JOB PERFORMANCE MEASURE

Job Position SRO	No. JP-OP-802-4101-232	Revision 0
JPM Title Determine Fire Brigade Minimum Manning	Duration 10 minutes	Page 1

*2 times Duration for ILO Exams

Examinee: _____ SRO

Evaluator: _____

Validating Representatives Name: _A. Snowberger / S. Schmus_____

JPM Type: **Normal /** Alternate Path **/** Time Critical Start Time _____

Evaluation Method: **Perform** / Walkthrough / Discuss Stop Time _____

Location: Plant / **Simulator** / **Classroom** Total Time: _____

PERFORMANCE EVALUATION SUMMARY											
Element	S	U	Comment	Element	S	U	Comment	Element	S	U	Comment
1.											
*** 2.**											
3.											
*** 4.**											

OPERATOR FUNDAMENTALS OBSERVATION				
Monitor operator fundamentals during the JPM set. Rate each area based on the criteria by placing a checkmark in the appropriate column. Indicate the comment number associated with the observation.				
Operator Fundamental	**Meets all Expectations**	**Opportunity for Improvement**	**Does not meet Expectations**	**Comment Number**
Monitoring				
Control				
Conservatism				
Teamwork				
Knowledge				

OVERALL EVALUATOR COMMENTS: _____

_____

_____

REMEDIAL CONTENT: _____

_____ PASS _____ FAIL

Evaluator Signature / Date: _____ / _____

JPM Observation Criteria

Fundamental	Meets all Expectations	Opportunity for Improvement	Does not meet Expectations
Monitoring	Equipment status monitored at proper frequency, using multiple means if available. Understood which indications were critical.	Some monitoring was performed but undue focus on task or lack of system knowledge prevented ideal monitoring.	Did not recognize key equipment status indicators, too much focus on single indications and ignored total system status.
Control	Task preview used to prepare for job. Aware of control bands and maintained them. Configuration control maintained.	Adequate control of system maintained throughout task but some improvements could be made such as better manual control or greater depth of knowledge for anticipating system response.	No anticipation of results of actions. Unaware or control bands or not able to maintain them. Lack of knowledge of how to control system parameters.
Conservatism	Low threshold for identification of problems. Questioning attitude. Uses “stop when unsure” if needed. Sensitive to nuclear safety.	Some opportunities existed to question before proceeding, High focus on task completion without consideration for other system affects.	Proceeds even when unsure with unanswered questions. High threshold for problem conditions.
Teamwork	Routinely communicates system status changes to the team. Communicates actions before taking them.	Communicated most status and actions. Some improvement would be warranted.	Routinely takes action without informing the team.
Knowledge	Able to anticipate system response based on solid system knowledge. Good working knowledge of generic fundamentals to predict and monitor system response.	Plant, system, or generic fundamental knowledge has some gaps.	Unable to predict system response, unsure of generic fundamentals concepts related to plant operation. Only relied on procedure for operating knowledge.

System:

N/A

Task:

01A0001017 - Direct emergency response measures until relieved by higher authority.

References: Required (R) / Available (A)

MOP10, Fire Brigade (R)

Tools and Equipment Required:

None

Initial Conditions:

You are the Control Room Supervisor on night shift with the shift assignments shown on the people sheet provided.

Initiating Cue(s):

At 0300 Cliff Bowen has a medical emergency and must leave site.

As the CRS, determine the following:

- If minimum Fire Brigade Manning is met.
- If not met, determine any compensatory actions that must be taken.
- If compensatory actions must be taken, determine when the actions must be taken by.
- Record your findings below:

Terminating Cue(s):

Results of examinees evaluation of the Fire Brigade, including compensatory actions and times, provided to the evaluator.

Task Standard:

The task is satisfactorily met if the examinee evaluates current manning against the requirements in MOP10, Fire Brigade, determines that minimum manning is not currently met for the Fire Brigade, determines that an additional Fire Brigade Member needs to be called in to fill the missing position and restore the Fire Brigade to its minimum manning requirements, and determines that the replacement must be obtained within 2 hours (or by 0500).

Licensed Operator Exam Information (required for NRC exams)

Safety Function:

N/A

K/A Reference: (from NUREG 1123)

K/A SYSTEM: Generic

K/A STATEMENT:

2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement or overtime limitations (reference potential) ..... 2.9 / 3.9

Maintenance Rule Safety Classification:

N/A

Maintenance Rule Risk Significant? (Yes or No)

N/A

PERFORMANCE EVALUATION

Start Time _____

ELEMENT		STANDARD	
CUE:	**Provide the examinee with the Cue Sheet, the manning sheet (people sheet), and a copy of MOP10, Fire Brigade.**		
1.	Refers to MOP10, Fire Brigade, Section 3.1 Fire Brigade Composition.	1.	Determines the following from MOP10 Section 3.1: A Fire Brigade of at least five members shall be maintained onsite at all times. The Fire Brigade shall not include the SM, Security, or members of the minimum shift crew necessary for safe shutdown of the unit or any personnel required for other essential functions during a fire emergency. Typical Fire Brigade should consist of: 1. One Fire Brigade Leader 2. Four Operators (or three Operators and a Fire Brigade Qualified Fire Protection Inspector) 3. One other qualified member of plant staff as communicator
*** 2.**	Evaluates current manning against requirements of MOP10.	*** 2.**	Determines that minimum Fire Brigade manning is not met because: o S. Smeal is the Fire Brigade Leader and the only off-shift Licensed Nuclear Operator (LNO). o C. Springsteen and A. Antrasian are the only non-licensed operators (NOs) who could be on the Fire Brigade and they are already assigned. o L. Pontnack is an NO but cannot be on the Fire Brigade because he is the designated communicator. o N. Major is an NO but cannot be on the Fire Brigade because he is the Dedicated Shutdown NO. Places a check mark signifying that minimum Fire Brigade manning is NOT met.
3.	Refers to MOP10, Fire Brigade, Section 3.1 Fire Brigade Composition for compensatory actions.	3.	Determines the following from MOP10 Paragraph 3.1.2: The Fire Brigade composition may be less than the minimum requirements for a period not to exceed two hours to accommodate unexpected absences of Fire Brigade members if immediate action is taken to restore the Fire Brigade to its minimum requirements.

ELEMENT	STANDARD
*** 4.** Evaluates for compensatory actions that must be taken in accordance with MOP10.	*** 4.** Determines that, since turnover is more than 2 hours away, action must be taken to: o Immediately start looking (calling for) a replacement Fire Brigade member to restore the Fire Brigade to minimum manning requirements. o The missing member must be replaced within 2 hours (by 0500).
CUE: End JPM when the results of the examinee's evaluation of the Fire Brigade, including compensatory actions and times, are provided to the evaluator.	

_____ SATISFACTORY _____ UNSATISFACTORY

Stop Time _____

*** Critical Step**

Evaluator Notes:

This JPM may be started at the CRS desk in the simulator.

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

Generic Notes and Cues:

None

System Specific Notes and Cues:

None

Task Performance and Cues:

The Elements of this JPM are step by step in accordance with the procedure. The Standard is that the procedure is performed as written. The Cues are as listed above for indication or as each step is completed the appropriate information is reported to the examinee. Notify Examinee that time compression may be used for activities performed outside of the Control Room. Notify Examinee if JPM is Time Critical (only if JPM is **NOT** Alternate Path.)

Critical Steps:

Critical Tasks are identified by asterisk (*) and **bolded** steps on the cover sheet. Verify that the latest revision of the procedure is used and critical tasks are correctly identified.

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for follow-up question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

KEY: (JP-OP-802-4101-232)

Results of your investigation:

Fire Brigade Manning is currently met. ☐ Yes ✕ No

Required compensatory actions, including time that actions must be taken, if applicable: ☐ N/A

Immediately start looking (calling for) a replacement Fire Brigade member to restore the Fire Brigade to minimum manning requirements.

The missing member must be replaced within 2 hours (by 0500).

Cue:

Initial Conditions:

You are the Control Room Supervisor on night shift with the shift assignments shown on the people sheet provided.

Initiating Cue(s):

At 0300 Cliff Bowen has a medical emergency and must leave site.

As the CRS, determine the following:

- If minimum Fire Brigade Manning is met.
- If not met, determine any compensatory actions that must be taken.
- If compensatory actions must be taken, determine when the actions must be taken by.
- Record your findings below:

Results of your investigation:

Fire Brigade Manning is currently met. ☐ Yes ☐ No

Required compensatory actions, including time that actions must be taken, if applicable: ☐ N/A

_____
_____
_____
_____

Today's People Sheet:

Date: Today

	Nights	Days
SM	E. Hauser	B. Jebbia
CRS	YOU	C. Chambers
CRLNO	J. Lambrou	D. Hammonds
COP H11-P603	P. Dragan	R. Chladni
Shift Foreman	** S. Smeal	** A. Engler
Other	N/A	J. Moore
Turbine Bldg	* C. Springsteen	* W. Dempsey
Reactor Bldg	* C. Bowen	* G. Brda
Outside/Fermi 1	* A. Antrasian	* S. Greg
Radwaste Op-Assigned	# L. Pontnack	# C. Jewell
Dedicated Shutdown NO	N. Major	E. Koss
Other	@ J. Henscheid	* B. Sortor

* Fire Brigade Member ** Fire Brigade Leader # CR Communicator
@ Fire Brigade Qualified Fire Protection Inspector

Cue Sheet: (JP-OP-802-4101-232)

Initial Conditions:

You are the Control Room Supervisor on night shift with the shift assignments shown on the people sheet provided.

Initiating Cue(s):

At 0300 Cliff Bowen has a medical emergency and must leave site.

As the CRS, determine the following:

- If minimum Fire Brigade Manning is met.
- If not met, determine any compensatory actions that must be taken.
- If compensatory actions must be taken, determine when the actions must be taken by.
- Record your findings below:

Results of your investigation:

Fire Brigade Manning is currently met. □ Yes □ No

Required compensatory actions, including time that actions must be taken, if applicable: □ N/A

_____
_____
_____
_____

Today's people sheet:

Date: Today

	Nights	**Days**
SM	E. Hauser	B. Jebbia
CRS	YOU	C. Chambers
CRLNO	J. Lambrou	D. Hammonds
COP H11-P603	P. Dragan	R. Chladni
Shift Foreman	** S. Smeal	** A. Engler
Other	N/A	J. Moore
Turbine Bldg	* C. Springsteen	* W. Dempsey
Reactor Bldg	* C. Bowen	* G. Brda
Outside/Fermi 1	* A. Antrasian	* S. Greg
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Dedicated Shutdown NO	N. Major	E. Koss
Other	@ J. Henscheid	* B. Sortor

* Fire Brigade Member ** Fire Brigade Leader # CR Communicator
@ Fire Brigade Qualified Fire Protection Inspector

Revision Summary

1) Revised 3.4.4 per CARD 22-26564.

Enclosures

A Outside Agency Fire Drill Criteria
B Fire Brigade Controller Pre-Job Brief

1.0 PURPOSE

CM

DER 89-1170	*This RACTS items relates to "Fire Protection not on RACTS list." Many procedures were identified as containing an element(s) pertaining to the implementation of the fire protection program. A commitment was made to add a statement in the procedure "to contact the fire protection specialist and/or the fire protection engineer for clarification or assistance as necessary" when changes are made to ensure that no fire protection program commitments are changed or deleted.*

To prescribe the requirements for the Fire Brigade including composition, equipment, training, drills, evaluations, and records.

2.0 SCOPE

This procedure applies to all Fire Brigade activities.

3.0 GENERAL REQUIREMENTS

3.1 Fire Brigade Composition

CM

20079	*Security Officers will not be assigned to Fire Brigade.*

3.1.1 A Fire Brigade of at least five members shall be maintained onsite at all times. The Fire Brigade shall not include the SM, Security, or members of the minimum shift crew necessary for safe shutdown of the unit or any personnel required for other essential functions during a fire emergency. Typical Fire Brigade should consist of:

1. One Fire Brigade Leader
2. Four Operators (or three Operators and a Fire Brigade Qualified Fire Protection Inspector)
3. One other qualified member of plant staff as communicator

3.1.2 The Fire Brigade composition may be less than the minimum requirements for a period not to exceed two hours to accommodate unexpected absences of Fire Brigade members if immediate action is taken to restore the Fire Brigade to its minimum requirements.

3.1.3 The following prerequisites are required for a Fire Brigade Member:

1. Pass the annual physical examination (D) specified for Fire Brigade personnel.

2. Be respirator qualified annually.

3. Be radworker qualified annually.

4. Successfully complete the Fire Brigade Member Training Course and requalification as required.

3.1.4 The following prerequisites are required for a Fire Brigade Leader:

1. Be qualified as a Fire Brigade member.

2. Successfully complete the Fire Brigade Leader Training Course.

3. Possession of a Reactor or Senior Reactor Operator License, or knowledge of plant systems and their impact on reactor safety.

3.2 Fire Brigade Equipment

3.2.1 The minimum equipment provided for the 5 member Fire Brigade shall consist of the following:

1. Personal protective equipment such as turnout coats, boots, gloves, helmets, life lines, emergency communications equipment, portable lights, portable ventilation equipment, and portable extinguishers, Nomex Hoods, and Personnel Alert Safety System (PASS).

2. A self-contained breathing apparatus (SCBA) using full-face positive-pressure masks approved by the National Institute for Occupational Safety and Health (NIOSH).

   a. At least 10 masks shall be available for Fire Brigade personnel.

   b. Service or rated operating time shall be a minimum of one-half hour for the self-contained units.

   c. At least two extra air supply bottles shall be onsite for each SCBA designated for Fire Brigade use.

d. In addition, an onsite 6-hour supply of reserve air should be provided and arranged to permit quick and complete replenishment of exhausted air supply bottle as they are returned.

e. If compressors are used as a source of breathing air, only units approved for breathing air shall be used. Compressors shall be capable of operating during a loss of offsite power. Special care must be taken to locate the compressor in areas free of dust and contaminants.

3.3 Fire Brigade Training Courses

3.3.1 Fire Brigade Member Training Course shall ensure the capability to control and suppress potential fires is established and maintained. The training shall consist of classroom instruction, fire fighting practice, and fire drills.

3.3.2 Fire Brigade Leader Training Course shall provide the knowledge and expertise to deal with any potential fire in a competent and successful manner. The training shall consist of classroom instruction, demonstration of implementation and management of fire scene during fire fighting practice and drills.

3.3.3 Requalification training sessions shall be held quarterly to ensure that the classroom portion of the Fire Brigade Member Training Course is repeated within a two year period for all Fire Brigade members.

3.3.4 Yearly practice sessions shall be held for each shift Fire Brigade stressing the proper methods of fighting various types of fires of those expected to occur on site. These sessions shall:

1. Provide Fire Brigade members with hands-on experience in extinguishing actual fires.

2. Be conducted using emergency breathing apparatus under strenuous conditions which could be encountered in fire fighting situations.

3. Use types of fire protection equipment available in the plant.

4. Provide practical application of leadership skills for the Fire Brigade Leader.

5. Be provided at intervals not to exceed one year for each Fire Brigade member.

6. Sessions should include appropriate training for weak areas discovered during drills (e.g. exchanging nozzles, connecting gated wyes, backup team coverage of attack team, foam cart use, Bunker gear donning, and communications expectations).

CM		
	87452	*Part of the corrective action for LER 87-034-00 (Fire Brigade practice sessions not being held at proper intervals), was "The fire protection program will be revised to require fire brigade practice sessions be conducted once per year with a maximum allowable extension not to exceed twenty-five percent of the training interval. The combined interval for three consecutive training intervals shall not exceed 3.25 times the specified training interval."*

3.3.5 All Fire Brigade training shall be performed within the time specified with a:

1. Maximum allowable extension not to exceed 25% of training interval.

2. Combined time for 3 consecutive training intervals not to exceed 3.25 times the specified training interval.

3.3.6 Any changes to the Fire Brigade Training Course shall be documented on a Training Change Request Form. Changes cannot be implemented without an approved Training Change Request Form.

NOTE: Drills should be scheduled as to not adversely affect Plant Operations.

3.4 Fire Brigade Drills

3.4.1 Fire drills shall be announced or unannounced.

3.4.2 Both announced and unannounced fire drills shall be preplanned and evaluated by persons selected by the Drill Coordinator. The following items are necessary to consider a drill preplanned:

1. Scheduled drill date

2. Fire drill package consisting of:

   - MOP10001, Fire Brigade Drill Record Form
   - DevonWay, Operations Fire Drill Response Observation
   - NT evaluation forms.

3. Recommended Fire Drill Scenario provided by the Nuclear Training Specialist or Drill Coordinator

4. Drills should be scheduled such that they occur during all shifts.

5. Drills should be scheduled with about 40% occurring on Monday through Friday day shift.

6. Drill scheduling is conducted by the Nuclear Training Staff.

7. A drill evaluator from the Nuclear Training Staff or Operations Management should be specified for each drill.

3.4.3 Both announced and unannounced fire drills shall include evaluation of the following functional areas as a minimum:

1. Fire discovery and confirmation methods.

2. Safe donning/checking of bunker gear.

3. Control Room interface.

4. Fire Brigade timeliness for mustering and proceeding to the scene.

5. Fire Attack timeliness.

6. Equipment use during fire attack.

7. Fire Containment.

8. Ventilation Control.

9. Communications effectiveness while in PPE from attack scene to Fire Brigade Leader and Control Room.

10. Evaluation of attack strategy.

11. Use of Fire Pre-Plans (at scene and in Control Room).

12. Command and control by Fire Brigade Leader.

13. Evaluation of plant hazards (by Control Room/Fire Brigade Leader).

14 Evaluation of personnel hazards (by Fire Brigade Members and Fire Brigade Leader). This includes discussion of life safety/Search and Rescue considerations.

15. Use of fire fighting resources (extra personnel, additional equipment, and Frenchtown Fire Department).

16. Use of Two-in/Two-out rule (at least two people located outside IDLH atmosphere to perform rescue activities).

17. Followed drill and conducted post drill critique.

18. Discussed/implemented Salvage and overhaul plans.

19. Post drill clean up and restoration of equipment for Fire Brigade use.

3.4.4 Drills shall be performed at regular intervals not to exceed 3 months for each shift Fire Brigade. At least one drill shall be performed each year on a back shift for each shift Fire Brigade. (UFSAR, 13.2.4.1.3 Fire Drills: Drills are performed at regular intervals not to exceed 90 days, with a grace period of 25 percent, for each fire brigade)

3.4.5 No less than one drill for each shift Fire Brigade per year shall be unannounced to determine the fire fighting readiness of the Fire Brigade Leader and Members, and fire protection systems and equipment. Unannounced drills are planned and scheduled such that Fire Brigade Members are unaware the drill is scheduled until it has begun. More drills should be considered for Shifts that experience significant turnover of Fire Brigade members.

3.4.6 Each Fire Brigade Member should participate in at least two drills each year.

3.4.7 At least a four week interval shall be provided between unannounced drills scheduled for a shift Fire Brigade.

3.4.8 The Frenchtown Township Fire Department shall participate in a fire drill at least once each year. This drill may be part of an RERP drill.

3.5 Fire Brigade Assembly Locations

3.5.1 Fire Brigade assembly locations exist in Turbine Building, OSC, and RHR Complex. These locations are not specified in the Fire Protection program documents as evaluated in FPEE 21-0005.

3.5.2 Fire Brigade assembly locations have been evaluated for Fire Protection Program compliance by FPEE 21-0005. Relocation from current location(s) are allowable using MOP23 controls with movement of appropriate Fire Brigade Equipment.

3.6 Fire Brigade Evaluation

3.6.1 At 3-year intervals, a randomly selected unannounced drill shall be evaluated by qualified individuals.

3.6.2 Annually, the NRC and/or NEIL NSO may observe Fire Brigade drills per their inspection requirements.

4.0 PROCEDURE

4.1 Fire Brigade Dress Out

Who	*Step*	*Action*
Fire Brigade Member	4.1.1	Report to the Fire Brigade dress out area at the beginning of the shift.

1. Remove and properly store the equipment set out by the offgoing individual.
2. Select and set out the following equipment:
    a. Bunker pants and coats
    b. Helmet
    c. Hood
    d. Boots
    e. Gloves
    f. Flashlight
    g. Self-contained breathing apparatus
    h. Communications equipment
    i. Eyeglass inserts for self-contained breathing apparatus, if necessary
3. Inspect selected equipment for serviceability and notify the Fire Brigade Leader if any equipment needs repair or service.

Fire Brigade Leader	4.1.2	Remove any defective equipment from service and notify the Nuclear Fire Protection Specialist/delegate.
Nuclear Fire Protection Specialist /delegate	4.1.3	Arrange for repair or replacement of equipment.

4.2 Fire Brigade Drills

Who	*Step*	*Action*
Fire Drill Coordinator	4.2.1	Organize announced or unannounced fire drill(s) with the Plant Manager's organization and Nuclear Training.
		1. Assign Fire Drill Evaluators.
Fire Drill Coordinator	4.2.2	If an announced fire drill, consider holding a pre-drill critique with the shift Fire Brigade for significant changes in Fire Brigade Shift membership, prior drill deficiencies, or new operators. Pre-Drill critique should also include Radiation Protection and Security if possible. This will typically not be done unless required for additional drills or training.
Fire Brigade / Fire Brigade Leader	4.2.3	Upon activation of the drill, assemble at the dress out area and don the required protective equipment including SCBAs.
Fire Brigade Leader		1. Inform the Control Room of the names of the responding Fire Brigade Members and the route to be taken.
Fire Brigade		2. When the Fire Brigade Leader Evaluator indicates the response time and equipment donning is complete, continue with the drill. Unannounced drills will typically take SCBAs to scene and announced drills the SCBAs can be taken to the scene or left behind (dependent on drill scenario, Drill Evaluator discretion, and heat stress considerations).
Fire Brigade Leader	4.2.4	Direct the activities of the Fire Brigade from the assembly area.
Fire Brigade Leader	4.2.5	Direct the activities of the Fire Brigade at the actual fire scene from the command and control location. This includes fire attack, search and rescue, ventilation/forcible entry, fire protection system/utility support, and backup team activities.
Fire Brigade Leader	4.2.6	Make scene reports to the Control Room and inform the Control Room of the following:
		1. Extent of damage.
		2. Status of equipment in fire area and possible effect of its loss.
		3. Steps to reduce damage to equipment within and adjacent to fire area.

4. Need to survey areas adjoining fire area for fire containment.

5. Method of ventilating fire area.

6. Requirement to notify Frenchtown Fire Department for assistance.

7. Status of Fire.

8. Any required equipment shutdowns/ventilation changes.

9. Any Search and Rescue efforts and medical assistance required.

10. When fire is out.

11. Establishment of a reflash watch.

4.2.7 Fire brigade leader should ensure frequent reports from his/her crews.

Fire Brigade Leader

4.2.8 When the drill is complete, verify all gear is properly stored, and ensure radiological health group is notified to do appropriate checks of SCBAs.

Fire Drill Evaluator

4.2.9 Record evaluation on NT forms/Observation Forms.

1. Document fire drill attendance on Training Attendance Record.

2. Send all forms to the Drill Coordinator or delegate.

Nuclear Training Specialist, Fire Protection

4.2.10 Have Nuclear Training Specialist/Operations Management Observer evaluate drill performance. Any deficiencies should be fed back to the Fire Brigade in the Critique and noted on Nuclear Training Forms/Observations/CARDs.

Fire Drill Coordinator

4.2.11 Complete MOP10001, Fire Brigade Drill Record Form.

1. Send the MOP10001 to the PST Scheduler for review.

Fire Drill Coordinator

4.2.12 Hold a post-drill critique covering the items listed in Step 3.4.3 as a minimum. Post-Drill critique should also include Radiation Protection and Security. Enclosure A criteria can be used for observed drills by outside agencies.

1. Schedule additional training for Fire Brigade Members with significant performance deficiencies.

2. IF overall drill performance was unsatisfactory, THEN schedule a repeat drill within thirty days. The repeat drill must contain the same objectives that were evaluated as unsatisfactory during performance of the previous evaluated drill.

4.3 Fire Brigade Quarterly Meetings

Who	*Step*	*Action*

Nuclear Training Specialist, Fire Protection

4.3.1 Prepare material for quarterly meeting to be held for each shift Fire Brigade. The following topics may be included:

- Fermi 2 specific systems/equipment
- New equipment
- Fermi 2 specific fire procedures
- Industry events
- Changes in training
- Miscellaneous information deemed suitable for discussion including significant drill concerns

Nuclear Fire Protection Specialist /delegate

4.3.2 Retain a copy of the agenda and any individual documentation which describes significant changes to the Fire Protection Program for 1 year.

END OF TEXT

JOB PERFORMANCE MEASURE

Job Position SRO	No. JP-OP-802-4101-233	Revision 0
JPM Title Perform Plant-Wide Announcement for Imminent Aircraft Threat	Duration 5 minutes*	Page 1

*2 times Duration for ILO Exams

Examinee: _____ SRO

Evaluator: _____

Validating Representatives Name: A. Snowberger / C. McAllister

JPM Type: Normal / Alternate Path **/ Time Critical** Start Time _____

Evaluation Method: **Perform** / Walkthrough / Discuss Stop Time _____

Location: Plant / **Simulator** / Classroom Total Time: _____

PERFORMANCE EVALUATION SUMMARY											
Element	S	U	Comment	Element	S	U	Comment	Element	S	U	Comment
1.											
*** 2.**											
*** 3.**											
*** 4.**											
*** 5.**											

OPERATOR FUNDAMENTALS OBSERVATION

Monitor operator fundamentals during the JPM set. Rate each area based on the criteria by placing a checkmark in the appropriate column. Indicate the comment number associated with the observation.

Operator Fundamental	Meets all Expectations	Opportunity for Improvement	Does not meet Expectations	Comment Number
Monitoring				
Control				
Conservatism				
Teamwork				
Knowledge				

OVERALL EVALUATOR COMMENTS: _____

_____

_____

REMEDIAL CONTENT: _____

_____ PASS _____ FAIL

Evaluator Signature / Date: _____ /

JPM Observation Criteria

Fundamental	Meets all Expectations	Opportunity for Improvement	Does not meet Expectations
Monitoring	Equipment status monitored at proper frequency, using multiple means if available. Understood which indications were critical.	Some monitoring was performed but undue focus on task or lack of system knowledge prevented ideal monitoring.	Did not recognize key equipment status indicators, too much focus on single indications and ignored total system status.
Control	Task preview used to prepare for job. Aware of control bands and maintained them. Configuration control maintained.	Adequate control of system maintained throughout task but some improvements could be made such as better manual control or greater depth of knowledge for anticipating system response.	No anticipation of results of actions. Unaware or control bands or not able to maintain them. Lack of knowledge of how to control system parameters.
Conservatism	Low threshold for identification of problems. Questioning attitude. Uses “stop when unsure” if needed. Sensitive to nuclear safety.	Some opportunities existed to question before proceeding, High focus on task completion without consideration for other system affects.	Proceeds even when unsure with unanswered questions. High threshold for problem conditions.
Teamwork	Routinely communicates system status changes to the team. Communicates actions before taking them.	Communicated most status and actions. Some improvement would be warranted.	Routinely takes action without informing the team.
Knowledge	Able to anticipate system response based on solid system knowledge. Good working knowledge of generic fundamentals to predict and monitor system response.	Plant, system, or generic fundamental knowledge has some gaps.	Unable to predict system response, unsure of generic fundamentals concepts related to plant operation. Only relied on procedure for operating knowledge.

JPM Information

System:

N/A

Task:

75046 - Determine required actions for a security event using the protective actions flowchart for security events.

References: Required (R) / Available (A)

EP-530, Assembly, Accountability and Onsite Protective Actions (A)

Tools and Equipment Required:

None

Initial Conditions:

This JPM is **TIME CRITICAL**.

- You are an extra SRO On Shift.
- The Shift Manager is not available.
- The Reactor is operating at 100% Power.
- A validated notification of an aircraft attack has been received from the NRC.
- The aircraft is 5 minutes from the site.
- The CRS is executing the Airborne Threat AOP.

Initiating Cue(s):

The CRS directs you to implement Onsite protective measures in accordance with EP-530.

Terminating Cue(s):

Announcement of aircraft threat has been made.

Task Standard:

The task is satisfactorily met if the examinee sounds the plant area alarm and makes the following announcement using the Hi-Com Override, within 5 minutes of receiving the cue:

“Attention all personnel. There is an Imminent Aircraft threat with an estimated arrival time of (current time +5 minutes). All personnel evacuate the reactor and auxiliary buildings. All personnel move away from these buildings and take shelter immediately!”

JPM Title Perform Plant-Wide Announcement for Imminent Aircraft Threat	No.: JP-OP-802-4101-233 Revision: 0 Page 4

Licensed Operator Exam Information (required for NRC exams)

Safety Function/Category:

11 – Abnormal Plant Evolutions

K/A Reference: (from NUREG 1123)

K/A SYSTEM: GENERIC

K/A STATEMENT: 2.1 Conduct of Operations

2.1.14 Knowledge of criteria or conditions that require plant-wide announcements, such as pump starts, reactor trips, mode changes, etc ..... 3.1 / 3.1
2.1.17 Ability to make accurate, clear, and concise verbal reports ..... 3.9 / 4.0
2.1.20 Ability to interpret and execute procedure steps ..... 4.6 / 4.6

Maintenance Rule Safety Classification:

N/A

Maintenance Rule Risk Significant? (Yes or No)

N/A

PERFORMANCE EVALUATION

Start Time _____

ELEMENT		STANDARD	
CUE:	**Provide Examinee with CUE Sheet.**		
1.	Refer to EP-530 Enclosure B, Security Event Onsite Protective Actions Flowchart. **Note**: EP-530, Section 5.1 Immediate Actions, Step 5.1.2 requires that, if there is a security event, GO TO the Security Event Onsite Protective Actions Flowchart in Enclosure B.	1.	Refers to EP-530 Enclosure B, Security Event Onsite Protective Actions Flowchart.
*** 2.**	Evaluates decision step to determine if a Hostile Attack is in progress.	*** 2.**	Determines that a Hostile Attack is NOT in progress.
*** 3.**	Evaluates decision step to determine if the aircraft threat is imminent.	*** 3.**	Determines that the aircraft threat IS imminent (≤5 minutes)
*** 4.**	Sound the Plant Area Alarm.	*** 4.**	Sounds the Plant Area Alarm.
*** 5.**	Make the following announcement using Hi-Com override: **"Attention all personnel. There is an Imminent Aircraft threat with an estimated arrival time of (insert time). All personnel evacuate the reactor and auxiliary buildings. All personnel move away from these buildings and take shelter immediately!"** Repeat announcement.	*** 5.**	Makes the following announcement: **"Attention all personnel. There is an Imminent Aircraft threat with an estimated arrival time of (current time +5 minutes). All personnel evacuate the reactor and auxiliary buildings. All personnel move away from these buildings and take shelter immediately!"** Repeats announcement.
CUE:	**Terminate JPM when announcement of aircraft threat has been made.**		

_____ SATISFACTORY _____ UNSATISFACTORY

Stop Time _____

*** Critical Step**

JPM Title Perform Plant-Wide Announcement for Imminent Aircraft Threat	No.: JP-OP-802-4101-233 Revision: 0 Page 6

Evaluator Notes:

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

Generic Notes and Cues:

N/A

System Specific Notes and Cues:

N/A

Task Performance and Cues:

The Elements of this JPM are step by step in accordance with the procedure. The Standard is that the procedure is performed as written. The Cues are as listed above for indication or as each step is completed the appropriate information is reported to the examinee.

Critical Steps:

Critical Tasks are identified by asterisk (*) and **bolded** steps on the cover sheet. Verify that the latest revision of the procedure is used and critical tasks are correctly identified.

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for follow-up question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

Cue Sheet: (JP-OP-802-4101-193)

Initial Conditions:

This JPM is **TIME CRITICAL**.

- You are an extra SRO On Shift.
- The Shift Manager is not available.
- The Reactor is operating at 100% Power.
- A validated notification of an aircraft attack has been received from the NRC.
- The aircraft is 5 minutes from the site.
- The CRS is executing the Airborne Threat AOP.

Initiating Cue(s):

The CRS directs you to implement Onsite protective measures in accordance with EP-530.

Cue Sheet: (JP-OP-802-4101-193)

Initial Conditions:

This JPM is **TIME CRITICAL**.

- You are an extra SRO On Shift.
- The Shift Manager is not available.
- The Reactor is operating at 100% Power.
- A validated notification of an aircraft attack has been received from the NRC.
- The aircraft is 5 minutes from the site.
- The CRS is executing the Airborne Threat AOP.

Initiating Cue(s):

The CRS directs you to implement Onsite protective measures in accordance with EP-530.

JOB PERFORMANCE MEASURE

Job Position SRO	No. JP-OP-804-0001-231	Revision 0
JPM Title Determine RCIC OPERABILITY and apply Technical Specifications	Duration 10 minutes*	Page 1

*2 times Duration for ILO Exams

Examinee: _____ SRO

Evaluator: _____

Validating Representatives Name: _A. Snowberger / M. Donigian_____

JPM Type: **Normal** / Alternate Path / Time Critical

Evaluation Method: **Perform** / Walkthrough / Discuss

Location: Plant / **Simulator** / **Classroom**

Start Time _____

Stop Time _____

Total Time: _____

PERFORMANCE EVALUATION SUMMARY											
Element	S	U	Comment	Element	S	U	Comment	Element	S	U	Comment
*** 1.**											
*** 2.**											
*** 3.**											
*** 4.**											
*** 5.**											

OPERATOR FUNDAMENTALS OBSERVATION				
Monitor operator fundamentals during the JPM set. Rate each area based on the criteria by placing a checkmark in the appropriate column. Indicate the comment number associated with the observation.				
Operator Fundamental	**Meets all Expectations**	**Opportunity for Improvement**	**Does not meet Expectations**	**Comment Number**
Monitoring				
Control				
Conservatism				
Teamwork				
Knowledge				

OVERALL EVALUATOR COMMENTS: _____

_____

_____

REMEDIAL CONTENT: _____

_____ **PASS** _____ **FAIL**

Evaluator Signature / Date: _____ / _____

JPM Observation Criteria

Fundamental	Meets all Expectations	Opportunity for Improvement	Does not meet Expectations
Monitoring	Equipment status monitored at proper frequency, using multiple means if available. Understood which indications were critical.	Some monitoring was performed but undue focus on task or lack of system knowledge prevented ideal monitoring.	Did not recognize key equipment status indicators, too much focus on single indications and ignored total system status.
Control	Task preview used to prepare for job. Aware of control bands and maintained them. Configuration control maintained.	Adequate control of system maintained throughout task but some improvements could be made such as better manual control or greater depth of knowledge for anticipating system response.	No anticipation of results of actions. Unaware or control bands or not able to maintain them. Lack of knowledge of how to control system parameters.
Conservatism	Low threshold for identification of problems. Questioning attitude. Uses “stop when unsure” if needed. Sensitive to nuclear safety.	Some opportunities existed to question before proceeding, High focus on task completion without consideration for other system affects.	Proceeds even when unsure with unanswered questions. High threshold for problem conditions.
Teamwork	Routinely communicates system status changes to the team. Communicates actions before taking them.	Communicated most status and actions. Some improvement would be warranted.	Routinely takes action without informing the team.
Knowledge	Able to anticipate system response based on solid system knowledge. Good working knowledge of generic fundamentals to predict and monitor system response.	Plant, system, or generic fundamental knowledge has some gaps.	Unable to predict system response, unsure of generic fundamentals concepts related to plant operation. Only relied on procedure for operating knowledge.

JPM Title Determine RCIC OPERABILITY and apply Technical Specifications	No.: JP-OP-804-0001-231 Revision: 0 Page 3

JPM Information

System:

N/A

Task:

76034 - Implement Technical Specification/Technical Requirements Manual actions

References: Required (R) / Available (A)

Technical Specifications (A)

23.206 RCIC System (A)

NOTE: Print RCIC Handout on White Paper in Color.

Tools and Equipment Required:

None

Initial Conditions:

- You are the on-coming CRS.
- You are preparing to take the shift.
- While walking down the RCIC System, you observe it to be in the lineup shown on the provided handout.
- Upon review of the unit log, you determine that RCIC has been in the configuration shown for the past 13 hours.
- No other plant equipment is out of service.

Initiating Cue(s):

Evaluate RCIC OPERABILITY and document below. If RCIC is OPERABLE, mark the table below with N/A.

Terminating Cue(s):

End JPM when the examinee evaluates RCIC Operability and provides a marked-up table.

Task Standard:

The task is satisfactorily met if the examinee evaluates the provided RCIC lineup and determines that RCIC is INOPERABLE and LCO 3.5.3 is NOT MET. For LCO 3.5.3, the examinee must then indicate that:

Action A.1, Verify by administrative means High Pressure Coolant Injection System is OPERABLE, must be performed Immediately

AND

Action A.2, Restore RCIC System to OPERABLE status, must be satisfied within 14 days.

JPM Title Determine RCIC OPERABILITY and apply Technical Specifications	No.: JP-OP-804-0001-231 Revision: 0 Page 4

Licensed Operator Exam Information (required for NRC exams)

Safety Function/Category:

N/A

K/A Reference: (from NUREG 1123)

K/A SYSTEM: GENERIC

K/A STATEMENT: Equipment Control

2.2.37 Ability to determine operability or availability of safety related equipment (SRO Only)……...4.6

Maintenance Rule Safety Classification:

N/A

Maintenance Rule Risk Significant? (Yes or No)

N/A

PERFORMANCE EVALUATION

Start Time _____

ELEMENT		STANDARD	
CUE:	**Provide examinee with Cue Sheet and RCIC mimic graphic.** **NOTE:** **The information leading to the determination below comes from 23.206, RCIC System SOP, Precaution 3.17 and 3.18.**		
CUE:	**IF examinee states that they would consult the RCIC SOP, P&L Section, to determine RCIC status, provide the attached portions of 23.206 included with this JPM.**		
*** 1.**	Review RCIC system lineup and recognize RCIC suction is aligned to the Torus.	*** 1.**	Recognizes RCIC suction is aligned to the Torus.
*** 2.**	Review initial conditions against 23.206 Precautions and Limitations to determine if RCIC OPERABILITY is impacted.	*** 2.**	Determines that, with RCIC aligned to the Torus for more than 12 consecutive hours, should be declared INOPERABLE due to potential drain down.
*** 3.**	Review initial conditions to determine which LCO and Condition(s) apply.	*** 3.**	Determines that, with RCIC declared INOPERABLE, Tech Spec LCO 3.5.3, RCIC System not MET. Determines that Tech Spec LCO 3.5.3 **Condition A applies** to RCIC INOPERABLE.
*** 4.**	Review LCO 3.5.3, Action A.1 to determine its applicability.	*** 4.**	Determines that HPCI must be verified to be OPERABLE by administrative means Immediately.
*** 5.**	Review LCO 3.5.3, Action A.2 to determine its applicability.	*** 5.**	Determines that RCIC must be restored to OPERABLE status within 14 days.
CUE:	**End JPM when the examinee evaluates RCIC Operability and provides a marked-up table.**		

_____ SATISFACTORY _____ UNSATISFACTORY

Stop Time _____

*** Critical Step**

JPM Title Determine RCIC OPERABILITY and apply Technical Specifications	No.: JP-OP-804-0001-231 Revision: 0 Page 6

Evaluator Notes:

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

FAILURE TO WEAR ALL PPE REQUIRED FOR TASK PERFORMANCE WILL RESULT IN FAILURE OF THIS JPM.

Generic Notes and Cues:

None

System Specific Notes and Cues:

None

Task Performance and Cues:

The Elements of this JPM are step by step in accordance with the procedure. The Standard is that the procedure is performed as written. The Cues are as listed above for indication or as each step is completed the appropriate information is reported to the examinee. Notify Examinee that time compression may be used for activities performed outside of the Control Room. Notify Examinee if JPM is Time Critical (only if JPM is **NOT** Alternate Path.)

Critical Steps:

Critical Tasks are identified by asterisk (*) and **bolded** steps on the cover sheet. Verify that the latest revision of the procedure is used and critical tasks are correctly identified.

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for follow-up question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

EVALUATOR KEY:

TS LCO	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.5.3 RCIC System	A. RCIC System inoperable	A.1 Verify by administrative means High Pressure Coolant Injection System is OPERABLE. AND A.2 Restore RCIC System to OPERABLE status.	Immediately 14 days

Cue Sheet: (JP-OP-804-0001-231)

Initial Conditions:

- You are the on-coming CRS.
- You are preparing to take the shift.
- While walking down the RCIC System, you observe it to be in the lineup shown on the provided handout.
- Upon review of the unit log, you determine that RCIC has been in the configuration shown for the past 13 hours.
- No other plant equipment is out of service.

Initiating Cue(s):

Evaluate RCIC OPERABILITY and document below. If RCIC is OPERABLE, mark the table below with N/A.

TS LCO	CONDITION	REQUIRED ACTION	COMPLETION TIME

Cue Sheet: (JP-OP-804-0001-231)

Initial Conditions:

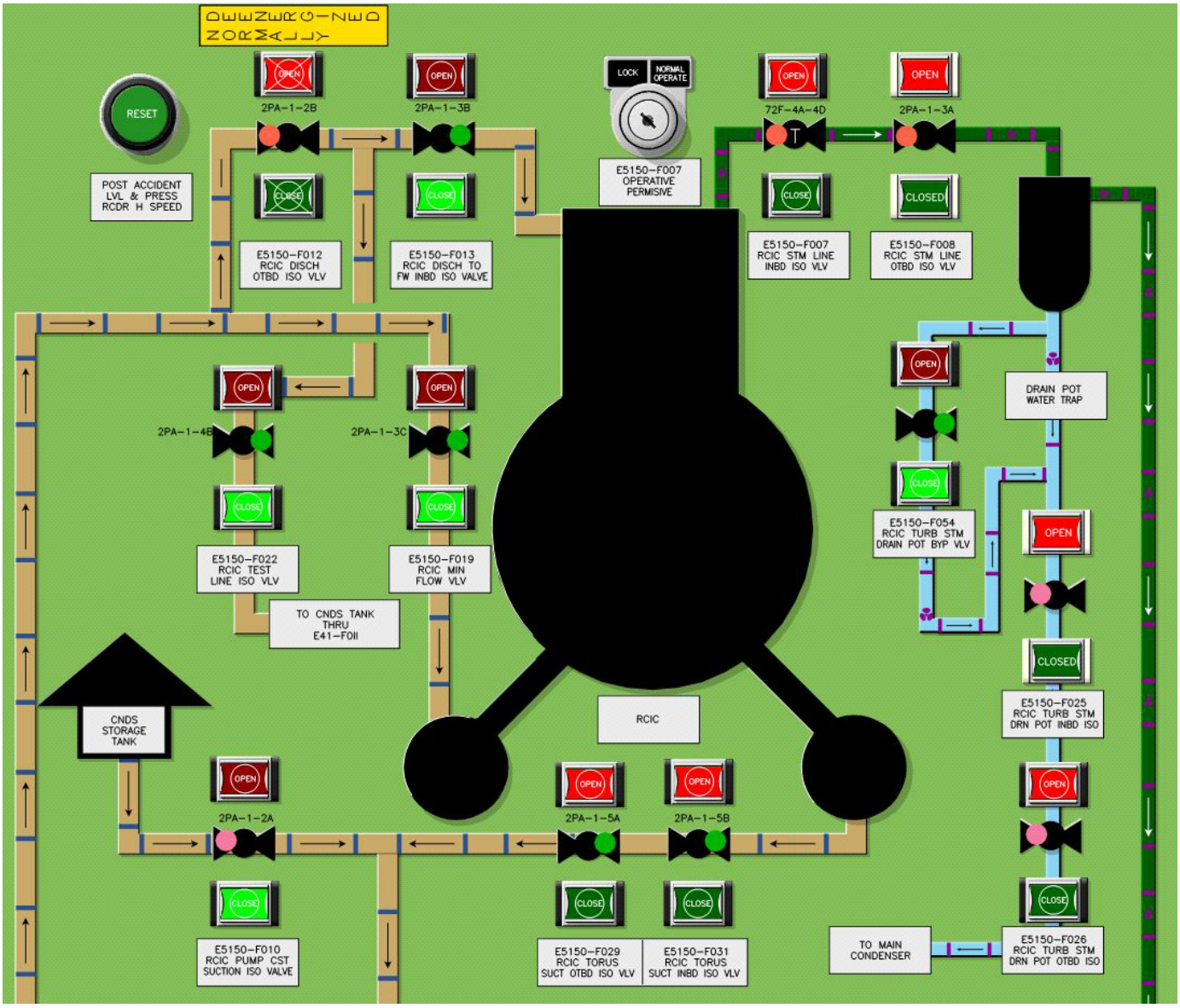
- You are the on-coming CRS.
- You are preparing to take the shift.
- While walking down the RCIC System, you observe it to be in the lineup shown on the provided handout.
- Upon review of the unit log, you determine that RCIC has been in the configuration shown for the past 13 hours.
- No other plant equipment is out of service.

Initiating Cue(s):

Evaluate RCIC OPERABILITY and document below. If RCIC is OPERABLE, mark the table below with N/A.

TS LCO	CONDITION	REQUIRED ACTION	COMPLETION TIME

Handout: (JP-OP-804-0001-231)



Key for Lights in Handout	
Open Light Lit	
Closed Light Lit	
Open Light Off	
Closed Light Off	

Do NOT provide the following until directed to do so in the CUE.

REACTOR CORE ISOLATION COOLING SYSTEM

Revision Summary

1) Added prerequisite to section 6.2 per CARD 20-31692.

Attachments

1	091316	RCIC System Valve Lineup
2	101603	RCIC System Electrical Lineup
3	050406	RCIC System Instrument Lineup
4	122800	Defeat of RCIC Level 8 Trip
5	113016	RCIC Standby Verification Checklist
6	110210	Verification Checklist For Section 5.1 Initial Fill And Vent
7	110210	Verification Checklist For Section 7.3 Lube Oil Sampling

Enclosures

A	110209	Local-Manual Operation of E41-F011, HPCI/RCIC Test Iso/PCV
B	080201	RCIC Manual Operation (copy located at H11-P601)
C	080201	HPCI and RCIC Controllers

Information and Procedures								
DTC	**DSN**	**Revision**	**Date Issued**	**DCR#**	**File #**	**IP**	**ISFSI**	**Recipient**
TPNPP	JP-OP-804-0001-231	105		20-1537	1703.02	I	N	

TABLE OF CONTENTS

1.0 PURPOSE

To prescribe the method for operating the Reactor Core Isolation Cooling (RCIC) System.

1.1 System Description

RCIC System is a high pressure coolant makeup system which supports Reactor shutdown when feedwater system is unavailable and Reactor Pressure Vessel (RPV) is isolated. RCIC System maintains sufficient water inventory in RPV to prevent fuel overheating. RCIC System can also maintain Reactor water level for Hot Standby.

During an RPV isolation, RCIC System can maintain adequate water inventory in RPV until Residual Heat Removal (RHR) System can be placed in operation in Shutdown Cooling Mode, after RPV has depressurized.

RCIC System is designed to provide 600 gpm flow to RPV within 50 seconds of initiation signal.

RCIC System consists of a turbine driven pump and required piping, valves and instrumentation. RCIC pump takes suction from Condensate Storage Tank (CST) or alternately from Suppression Pool, and discharges into B Feedwater Line through a T-connection outside Primary Containment. RCIC turbine is driven by steam supplied from RPV. Exhaust steam from RCIC turbine is piped to Suppression Pool for condensation. RCIC System is automatically started on low Reactor Water Level (Level 2). RCIC System can also be started manually from Control Room or Remote Shutdown Panel.

A RCIC System test line permits functional testing of RCIC System during normal plant operation. A minimum flow bypass line bypasses RCIC pump discharge flow to Suppression Pool during low flow conditions.

2.0 REFERENCES

2.1 Use References

2.1.1 22.000.02, Plant Startup to 25% Power

2.1.2 23.205, Residual Heat Removal System

2.1.3 24.000.01, Situation Surveillances/LCO Action Tracking

2.1.4 24.206.01, RCIC Pump Operability and Flow at 1025 psi and Valve Operability

2.1.5 24.206.03, RCIC Discharge Piping Venting and Lineup Verification

2.1.6 24.206.04, RCIC System Automatic Actuation and Flow Test

2.2 Potential Use References

2.2.1 Technical Specifications/TRM

- Technical Specifications, Section 3.3.3.2, Remote Shutdown System
- Technical Specifications, Section 3.3.5.2, Reactor Core Isolation Cooling (RCIC) System Instrumentation
- Technical Specifications, Section 3.3.6.1, Primary Containment Isolation Instrumentation
- Technical Specifications, Section 3.5.3, RCIC System
- Technical Specifications, Section 3.6.1.8, Suppression Chamber-to-Drywell Vacuum Breakers
- Technical Specifications, Section 3.6.2.1, Suppression Pool Average Temperature
- TRM Section TR 3.3.5.2, Reactor Core Isolation Cooling (RCIC) System Instrumentation
- TRM Section TR 3.3.6.1, Primary Containment Isolation Instrumentation

2.2.2 Procedures

- 1D24, RCIC SYSTEM ACTUATED
- 1D51, RCIC ISOLATION TRIP SIGNAL A
- 1D55, RCIC ISOLATION TRIP SIGNAL B
- 1D59, RCIC ISOLATION PUSHBUTTON
- 1D63, RCIC CNDR VAC TANK LEVEL HIGH
- 1D71, RCIC CNDR VAC TK PRESSURE HIGH
- 1D77, RCIC STEAM VALVES NOT FULL OPEN
- 1D78, RCIC INLET STEAM DRAIN POT LEVEL HIGH

- 1D79, RCIC TURBINE SHUTDOWN RPV H2O LEVEL L8
- 1D86, RCIC TURBINE EXH DIAPH PRESSURE HIGH
- 1D90, RCIC TURBINE TRIP PUSHBUTTON ARMED
- 1D94, RCIC TURBINE TRIPPED

2.2.3 Drawings

I-2231-01	Schematic Diagram - RCIC Turbine Gland Seal Condensate and Gland Seal Vacuum Pumps E51-C003 & C004
I-2231-03	Schematic Diagram - RCIC Steam Supply Inboard Isolation Valve MO and RCIC Turbine Trip Throttle Valve MO E5150-F007 & F059
I-2231-04	Schematic Diagram - RCIC Steam Supply Outboard Isolation Valve MO and RCIC Pump Suction from CST Isolation Valve MO E5150-F008 & F010
I-2231-05	Schematic Diagram - RCIC Pump Discharge Isolation Valve MO and RCIC pump Discharge to Feedwater Header Isolation Valve MO E5150-F012 & F013
I-2231-06	Schematic Diagram - RCIC Pump Suction from Suppression Chamber Outboard and Inboard Isolation Valves E5150-F029 & F031
I-2231-07	Schematic Diagram - RCIC Turbine Steam Stop Valve MO and RCIC Lube Oil Cooler and Barometric Condenser Cooling Water Supply Isolation Valve MO E5150-F045 & F046
I-2231-08	Schematic Diagram - RCIC Pump Minimum Flow Bypass Valve MO and RCIC Discharge to CST Test Isolation Valve MO E5150-F019 & F022
I-2231-09	Schematic Diagram - RCIC Turbine Exhaust Line Vacuum Breaker Outboard and Inboard Isolation Valves MO E5150-F062 & F084
I-2231-10	Schematic Diagram - RCIC Turbine Exhaust Valve E5150-F001 and Vacuum Pump Discharge Valve E5150-F002

I-2235-07	Schematic Diagram - Barometric Condenser Condensate Pump Discharge Drain Valves to CRW AO E5150-F004 & F005
I-2235-08	Schematic Diagram - RCIC Turbine Drain Pot Drain to Main Condenser Isolation Valves AO and RCIC Turbine Steam Supply Drain Pot Level Control Valve AO E5150-F025, F026 & F054
I-2235-11	Schematic Diagram - RCIC Recirc. System Relays
I-2235-10	Schematic Diagram - RCIC Recirc. System Instrument Checks A & B
I-2235-01	Schematic Diagram - RCIC System Notes, Relay Tabulation and Power Distribution
I-2235-02	Schematic Diagram - RCIC System Logic Circuit Part 1
I-2235-03	Schematic Diagram - RCIC System Logic Circuit Part 2
I-2235-04	Schematic Diagram - RCIC Turbine Governor & Trip & Throttle Valve & Remote Trip Circuit
I-2235-05	Schematic Diagram - RCIC System Annunciator
I-2235-06	Schematic Diagram - RCIC System Instrument Loop
M-5709-01	Reactor Core Isolating Cooling System Functional Operating Sketch

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Maintain pump bearing temperatures between 40 and 180°F.

NOTE: Oil level in TRICO oiler glasses is expected to drop during first run following maintenance on pump bearing.

3.2 Maintain oil level in pump and turbine reservoirs as follows:

- Turbine: To mark on sightglass in coupling end bearing pedestal sump.
- Pump: To mark on TRICO oiler glasses

3.3 Limit extended RCIC Pump operation with indicated flow less than 130 gpm to minimize time RCIC System is on minimum flow, and to prevent draining CST to Suppression Pool.

3.4 When operating RCIC, rely primarily on RPV Wide Range indication.

CM

3.5 Limit extended RCIC Turbine operation at speeds less than 2100 rpm for the following considerations:

- Low oil pressure may result in bearing damage.
- Low oil pressure may result in control valve instability.
- Low speed or steam flow causes control valve to operate very close to its seat, which may cause water hammer to occur in exhaust line. Repeated occurrence can physically damage Turbine exhaust check valve.

3.6 Do not exceed RCIC Turbine speed of 4950 rpm to provide adequate margin to prevent RCIC Turbine damage due to overspeed.

3.7 E41-F011, HPCI/RCIC Test Iso/PCV (COP H11-P602), shall be closed and E4100-M001, E41-F011 HPCI/RCIC Test Iso/PCV, selector switch in ISOLATE except during testing or operating in the test mode for pressure control.

3.8 E5150-F012, RCIC Disch Otbd Iso Vlv, shall be open and de-energized because of an undersized motor operator that may not open (if closed) under some dynamic conditions.

3.9 RCIC System must be placed in Standby at greater than or equal to 75 psig in accordance with 22.000.02, Plant Startup to 25% Power, and flow tested at 150 psig (+50 / -0) in accordance with 24.206.04, RCIC System Automatic Actuation and Flow Test, to comply with Technical Specifications. In emergency conditions, RCIC will supply water to RPV down to the low reactor pressure Isolation setpoint of 62 psig.

3.10 Alarm 1D93, RCIC TURBINE OIL FILTER DIFF PRESS HIGH, is an expected alarm during RCIC Startup due to cold oil. Alarm should clear when oil reaches operating temperature.

3.11 When the RCIC System is not needed to control RPV water level following a LOCA, E5150-F001, RCIC Turb Exh Iso Vlv, and E5150-F002, RCIC Vacuum Pump Disch Iso Vlv, shall be closed. Closing the valves maintains primary containment isolation integrity.

CM

3.12 If RCIC must be operated for extended periods of time, Primary Containment Oxygen concentrations should be periodically monitored. RCIC Gland Seal Vacuum Pump Operation may draw air in through the Turbine Seals and exhaust it into the Suppression Chamber air space. Additionally, operation of RCIC system in conjunction with Hydrogen Water Chemistry system in service, will add hydrogen to the suppression chamber atmosphere.

3.13 Minimize operating E41-F011, HPCI/RCIC Test Iso/PCV, less than 9% open and between 29 and 47% open due to being in a high wear region for valve internals.

3.14 RCIC has the potential to trip on High Exhaust Pressure due to water intrusion if any of the following conditions exist:

- RCIC is in Standby.
- Annunciator 1D63, RCIC CNDR VAC TANK LEVEL HIGH, alarms.
- RCIC is automatically or manually initiated.

CM

3.15 Operation of the RCIC System will add heat to the Torus. Drywell Pressure may be less than Torus Pressure, and Torus to Drywell Vacuum Breakers may open. Comply with the following Technical Specifications during RCIC operation:

- Section 3.6.2.1, Suppression Pool Average Temperature.
- Section 3.6.1.8, Suppression Chamber - to -Drywell Vacuum Breakers.

3.16 Do not overfill the RCIC turbine oil system. Overfilling the oil system will result in the mechanical overspeed device aerating the oil, air bubbles blocking the governor end drain line, oil level decreasing in the sightglass, and oil leakage from the governor end bearing housing. Leakage may cause oil mist and/or smoke. If this occurs, the turbine shall be shutdown.

3.17 When RCIC is aligned to the Torus for greater than one hour:

- There is a potential for a void to form causing a pressure transient with RCIC startup.
- When RCIC Suction is realigned to CST, the discharge line high point vent should be vented.
- RCIC will not be considered inoperable in this condition. (CARD 01-20890)

3.18 Engineering recommends that RCIC be considered inoperable if aligned to the Torus (in standby) for more than twelve consecutive hours, due to potential drain down. Reference CARD 98-11671 and TMPE 97-0345. This clock can be reset by aligning back to the CST.

3.19 The throttle position of E5100-F508, RCIC Turb Pump End Shaft Seal Leakoff Drain Vlv, and E5100-F510, RCIC Turb Governor End Shaft Seal Leakoff Drain Vlv, may require periodic adjustment to maintain the desired turbine gland seal pressure of 5 to 9 inches Hg. Adjustments should only be made when the turbine is at operating temperature.

3.20 The throttle position of E5100-F056, RCIC Turb Exhaust Drain Pot Throttle Vlv, may require periodic adjustment to maintain the desired barometric condenser vacuum tank pressure of 9 to 12 inches Hg. Adjustments should only be made when the turbine is at operating temperature. Adjustments shall not result in E5101-C004, RCIC Barometric Condenser Vacuum Pump, operating with amperage outside the green band of E51-R610, RCIC Barometric Condenser Vacuum Pump Ammeter Current Indicator. Adjustment shall never result in E5100-F056 being fully closed.

CM

3.21 E5150-F022, RCIC Test Line Iso Valve, and E41-F011, HPCI/RCIC Test Iso/Press Control Valve, should not be opened at the same time unless RCIC is in operation. This condition depressurizes the discharge line to the CST, setting up the potential for a flow transient. If this condition occurs, a fill and vent of the RCIC system must be performed prior to further system operation.

CM

3.22 If the RCIC system is shutdown in a manner other than specified in the procedure, a fill and vent of the RCIC system must be performed prior to further system operation.

3.23 If the lower Alphanumeric display on E51-K615, RCIC Discharge Flow Controller, reads “AOUT1 OC” or “FLOW BAD”, a CARD should be initiated and RCIC declared inoperable.

3.24 The time required for oil to drain back to the bearing housings can vary considerably following a run. Large changes in turbine casing temperature can also affect oil level. If there is no evidence of oil leakage and oil level is above the lower operating band and below the standstill upper band oil should not be added to the turbine reservoir for approximately 24 hours following a turbine run to give time for level to stabilize. This precaution **DOES NOT** preclude replenishing after sampling.

3.25 Opening either the E5150-F095 or E5150-F045 under line pressure without running RCIC (i.e. valve PMT) may result in moisture contamination of the lube oil, even if the E515-F059 is closed. Operation in this alignment should be limited and compensatory moisture checks instituted following use of this alignment.

3.26 With RCIC running and vacuum breaker function unavailable, a subsequent trip / shutdown may result in a water slug from the suppression pool rapidly accelerating into the exhaust line. This condition would create large stresses on the exhaust line, valves, piping and supports. Therefore, RCIC should be removed from standby whenever the exhaust line vacuum breaker is not functional.

END OF SECTION

JOB PERFORMANCE MEASURE

Job Position SRO / RO	No. JP-OP-802-4101-435S	Revision 0
JPM Title Notify Hospital for Contaminated Injured Worker	Duration 21 minutes*	Page 1

*2 times Duration for ILO Exams

Examinee: _____ SRO

Evaluator: _____

Validating Representatives Name: A. Snowberger_____

JPM Type: **Normal** / Alternate Path **/** Time Critical — Start Time _____

Evaluation Method: **Perform** / Walkthrough / Discuss — Stop Time _____

Location: Plant / **Simulator** / **Classroom** — Total Time: _____

PERFORMANCE EVALUATION SUMMARY											
Element	S	U	Comment	Element	S	U	Comment	Element	S	U	Comment
*** 1.**											
2.											
*** 3.**											
*** 4.**											
5.											
*** 6.**											

OPERATOR FUNDAMENTALS OBSERVATION

Monitor operator fundamentals during the JPM set. Rate each area based on the criteria by placing a checkmark in the appropriate column. Indicate the comment number associated with the observation.

Operator Fundamental	Meets all Expectations	Opportunity for Improvement	Does not meet Expectations	Comment Number
Monitoring				
Control				
Conservatism				
Teamwork				
Knowledge				

OVERALL EVALUATOR COMMENTS: _____

_____

_____

REMEDIAL CONTENT: _____

_____ PASS _____ FAIL

Evaluator Signature / Date: _____ /

JPM Observation Criteria

Fundamental	Meets all Expectations	Opportunity for Improvement	Does not meet Expectations
Monitoring	Equipment status monitored at proper frequency, using multiple means if available. Understood which indications were critical.	Some monitoring was performed but undue focus on task or lack of system knowledge prevented ideal monitoring.	Did not recognize key equipment status indicators, too much focus on single indications and ignored total system status.
Control	Task preview used to prepare for job. Aware of control bands and maintained them. Configuration control maintained.	Adequate control of system maintained throughout task but some improvements could be made such as better manual control or greater depth of knowledge for anticipating system response.	No anticipation of results of actions. Unaware or control bands or not able to maintain them. Lack of knowledge of how to control system parameters.
Conservatism	Low threshold for identification of problems. Questioning attitude. Uses “stop when unsure” if needed. Sensitive to nuclear safety.	Some opportunities existed to question before proceeding, High focus on task completion without consideration for other system affects.	Proceeds even when unsure with unanswered questions. High threshold for problem conditions.
Teamwork	Routinely communicates system status changes to the team. Communicates actions before taking them.	Communicated most status and actions. Some improvement would be warranted.	Routinely takes action without informing the team.
Knowledge	Able to anticipate system response based on solid system knowledge. Good working knowledge of generic fundamentals to predict and monitor system response.	Plant, system, or generic fundamental knowledge has some gaps.	Unable to predict system response, unsure of generic fundamentals concepts related to plant operation. Only relied on procedure for operating knowledge.

JPM Information

System:

N/A

Task:

74001 - Request offsite ambulance/paramedic, fire, or hospital support

References: Required (R) / Available (A)

EP-225, Radiological Medical Emergencies (R)
Form EP-290005, Hospital Support Request Form (R)
Form EP-290004, Ambulance/Paramedic Support Request Form (R)
Form EP-290006, Secondary Alarm Station Report (R)
General Regulatory Reporting Requirements List (GRRR List) (A)
MLS05004, Fermi 2 Event Notification Worksheet (R)
MLS05007, Short Term Reportability Worksheet (R)

Tools and Equipment Required:

RERP Forms and Reportability Forms (above)

Initial Conditions:

- You are an extra SRO on shift.
- The plant is in a planned refueling outage.
- Radiation Protection, First Responder, and Site Nurse have responded to a medical emergency in the Reactor Water Cleanup (RWCU) Pump Room A.
- The first responder reports there is a contaminated injured man and is in urgent need of an ambulance and a paramedic.
- The man is approximately 40 years old.
- The injured man has a compound fracture of the right upper leg and has lost a large amount of blood.
- Radiation Protection has informed the Control Room that actions in Step 5.2.1 of EP-225, Radiological Medical Emergencies, are necessary for a contaminated injured man.
- Point Aux Peaux access is closed.

Initiating Cue(s):

The SM directs you to request offsite assistance in accordance with EP-225, Radiological Medical Emergencies, and EP-290, Emergency Notifications, using the forms provided.

Also, identify the appropriate reporting requirement, as applicable.

Terminating Cue(s):

Forms EP-290004, EP-290005, and EP-290006 complete and phone calls made, and a reporting requirement is determined.

Task Standard:

The task is satisfactorily met if the examinee requests ambulance and hospital support, in accordance with EP-225 Radiological Medical Emergencies, by filling out the following forms and making the required phone calls in accordance with the attached KEY for each form:

- Form EP-290005, Hospital Support Request Form (R)
- Form EP-290004, Ambulance/Paramedic Support Request Form (R)
- Form EP-290006, Secondary Alarm Station Report (R)

Additionally, the task is satisfactorily met if the SRO examinee identifies the 8-hour reporting requirement in accordance with 50.72(b)(3)(xii).

JPM Title Notify Hospital for Contaminated Injured Worker	No.: JP-OP-802-4101-435S Revision: 0 Page 4

Licensed Operator Exam Information (required for NRC exams)

Safety Function:

N/A

K/A Reference: (from NUREG 1123)

K/A SYSTEM: Generic

K/A STATEMENT:

2.3.12 Knowledge of radiological safety principles and procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, or alignment of filters……. .....3.2 / 3.7

Maintenance Rule Safety Classification:

N/A

Maintenance Rule Risk Significant? (Yes or No)

No

JPM Title Notify Hospital for Contaminated Injured Worker	No.: JP-OP-802-4101-435S Revision: 0 Page 5

PERFORMANCE EVALUATION Start Time _____

ELEMENT	STANDARD
CUE: Provide examinee with CUE Sheet, copy of EP-225 and the required forms. **For SRO examinee, also provide MLS05004 and MLS05007 forms for reportability.** **IF asked the details of injured individual's radiological status and the Body Map (Attachment 1 of EP-225) are with patient and will go with the patient during transport to the hospital**	
*** 1**. Complete Form EP-290004, Ambulance/Paramedic Support Request Form.	*** 1**. Form EP-290004 is completed IAW the attached key. Critical aspects of this step are marked ***CT** on the key.
CUE: Inform the examinee to simulate the phone call. **CUE: For Form EP-290004, inform the examinee that Nate Drew is the Dispatcher, response time will be 25 minutes, arriving from Promedica Monroe. The examinee's phone number is 734-586-4771.**	
2. Complete Phone call to Frenchtown Township Rescue Squad.	2. Phone call is complete.
NOTE: Completion of forms EP-290005 & EP-290006 may be performed in any order.	
*** 3**. Complete Form EP-290006, Secondary Alarm Station Report.	*** 3**. Form EP-290006 is completed IAW the attached key. Critical aspects of this step are marked ***CT** on the key.
CUE: Inform the examinee to simulate the phone call. **CUE: When phone call is made, state: "Secondary Alarm Station, this is Officer Jones."** **CUE: For Item 4 on Secondary Alarm Station Report, the location is Warehouse A loading dock ramp door.**	
*** 4**. Complete Form EP-290005, Hospital Support Request Form.	*** 4**. Form EP-290005 is completed IAW the attached key. Critical aspects of this step are marked ***CT** on the key.
5. Complete phone call to ProMedica Monroe Hospital.	5. Phone call is complete.
CUE: Inform the examinee to simulate the phone call to the primary hospital. **CUE: Transport the injured person to the primary hospital, charge nurse is <u>George Fayne</u>.**	
CUE: Provide examinee with copy of MLS05004, Event Notification Worksheet and MLS05007, Short Term Reportability Worksheet. **CUE: As CRS identify the appropriate reporting requirement.**	
*** 6**. Review GRRR List.	*** 6**. Identifies 8-hour reporting requirement in accordance with 50.72(b)(3)(xii).
CUE: Terminate JPM when forms have been filled out, phone calls have been made, and GRRR List reviewed.	

_____ SATISFACTORY _____ UNSATISFACTORY

Stop Time _____ *** Critical Step**

JPM Title Notify Hospital for Contaminated Injured Worker	No.: JP-OP-802-4101-435S Revision: 0 Page 6

Evaluator Notes:

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

Generic Notes and Cues:

None

System Specific Notes and Cues:

N/A

Task Performance and Cues:

The Elements of this JPM are step by step in accordance with the procedure. The Standard is that the procedure is performed as written. The Cues are as listed above for indication or as each step is completed the appropriate information is reported to the examinee.

Critical Steps:

Critical Tasks are identified by asterisk (*) and **bolded** steps on the cover sheet. Verify that the latest revision of the procedure is used and critical tasks are correctly identified.

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for follow-up question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

Simulator Setup

IC#:

N/A

Malfunctions:

Number	Title	Value	Delay	Ramp
N/A				

Remote Functions:

Number	Title	Value	Delay	Ramp
N/A				

Override Functions:

Number	Title	Value	Delay	Ramp
N/A				

Special Instructions:

N/A

KEY (EP-290004)

AMBULANCE/PARAMEDIC SUPPORT REQUEST FORM

For any medical emergency requiring ambulance support:

- Dial 734-243-7070

Date: Today Time: Now

SCRIPT:

- This is Examinee's Name (name) calling from Fermi 2.
- There are injured personnel onsite and your assistance is required immediately.
- There are **1** (number) personnel injured. ***CT**
- They are / are not (circle one) contaminated. ***CT**

NOTE: Dispatch must be informed if injured person has been assessed by onsite medical professional.

- The description of the injury is as follows:
  The injured man has a compound fracture of the right upper leg and has lost a large amount of blood ***CT**
- The injured person (if known) is:
  - ☒ Male ☐ Female
  - Approximately/actually 40 years old.
  - This ☐ IS ☒ IS NOT a cardiac emergency.
- Use the Fermi Drive access gate.
- Transport the victim(s) to: ☒ ProMedica Monroe Regional Hospital (PRIMARY)***CT**
  ☐ Beaumont Hospital – Trenton (BACK-UP)
- Take the following precautions:
  Measures for treatment of potentially contaminated person.
- My call back phone number is (734) 586-4771 (Or number at desk where call is placed) ***CT**

END AMBULANCE/PARAMEDIC CALL

CALL SECONDARY ALARM STATION

☐ COMPLETE EP-290006 to facilitate the call to SAS.

OTHER ACTIONS

☐ COMPLETE EP-290005 for Hospital Support Request.

☐ REFER to EP-225, "Radiological Medical Emergencies," for completing applicable immediate and follow-up actions.

☐ FORWARD completed form to Manager, RERP.

FOR TRAINING USE ONLY

KEY (EP-290006)

SECONDARY ALARM STATION REPORT

Secondary Alarm Station: Control Room – Security Direct Line or 6-5215

1. Support organization contacted / Status of personnel and vehicles arriving:

   ☐ Fire Dept.
   - Vehicles expected: 1 (one) Engine, 1 (one) Tower Truck, 1 (one) Rescue
   - Personnel expected: 6 (six)

   ☒ Ambulance/Paramedics

   ☒ Life Threatening Medical Emergency: ***CT (The critical component is communication of the expected number of vehicles/personnel that will arrive onsite, NOT the determination of the type of emergency).**
   - Vehicles expected: 1 (one) Frenchtown Rescue, 1 (one) Ambulance
   - Personnel expected: 2 (two) Frenchtown, 2 (two) Ambulance

   ☐ Non-Life Threatening Medical (Ambulance Transport ONLY):
   - Vehicles expected: 1 (one) Ambulance
   - Personnel expected: 2 (two)

   ☐ Other: _____

2. Owner-controlled area access gate to be used:

   ☒ Fermi Drive (Primary) ***CT**

   ☐ Point Aux Peaux (only use if Fermi Drive Gate is not accessible)

3. Expected Time of Arrival: +25 minutes from now

4. Location of emergency / Location for staging responders: Warehouse A Loading Dock

5. Contact Name: Officer Jones Date: Today Time: Now

6. IF transport to hospital is required, THEN complete the Hospital Support Request Form (EP-290005).

7. FORWARD completed form to Manager, RERP.

KEY (EP-290005)

HOSPITAL SUPPORT REQUEST FORM

NOTE: ProMedica Monroe Regional Hospital is the primary hospital. Beaumont Hospital – Trenton should only be used if conditions prevent the use of ProMedica Monroe Regional Hospital.

ProMedica Monroe Regional Hospital: **734-240-8404 (ask for Charge Nurse)**

Beaumont Hospital – Trenton: **734-671-3134, 734-671-3881, or 734-362-6764**

Date: Today Time: Now

SCRIPT

- This is Examinee's Name (name) calling from Fermi 2.
- What is your name please? (name) George Fayne
- There are injured personnel onsite and an ambulance service has been requested for transport.
- There are 1 (number) personnel injured.***CT**
- They (are) / are not (circle one) contaminated. ***CT**
- **NOTE: IF** there are contaminated personnel, **THEN** state: ***CT**

"You are requested to implement your Radiological Emergency Response Plan."

- Their injuries include: ***CT**

Compound fracture of upper right leg.
Significant blood loss.

- There are 0 (number) personnel suffering from excessive radiation exposure.
- My call back phone number is 734-586-4711 (or number at desk where call is made) ***CT**

END HOSPITAL CALL

OTHER ACTIONS

☐ FORWARD completed form to Manager, RERP.

Cue: (JP-OP-802-4101-435S)

Initial Conditions:

- You are an extra SRO on shift.
- The plant is in a planned refueling outage.
- Radiation Protection, First Responder, and Site Nurse have responded to a medical emergency in the Reactor Water Cleanup (RWCU) Pump Room A.
- The first responder reports there is a contaminated injured man who is in urgent need of an ambulance and a paramedic.
- The man is approximately 40 years old.
- The injured man has a compound fracture of the right upper leg and has lost a large amount of blood.
- Radiation Protection has informed the Control Room that actions in Step 5.2.1 of EP-225, Radiological Medical Emergencies, are necessary for a contaminated injured man.
- Point Aux Peaux access is closed.

Initiating Cue(s):

The SM directs you to request offsite assistance in accordance with EP-225, Radiological Medical Emergencies, and EP-290, Emergency Notifications, using the forms provided.

Also, identify the appropriate reporting requirement, as applicable.

Cue Sheet: (JP-OP-802-4101-435)

Initial Conditions:

- You are an extra SRO on shift.
- The plant is in a planned refueling outage.
- Radiation Protection, First Responder, and Site Nurse have responded to a medical emergency in the Reactor Water Cleanup (RWCU) Pump Room A.
- The first responder reports there is a contaminated injured man who is in urgent need of an ambulance and a paramedic.
- The man is approximately 40 years old.
- The injured man has a compound fracture of the right upper leg and has lost a large amount of blood.
- Radiation Protection has informed the Control Room that actions in Step 5.2.1 of EP-225, Radiological Medical Emergencies, are necessary for a contaminated injured man.
- Point Aux Peaux access is closed.

Initiating Cue(s):

The SM directs you to request offsite assistance in accordance with EP-225, Radiological Medical Emergencies, and EP-290, Emergency Notifications, using the forms provided.

Also, identify the appropriate reporting requirement.

RADIOLOGICAL MEDICAL EMERGENCIES

Revision Summary

1) Re-wrote Entry Condition Step 3.1.
2) Added new General Information Step 4.2 to explain that medical treatment takes priority over decontamination efforts. This was originally stated in a CAUTION before Step 5.1.
3) Added Note before Step 5.1.3 to have Control Room personnel use pager utility for notifying First Responders.
4) Reworded Step 5.1.3.1 relating to Control Room personnel contacting Radiation Protection.
5) Reworded Step 5.1.7.5 to provide instruction on which step to go to whenever hospital treatment is necessary.
6) Re-worded Caution statement before Step 5.1.8 relating to medical staff decon involvement.
7) Added Note before Step 5.1.8 to reference 67.000.400 for decon methods.
8) Added new Steps to 5.1.9 and 5.2.2 regarding free releasing individuals from the RRA.
9) Updated titles of support hospitals in Step 5.2.1.
10) Added new Steps to 5.2.4 regarding processing secondary dosimeters.
11) Reworded Note before Step 5.2.5 to clarify location of normal ambulance pick-up location.
12) Reworded Step 5.2.7 to ensure Body Maps (Attachment 1) stay with the patient during transport to the hospital.
13) Clarified wording for contamination release levels in Steps 6.1.1.4 and 7.1.1.4.
14) Re-worded Step 7.1.1.6 regarding the collection of radioactive material.
15) Added new Step 7.1.1.7 regarding the transport of radioactive material back to Fermi.
16) Made minor editorial changes throughout procedure. No revision bars used for editorial changes.
17) Revised step 3.1, 4.3, 5.1.3, 5.1.9, 5.2.2, 5.2.4 and the Note preceding step 5.2.5 to change instances of Radiologically Restricted Area (RRA) to Radiologically Controlled Area (RCA) in accordance with NEI Efficiency Bulletin 16-26c. (ACR #16-1534)

Attachments

1 083105 Body Map

Enclosures - None

1.0 PURPOSE

To prescribe the required actions and special considerations when handling and transporting injured and radiologically contaminated or potentially contaminated personnel.

2.0 USE REFERENCES

2.1 EP-290, Emergency Notifications

2.2 67.000.400, Personnel Decontamination and Assessment

2.3 General Regulatory Reporting Requirements List (GRRR List)

3.0 ENTRY CONDITIONS

3.1 Report of injured or significantly ill personnel inside the Radiologically Controlled Area (RCA) or involving radioactive material.

4.0 GENERAL INFORMATION

4.1 Radioactive contamination is of special concern because of the potential internal dose caused by radioactive material absorbed into the bloodstream through an open wound. Specific guidelines for rendering medical care and first aid to contaminated personnel may limit or even eliminate the absorption of radionuclides.

4.2 Prompt treatment of serious or potentially serious injuries or illnesses (e.g., life-threatening conditions) takes priority over decontamination efforts, treatment of radiation exposure, or movement of the victim.

4.3 Individuals injured inside a RCA must be surveyed by Radiation Protection personnel prior to determining the individual is not contaminated.

4.4 All occupational injuries and non-occupational injuries and illnesses must be reported to the employee’s supervisor.

4.5 A Plant First Responder is a qualified first aid provider dedicated to responding to medical emergencies onsite. Plant First Responders are qualified in basic first aid and CPR as part of their training in Responding to Emergencies. However, Plant First Responders are not required to be certified through the State First Responder Program.

4.5.1 During normal working hours, the Onsite Nurse is responsible for first aid treatment and the decision for offsite medical assistance. During off hours, or when the Onsite Nurse is not present, the Plant First Responder is responsible for first aid treatment and the decision for offsite medical assistance. If neither the nurse nor Plant First Responder is available, Operations personnel qualified in first aid are responsible for the previously stated responsibilities.

4.5.2 First aid providers should ensure adequate protective clothing is worn to protect themselves from blood and other potentially infectious materials that may be present during response to a medical emergency.

4.6 In the event of mass casualties involving contaminated or potentially contaminated personnel. Monroe County Emergency Management Plan, Annex K. Appendix 1, Nuclear Accident Procedures Emergency Medical Services, states that Monroe County Emergency Medical Services Official will be responsible for mobilizing and coordinating all emergency medical services (EMS) resources to respond promptly to a nuclear facility accident including communication, transport and treatment.

Triage areas would be established by the Incident Commander in accordance with local response protocols. The Nuclear Training Center or any other suitable onsite location would be made available to the Incident Commander.

In the event of a casualty that prevents immediate removal of injured personnel from site, the Nuclear Training Center (NTC) can be used as a triage staging area, as designated by the Shift Manager. The NTC provides an area accessible to offsite medical responders without approaching the protected area of the plant. Transport of more seriously injured personnel could then occur while less seriously injured continue to receive treatment from onsite and offsite medical responders.

5.0 IMMEDIATE ACTIONS

CAUTION

**Unless there is an immediate danger to life or limb,
a person with a serious illness or injury should not be moved until medically evaluated.**

5.1 Initial Response

Who	*Step*	*Action*
Employee	5.1.1	Upon discovering an injured **and** contaminated or potentially contaminated individual:
		1. Contact the Main Control Room and report the nature of the injury, condition of the individual, and any other relevant information.
		NOTE: Personnel qualified in first aid, but not designated as medical response personnel, are not required to perform first aid, but may do so at their option.
		2. If qualified, administer first aid.
		3. Remain with the injured individual until designated medical assistance arrives.
Control Room	5.1.2	During a non-emergency situation when the Operational Support Center (OSC) is **not** functional, direct available on-shift Operations personnel to respond to the accident.
		or
OSC		When the OSC is functional, dispatch a Damage Control and Rescue Team (DCRT) to respond to the accident. This team shall include an Operator.
On-Shift Operations Personnel/Damage Control Rescue Team/Qualified First Aid Personnel		1. Gather first aid equipment, proceed to accident scene, and administer first aid to the injured individual.

NOTE: Control Room personnel should use the paging system (i.e., Pager Utility) and alpha page First Responders to direct them to the scene.

Control Room

5.1.3 Notify the following of all relevant information concerning the reported injury including expected hazards in the area:

1. **IF** the illness or injury has occurred inside the RCA or if radioactive material is involved outside the RCA, **THEN** contact Radiation Protection (typically the RP Main Control Point).

2. Secondary Alarm Station (Security)

3. Onsite Medical Facility (day shift)

4. Supervisor of the injured individual

NOTE: Radiological surveys must be performed to the extent possible. These surveys shall not aggravate the injuries or interfere with the individual's treatment.

Radiation Protection

5.1.4 Obtain radiological survey equipment, report to the accident scene, and assess the radiological conditions of the injured individual and the area.

1. Notify the Shift Manager/Emergency Director if the injured individual's dose exceeds administrative guidelines established in MRP03, “Personnel Radiation Monitoring.”

2. Be prepared to instruct on-shift Operations personnel and the first aid provider on radiological control techniques when treating and transporting the injured individual.

Shift Manager/ Emergency Director

5.1.5 Make an **Immediate Notification** if dose falls within the reportability requirements of 10CFR20.2202(a).

NOTE: Escorting an Onsite Nurse to the scene by Security is only carried out on Monday through Friday dayshift when a nurse is on site.

Nuclear Security Personnel

5.1.6 Report to the OSB Main Entrance to escort the Onsite Nurse with medical supply cart to the accident location.

On-Shift Operations Personnel/Damage Control Rescue Team/Qualified First Aid Personnel

5.1.7 Upon arriving at the accident location:

1. Follow Radiation Protection instructions concerning exposure and contamination controls.

2. Administer required first aid.

3. Prepare to transport the injured person(s) out of the radiological controlled area.

4. **IF** the injured individual is being removed from a contaminated area, **THEN** remove the injured individual's contaminated clothing, if possible.

5. Determine if hospital treatment is necessary (for example, the individual has a fracture, burn, or head injury, in shock, etc.).

   a. **IF** hospital treatment **IS** needed, **THEN** contact the Main Control Room and request offsite assistance (e.g., Frenchtown Rescue/Paramedics).

      1) GO TO Step 5.2.

   b. **IF** off-site assistance **IS NOT** needed, **THEN** Go to next Step 5.1.8.

CAUTION

If decontamination efforts involve significant injuries such as lacerations, wounds, open fractures, or body orifices, the Onsite Nurse/Medical Professional will oversee and/or perform this effort to prevent further injury.

NOTE: Personnel decontamination methods are performed in accordance with 67.000.400.

Radiation Protection/ Qualified First Aid Personnel

5.1.8 For individuals with minor injuries that are contaminated or potentially contaminated, perform decontamination methods in the Personnel Decontamination Room before treatment at the Onsite Medical Facility

Radiation Protection

5.1.9 When **time and injuries** permit, remove any remaining contaminated or potentially contaminated clothing or personal items and survey the individual for free release before removal from the RCA.

1. **IF** the individual was free released from the RCA, **THEN** turn the individual over to medical personnel and/or their supervisor.

   a. Ensure individual is logged out of the RCA, as needed.

Anyone having contact with the injured individual

b. Clean hands with soap and water. Report any contact with the injured individual's body fluids to your supervisor and onsite medical.

c. Exit this procedure.

5.2 Request for Offsite Medical Assistance

Who	*Step*	*Action*
Control Room	5.2.1	Upon request from Operations personnel (at the scene) or a qualified first aid provider for offsite medical support, contact the following in accordance with Offsite Emergency Support Required of EP-290:

1. Contracted Ambulance Service – Ambulance/Paramedic Support Request Form (EP-290004)

2. ProMedica Monroe Hospital – Hospital Support Request Form (EP-290005)

or

Beaumont Hospital - Trenton (if ProMedica Monroe cannot be used due to events occurring at Fermi 2 or ProMedica Monroe) (EP-290005)

3. Secondary Alarm Station (SAS) – Secondary Alarm Station Report (EP-290006)

Radiation Protection 5.2.2 **IF** the injured/ill individual was surveyed (whole body) and no contamination was detected (i.e. individual can be free released from the RCA), **THEN** collect individual's secondary dosimeter while patient is being handed over to ambulance/medical personnel.

1. Contact the Main Control Room and inform them the individual(s) being transported to the hospital **IS (ARE) NOT** contaminated.

Anyone having contact with the injured individual

2. Clean hands with soap and water. Report any contact with the injured individual's body fluids to your supervisor and onsite medical.

3. Exit this procedure.

5.2.3 **IF** the injured individual is contaminated, **THEN** designate the location, degree of contamination, and pertinent injury information on a Body Map (Attachment 1) when time and injuries permit.

NOTE: The Radiation Protection technician who accompanies the individual in the ambulance shall keep his/her assigned dosimetry on his/her body.

5.2.4 Upon exiting the RCA, remove the injured individual's DLR and secondary dosimetry, and replace with dosimetry from the Radiation Protection Emergency Equipment - Onsite Ambulance Kit prior to transfer offsite.

1. Process secondary dosimeter to log individual(s) out of the RCA.

2. Send DLR to Rad Health for analysis as appropriate.

NOTE: The normal ambulance pick-up location for injuries inside the RCA is the RCA boundary gate adjacent to Warehouse A loading dock area unless designated otherwise by the Shift Manager.

Nuclear Security Personnel

5.2.5 When the ambulance arrives onsite, provide an escort to the designated pick-up location.

On-Shift Operations Personnel/ Damage Control Rescue Team/ Qualified First Aid Personnel

5.2.6 Provide ambulance crew with details of injured individual's medical status.

Radiation Protection

5.2.7 Provide ambulance crew with details of injured individual's radiological status and ensure the Body Map (Attachment 1) stays with the patient during transport to the hospital.

5.2.8 During transfer of individual into ambulance, use material/equipment from the Radiation Protection Emergency Equipment - Onsite Ambulance Kit to minimize radiological hazards to offsite support agencies. The kit is located in the Alternate Fire Brigade dressout area, north end of Machine Shop, 1st Floor OSB.

1. Issue DLRs and DRDs to ambulance crew.

2. Provide ambulance crew with protective clothing, as necessary.

3. Line the ambulance interior with plastic sheeting (such as herculite), as necessary.

5.2.9 Accompany injured individual to hospital. Arrange to have another Radiation Protection technician meet the ambulance at the hospital to provide further radiological support.

5.2.10 Advise the ambulance personnel on proper radiological controls during handling and transport of injured individual.

Anyone having contact with the injured individual

5.2.11 Clean hands with soap and water. Report any contact with the injured individual's bodily fluids to your supervisor and onsite medical.

6.0 PROCEDURE

6.1 Radiation Controls at the Hospital

Who	*Step*	*Action*

NOTE: The hospital staff is responsible for setting up the Radiation Emergency Area (REA) of the hospital using the materials stored in the RP Emergency Equipment - Hospital Cabinets. Radiological postings and ropes are used to control access to the REA.

Radiation Protection

6.1.1 If staged **outside** the hospital treatment room:

1. After patient is delivered to the hospital, ensure access into the ambulance is controlled until it is surveyed and released as not contaminated.

2. Verify postings/barriers are adequate and make changes, if necessary.

3. Ensure ambulance attendants remain inside the ambulance or inside hospital REA until monitored for contamination.

4. Survey ambulance attendants and all potentially contaminated equipment/surfaces of the ambulance and decontaminate as necessary to no detectable activity above background prior to release.

5. Collect dosimetry and any protective clothing or contaminated waste from ambulance personnel prior to release.

6. Ensure buffer zone is kept free of contamination.

7. Control entrance and exit of hospital personnel and equipment into and out of the treatment room.

6.1.2 If staged i**nside** the hospital treatment room:

1. Don protective clothing and dosimetry stored in the RP Emergency Equipment - Hospital Kit.

2. Assist hospital staff in donning protective clothing and dosimetry.

3. Perform frequent surveys of hospital staff, equipment, and patient.

4. Provide guidance in contamination control practices during handling and treatment of patient.

5. If necessary, use the services of the U.S. Department of Energy's Radiation Emergency Assistance Center/Training Site (REAC/TS) to determine the magnitude of excessive exposures or provide consultation on medical response. Emergency telephone numbers for REAC/TS are listed in the RERP Emergency Telephone Directory and offsite hospital plans.

7.0 FOLLOW-UP ACTIONS

7.1 Final Radiation Protection Actions and Reportability Requirements

Who	*Step*	*Action*
Radiation Protection	7.1.1	Upon termination of the emergency:

1. Assist hospital staff in removing protective clothing and exiting the treatment room.

2. Collect dosimetry from personnel exiting REA and verify complete dose information.

3. Perform contamination surveys of all personnel, equipment, and any other surfaces potentially contaminated in the REA.

4. Decontaminate contaminated personnel, equipment, and other surfaces to no detectable activity above background before release.

5. Ensure all results of ambulance and hospital surveys and decontamination are documented.

6. Collect all protective clothing, contaminated or potentially contaminated waste, and any radioactive material that originated from Fermi from both hospital and ambulance personnel, and prepare to return to Fermi 2.

7. Before transporting any radioactive material back to Fermi 2, this material must be surveyed (characterized) to determine if radioactive shipment regulations apply. Contact the RP Shipping Supervisor/Specialist for this information.

8. Collect all Fermi equipment used during transportation and return to First Aid facility. This may include:

   a. Miller full body splint

   b. Yellow litter

   c. Orange basket stretcher

   d. Splints

   e. Any head or body restraints or straps

9. Perform inventories, as required, of Radiation Protection Emergency Equipment - Hospital Kit and Onsite Ambulance Kit in accordance with 67.000.405, "Maintenance and Inventory of Radiation Protection Emergency Kits."

10. Send copies of completed documents generated from performance of this procedure to Manager, RERP for retention.

Shift Manager/ Emergency Director

7.1.2 Ensure all reportability requirements from the General Regulatory Reporting Requirements List (GRRR List) are met.

1. Reference GRRR List Report No. I-1 for transporting contaminated individuals offsite.

2. Reference GRRR List Report No. I-6 for incidents involving radiation exposures.

8.0 RECORDS

8.1 Radiation Protection Documentation

8.1.1 All documentation related to ambulance and hospital surveys, and decontamination are required records and shall be sent to the Supervisor, Radiation Protection for retention.

8.1.2 All completed inventory forms shall be sent to the Radiation Protection Emergency Kit Coordinator for review and retention.

8.1.3 All completed Body Maps (Attachment 1) shall be sent to the Manager, RERP for retention.

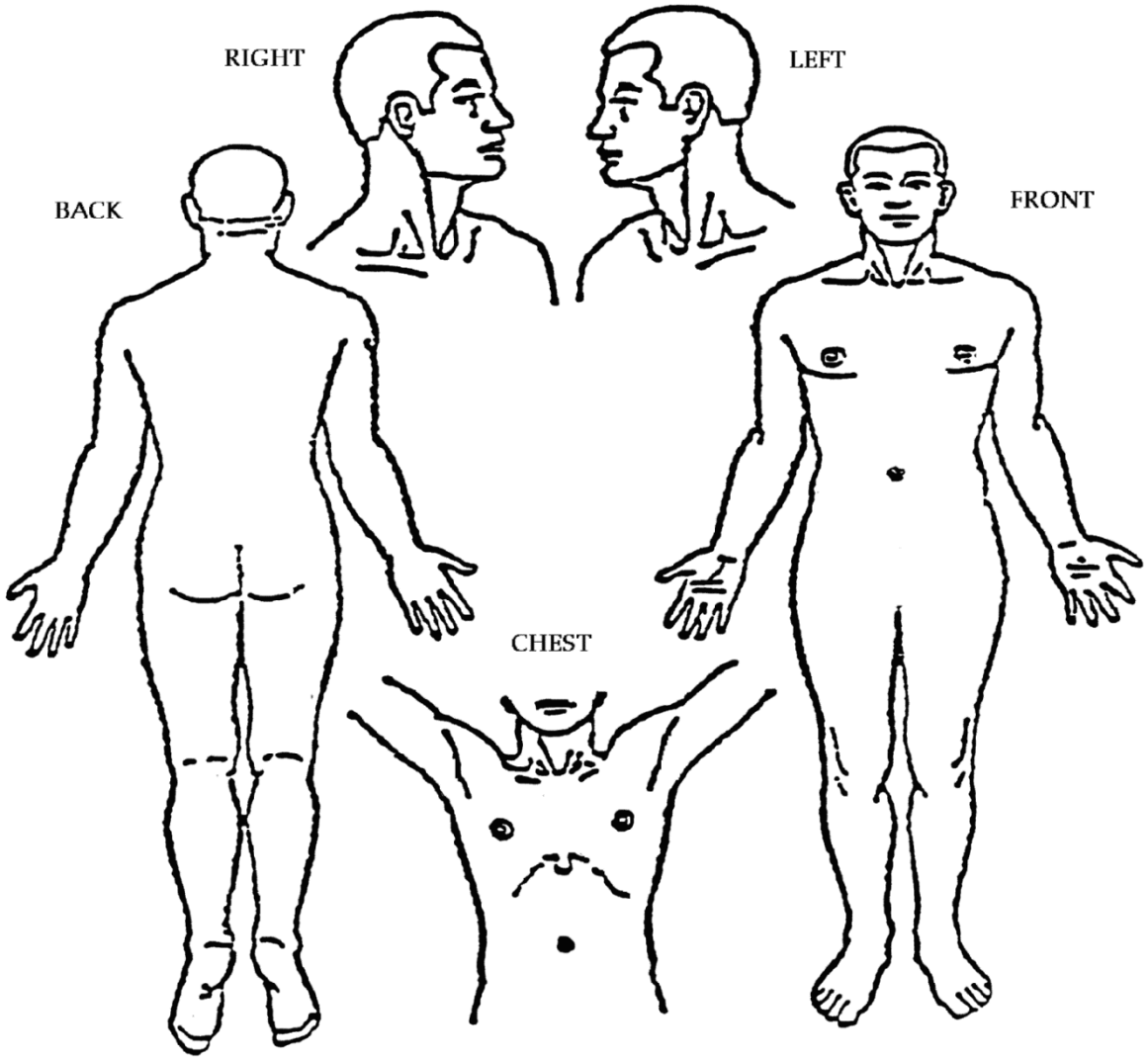
END OF TEXT

BODY MAP

CONTAMINATED AREA LOCATIONS
DEGREE OF CONTAMINATION
LOCATION OF WOUNDS

Individual's Name:_____ **Date:**_____

Dept./Organization:_____ **Survey Time:**_____



Type of Meter Used:_____ **Distance Skin-to-Probe:**_____ inches
(Indicate Model and Number)

Body Map Completed by:_____ _____ _____
Print Name Signature Date

Send completed form to Manager, RERP.

END

AMBULANCE/PARAMEDIC SUPPORT REQUEST FORM

For any medical emergency requiring ambulance support:

- Dial 734-243-7070

Date:_____ Time:_____

SCRIPT:

- This is _____ (name) calling from Fermi 2.
- There are injured personnel onsite and your assistance is required immediately.
- There are ____ (number) personnel injured.
- They are / are not (circle one) contaminated.

NOTE: Dispatch must be informed if injured person has been assessed by onsite medical professional.

- The description of the injury is as follows:

- The injured person (if known) is:
  - ☐ Male ☐ Female
  - Approximately/actually _____ years old.
  - This ☐ IS ☐ IS NOT a cardiac emergency.
- Use the Fermi Drive access gate.
- Transport the victim(s) to: ☐ ProMedica Monroe Regional Hospital (PRIMARY)
  ☐ Beaumont Hospital – Trenton (BACK-UP)
- Take the following precautions:

- My call back phone number is _____

END AMBULANCE/PARAMEDIC CALL

CALL SECONDARY ALARM STATION

☐ COMPLETE EP-290006 to facilitate the call to SAS.

OTHER ACTIONS

☐ COMPLETE EP-290005 for Hospital Support Request.

☐ REFER to EP-225, "Radiological Medical Emergencies," for completing applicable immediate and follow-up actions.

☐ FORWARD completed form to Manager, RERP.

HOSPITAL SUPPORT REQUEST FORM

NOTE: ProMedica Monroe Regional Hospital is the primary hospital. Beaumont Hospital – Trenton should only be used if conditions prevent the use of ProMedica Monroe Regional Hospital.

ProMedica Monroe Regional Hospital: **734-240-8404 (ask for Charge Nurse)**

Beaumont Hospital – Trenton: **734-671-3134, 734-671-3881, or 734-362-6764**

Date:_____ Time: _____

SCRIPT

- This is _____ (name) calling from Fermi 2.
- What is your name please? (name) _____
- There are injured personnel onsite and an ambulance service has been requested for transport.
- There are ____ (number) personnel injured.
- They are / are not (circle one) contaminated.
- **NOTE: IF** there are contaminated personnel, **THEN** state:

> **"You are requested to implement your Radiological Emergency Response Plan."**

- Their injuries include:

- There are _____(number) personnel suffering from excessive radiation exposure.
- My call back phone number is_____

END HOSPITAL CALL

OTHER ACTIONS

☐ FORWARD completed form to Manager, RERP.

SECONDARY ALARM STATION REPORT

Secondary Alarm Station: Control Room – Security Direct Line or 6-5215

1. Support organization contacted / Status of personnel and vehicles arriving:

   ☐ Fire Dept.
   - Vehicles expected: 1 (one) Engine, 1 (one) Tower Truck, 1 (one) Rescue
   - Personnel expected: 6 (six)

   ☐ Ambulance/Paramedics

   ☐ Life Threatening Medical Emergency:
   - Vehicles expected: 1 (one) Frenchtown Rescue, 1 (one) Ambulance
   - Personnel expected: 2 (two) Frenchtown, 2 (two) Ambulance

   ☐ Non-Life Threatening Medical (Ambulance Transport ONLY):
   - Vehicles expected: 1 (one) Ambulance
   - Personnel expected: 2 (two)

   ☐ Other: _____

2. Owner-controlled area access gate to be used:

   ☐ Fermi Drive (Primary)

   ☐ Point Aux Peaux (only use if Fermi Drive Gate is not accessible)

3. Expected Time of Arrival: _____

4. Location of emergency / Location for staging responders: _____

5. Contact Name: _____ Date: _____ Time: _____

6. IF transport to hospital is required, THEN complete the Hospital Support Request Form (EP-290005).

7. FORWARD completed form to Manager, RERP.

FERMI 2 EVENT NOTIFICATION WORKSHEET

Message No.: _____

Notification Time: _____ Facility: FERMI 2 Name of Caller: _____ Call Back No.: _____

Event Time & Zone: _____ Event Date: _____ Power/Mode Before: _____ Power/Mode After: _____

Event Classifications		1-Hr. Non-Emergency 10CFR50.72(b)(1)		(v)(A) Safe S/D Capability	AINA
☐ General Emergency	GEN/AAEC	☐ TS Deviation	ADEV	☐ (v)(B) RHR Capability	AINB
☐ Site Area Emergency	SIT/AAEC	**4 Hr. Non-Emergency 10CFR50.72(b)(2)**		☐ (v)(C) Control of Rad Release	AINC
☐ Alert	ALE/AAEC	☐ (i) TS Required S/D	ASHU	☐ (v)(D) Accident Mitigation	AIND
☐ Unusual Event	UNU/AAEC	☐ (iv)(A) EECS Discharge to RCS	ACCS	☐ (xii) Offsite Medical	AMED
☐ 50.72 Non-Emergency	(see next columns)	☐ (iv)(B) RPS Actuation (scram)	ARPS	☐ (xiii) Loss Comm/Asmt/Resp	ACOM
☐ Physical Security (73.71)	DDDD	☐ (xi) Offsite Notification	APRE	**60-Day Optional 10CFR50.73(a)(1)**	
☐ Material/Exposure	B????	**8 Hr. Non-Emergency 10CFR50.72(b)(3)**		☐ Invalid Specified Sys Actuation	AINV
☐ Fitness for Duty	HFIT	☐ (ii)(A) Degraded Condition	ADEG	**Other Unspecified Req. (Identify)**	
☐ Other Unspecified Req.	(see last column)	☐ (ii)(B) Unanalyzed Condition	AUNA	☐	NONR
☐ Information Only	NNF	☐ (iv)(A) Specified System Actuation	AESF	☐	NONR

Event Description

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

Anything Unusual or Not Understood? ☐ Yes (Explain above) ☐ No **Did all Systems Function as Required?** ☐ Yes ☐ No (Explain above)

Mode of Operation Until Corrected: _____ Estimated Restart Date: _____ Additional Information on Back? ☐ Yes ☐ No

Approved: (Shift Manager Initials/Director – Operations Signature) _____

Notifications

NRC Resident	☐ Yes	☐ No	☐ Will Be	Nuclear Information	☐ Yes	☐ No	☐ Will Be
State(s)	☐ Yes	☐ No	☐ Will Be	Licensing	☐ Yes	☐ No	☐ Will Be
Local	☐ Yes	☐ No	☐ Will Be	Director - Operations	☐ Yes	☐ No	☐ Will Be
Other Gov Agencies	☐ Yes	☐ No	☐ Will Be	Plant Manager	☐ Yes	☐ No	☐ Will Be
Media/Press Release	☐ Yes	☐ No	☐ Will Be	Other _____	☐ Yes	☐ No	☐ Will Be

FERMI 2 EVENT NOTIFICATION WORKSHEET

Additional Information

Radiological Releases: Check or Fill in Applicable Items (specific details/explanations should be covered in event description)

☐ Liquid Release ☐ Gaseous Release ☐ Unplanned Release ☐ Planned Release ☐ Ongoing ☐ Terminated

☐ Monitored ☐ Unmonitored ☐ Offsite Release ☐ ODCM Exceeded ☐ RM Alarms ☐ Areas Evacuated

☐ Personnel Exposed or Contaminated ☐ Offsite Protective Actions Recommended *State release path in description

	Release Rate (Ci/sec)	% ODCM Limit	HOO Guide	Total Activity (Ci)	% T.S. Limit	HOO Guide
Noble Gas						
Iodine						
Particulate						
Liquid (excluding tritium and dissolved noble gases)						
Liquid (tritium)						
Total Activity						

	Plant Stack	Condenser/ Air Ejector	Main Steam Line	Other
Rad Monitor Readings				
Alarm Setpoints				
%ODCM Limit (if applicable)				

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

Location of the Leak (e.g. valve, pipe, etc.): _____

Leak Rate: _____ Units (gpm/gpd): _____ T.S. Limits: _____ Sudden or Long-Term Development: _____

Leak Start Date: _____ Leak Start Time: _____

Coolant Activity and Units: Primary: _____ Secondary: _____

List of Safety Related Equipment not Operational: _____

Event Description (Continued from Page 1)

SHORT TERM REPORTABILITY WORKSHEET – FOR 10CFR 50.72
REPORTABILITY EVALUATIONS

1 HOUR REPORTS		
Y	N	50.72(a)(1)(i) – Declaration of Emergency Action Level (1022 - 3.1.1) or Deviation from TS (50.54(x)) (1022 - 3.2.3)
		Was an EAL declared?
		Was it discovered that an EAL should have been declared in the past (condition no longer exists)?
		Was a deviation from the Plant TS authorized in an emergency per 50.54(x)?
4 HOUR REPORTS		
Y	N	50.72(b)(2)(i) – The initiation of any nuclear plant shutdown required by the plant's technical specifications (1022 - 3.2.1)
		Was plant power reduced because of required actions in accordance with technical specifications? Report even if performed in anticipation of exceeding time limits for restoring required equipment?
Y	N	50.72(b)(2)(iv)(A) - Any event that results or should have resulted in emergency core cooling system **(ECCS) discharge into the reactor coolant system as a result of a valid signal** except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation. (1022 - 3.2.6)
		Did Drywell Pressure rise to ≥ 1.68 psig? (HPCI, LPCI, CS)
		Did RPV Level lower to ≤ 31.8"? (Level 1) (LPCI, CS)
		Did RPV Level lower to ≤ 110.8"? (Level 2) (HPCI)
		Was an ECCS pump (HPCI, LPCI, CS) started and used to inject water into the RPV manually?
		Was the signal that caused the start/injection due to an HU error but still was a valid signal based on parameters exceeding setpoints?
Y	N	50.72(b)(2)(iv)(B) - Any event or condition that results in actuation of the reactor protection system (RPS**) when the reactor is critical** except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation. (1022 - 3.2.6)
		Was any RPS setpoint exceeded that should have caused an automatic scram?
		Was the reactor manually scrammed but would have exceeded an RPS setpoint if manual actions were not taken?
		Was the reactor manually scrammed for reasons other than a normal GOP shutdown?
		Did the reactor automatically scram during a GOP shutdown?
		Did the reactor automatically scram during a testing or other invalid signal that caused RPS to actuate?
Y	N	50.72(b)(2)(xi) - Any event or situation related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made. Such an event may include an onsite fatality or inadvertent release of radioactivity contaminated materials (1022 - 3.2.12).
		Is a report being planned to any outside agency (State or local government, environmental agency, local law enforcement, fire department) that includes information about: ☐ A release of radioactively contaminated tools or equipment to public areas ☐ Unusual or abnormal releases of radioactive effluents ☐ Onsite fatality ☐ Another situation related to the radiological health and safety of the public or onsite personnel or protection of the environment.

SHORT TERM REPORTABILITY WORKSHEET – FOR 10CFR 50.72
REPORTABILITY EVALUATIONS

8 HOUR REPORTS		
Y	N	50.72(b)(3)(ii) - Any event or condition that results in (A) the condition of the nuclear power plant, including its principle safety barriers being seriously degraded; or (B) The nuclear power plant being in an unanalyzed condition that significantly degrades plant safety (1022 - 3.2.4). **NOTE**: ENS notifications and LERs are required if a Degraded or Unanalyzed Condition occurred within 3 years of the date of discovery, even if the event is not on-going at the time of discovery.
		Are there widespread fuel cladding failures discovered?
		Are there RCS pressure boundary or Containment welding failures discovered?
		Has the containment integrity function failed or a leak rate test failed (total containment leakage)?
		Have RPV pressure temperature curves been violated?
		Have fire barriers found to be missing so redundant train separation is lacking?
		Was a system design flaw discovered not included in the original plant design and accident analysis?
Y	N	50.72(b)(3)(iv)(A) - Any event or condition that results in valid actuation of any of the systems listed below, except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation. Paragraph 50.72(b)(3)(iv)(B) systems: (1022 - 3.2.6)

RPS	HPCI	RCIC	LPCI	CS	EDGs	MSIVs	CTMT Isolation signals affecting more than ONE System

		Was any RPS setpoint exceeded that should have caused an automatic scram with the reactor not critical?
		Was the reactor manually scrammed with the reactor not critical? This could be reportable event even if the scram signal was generated from an HU error.
		Were any of the systems started or actuated manually in response to actual plant conditions (i.e. RCIC start prior to L2 to control level)?
		Did RPV Level lower to ≤ 173.4”? (Level 3) - Groups 4/13/15
		Did RPV Level lower to ≤ 110.8”? (Level 2) - Groups 2/10/11/12/14/16/17/18 and HPCI/RCIC start
		Did RPV Level lower to ≤ 31.8”? (Level 1) - Groups 1/3/5 and LPCI/CS/EDG start
		Did Drywell Pressure rise to ≥ 1.68 psig? – Groups 2/3/5/12/13/14/15/16/17/18 and HPCI/LPCI/CS/EDG start
		Did MSIVs automatically close or were they manually closed for a reason other than maintenance or a pre-planned sequence?
		Did EDGs auto start or were manually started in response to, or anticipation of, a valid bus undervoltage signal even if they did not power the bus after starting?
		Was a Fuel Pool Radiation Monitor setpoint exceeded? - Report Groups 14/16
		Did a valid containment isolation signal occur that actuated MORE THAN ONE system? – NOT REPORTABLE if only a single system actuation such HPCI/RCIC/RWCU room temperatures.
		Was the signal that caused the actuation due to an HU error but still was a valid signal based on parameters exceeding setpoints for any of the systems listed above?

SHORT TERM REPORTABILITY WORKSHEET – FOR 10CFR 50.72
REPORTABILITY EVALUATIONS

8 HOUR REPORTS		
Y	N	50.72(b)(3)(v) - Any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to: (1022 - 3.2.7) (A) Shut down the reactor and maintain it in a safe shutdown condition (e.g. Loss of RPS function) (B) Remove residual heat (e.g. Loss of ECCS or SDC function) (C) Control the release of radioactive material; or (e.g. Loss of Secondary CTMT) (D) Mitigate the consequences of an accident (e.g. HPCI inoperable, redundant safety components inoperable) 50.72(b)(3)(vi) Events covered in paragraph (b)(3)(v) of this section may include one or more procedural errors, equipment failures, and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, individual component failures need not be reported pursuant to paragraph (b)(3)(v) of this section if redundant equipment in the same system was operable and available to perform the required safety function.
		Is a single train safety system declared inoperable (HPCI, ADS, 72CF)?
		Was SDC lost with no alternate train available to be placed in service?
		Was it discovered that a system required to meet single failure criterion cannot not?
		Is it discovered that a TS component, system, or structure could not meet its safety function and there does not exist an operable redundant component, system, or structure?
		Are both offsite power sources or one or both EDGs in both divisions inoperable?
Y	N	50.72(b)(3)(xii) - Any event requiring the transport of a radioactively contaminated person to an offsite medical facility for treatment. (1022 - 3.2.11)
Y	N	50.72(b)(3)(xiii) - Any event that results in a major loss of emergency assessment capability, offsite response capability, or offsite communications capability (e.g., significant portion of control room indication, Emergency Notification System, or offsite notification system) – Refer to NRC Communications book for ERDS and EP-580 for EITER (1022 - 3.2.13)
		Has there been a loss of annunciators or control room indications that would prevent assessment of emergency classifications and protective action recommendations? - Requires further review of NUREG 1022.
		Has there been a loss of assessment capability in the TSC or EOF that cannot be restored within 60 minutes?
		Is there planned maintenance affecting assessment capability in the Control Room, TSC, of EOF that: ☐ Will last longer than 60 minutes and does not have adequate compensatory actions or monitoring. ☐ Is planned to last, or lasted longer than 72 hours.
		Has there been a significant natural hazard that would restrict access to the site or and prevent staffing emergency facilities?
		Has there been a significant natural hazard that would impede the state from implementing potential protective action recommendations?
		Has there been a loss of communication systems used for the emergency plan that would impair implementing any aspect of the emergency plan?
		Is there planned maintenance affecting communication systems that: ☐ Could not be restored immediately if needed and do not have adequate compensatory actions or monitoring. ☐ Is planned to last, or lasted longer than 72 hours.

JOB PERFORMANCE MEASURE

Job Position SRO	No. JP-OP-832-0001-231	Revision 0
JPM Title Event Classification IAW EP-101 (CA2.1)	Duration 30 minutes	Page 1

*2 times Duration for ILO Exams

Examinee: _____ SRO / RO / NO

Evaluator: _____

Validating Representatives Name: _A. Snowberger / M. Donigian_____

JPM Type: **Normal /** Alternate Path **/ Time Critical** Start Time _____

Evaluation Method: **Perform** / Walkthrough / Discuss Stop Time _____

Location: Plant / **Simulator** / **Classroom** Total Time: _____

PERFORMANCE EVALUATION SUMMARY											
Element	S	U	Comment	Element	S	U	Comment	Element	S	U	Comment
1.											
*** 2.**											
3.											
4.											
*** 5.**											
*** 6.**											

OPERATOR FUNDAMENTALS OBSERVATION				
Monitor operator fundamentals during the JPM set. Rate each area based on the criteria by placing a checkmark in the appropriate column. Indicate the comment number associated with the observation.				
Operator Fundamental	**Meets all Expectations**	**Opportunity for Improvement**	**Does not meet Expectations**	**Comment Number**
Monitoring				
Control				
Conservatism				
Teamwork				
Knowledge				

OVERALL EVALUATOR COMMENTS: _____

_____

_____

REMEDIAL CONTENT: _____

_____ PASS _____ FAIL

Evaluator Signature / Date: _____ / _____

JPM Observation Criteria

Fundamental	Meets all Expectations	Opportunity for Improvement	Does not meet Expectations
Monitoring	Equipment status monitored at proper frequency, using multiple means if available. Understood which indications were critical.	Some monitoring was performed but undue focus on task or lack of system knowledge prevented ideal monitoring.	Did not recognize key equipment status indicators, too much focus on single indications and ignored total system status.
Control	Task preview used to prepare for job. Aware of control bands and maintained them. Configuration control maintained.	Adequate control of system maintained throughout task but some improvements could be made such as better manual control or greater depth of knowledge for anticipating system response.	No anticipation of results of actions. Unaware or control bands or not able to maintain them. Lack of knowledge of how to control system parameters.
Conservatism	Low threshold for identification of problems. Questioning attitude. Uses “stop when unsure” if needed. Sensitive to nuclear safety.	Some opportunities existed to question before proceeding, High focus on task completion without consideration for other system affects.	Proceeds even when unsure with unanswered questions. High threshold for problem conditions.
Teamwork	Routinely communicates system status changes to the team. Communicates actions before taking them.	Communicated most status and actions. Some improvement would be warranted.	Routinely takes action without informing the team.
Knowledge	Able to anticipate system response based on solid system knowledge. Good working knowledge of generic fundamentals to predict and monitor system response.	Plant, system, or generic fundamental knowledge has some gaps.	Unable to predict system response, unsure of generic fundamentals concepts related to plant operation. Only relied on procedure for operating knowledge.

System:

N/A

Task:

01A0001017 - Direct emergency response measures until relieved by higher authority.

References: Required (R) / Available (A)

EP-101 Classification of Emergencies (A)

EP-290, Emergency Notifications (A)

EP-290001, Nuclear Plant Event Notification Form (A)

Tools and Equipment Required:

None

Initial Conditions:

You are an extra SRO assigned to shift and are in the Main Control Room.

The Shift Manager is not available.

Plant conditions are:

- Division 2 RHR is in SDC.
- RPV Temp is 100°F and stable.
- Div 1 EDGs are tagged out with rebuilds in progress.
- CTG11-2,3,4 is not available.

THEN:

- A loss of all offsite power occurs.
- CTG11-1 will not start due to a significant failure of the lube oil system. (no estimated time of recovery)
- 5 minutes later, EDG 13 tripped due to Crankcase Pressure High.
- 8 minutes later, EDG 14 tripped due to Generator Differential.

Initiating Cue(s):

Classify the event per EP-101, Classification of Emergencies, and complete EP-290001, Nuclear Plant Event Notification Form.

This JPM is **TIME CRITICAL**.

Terminating Cue(s):

A completed EP-290001 has been provided by the examinee.

Task Standard:

The task is satisfactorily met if the examinee selects the correct EP-101 table for COLD (RCS ≤200°F) Conditions, determines that a loss of all onsite and offsite power exits, makes a timely and accurate classification of CA2.1 within 15 minutes, and then completes EP-290001, Event Notification Form, per the attached KEY, within 15 minutes of the time of event declaration.

Licensed Operator Exam Information (required for NRC exams)

Safety Function:

10 – Emergency Plant Evolutions

K/A Reference: (from NUREG 1123)

K/A SYSTEM: 262001 AC Electrical Distribution

K/A STATEMENT:

A2 Ability to (a) predict the impacts of the following on the AC Electrical Distribution and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operations:

A2.12 Station blackout ..... 4.6 / 4.5

K/A SYSTEM: GENERIC

K/A STATEMENT:

2.4.41 Knowledge of emergency action level thresholds and classifications. (CFR 43.5 / 45.11) 4.6

Maintenance Rule Safety Classification:

N/A

Maintenance Rule Risk Significant? (Yes or No)

N/A

PERFORMANCE EVALUATION

Start Time _____

ELEMENT	STANDARD
NOTE **Ensure a copy of EP-101, Enclosure A, EAL Classification Matrix (Charts) and the Emergency Action Level Technical Bases are available.** **Ensure EP-290 and a clean EP-290001, Nuclear Plant Event Notification Form are available.**	
CUE: Provide the examinee with the Cue Sheet. **Inform the examinee that this JPM is TIME CRITICAL.**	
NOTE: Start the 15-minute clock when the initiating cue is provided to the examinee **Record declaration clock start time:** **START TIME: _____**	
1. Locate and obtain a copy of EP-101, Enclosure A, EAL Classification Matrix (Wallcharts) and if needed, the Emergency Action Level Technical Bases.	1. Examinee locates and obtains a copy of EP-101, Enclosure A, EAL Classification Matrix (Wallcharts) and if needed, the Emergency Action Level Technical Bases.
*** 2.** Review and evaluate plant conditions from Cue Sheet.	*** 2**. Reviews current plant conditions against EP-101 and applicable bases and determines: □ The applicable EAL chart for these conditions is for “Cold Conditions”
3. Compare events from the scenario to the requirements of EP-101, Enclosure A, EAL Classification Matrix (Wallcharts) and if needed, the Emergency Action Level Technical Bases.	3. Refers to EP-101, Enclosure A, EAL Classification Matrix (Wallcharts) and the Emergency Action Level Technical Bases, if needed.
4**.** Uses place-keeping to track EAL indicator	4. EAL indicators are circled on the EAL Classification Matrix (Wallcharts)
*** 5.** Determine Emergency Classification	*** 5.** Declares CA2.1, due to Loss of all onsite and offsite power, applies NOTE 1 and declares CA2.1 now because the EDG trips are essential trips and the EDG will not be restored in 15 minutes. **Record actual time declared below:** **DECLARATION TIME: _____** **Start 15 minute clock for completion of EP-290001, Event Notification Form.**

ELEMENT	STANDARD
CUE: When examinee demonstrates how to locate the Event Notification Form, provide the examinee with a (yellow) copy of EP-290001.	
*** 6.** Complete EP-290001, Nuclear Plant Event Notification Form.	*** 6.** Completes EP-290001, Nuclear Plant Event Notification Form. **Information on the KEY marked with an * is critical** (Summarized below): Block I: Plant Contact Information **734-586-4771** (Or number listed on phone at Desk) **(*)** **001 (or 1) (*)** Block II: Current Classification **Alert (*)** **Today's Date (*)** **Time Event Declared (*)** Block III: Reason for Classification **CA2.1 (*)** **Cold Shutdown/Refueling System Malfunction (*)** Block IV: Radiological Release in Progress Due to Event. **No (*)** Block V: Protective Action Recommendations (PARs) **None (*)** **Record actual time EP-290001 is completed below:** **COMPLETION TIME: _____**
CUE: End JPM when a completed EP-290001 has been provided by the examinee.	

_____ SATISFACTORY _____ UNSATISFACTORY

Stop Time _____

*** Critical Step**

Evaluator Notes:

This JPM may be started at the CRS desk in the simulator.

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

Generic Notes and Cues:

N/A

System Specific Notes and Cues:

None

Task Performance and Cues:

The Elements of this JPM are step by step in accordance with the procedure. The Standard is that the procedure is performed as written. The Cues are as listed above for indication or as each step is completed the appropriate information is reported to the examinee. Notify Examinee that time compression may be used for activities performed outside of the Control Room. Notify Examinee if JPM is Time Critical (only if JPM is **NOT** Alternate Path.)

Critical Steps:

Critical Tasks are identified by asterisk (*) and **bolded** steps on the cover sheet. Verify that the latest revision of the procedure is used, and critical tasks are correctly identified.

FOLLOW-UP DOCUMENTATION QUESTIONS

Reason for follow-up question(s):

Question:

Reference:

Response:

Question:

Reference

Response:

KEY: (JP-OP-832-0001-231)

EMD-032A (01/2019)
Michigan State Police
Emergency Management and Homeland Security Division

NUCLEAR PLANT EVENT NOTIFICATION FORM

Authority: 44 CFR 350.5 and MCL 30.407a; **Compliance:** Voluntary

☐ Actual Event				☒ Drill	
I. Plant Contact Information					
Nuclear Power Plant: Fermi 2	Call Back Telephone Number: **734-586-4771 (Or Number on Phone)***				Plant Message Number: **001***
Notifying From: ☒ Control Room ☐ EOF ☐ TSC ☐ Other :					
II. Current Classification					
☐ Unusual Event	☒ Alert	☐ Site Area Emergency	☐ General Emergency	☐ Termination	
Classification Declared at:	Date: **Today's Date**	Time: **Time Event Declared**			
III. Reason for Classification					
☐ Abnormal Rad Level/Radiological Effluents		☐ System Malfunction			
☐ Fission Product Barrier Degradation		☐ Hazards and Other Conditions Affecting Plant Safety			
EAL Number: **CA2.1***		☒ Cold Shutdown/Refueling System Malfunction			
		☐ Independent Spent Fuel Storage Installation Event			
IV. Radiological Release in Progress Due to Event					
☐ Yes		☒ No			
V. Protective Action Recommendations (PARs)					
☒ None					
Recommend the following protective actions, implement the State of Michigan Potassium Iodide (KI) plan, and all other areas monitor and prepare.					
Evacuation of Area(s)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
In-Place Shelter of Area	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Clear Lake Area(s)	☐ 6			☐ 7	
PARs based on Dose Calculations	☐ Yes	☐ No			
PARs beyond 10 Miles	☐ Yes	☐ No			
VI. Licensee Approval Authority					
Examinee's Signature Name:		**Today's Date** Date:		**Now** Time:	

Cue Sheet: (JP-OP-832-0001-231)

Initial Conditions:

You are an extra SRO assigned to shift and are in the Main Control Room.

The Shift Manager is not available.

Plant conditions are:

- Division 2 RHR is in SDC.
- RPV Temp is 100°F and stable.
- Div 1 EDGs are tagged out with rebuilds in progress.
- CTG11-2,3,4 is not available.

THEN:

- A loss of all offsite power occurs.
- CTG11-1 will not start due to a significant failure of the lube oil system. (no estimated time of recovery)
- 5 minutes later, EDG 13 tripped due to Crankcase Pressure High.
- 8 minutes later, EDG 14 tripped due to Generator Differential.

Initiating Cue(s):

Classify the event per EP-101, Classification of Emergencies, and complete EP-290001, Nuclear Plant Event Notification Form.

This JPM is **TIME CRITICAL**.

Cue Sheet: (JP-OP-832-0001-231)

Initial Conditions:

You are an extra SRO assigned to shift and are in the Main Control Room.

The Shift Manager is not available.

Plant conditions are:

- Division 2 RHR is in SDC.
- RPV Temp is 100°F and stable.
- Div 1 EDGs are tagged out with rebuilds in progress.
- CTG11-2,3,4 is not available.

THEN:

- A loss of all offsite power occurs.
- CTG11-1 will not start due to a significant failure of the lube oil system. (no estimated time of recovery)
- 5 minutes later, EDG 13 tripped due to Crankcase Pressure High.
- 8 minutes later, EDG 14 tripped due to Generator Differential.

Initiating Cue(s):

Classify the event per EP-101, Classification of Emergencies, and complete EP-290001, Nuclear Plant Event Notification Form.

This JPM is **TIME CRITICAL**.

Do NOT provide the following to the examinee until directed to do so by the CUE.

EMD-032A (01/2019)
Michigan State Police
Emergency Management and Homeland Security Division

NUCLEAR PLANT EVENT NOTIFICATION FORM

Authority: 44 CFR 350.5 and MCL 30.407a; **Compliance:** Voluntary

☐ Actual Event		☐ Drill
I. Plant Contact Information		
Nuclear Power Plant: Fermi 2	Call Back Telephone Number:	Plant Message Number:
Notifying From: ☐ Control Room ☐ EOF ☐ TSC ☐ Other :		
II. Current Classification		
☐ Unusual Event ☐ Alert ☐ Site Area Emergency ☐ General Emergency ☐ Termination		
Classification Declared at:	Date:	Time:
III. Reason for Classification		
☐ Abnormal Rad Level/Radiological Effluents	☐ System Malfunction	
☐ Fission Product Barrier Degradation	☐ Hazards and Other Conditions Affecting Plant Safety	
EAL Number:	☐ Cold Shutdown/Refueling System Malfunction	
	☐ Independent Spent Fuel Storage Installation Event	
IV. Radiological Release in Progress Due to Event		
☐ Yes	☐ No	
V. Protective Action Recommendations (PARs)		
☐ None		
Recommend the following protective actions, implement the State of Michigan Potassium Iodide (KI) plan, and all other areas monitor and prepare.		
Evacuation of Area(s)	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5	
In-Place Shelter of Area	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5	
Clear Lake Area(s)	☐ 6	☐ 7
PARs based on Dose Calculations	☐ Yes ☐ No	
PARs beyond 10 Miles	☐ Yes ☐ No	
VI. Licensee Approval Authority		
Name:	Date:	Time: