched in 2 loop operation	2. Loop A and B flows are verified
3. Verify Post Accident Sampling system sampling is not in progress	3. Not in progress, given in Initial Conditions
NOTE (1) The preferred methods to obtain Loop Drive Flows are from Recirculation Loop Flow Recorders, B31-R614 blue pen and B31-R614 red pen. Drive Flow Indicators, B31-R613 and B31-R617, may be used as an alternate indication if the flow recorders are not available. **NOTE (2)** The preferred method to obtain Total Core Flow is from the Flow Recorder B21-R613 red pen. The IPCS Core Power and Flow Report may be used to indicate Total Core Flow as an alternate method. Ensure **WT flag =2** when using IPCS.	
Two Recirculation Loop Drive Flow Deviation Verification	
CUE: Recirc Loop A Flow is 36 Kgpm	
4. Record operating value of Recirculation Loop A Drive Flow from B31-R614, Recirc Loops Flow Recorder, Blue Pen	4. Records B31-R614, Recirc Loops Flow Recorder, Blue Pen reading and initials
CUE: Recirc Pump A Speed is 73%	
5. Record operating value of Recirculation Pump A Speed from C32-K816, FW and RR Flat Panel Display	5. Records C32-K816, FW and RR Flat Panel Display reading and initials
CUE: Recirc Loop B Flow is 38 Kgpm	
6. Record operating value of Recirculation Loop B Drive Flow from B31-R614, Recirc Loops Flow Recorder, Red Pen	6. Records B31-R614, Recirc Loops Flow Recorder, Red Pen reading and initials
CUE: Recirc Pump B Speed is 75%	
7. Record operating value of Recirculation Pump B Speed from C32-K816, FW and RR Flat Panel Display	7. Records C32-K816, FW and RR Flat Panel Display reading and initials
*8. Using the data from Steps 4 and 5, plot and verify point is between –10% and +10% curve on Attachment 1	*8. Verified point is between –10% and +10% curve on Attachment 1
*9. Using the data from Steps 6 and 7, plot and verify point is between –10% and +10% curve on Attachment 2	*9. Verified point is between –10% and +10% curve on Attachment 2
Note: Given in Initial Conditions	
10. Record Reactor Power	10. Records Reactor Power as 100%
11. Record test personnel	11. Prints name, initials and signs.

Two Recirculation Loop Drive Flow Deviation Verification	
NOTE: All indicators are on COP H11-P603	
CUE: Total core flow is 85.3 Mlb/hr	
12. Record total core flow indication from B21-R613, Reactor Core Dp & jet Pump Total Flow Rec, Red Pen	12. Records B21-R613, Reactor Core Dp & jet Pump Total Flow Red Pen and initials.
CUE: Core dP is 11.5 PSID	
13. Record core differential pressure from B21-R613, Reactor Core Dp & jet Pump Total Flow Rec, Blue Pen	13. Records B21-R613, Reactor Core Dp & jet Pump Total Flow Rec, Blue Pen and initials
CUE: Recirc Loop A Flow is 36 Kgpm	
14. Record Recirculation Loop A Drive Flow from B31-R614, Recirc Loops Flow Recorder, Blue Pen	14. Records B31-R614, Recirc Loops Flow Recorder, Blue Pen and initials
CUE: Recirc Loop B Flow is 38 Kgpm	
15. Record Recirculation Loop B Drive Flow from B31-R614, Recirc Loops Flow Recorder, Red Pen	15. Records B31-R614, Recirc Loops Flow Recorder, Red Pen and initials
*16. Calculate Total Recirculation Loop Drive Flow below by adding recorded values of Recirculation Loop A and Loop B Drive Flows.	*16. Calculates Total Recirc Drive Flow as 74 Kgpm and initials
*17. Using the data from Steps 12 and 13, plot and verify point is between –10% and +10% curve on Attachment 3	*17. Verified point is between –10% and +10% curve on Attachment 3
CUE: Reactor Power is 100%, Rod Line is 109.5%	
18. Record Reactor power and rod line.	18. Power and Rod line are recorded and initialed.
19. Record test personnel	19. Prints name, initials and signs.
Jet Pump Differential Pressure Deviation Verification	
NOTE: Steps 20 through 23 are only required if the Recirculation Loop A is in operation. Otherwise, NA these steps.	
NOTE to NRC examiner: The student should prove he/she knows how to obtain these readings by going to the appropriate panel. Once this has been satisfied, give them the cues off of the attached NRC cue sheet.	
CUE: See NRC Cue sheet	
*20. Record individual percent dp indications for jet pumps 11 through 20 in Table 1 (RR H11-P619)	*20. Obtains dp% and records in Table 1.
*21. Calculate and record Recirculation Loop A Average dP (Average A) by adding dP values recorded in Table 1 for jet pumps 11 through 20 and dividing sum by 10.	*21. Calculates Jet Pump data and comes up with Average A = 26.8%.

Jet Pump Operability Test	No.: NRC Exam 2004-301-A1.1 Revision: 0 Page 4

NOTE to NRC examiner: The answers are on the NRC cue sheet. They are there for you to verify the answers given by the examinee. DO NOT give them as CUES.	
*22. Calculate and record in Table 1, percent deviation from Loop Average for Jet Pumps 11 through 20, using the following equation: (Jet Pump dP – Average A)/Average A x 100.	*22. Calculates percent deviation and enters on Table 1
*23. Using the deviation from Average % points recorded on Table 1, plot and verify all points are between –20% and +20% points on Attachment 5.	*23. Verified points are between –20% and +20% on Attachment 5
NOTE: Steps 24 through 27 are only required if the Recirculation Loop B is in operation. Otherwise, NA these steps.	
CUE: See NRC Cue sheet	
*24. Record individual percent dp indications for jet pumps 1 through 10 in Table 2 (RR H11-P619)	*24. Obtains dp% and records in Table 2.
*25. Calculate and record Recirculation Loop B Average dP (Average B) by adding dP values recorded in Table 2 for jet pumps 1 through 10 and dividing sum by 10.	*25. Calculates Jet Pump data and comes up with Average B = 29.3%.
NOTE to NRC examiner: The answers are on the NRC cue sheet. They are there for you to verify the answers given by the examinee. DO NOT give them as CUES.	
*26. Calculate and record in Table 2, percent deviation from Loop Average for Jet Pumps 1 through 10, using the following equation: (Jet Pump dP – Average B)/Average B x 100.	*26. Calculates percent deviation and enters on Table 2
*27. Using the deviation from Average % points recorded on Table 2, plot and verify all points are between –20% and +20% points on Attachment 5.	*27. Verified points are between –20% and +20% on Attachment 5
28. Record test personnel	28. Prints name, initials and signs.
End JPM	

_____ SATISFACTORY _____ UNSATISFACTORY

Terminating Cue(s):

24.138.06 has been completed correctly.

Jet Pump Operability Test	No.: NRC Exam 2004-301-A1.1 Revision: 0 Page 5

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for Followup question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

Jet Pump Operability Test	No.: NRC Exam 2004-301-A1.1 Revision: 0 Page 6

Simulator Setup

IC#:

Malfunctions:

Remote Functions:

Number	Title	Value

Override Functions:

Special Instructions:

JOB PERFORMANCE MEASURE
NRC Exam 2004-301-A1.1

JPM A1.1 Cue Sheet

Initial Conditions:
The plant is operating steady state at 100% power. Post Accident Sampling is NOT in progress
Initiating Cue(s):
The CRS directs you to perform 24.138.06, Jet Pump Operability Test.

Jet Pump Operability Test	No.: NRC Exam 2004-301-A1.1 Revision: 0 Page 1

NRC Cue Sheet

Jet Pump #	Indicator PIS#	Symbol	dP (%)	Deviation from Average (%)*
11	B21-R608A	JP11	**29**	8.2
12	B21-R608C	JP12	**25**	-6.7
13	B21-R608E	JP13	**28**	4.5
14	B21-R608G	JP14	**26**	-3.0
15	B21-R608J	JP15	**29**	8.2
16	B21-R608L	JP16	**27**	0.7
17	B21-R608N	JP17	**25**	-6.7
18	B21-R608R	JP18	**25**	-6.7
19	B21-R608T	JP19	**27**	0.7
20	B21-R608V	JP20	**27**	0.7

*These values are here for you to second check the examinee. DO NOT give them these numbers.

Jet Pump #	Indicator PIS#	Symbol	dP (%)	Deviation from Average (%)*
1	B21-R608B	JP1	**29**	-1.0
2	B21-R608D	JP2	**31**	5.8
3	B21-R608F	JP3	**29**	-1.0
4	B21-R608H	JP4	**28**	-4.4
5	B21-R608K	JP5	**31**	5.8
6	B21-R608M	JP6	**30**	2.4
7	B21-R608P	JP7	**28**	-4.4
8	B21-R608S	JP8	**28**	-4.4
9	B21-R608U	JP9	**30**	2.4
10	B21-R608W	JP10	**29**	-1.0

* These values are here for you to second check the examinee. DO NOT give them these numbers.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-301-A1.2

Job Position Nuclear Supervising Operator	No. NRC EXAM 2004-301-A1.2	Revision 1
JPM Title Verify Valve Configuration - Maintenance on HCU Components	Duration 15 Minutes	Page COVER SHEET

Examinee: _____ SRO / RO / NLO / SROC / STA

Evaluator: _____

Evaluation Method: Perform / Simulator / Classroom

Start Time _____

Stop Time _____

Total Time _____

PERFORMANCE EVALUATION							
Element	S	U	Comments	Element	S	U	Comments
1.							
* 2.							
* 3.							

_____ SATISFACTORY _____ UNSATISFACTORY

ORAL EVALUATION (Not Required for ILO Exams)			
Question #	S	U	Comments
			TIME:
			TIME:

_____ SATISFACTORY _____ UNSATISFACTORY

OVERALL EVALUATOR COMMENTS:

Evaluator Signature / Date: _____

JOB PERFORMANCE MEASURE

NRC EXAM 2004-301-A1.2

Job Position Nuclear Supervising Operator	No. NRC EXAM 2004-301-A1.2	Revision 1
JPM Title Verify Valve Configuration - Maintenance on HCU Components	Duration 15 Minutes	Page 1

References: Required (R) / Available (A) M-5703-1 (R), 23.106 (A), MOP 12 (A)
Tools and Equipment Required: Safety Tagging Record

Preferred Evaluation Method:

Perform	X	Walkthrough		Discuss	
Plant		Simulator		Classroom	X

Evaluator Notes:

ENSURE ALL INDUSTRIAL AND PERSONNEL SAFETY PRACTICES ARE USED AND ENFORCED.

Attached is a sample Safety Tagging Record.

K/A

201001 Control Rod Drive Hydraulic System

2.1.24 Ability to obtain and interpret station electrical and mechanical drawings.

(CFR: 45.12 / 45.13) RO 2.8 SRO 3.1

2.2.13 Knowledge of tagging and clearance procedures.
(CFR: 41.10 / 45.13) RO 3.6 / SRO 3.8

Task Standard:

Verify the proper valve configuration for taking an HCU out of service for maintenance on HCU components as identified on the attached Safety Tagging Record.

Initial Conditions:

Maintenance has submitted a Request for Protective Tagging for a Work request on HCU C1103D090, and a Safety Tagging Record has been prepared.

The Control Rod has been positioned as directed by the SM and the amphenols are disconnected.

Initiating Cue(s):

Verify the Safety Tagging Record has been prepared correctly and will provide the needed protection.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-301-A1.2

Job Position Nuclear Supervising Operator	No. NRC EXAM 2004-301-A1.2	Revision 1
JPM Title Verify Valve Configuration - Maintenance on HCU Components	Duration 15 Minutes	Page 2

PERFORMANCE EVALUATION

Time Start _____

	Elements		Standards
1.	Locate and refer to drawing M-5703-1.	1.	Locate and refers to correct drawing.
CAUTION:	**C11-F101A, Insert Riser Isolation Valve, must be closed prior to closing either C11-F102A, Withdraw Riser Isolation Valve, and/or C11-F112, Scram Discharge Isolation Valve, to prevent damage to HCU and CRD components.**		
* 2.	Identify the following valves as SHUT and tagged: a. C11-F101A, Withdrawal Riser Isolation b. C11-F102A, Insert Riser Isolation c. C11-F103, Drive Water Isolation d. C11-F112, Scram Outlet Isolation e. C11-F105, Exhaust Riser Isolation f. C11-F104, Cooling Water Isolation Note: The facility had unintentionally noted the wrong HCU for valve F-104 on the tag sheet. Additional critical step was noted. g. C11-F113, Charging Water Isolation	* 2.	Properly identifies the following valves as needing to be SHUT and tagged: a. C11-F101A, Withdrawal Riser Isolation b. C11-F102A, Insert Riser Isolation c. C11-F103, Drive Water Isolation d. C11-F112, Scram Outlet Isolation e. C11-F105, Exhaust Riser Isolation f. C11-F104, Cooling Water Isolation Identifies that valve F-104 was noted for wrong HCU. g. C11-F113, Charging Water Isolation
* 3.	Identify valve as OPEN and tagged: C11-F107, Accumulator Drain Valve	* 3.	Identifies that F107 should be listed on the STR as OPEN and red tagged.

Time Stop _____

* Critical Steps

Terminating Cue(s):

When identified that STR is proper with the exception of missing C11-F107 tagged in the OPEN position.

Job Position Nuclear Supervising Operator	No. NRC EXAM 2004-301-A1.2	Revision 1
JPM Title Verify Valve Configuration - Maintenance on HCU Components	Duration 15 Minutes	Page 3

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for Followup question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

Job Position Nuclear Supervising Operator	No. NRC EXAM 2004-301-A1.2	Revision 1
JPM Title Verify Valve Configuration - Maintenance on HCU Components	Duration 15 Minutes	Page 4

Simulator Setup

IC#:

Malfunctions:

Remote Functions:

Number	Title	Value

Override Functions:

Special Instructions:

JPM A1.2 Cue Sheet

Initial Conditions:

Maintenance has submitted a Request for Protective Tagging for a Work request on HCU C1103D090, and a Safety Tagging Record has been prepared.

The Control Rod has been positioned as directed by the SM and the amphenols are disconnected.

Initiating Cue(s):

Verify the Safety Tagging Record has been prepared correctly and will provide the needed protection.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-RO-A1.3

Job Position NO	No. NRC EXAM 2004-RO-A1.3	Revision 1
JPM Title Determine RWP Requirements for Entry into a Locked High Radiation Area	Duration 10 minutes	Page COVER SHEET

Examinee: _____ SRO / RO

Evaluator: _____

Evaluation Method: Normal / Perform

Start Time _____

Stop Time _____

Total Time _____

PERFORMANCE EVALUATION SUMMARY			
Step #	S	U	Comments
*1			
*2			
3			
*4			
*5			
*6			

_____ SATISFACTORY _____ UNSATISFACTORY

ORAL EVALUATION (Not Required for ILO Annual Exams)			
Question #	S	U	Comments
			TIME:
			TIME:

_____ SATISFACTORY _____ UNSATISFACTORY

OVERALL EVALUATOR COMMENTS:

Evaluator Signature / Date: _____

JOB PERFORMANCE MEASURE

NRC EXAM 2004-RO-A1.3

Determine RWP Requirements for Entry into a Locked High Radiation Area	No.: NRC EXAM 2004-RO-A1.3 Revision: 1 Page 1

References: Required (R) / Available (A)

RWP 04-1012 (A)

MRP06 Accessing and Control of High Radiation, Locked High Radiation, and Very High Radiation Areas, Rev 2 (A)

Tools and Equipment Required:

None

Preferred Evaluation Method:

Perform	X	Walkthrough		Discuss	
Plant	X	Simulator		Classroom	

Evaluator Notes:

A copy of RWP 04-1012 is attached for reference. Depending on method of implementation, this copy may need to be provided to the examinee.

ENSURE ALL INDUSTRIAL AND PERSONNEL SAFETY PRACTICES ARE USED AND ENFORCED AT ALL TIMES.

K/A

SYSTEM: 2.3.1 Knowledge of 10C CFR: 20 and related facility radiation control requirements (2.6/3.0)

Task Standard:

Determine proper Radiation Work Permit entry conditions for an entry into a Locked High Radiation Area.

Initial Conditions:

You are an extra operator assigned to the shift.

The plant is operating steady state at full power.

A low oil pressure alarm is received on the #2 Turbine Low Pressure Stop Valve Unitized Actuator and temperatures are increasing.

Initiating Cue(s):

The CRS directs you to perform an inspection of the LPSV Unitized Actuator.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-RO-A1.3

Determine RWP Requirements for Entry into a Locked High Radiation Area	No.: NRC EXAM 2004-RO-A1.3 Revision: 1 Page 2

Start Time _____

Stop Time _____

Total Time _____

	Elements		Standards
*1.	Determines that the UA is in a Locked High Radiation Area.	*1.	Area determined to be a Locked High Radiation Area.
CUE:	Give examinee copy of attached RWP after he/she proves he knows how to obtain.		
*2.	Locate RWP 04-1012.	*2.	RWP is located.
CUE:	Give examinee copy of survey maps when requested from RP.		
3.	Review RWP requirements for emergency entry into a Locked High Radiation Area.	3.	Determines dose and dose rate requirements.
*4.	Determine either: a. Continuous RP coverage needed, or b. Alarming dosimeter needed, or c. Dose rate meter needed (if individual is qualified to use).	*4.	Determine that an alarming dosimeter or dose rate meter (if individual is qualified to use) is needed.
*5.	Review RWP requirements for notifying RP prior to and upon exit from the area	*5.	RP must be notified prior to and immediately after exiting High Radiation Area.
*6.	Review RWP requirements for stay time tracking.	*6.	RP must be present to perform stay time tracking when entering a Locked High Radiation Area.

_____ SATISFACTORY _____ UNSATISFACTORY

Terminating Cue(s):

Determine Radiation Work Permit entry conditions for an entry into a Locked High Radiation Area.

Determine RWP Requirements for Entry into a Locked High Radiation Area	No.: NRC EXAM 2004-RO-A1.3 Revision: 1 Page 3

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for Followup question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

Determine RWP Requirements for Entry into a Locked High Radiation Area	No.: NRC EXAM 2004-RO-A1.3 Revision: 1 Page 4

Simulator Setup

IC#:

Malfunctions:

Remote Functions:

Number	Title	Value

Override Functions:

Special Instructions:

JOB PERFORMANCE MEASURE
NRC EXAM 2004-RO-A1.3

JPM RO A1.3 Cue Sheet

Initial Conditions:

You are an extra operator assigned to the shift.

The plant is operating steady state at full power.

A low oil pressure alarm is received on the #2 Turbine Low Pressure Stop Valve Unitized Actuator and temperatures are increasing.

Initiating Cue(s):

The CRS directs you to perform an inspection of the LPSV Unitized Actuator.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-RO-A1.4

Job Position RO / SRO	No. NRC EXAM 2004-RO-A1.4	Revision 2
JPM Title Complete Nuclear Event Notification Form (Site Area)	Duration 15 min	Page COVER SHEET

Examinee: _____ SRO / RO

Evaluator: _____

Evaluation Method: Perform / Simulator

Start Time _____

Stop Time _____

Total Time _____

PERFORMANCE EVALUATION SUMMARY			
Step #	S	U	Comments
*1			
2			
*3			
*4			
*5			
*6			
7			
*8			
*9			
*10			
*11			
*12			

_____ SATISFACTORY _____ UNSATISFACTORY

ORAL EVALUATION (Not Required for ILO Exams)			
Question #	S	U	Comments
			TIME:
			TIME:

_____ SATISFACTORY _____ UNSATISFACTORY

OVERALL EVALUATOR COMMENTS:

Evaluator Signature / Date: _____

References: Required (R) / Available (A)

EP-290 "Emergency Notifications" (R)

JOB PERFORMANCE MEASURE

NRC EXAM 2004-RO-A1.4

Complete Nuclear Event Notification Form (Site Area)	No.: NRC EXAM 2004-RO-A1.4 Revision: 2 Page 1

Tools and Equipment Required:
None

Preferred Evaluation Method:

Perform	X	Walkthrough		Discuss	
Plant		Simulator	X	Classroom	

Evaluator Notes:
This JPM may be performed using a Hard Copy of the Nuclear Event Notification Form **or** Electronically using Jet Form.

Whenever possible, allow the examinee to use IPCS to obtain weather information. Otherwise, information is provided in attached cue.

NOTE: This JPM can be performed anywhere. It is preferred to perform it in the Simulator, TSC, or EOF with IPCS functioning.

ENSURE ALL INDUSTRIAL AND PERSONNEL SAFETY PRACTICES ARE USED AND ENFORCED AT ALL TIMES.

K/A SYSTEM:
2.1 Generic Knowledge and Abilities:
2.4.15 Knowledge of communication procedures associated with EOP implementation. 3.0 / 3.5

Task Standard:

All steps required are completed within 15 minutes, including:
- Emergency Director approval (signature) of the notification form.
- Completion of telephone notifications to Offsite Authorities.
- All steps are completed, including 2B (phone calls).

Initial Conditions:
- The Emergency Director has just declared a Site Area Emergency due to an event in progress.
- The event in progress is that Site boundary dose rates resulting from a gaseous release exceeds 100 mrem TEDE for the projected duration of the release. (**AS1**)
- Currently the plant is degrading and a confirmatory sample is in progress.
- There is currently no precipitation.
- There are no protective action recommendations at this time.

Initiating Cue(s):

You are the Control Room Emergency Communicator. Your duties are to perform the following:
- Fill out the required information for a Nuclear Event Notification Form.
- Present the form to the Emergency Director for approval.
- Make the required Offsite Authority Telephone Notifications.

This task is time critical.

Complete Nuclear Event Notification Form (Site Area)	No.: NRC EXAM 2004-RO-A1.4 Revision: 2 Page 2

Start Time _____

Stop Time _____

Total Time _____

Elements	Standards
Note: The student may use a hard copy form or use the computer (Jet Form in ARMS)	
CUE: This is a Drill	
*1. Fill in Actual Event or Drill on the top of the Nuclear Event Notification Form	*1.Drill is checked.
2. Enter the Plant Contact information and Plant Message Number	2. Enters: Nuclear Power Plant: Fermi 2 Plant Communicator: Examinee Calling From: Current location Call Back Number: Current location Message Number: 1
*****3. Enters the Current Classification Data.	*3. Enters: Current Classification: SAE Declared Date: Today's Date Declared Time: Current Time
*4. Enters the Reason for Classification Data	*4. Enters: Reason for Classification: Abnormal Rad Level /Radiological Effluents Fermi IC Number: AS1
*5. Enters Plant Status	*5. Enters: Degrading
*6. Enters Radiological Release in Progress Due to Event	*6. Enters: Yes- >AU1 Limits
7. Enters Protective Action Recommendations	7. Enters: None
NOTE: 10m Met Tower Data is preferred.	
CUE, If IPCS not available: Wind Direction 0 to 180 Wind Speed (mph) 2 Stability classC Precipitation No	
*8. Enters Meteorological Data	*8. Enters: (Data obtained from IPCS terminal) Wind Direction: actual reading Wind Speed (mph): actual reading Stability class: actual reading Precipitation: actual reading

Complete Nuclear Event Notification Form (Site Area)	No.: NRC EXAM 2004-RO-A1.4 Revision: 2 Page 3

NOTE: Sign as Emergency Director	
*9. Obtains Emergency Director Signature	*9. Signed by Emergency Director
CUE: The auto-dial feature is not currently working.	
*10. Notifies the Monroe County Sheriff by calling 734-243-7070	*10. Monroe County Sheriff notified within 15 minutes.
*11. Notifies the Wayne County Sheriff by calling 734-942-3600	*11. Wayne County Sheriff notified within 15 minutes.
*12. Notifies the Michigan State Police by calling 517-336-6100	*12. Michigan State Police notified within 15 minutes.
End JPM	

_____ SATISFACTORY _____ UNSATISFACTORY

Terminating Cue(s):

Nuclear Event Notification Form has been turned in for approval to the Emergency Director and required 15-Minute Offsite Authority Notifications are complete.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-RO-A1.4

Complete Nuclear Event Notification Form (Site Area)	No.: NRC EXAM 2004-RO-A1.4 Revision: 2 Page 4

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for Followup question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

Complete Nuclear Event Notification Form (Site Area)	No.: NRC EXAM 2004-RO-A1.4 Revision: 2 Page 5

Simulator Setup

IC#:

Malfunctions:

Remote Functions:

Number	Title	Value

Override Functions:

Special Instructions:

JOB PERFORMANCE MEASURE
NRC EXAM 2004-RO-A1.4

JPM RO A1.4 Cue Sheet

Initial Conditions:

- The Emergency Director has just declared a Site Area Emergency due to an event in progress.
- The event in progress is that Site boundary dose rates resulting from a gaseous release exceeds 100 mrem TEDE for the projected duration of the release. (**AS1**)
- Currently the plant is degrading and a confirmatory sample is in progress.
- There is currently no precipitation.
- There are no protective action recommendations at this time.

Initiating Cue(s):

You are the Control Room Emergency Communicator. Your duties are to perform the following:

- Fill out the required information for a Nuclear Event Notification Form.
- Present the form to the Emergency Director for approval.
- Make the required Offsite Authority Telephone Notifications.

This task is time critical.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.2

Job Position SRO	No. NRC EXAM 2004-SRO-A1.2		Revision 0
JPM Title Knowledge of Shift Staffing Requirements	Duration 6 min	Page COVER SHEET	

Examinee: _____ SRO / RO

Evaluator: _____

Evaluation Method: Perform / Simulator / Classroom

Start Time _____

Stop Time _____

Total Time _____

PERFORMANCE EVALUATION SUMMARY			
Step #	S	U	Comments
1			
*2			
*3			
*4			

_____ SATISFACTORY _____ UNSATISFACTORY

ORAL EVALUATION (Not Required for ILO Exams)			
Question #	S	U	Comments
			TIME:
			TIME:

_____ SATISFACTORY _____ UNSATISFACTORY

OVERALL EVALUATOR COMMENTS:

Evaluator Signature / Date: _____

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.2

Knowledge of Shift Staffing Requirements	No.: NRC EXAM 2004-SRO-A1.2 Revision: 0 Page 1

References: Required (R) / Available (A)

MOP03 (A)

Tools and Equipment Required:

None

Preferred Evaluation Method:

Perform	X	Walkthrough		Discuss	
Plant		Simulator		Classroom	

Evaluator Notes:

This JPM may be performed anywhere the examinee has access to conduct manuals.

ENSURE ALL INDUSTRIAL AND PERSONNEL SAFETY PRACTICES ARE USED AND ENFORCED AT ALL TIMES.

K/A

SYSTEM: 2.1.4 Knowledge of shift staffing requirements (2.3/3.4)

Task Standard:

Shift staffing adjusted and actions taken to meet minimum shift staffing within the time constraints.

Initial Conditions:

The time is 1000 Sunday morning with the plant operating at 100% power. The crew is operating with the minimum shift complement in accordance with the Shift Assignment Sheet. Security is also operating at minimum complement.

Initiating Cue(s):

Frank Brown has just informed you that he is leaving immediately due to a personal emergency. He has given a turnover to J. Parent, who has just recently completed his proficiency watches as Turbine Building Rounds. You are to identify the staffing adjustments, if any, that need to be made, recommendations for call-outs, and time constraints. Vocalize your thought process and report when you have completed the task.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.2

Knowledge of Shift Staffing Requirements	No.: NRC EXAM 2004-SRO-A1.2 Revision: 0 Page 2

Start Time _____

Stop Time _____

Total Time _____

Elements	Standards
Evaluator Note: Hand the examinee a copy of the attached Shift Assignment sheet if asked for.	
1. Obtains a copy of the current Shift Assignments sheet to determine the status of shift staffing.	1. Copy of Shift Assignments sheet obtained
Evaluator Note: Hand the examinee a copy of the overtime sheet and fire brigade member letter if asked for.	
*2. Uses the overtime callout sheet and letter for who is qualified as fire brigade member to determine that a qualified fire brigade member is needed to replace F. Brown.	*2. Identifies that F. Brown was filling a required Fire Brigade position in addition to TB Rounds.
*3. Identify the time requirements to have minimum staffing positions filled.	*3. Identifies that minimum staffing must be filled within 2 hours per MOP03.
*4. Initiates the process for call-out to fill the Fire Brigade member position.	*4. Identifies a proper replacement and initiates call out.
Note to NRC examiner: Ask the examinee to identify who (person) would meet the requirement.	The first qualified person on the Over time list would be J. Wagonsomer.

_____ SATISFACTORY _____ UNSATISFACTORY

PERFORMANCE EVALUATION

Terminating Cue(s):

Call-out is made for another NO who is qualified as a Fire Brigade member within 2 hours.

Knowledge of Shift Staffing Requirements	No.: NRC EXAM 2004-SRO-A1.2 Revision: 0 Page 3

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for Followup question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

Knowledge of Shift Staffing Requirements	No.: NRC EXAM 2004-SRO-A1.2 Revision: 0 Page 4

Simulator Setup

IC#:

Malfunctions:

Remote Functions:

Number	Title	Value

Override Functions:

Special Instructions:

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.2

JPM SRO A1.2 Cue Sheet

Initial Conditions:

The time is 1000 Sunday morning with the plant operating at 100% power. The crew is operating with the minimum shift complement in accordance with the Shift Assignment Sheet. Security is also operating at minimum complement.

Initiating Cue(s):

Frank Brown has just informed you that he is leaving immediately due to a personal emergency. He has given a turnover to J. Parent, who has just recently completed his proficiency watches as Turbine Building Rounds. You are to identify the staffing adjustments, if any, that need to be made, recommendations for call-outs, and time constraints. Vocalize your thought process and report when you have completed the task.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.2

Knowledge of Shift Staffing Requirements	No.: NRC EXAM 2004-SRO-A1.2 Revision: 0 Page 1

SHIFT ASSIGNMENTS

DATE: Today

	Nights	Days	
SM	D. Hemmele	M. Brubaker	
CRS	J. Simone	M. Paul	
CRNSO	M. Fulweber	G. Casey	
COP H11-P603	J. Leist	T. Sampson	Safe Shutdown
Patrol	M. Himebauch**	E. Sorg**	
Shift Foreman	J. Clements		
Other			
Turbine Bldg	M. Toward*	F. Brown*	
Reactor Bldg	A. Antrassian*	J. Woods*	
Outside/Fermi 1	S. Harter	L. Sharpe	Safe Shutdown
Radwaste Op-Assigned	E. Smith#	W. Dempsey#	
Radwaste Op-shift	H. Siech*	N. Major*	
Other	S. Lanman*	J. Parent	
		Reggie Brown (fire protection)*	

* Fire Brigade Member **Fire Brigade Leader # CR Communicator

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.4

Job Position SRO	No. NRC EXAM 2004-SRO-A1.4	Revision 0
JPM Title Approve a discharge permit	Duration 10 minutes	Page COVER SHEET

Examinee: _____ SRO / RO

Evaluator: _____

Evaluation Method: Perform / Simulator / Classroom

Start Time _____

Stop Time _____

Total Time _____

PERFORMANCE EVALUATION SUMMARY			
Step #	S	U	Comments
*1.			
*2.			
3			
4.			

_____ SATISFACTORY _____ UNSATISFACTORY

ORAL EVALUATION (Not Required for ILO Exams)			
Question #	S	U	Comments
			TIME:
			TIME:
			TIME:
			TIME:

_____ SATISFACTORY _____ UNSATISFACTORY

OVERALL EVALUATOR COMMENTS:

Evaluator Signature / Date: _____

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.4

JPM Title Approve a discharge permit	No.: NRC EXAM 2004-SRO-A1.4 Revision: 0 Page 1

K/A SYSTEM:

2.3.6 Knowledge of the requirements for reviewing and approving release permits.

References: Required (R) / Available (A)
MCE 06 Non radiological discharges (A)
Discharge Permit

Tools and Equipment Required:
NONE

Preferred Evaluation Method:

Perform	X	Walkthrough		Discuss	
Plant	X	Simulator	X	Classroom	

Evaluator Notes:
Provide the candidate with the Discharge Permit with parts 1,2,3 completed.

ENSURE ALL INDUSTRIAL AND PERSONNEL SAFETY PRACTICES ARE USED AND ENFORCED AT ALL TIMES.

K/A SYSTEM:

2.3.6 Knowledge of the requirements for reviewing and approving release permits.

Task Standard:
Approve a discharge permit

Initial Conditions:
You are the CRS.
The CST/CRT dike has filled up with rainwater. A discharge permit has been initiated.

Initiating Cue(s):
Review and approve the discharge permit.

JPM Title Approve a discharge permit	No.: NRC EXAM 2004-SRO-A1.4 Revision: 0 Page 2

PERFORMANCE EVALUATION

Time Start _____

	Elements		Standards
*1.	Determines that the CST/CRT diked area is subject to radiological restrictions in accordance with section 5.1 of MCE06.	*1.	Determines discharge is subject to radiological restrictions.
*2.	Assigns an expiration date not to exceed 24 hours based on 5.1.11.2	*2.	Dates the expiration block for the next day. Note: Difference in procedure and facility expectation and what was actually performed. Facility noted that the 24 hours does not require the specific time interval, i.e., date and time to equate to 24 hours. However, the applicants noted the specific time in which the 24 hours would actually expire. The examiners noted this apparent procedure error/discrepancy to the facility during the validation week. It was assured that it only required the day and no specific time.
3.	Determines there are no special precautions and limitations	3.	No special precautions and limitations noted.
4.	Sign and date	4.	Signs as NSS and dates.

Time Stop _____

Terminating Cue(s):

Discharge permit is approved.

JPM Title Approve a discharge permit	No.: NRC EXAM 2004-SRO-A1.4 Revision: 0 Page 3

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for Followup question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

JPM Title Approve a discharge permit	No.: NRC EXAM 2004-SRO-A1.4 Revision: 0 Page 4

Simulator Setup

IC#:

Malfunctions:

Remote Functions:

Number	Title	Value

Override Functions:

Special Instructions:

JPM SRO A1.4 Cue Sheet

Initial Conditions:

You are the CRS.
The CST/CRT dike has filled up with rainwater. A discharge permit has been initiated.

Initiating Cue(s):

Review and approve the discharge permit.

JOB PERFORMANCE MEASURE

NRC EXAM 2004-SRO-A1.5

Job Position SRO	No. NRC EXAM 2004-SRO-A1.5	Revision 1
JPM Title Determine Classification, Protective Action and Implementation time for Protective Action Recommendations	Duration (Time Critical) 20 min	Page COVER SHEET

Examinee: _____ SRO / RO

Evaluator: _____

Evaluation Method: Perform / Simulator / Time Critical

Start Time _____

Stop Time _____

Total Time _____

PERFORMANCE EVALUATION SUMMARY			
Step #	S	U	Comments
1			
*2			
*3			
*4			
*5			
6			

_____ SATISFACTORY _____ UNSATISFACTORY

ORAL EVALUATION (Not Required for ILO Exams)			
Question #	S	U	Comments
			TIME:
			TIME:

_____ SATISFACTORY _____ UNSATISFACTORY

OVERALL EVALUATOR COMMENTS:

Evaluator Signature / Date: _____

JOB PERFORMANCE MEASURE
NRC EXAM 2004-SRO-A1.5

Determine Classification, Protective Action and Implementation time for Protective Action Recommendations	No.: NRC EXAM 2004-SRO-A1.5 Revision: 1 Page 1

References: Required (R) / Available (A)
EP-101 Classification of Emergencies, (R)
EP-105 General Emergency, (R)
EP-545 Protective Action Recommendations, (R)

Tools and Equipment Required:
None

Preferred Evaluation Method:

Perform	X	Walkthrough		Discuss	
Plant		Simulator	X	Classroom	

Evaluator Notes:
Cue the trainee if necessary about making reports or other communications.

ENSURE ALL INDUSTRIAL AND PERSONNEL SAFETY PRACTICES ARE USED AND ENFORCED AT ALL TIMES.

K/A
SYSTEM: 2.4.41 Knowledge of the emergency action level thresholds and classifications (2.3/4.1)

Task Standard:

- Classify the emergency as a General Emergency based on HG1 – EP101 Enclosure A Page A-4 within 15 minutes
- Determines PAR is to evacuate Area 1 based on Security event in progress (EP-545 flowchart) within 15 minutes of classification determination
- Notifies the state authorities that it will take approximately 3 hours and 10 minutes to evacuate based on enclosure D of EP-545
- Notifies the state authorities that approximately 5,156 people will need to be evacuated based on enclosure E of EP-545

Initial Conditions:
You are an extra SRO assigned to implement the E-Plan.
The Date is February 3rd, 2004. Time is 1200 p.m. (noon)
Current weather conditions are a snow and rain mixture with winds at 90° (towards the lake)

A security event is in progress that has caused fuel damage. Intruders are in control of some of the equipment necessary to maintain the safety functions.

The STA has accumulated the following data:
- SGTS Div 1 and Div 2 AXM Channel 3 indicate 200μCι/cc and has been confirmed to be valid
- These measurements are expected to continue for 1 hour
- Sample analysis indicate a combined radioiodine concentration of 100 DAC and is expected to continue for <1 hour

Initiating Cue(s):
Based on the information given:
1. Classify the event
2. If required, provide PAR

Note to NRC examiner: This cue will not be given unless the Classification is done correctly.
Provide state authorities with estimated time for evacuation and estimated population.

JOB PERFORMANCE MEASURE
NRC EXAM 2004-SRO-A1.5

Determine Classification, Protective Action and Implementation time for Protective Action Recommendations	No.: NRC EXAM 2004-SRO-A1.5 Revision: 1 Page 2

Start Time _____

Stop Time _____

Total Time _____

Elements	Standards
1. Candidate obtains a copy of EP-101, using book and flowchart	1. EP-101 book and flowchart obtained.
*2. Classifies the event as GE based on HG1	*2. GE declared on HG1 within 15 minutes
NOTE: Based on PAR flowchart. Security Event – Yes, evacuate area 1 and continue evaluation..	
*****3. Determines to evacuate area 1 (security event)	*3. Areas 1 determined for evacuation within 15 minutes of classification determination
NRC examiner Note: This is part 2 of the JPM. The candidate must properly classify the event to move on. **CUE:** The state has asked for you to provide them with estimated time for evacuation and the estimated population.	
*4. Uses enclosure D of EP-545 to determine 3 hour 10 minute evacuation time	*4. Evacuation time determined to be 3 hours and 10 minutes.
*5. Uses enclosure E of EP-545 to determine a population of 5,156 people.	*5. Population determined to be 5,156 people
NOTE: Act as communicator to receive report.	
6. Candidate reports evacuation time and population to State (will report to communicator).	6. Evacuation time and population reported.
End JPM	

_____ SATISFACTORY _____ UNSATISFACTORY

Terminating Cue(s):

Classification and PAR determined. Evacuation time and population reported to Communicator.

JOB PERFORMANCE MEASURE
NRC EXAM 2004-SRO-A1.5

Determine Classification, Protective Action and Implementation time for Protective Action Recommendations	No.: NRC EXAM 2004-SRO-A1.5 Revision: 1 Page 3

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for Followup question(s): _____

Question:

Reference:

Response:

Question:

Reference

Response:

Determine Classification, Protective Action and Implementation time for Protective Action Recommendations	No.: NRC EXAM 2004-SRO-A1.5 Revision: 1 Page 4

Simulator Setup

IC#:

Malfunctions:

Remote Functions:

Number	Title	Value

Override Functions:

Special Instructions:

JOB PERFORMANCE MEASURE
NRC EXAM 2004-SRO-A1.5

JPM SRO A1.5 Cue Sheet

Initial Conditions:

You are an extra SRO assigned to implement the E-Plan.
The Date is February 3rd, 2004. Time is 1200 p.m. (noon)
Current weather conditions are a snow and rain mixture with winds at 90° (towards the lake)

A security event is in progress that has caused fuel damage. Intruders are in control of some of the equipment necessary to maintain the safety functions.

The STA has accumulated the following data:

- SGTS Div 1 and Div 2 AXM Channel 3 indicate 200μCι/cc and has been confirmed to be valid
- These measurements are expected to continue for 1 hour

Sample analysis indicate a combined radioiodine concentration of 100 DAC and is expected to continue for <1 hour

Initiating Cue(s):

Based on the information given:

1. Classify the event
2. If required, provide PAR