JPM A1-1

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1290020301 Conduct of Shift Operations
TASK STANDARD: RFM Operator determined to not be able to stand watch.
LSRO determined to need working hour limit deviation form to permit helping with surveillance.
K/A: 2.1.5 K/A RATING: RO: 2.3 SRO: 3.4
APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 10 min.
REFERENCES: 01DP-9EM01, OVERTIME LIMITATIONS
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 8/28/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA _____

TESTING METHOD: SIMULATE _____ PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)
EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC#: The simulator is not specifically needed for this JPM.

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	TAG	TITLE	VALUE	TIME DELAY	RAMP RATE
	N/A				

C. SPECIAL INSTRUCTIONS:

- Ensure that a **copy** of 01DP-9EM01, OVERTIME LIMITATIONS, Rev. 2, is available.

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- **Blank copy** of 01DP-9EM01, OVERTIME LIMITATIONS, Rev. 2.
- Calculator

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

1. The following Unit 1 outage working hour history is given for an on-shift LSRO and a Refuel Machine Operator. The hours worked are on the Unit 2 Refueling Platform performing core alterations.

Date	**LSRO**	**Refuel Machine Operator**
10/28 (Day 1)	12 hrs (DS)	12 hrs (NS)
10/29	12 hrs (DS)	OFF
10/30	12 hrs (DS)	OFF
10/31	OFF	12 hrs (DS)
11/1	12 hrs (DS)	12 hrs (DS)
11/2	12 hrs (DS)	12 hrs (DS)
11/3	12 hrs (DS)	12 hrs (DS)
11/4	12 hrs (DS)	12 hrs (DS)
11/5	12 hrs (DS)	12 hrs (DS)

DS=Dayshift NS=Nightshift

2. The LSRO and Refuel Machine Operator are scheduled to work dayshift today, 11/6

INITIATING CUE:

- **You are directed to evaluate the working hour history for the LSRO and the Refuel Machine Operator and determine whether both individuals can work a full dayshift of 12 hours**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set, then ensure the examinee has been briefed IAW NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.

SAFETY CONSIDERATIONS:

- None

STEP	ELEMENT	STANDARD
1.	Obtain 01DP-9EM01, Overtime Limitations	Obtains 01DP-9EM01, Overtime Limitations.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2.	The number of hours worked shall be controlled in accordance with the limitations set in 01DP-9EM01, Overtime Limitations.	Assess hours worked and conclude the following: The LSRO may work the entire 12 hour dayshift.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3. *	The number of hours worked shall be controlled in accordance with the limitations set in 01DP-9EM01, Overtime Limitations.	Assess hours worked and conclude the following: The Refuel Machine Operator may not take the shift unless an exception is given because the next hour worked will result in him exceeding 72 hours in a 168 hour period.

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP	ELEMENT	STANDARD
4. *	The number of hours worked shall be controlled in accordance with the limitations set in 01DP-9EM01, Overtime Limitations.	**Inform CUE:** **Assume you have completed a 12 hour shift as LSRO on November 6th and you are now in the break room. You have just received a radio call one hour after turnover from the refuel bridge that your help is needed in performing a partial ST on the bridge for about 2 hours.** **Assess whether you can assist with the ST** Conclude that the ST work may NOT be performed due to exceeding working hour limits of: • 24 in 48 hrs, or • 72 in 168 hrs OR Yes, the work may be performed provided a Working Hour Limits Deviation is processed and approved. **When requested CUE (as appropriate): I understand the ST work may/may not be performed.**

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
00	08/28/02		Original

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

1. The following Unit 1 outage working hour history is given for an on-LSRO and a Refuel Machine Operator. The hours worked are on the Unit 2 Refueling Platform performing core alterations

Date	**LSRO**	**Refuel Machine Operator**
10/28 (Day 1)	12 hrs (DS)	12 hrs (NS)
10/29	12 hrs (DS)	OFF
10/30	12 hrs (DS)	OFF
10/31	OFF	12 hrs (DS)
11/1	12 hrs (DS)	12 hrs (DS)
11/2	12 hrs (DS)	12 hrs (DS)
11/3	12 hrs (DS)	12 hrs (DS)
11/4	12 hrs (DS)	12 hrs (DS)
11/5	12 hrs (DS)	12 hrs (DS)

DS=Dayshift NS=Nightshift

2. The LSRO and Refuel Machine Operator are scheduled to work dayshift today, 11/6

INITIATING CUE:

- **You are directed to evaluate the working hour history for the LSRO and the Refuel Machine Operator and determine whether both individuals can work a full dayshift of 12 hours**

SAFETY CONSIDERATIONS:

- None

CANDIDATE

JPM A1-2

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1290640303 REVIEW RECOMMENDATIONS FOR SENSITIVE ISSUES
TASK STANDARD: Identify Controls per the Sensitive Issue Manual for dropped foreign material
K/A: 2.1.5 K/A RATING: RO: 2.3 SRO: 3.4
APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 15 min
REFERENCES: Sensitive Issues Manual
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 08/29/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA _____

TESTING METHOD: SIMULATE _____ PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)
EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM A1-2

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : The simulator is not needed for this JPM.

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- Ensure that a **copy** of "Sensitive Issues Manual", Rev 7 is available.

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

- **Blank copy** of "Sensitive Issues Manual", Rev 7 .

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **During fuel transfer into the Spent Fuel Pool, a foreign object is noted in the bottom of the pool. Fuel transfer is suspended. In planning to recover the item, identify all Activity and Evolution Controls that are required by the SENSITIVE ISSUES MANUAL, APPENDIX A & B.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed IAW NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.

PVNGS JOB PERFORMANCE MEASURE

STEP		ELEMENT	STANDARD
1.		Verify current issue of sensitive issues manual.	Examinee references current revision of sensitive issues manual.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.		Refers to Appendix A, Table B (Maintenance Evolutions) and Appendix B.	Examinee references Appendix A, Table B & Appendix B.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.	*	Identifies the Outage Evolution and applies the correct "Activity and Evolution Controls"	Examinee references page 19: "Unusual SFP evolutions such as retrieval of foreign objects or any SFP activity designated by the SSM or Outage Manager as requiring special controls" (see attached reference) and identifies **ALL** activity and evolution controls listed and cross references these items to Appendix B: **Planning & Preparation –** 1,3,4,5,9 **Other Dept. Involvement** – E1, Q8 **Performance** –2

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

APPENDIX A
TABLE B
MAINTENANCE EVOLUTIONS (CONTINUED)

EVOLUTION/SYSTEM/ COMPONENT/ACTIVITY/ISSUE	PLANNING & PREPARATION	OTHER DEPT. INVOLVEMENT	PERFORMANCE
ON-LINE TROUBLESHOOTING OF VITAL AC/DC SWITCHGEAR OR CONTROL PANELS (DG, DF, PE, PK, PN, PB, PH)	3, 4, 11	E1	3
PLANNED SYSTEM BREACH WITH THE POTENTIAL FOR LARGE RELEASE OF RADIOACTIVE GAS OR EXPLOSIVE GAS	3, 4, 5, 8, 9	Q8	3, 5
ACTIVITIES IN HIGH TEMPERATURE AREAS WHERE HEAT STRESS POTENTIAL EXISTS	1	I1	0
UNUSUAL SFP EVOLUTIONS SUCH AS RETRIEVAL OF FOREIGN OBJECTS OR ANY SFP ACTIVITY DESIGNATED BY THE SSM OR OUTAGE MANAGER AS REQUIRING SPECIAL CONTROLS	1, 3, 4, 5, 9,	E1, Q8	2
INITIAL WALKTHRU/PERFORMANCE OF NEW ST's AND PM's ON CRITICAL COMPONENTS	1	S1	3
RX VESSEL LEVEL MONITORING SYSTEM INSTALLATION/ON-LINE MAINTENANCE	3	0	0
MOVEMENT OF HEAVY LOADS (AROUND CRITICAL EQUIPMENT)	1, 4, 10	0	3
MAINTENANCE UNDER A CLEARANCE WHERE NORMAL MAINTENANCE CONDITIONS CANNOT BE ESTABLISHED SUCH AS UTILIZING THE BACKSEAT OR BREACHING THE SYSTEM TO CREATE A DRAIN PATH	3, 4, 9, 10, 11, 12	0	3
NON-RADIOLOGICAL DIVING ACTIVITIES	2, 5	I1, F1	5, 15
RADIOLOGICAL DIVING	2, 5, 24	I1, F1	5, 15
ANY ENTRY INTO AN IDLH ATMOSPHERE	2, 4, 5	I1	3
SP ENTRY FOR INSPECTIONS, TESTING, TOOL/PARTS REMOVAL (EG., LADDER, DIVER, BOAT, ETC)	1, 4, 9	0	0
HRA ENTRIES (ENTRY INTO HRA DOES NOT REQUIRE SEQUENCING AS SENSITIVE ISSUE FOR SCHEDULING PURPOSES. SEQUENCING AS A SENSITIVE ISSUE WILL BE EVOLUTION DEPENDENT).	24	0	0
LHRA ENTRIES (ENTRY INTO LHRA DOES NOT REQUIRE SEQUENCING AS SENSITIVE ISSUE FOR SCHEDULING PURPOSES. SEQUENCING AS A SENSITIVE ISSUE WILL BE EVOLUTION DEPENDENT).	25	0	0
VHRA ENTRIES	2, 3, 4, 19, 20, 21	0	14
CONTAINMENT ENTRIES (AT POWER)	1, 3, 25	0	0
GAS TURBINE GENERATOR MAINTENANCE			
ACTIVITIES INVOLVING SFP AND OR SUPPOR SUCH AS RECEIPT/MOVEMENT OF NEW FUE			

ANSWER KEY

COMMENTS:

APPENDIX B
ACTIVITY AND EVOLUTION CONTROLS

PLANNING & PREPARATION	OTHER DEPT. INVOLVEMENT (E - ENGINEERING Q - QUALITY,)	PERFORMANCE
1. Pre-job briefing required for principal organization with checklist. 2. Detailed written pre-job briefing specifically developed for the evolution such as tailboard database. 3. Integrated pre-job briefing with all affected personnel present. 4. Supervision attend pre-job brief to ensure adequacy (Team Leader, Section Leader or Dept. Leader). 5. Pre-job briefing attended by SSM or Dept. Leader. 6. Mockup, walkthru training or JIT conducted prior to work/evolution. 7. Fragnet schedule developed for complex evolutions and coordinator assigned. 8. Employees in area notified or briefed. 9. Operations Dept. Leader approval to start evolution. 10. Maintenance Dept. Leader approval to start evolution. 11. Operations Director approval to start evolution. 12. Repair contingencies considered. 13. Outage Dept. Leader approval to start evolution. 14. Second party verification and/or additional hold points identified in work package. 15. PRB approval to start evolution. 16. Concurrent verification by a second individual prior to manipulation. 17. Integrated pre-job RP briefing 18. RPSS Dept. Leader approval to start transfer to disposal container (HIC) 19. Requires RP Dept. Leader approval 20. Requires OPS. Shift Mgr. to be notified prior to VHRA entry. 21. Specific REP required for VHRA. 22. Unit 1 Operations Department Leader or Designee involved in brief. 23. Nuclear Assurance present at pre-job briefing.. 24. RP briefing required of radiological conditions of each specific HRA prior to entry. Work Group Leader cognizant of entry. 25. Formal pre-job brief required by RP prior to LHRA entry. Work Group Leader cognizant of entry. 26. Requires detailed Reactor Engineering Game Plan approved by NFM Section Leader and UDL for appropriate Unit.	Q,E-0. As specified in procedures only. Q,E-1. Review of troubleshooting plan/work package. Q,E-2. Present at pre-job briefing. Q,E-3. Witness troubleshooting. Q,E-4. Witness corrective maintenance. Q,E-5. Witness and review testing/retest. Q,E-6. Conduct walkdown monthly to identify conditions which might affect ability to function. Q,E-7. Department assistance available on site. Q-8. Notify Nuclear Assurance (NA) (check callout list) Q,E-9 Dept. informed assistance available offsite. S-1. Standards present. C-1 Chemistry Informed I-1 Industrial Safety Informed J-1 Environmental Informed F-1 Fire Department Informed	0. Normal controls established by procedures. 1. SSM, OPS Dept. Leader or above present. 2. Refueling Team Leader/Section Leader present this role may be filled by a refueling SRO licensed individual 3. Maintenance Leader present 4. Around the clock management coverage for overall oversight/coordination. 5. Access restricted to necessary personnel only (i.e. switchyard or control room). 6. Independent verification or inspection required. 7. Utilize most experienced person at Palo Verde to perform. 8. On station, face-to-face turnover. 9. Work around the clock. 10. Team Leader/Section Leader will assign independently qualified workers. 11. Minimum of 2 maintenance craft persons present. 12. As established by JCO or Discretionary Enforcement. 13. NA present. 14. Requires continuous RP coverage. 15. Dive Team Leader Assigned and Present 16. UDL present in Control Room, for Power Decreases below 60% the Ops Director or appointee will be present in the control room,

ANSWER KEY

23

JPM A1-2
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **During fuel transfer into the Spent Fuel Pool, a foreign object is noted in the bottom of the pool. Fuel transfer is suspended. In planning to recover the item, identify all Activity and Evolution Controls that are required by the SENSITIVE ISSUES MANUAL, APPENDIX A & B.**

CANDIDATE

JPM A2

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1290420202 MAINTAIN HOUSEKEEPING
TASK STANDARD: Identify Actions for Inadvertent Loss of FME Control
K/A: 2.2.18 K/A RATING: RO: 2.3 SRO: 3.6
APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 15 min
REFERENCES: 30DP-0WM12, HOUSEKEEPING AND SYSTEM CLEANLINESS
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 08/29/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA _____

TESTING METHOD: SIMULATE _____ PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)

EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM A2

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : The simulator is not needed for this JPM.

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- Ensure that a **copy** of 30DP-0WM12, "HOUSEKEEPING AND SYSTEM CLEANLINESS", Rev 8 is available.

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

- **Blank copy** of 30DP-0WM12, "HOUSEKEEPING AND SYSTEM CLEANLINESS", Rev. 8.

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **During core reload, a fuel assembly is being moved from the upender to the designated Reactor Core location. A Refuel Machine Operator trainee inadvertently looses his glasses while looking over the side of the Refuel Machine. His glasses are visually located on the fuel assembly alignment pin for the next fuel assembly. Identify the LSRO actions that are required by the HOUSEKEEPING AND SYSTEM CLEANLINESS procedure for the loss of FME.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed IAW NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.

JPM A2

PVNGS JOB PERFORMANCE MEASURE

STEP		ELEMENT	STANDARD
1.		Verify current issue of 30DP-0WM12, Housekeeping and System Cleanliness.	Examinee references current revision of Housekeeping and System Cleanliness.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.		Refers to Section 4.11 - Inadvertent Loss of FME.	Examinee references Section 4.11 - Inadvertent Loss of FME (see attached).

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.	*	Identifies the requirements for inadvertent loss of FME.	Examinee identifies the following two Critical Tasks as a minimum: 1) The LSRO ***shall*** suspend work activities in the immediate area and notify the Control Room (i.e. Responsible Leader). 2) The LSRO should **not** elect to resume core reload.

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

HOUSEKEEPING AND SYSTEM CLEANLINESS	30DP-0WM12	Revision 8

Section 4.10 -Special Consideration Item Control and Exclusion, Continued

Repairs and problem resolution

Discrepancies noted during the operation of hydraulic tools or equipment ***shall*** be reported to the Responsible Leader and resolved prior to continuing work. Resolution includes:

- Service and repair of hydraulic tools and equipment ***shall*** not be accomplished in an area where system internals could be contaminated by hydraulic fluid or, parts removed could be dropped and concealed.
- Areas within the zone should be protected with drip pans, shields or equivalent barriers in case of hydraulic tool/equipment failure, when practical.
- Where possible, hoses should be secured to prevent whipping, should they rupture.

Section 4.11 - Inadvertent Loss of FME

Response for inadvertent introduction into an open system

IF it is known or suspected that control of FME is lost by foreign material, or an object being inadvertently introduced into an open system or related component, **THEN** the following steps ***shall immediately be taken***:

NOTE

Recovery actions in the Reactor Vessel shall not be performed without a written recovery plan and with engineering concurrence of that plan.

- The work group ***shall*** suspend work activities in the immediate area and notify the Responsible Leaders. **IF** the object is in a controlled state and visually detectable, **THEN** the Responsible leader may elect to resume work until it is practical to retrieve the foreign material.
- When items cannot be easily retrieved, delay any further retrieval attempts until the Responsible Leader has initiated a DF Work Order and a Deficiency Work Order [DFWO] disposition has been received.
- All foreign material/object detection and recovery actions ***shall*** be fully documented in the work order controlling the work activity.
-

ANSWER KEY

COMMENTS:

JPM A2
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	08/29/02		New JPM

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **During core reload, a fuel assembly is being moved from the upender to the designated Reactor Core location. A Refuel Machine Operator trainee inadvertently looses his glasses while looking over the side of the Refuel Machine. His glasses are visually located on the fuel assembly alignment pin for the next fuel assembly. Identify the LSRO actions that are required by the HOUSEKEEPING AND SYSTEM CLEANLINESS procedure for the loss of FME.**

CANDIDATE

JPM A3

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1290020301 CONDUCT OF SHIFT OPERATIONS
TASK STANDARD: Verify radiological entry requirements for the fuel floor RWP
K/A: 2.3.1 K/A RATING: RO: 2.6 SRO: 3.0

APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 5 min
REFERENCES: Radiological Work Permit
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 8/30/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA _____

TESTING METHOD: SIMULATE _____ PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)

EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM A3

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

Ensure that a **copy** of RADIATION EXPOSURE PERMIT **3-3022A** is available.

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

- A **copy** of RADIATION EXPOSURE PERMIT **3-3022A** is available.

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

1. Unit 3 is in Mode 6, core offload in progress
2. You are the relieving LSRO
3. No other activities are in progress or planned
4. **Using the attached Radiation Exposure Permit, determine the following criteria:**
   - **Task number to be signed in on**
   - **Dosimetry and PC requirements**
   - **Rad Protection coverage requirements**
   - **EPD (Electronic Dosimetry) settings**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Supervisor of in-plant JPM performance.

JPM A3

PVNGS JOB PERFORMANCE MEASURE

STEP		ELEMENT	STANDARD
1.		Obtain REP 3-3022A.	Examinee is given a copy of REP 3-3022A.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.		Locate information requested.	Locates items on REP.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.	*	Identifies the items on the REP. NOTE: These would be the minimum items required to successfully complete the JPM.	Examinee determines the following 4 critical tasks: 1) Task number to be signed in on is task #1. 2) EPD required. No HCA or HPA are expected with no wet work so only one full PC set would be required. 3) Continuos RP coverage is required during movement of fuel. 4) EPD (Electronic Dosimetry) settings: 50 mRem Dose 5) 1000 mRem/hr Dose Rate

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

JPM A3
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	9/3/02		New JPM

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

1. Unit 3 is in Mode 6, core offload in progress
2. You are the relieving LSRO
3. No other activities are in progress or planned
4. **Using the attached Radiation Exposure Permit, determine the following criteria:**
   - **Task number to be signed in on**
   - **Dosimetry and PC requirements**
   - **Rad Protection coverage requirements**
   - **EPD (Electronic Dosimetry) settings**

CANDIDATE

CANDIDATE

RADIATION EXPOSURE PERMIT

3-3022A

JOB DESCRIPTION: REFUELING AND ASSOCIATED WORK

LOCATION: UNIT 3 CONTAINMENT AND FUEL BUILDINGS

JOB SCOPE: Refueling Operations, including; refueling machine and spent fuel handling machine operations, retrieval of known material from the refuel cavity and spent fuel pool, and fuel ultrasonic testing.

LIMITATIONS: NO VHRA ENTRY
NO LHRA ENTRY
NO RETRIEVAL OF UNKNOWN ITEMS FROM THE SPENT FUEL POOL OR REFUEL CAVITY.

LOCATION	DOSE RATES (mRem/hr)	CONTAMINATION (DPM/100 sq. cm)	ADDITIONAL INFORMATION	SURVEY OR A/S ID #
140' Containment around refuel cavity.	5-50	1,000-10,000	During refuel, cavity full	Historical
140' Fuel Building around Spent Fuel Pool	< 5	1,000-10,000	Dose rates will increase in areas adjacent to transfer canal when drained.	Historical

TASK #	TASK / JOB EVOLUTION	DOSIMETRY, RESPIRATORY & PC REQUIREMENTS	RP COVERAGE REQUIREMENTS	PRE -JOB BRIEF REQUIRED
1	Refueling Operations and Support. To include: **HRA ENTRY** ***RP AUTHORIZATION REQUIRED***	EPD CA Entry - full set HCA/HPCA Entry - double set Wet work - Wet Set and Faceshield	Intermittent, Continuous during fuel movement.	Yes
2	• SFP Weir gate rem./rplc. • Fuel UT / Recon and support. To include: **HRA ENTRY** ***RP AUTHORIZATION REQUIRED***	EPD CA entry - full set HCA/HPCA entry - double set Wet work - Wet Set and Faceshield	Intermittent, Continuous during fuel movement, Weir gate work, fuel UT / recon.	Yes
3	Retrieval of known items from Refuel / Spent Fuel Storage pools to include: • Refuel Mach. Camera rem./rplc. To include: **HRA ENTRY** ***RP AUTHORIZATION REQUIRED***	EPD Direct handling of material > 1 R/HR on contact - Special dosimetry "F" Pack; Chest and finger Ring TLDs. CA entry - full set HCA/HPCA entry - double set Wet work - Wet Set and Faceshield	Continuous during item retrieval	Yes

CANDIDATE

RADIATION EXPOSURE PERMIT

3-3022A

JOB DESCRIPTION: REFUELING AND ASSOCIATED WORK

ELECTRONIC DOSIMETRY SETTINGS		TASK # 1		TASK # 2		TASK # 3		TASK # 4		TASK # 5	
MAX DOSE PER ENTRY	MAX DOSE RATE / HR	50	1,000	50	1,000	100	1,000	N/A	N/A	N/A	N/A

SPECIAL INSTRUCTIONS

- Contact RP and review current radiological survey data for work area prior to each RCA entry.
- EPD alarm setpoints may be increased based on RP Section Leader evaluation / authorization.
- RP may relax outer protective clothing requirements for wet work associated with installing / removing equipment from the Rx. Cavity or Spent Fuel Pool.

RADIOLOGICAL HOLD POINTS:

- Notify RP prior to: HRA, HPCA, HCA, ARA entry.
- Notify RP prior to beginning maintenance activities to discuss job scope.
- Area radiation monitor (EC-4 or equivalent) is set-up and operable on the Spent Fuel Handling / Refuel machine prior to moving fuel (verify operability daily when in use).
- Notify effluent tech to adjust RAD Monitor normal settings before moving fuel or Spent Fuel Pool weir gate.
- Items having a dose rate of greater than or equal to 1 REM/hr at 12 inches upon removal from the pool shall be immediately placed back in the pool. Contact RP Section Leader for disposition.
- RP Section Leader Authorization required to continue work if Fuel Building normal ventilation is out of service.
- Face shields worn in a contaminated area must be surveyed by RP prior to re-donning.

PREREQUISITES:

- Discuss job scope with RP.
- Establish means of wrapping/containing items prior to removing them from pool.
- Lead blankets should be staged inside Zone III prior to removing material from refuel pool.
- Ensure the Rx. Head is installed or the Rx. Cavity is flooded to ~ 137' prior to installing or removing cavity lights.
- **Ensure cask loading pit is filled with water prior to moving fuel assemblies adjacent to this region of the SFP for fuel reconstitution.**

ALARA / ENGINEERING CONTROLS:

- Rinse or wipe down all items as they are removed from the pool (obtain SRO authorization prior to adding water to pool).
- Bag, wrap or otherwise contain any items removed from the refueling/spent fuel storage pool. Survey history indicates these items may have high dose rates, hot particles and high levels of contamination associated with them.
- Shield items removed from Refueling / SF Pools as directed by RP.
- Stand by in low dose "Cold Area" when not actively involved in job.
- Temporary Shielding (TSP # C-140-02) may be utilized to decrease dose rates on Refueling Machine Trolley based on dose rates over Rx. Cavity.

TASK 2 : SFP Weir gate removal / replacement

CANDIDATE

RADIATION EXPOSURE PERMIT

3-3022A

JOB DESCRIPTION: REFUELING AND ASSOCIATED WORK

- Use contamination control "Weir Gate bag" when gate is removed/stored.

RADIOLOGICAL SURVEILLANCE:

- Post the fuel transfer tube expansion joints on 80', 100', and 120' elevations "Radiation Protection Hold Point" prior to refuel operations.
- If normal ventilation is secured, increase contamination monitoring throughout the fuel building, (high potential of increased local airborne radioactivity, and spread of contamination).
- Increase worker / work area survey frequency when protective clothing requirements for wet work are relaxed.
- Monitor workers gloves for contamination build-up, change outer gloves as necessary.
- Survey face shields worn in CAs prior to reuse.
- Establish low dose "Cold Areas".

EXPIRES: 31-OCT.-02 @23:59 **JHES CAT:** 3 **REG GUIDE 1.16:** Routine Maint.

ORIGINATOR: RP OPS PLANNING **EXT:** 1926 **ALARA REVIEW:** Yes

ESTIMATED MAN HOURS: 2,400 **ESTIMATED MAN REM:** 2.500

REP APPROVALS

PREPARED BY: Jeff Gyger DATE/TIME: 30-AUG.-02 / 08:00

RP SECTION LEADER (RPSL) APPROVAL: DATE/TIME /

DEPARTMENT LEADER APPROVAL: N/A DATE/TIME /

REP TERMINATION

REASON: ____ EXPIRED: ____ JOB COMPLETE ____ REVISION ____ OTHER

TERMINATED BY: DATE/TIME: /

JPM A4

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1240120002 DIRECT PERSONNEL ASSEMBLY AND ACCOUNTABILITY
TASK STANDARD: Identify assembly locations within the power block
K/A: 2.4.29 K/A RATING: RO: 2.6 SRO: 4.0

APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 5 min
REFERENCES: EPIP-01, SATELLITE TECHNICAL SUPPORT CENTER ACTIONS
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 8/30/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA _____

TESTING METHOD: SIMULATE _____ PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)

EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM A4

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- Ensure that a **copy** of EPIP-01, "SATELLITE TECHNICAL SUPPORT CENTER ACTIONS", Rev 11 is available.

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

- **Blank copy** of EPIP-01, "SATELLITE TECHNICAL SUPPORT CENTER ACTIONS", Rev 11.

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

1. Unit 1 is in Mode 1
2. Unit 2 is in Mode 6, core offload in progress
3. Unit 3 is in Mode 1
4. While in the process of exiting containment from Unit 2 you hear a loud "slow whoop" (a high pitch in 3 second bursts)
5. The following announcement is made:
   "Attention all plant personnel. Attention all plant personnel. This is NOT a drill. A security emergency situation classified as a Site Area Emergency exists in Unit 1. Assembly is required. All personnel report to your designated Assembly Area. Avoid U1 and it's immediate surrounding area. This is NOT a drill."

6. **Determine all the applicable designated assembly areas inside the protected area for Unit 2 per EPIP-01.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Supervisor of in-plant JPM performance.

JPM A4

PVNGS JOB PERFORMANCE MEASURE

STEP		ELEMENT	STANDARD
1.		Obtain and verify current copy of EPIP-01.	Examinee obtains current copy of EPIP-01.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.		Locate Appendix I – Assembly section.	Appendix – I located.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.	*	Identifies all of the applicable assembly areas for Unit 2 inside the protected area. (Evaluator copy "Answer Key" is attached)	Designated Assembly Areas within the Power Plant Protected Area are: (The following 4 items are Critical Tasks for this JPM) 1) The Control Room/Satellite Technical Support Center 2) Technical Support Center 3) Operations Support Center, and **4)** Containment (Modes 5, 6, and Defueled, if appropriate).

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

Appendix I – Assembly

1.0 General information

1.1 Assembly is recommended at the Alert classification level unless the Emergency Coordinator is reasonably assured that the condition does not have the potential to further degrade. Accountability is required for a Site Area Emergency or a General Emergency and must be completed within 30 minutes following the request for Accountability. Accountability does not have to be performed immediately following the request for Assembly.

1.2 Designated Assembly Areas within the Power Plant Protected Area are the Control Room/Satellite Technical Support Center, Technical Support Center, Operations Support Center, and Containment (Modes 5, 6, and Defueled, if appropriate). Designated Assembly Areas beyond the Power Plant Protected Area are major buildings within the Owner Controlled Area having the capability of receiving Plant Paging System announcements.

1.3 Essential personnel are ~~Emergency Response Organization~~ personnel currently required for duty, and individuals engaged in Emergency Coordinator authorized critical work. If directed, essential personnel in an Unaffected Unit who normally respond to their Assembly Area will respond to the Affected Unit Assembly Area.

1.4 If the Security Computer System is not functioning, Security personnel will manually account for Power Plant Protected Area personnel at Security Headquarters. Power Plant Protected Area Assembly Area supervision will accommodate accordingly at each of their respective locations.

ANSWER KEY

JPM A4
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	8/30/02		

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

1. Unit 1 is in Mode 1
2. Unit 2 is in Mode 6, core offload in progress
3. Unit 3 is in Mode 1
4. While in the process of exiting containment from Unit 2 you hear a loud "slow whoop" (a high pitch in 3 second bursts)
5. The following announcement is made:
   "Attention all plant personnel. Attention all plant personnel. This is NOT a drill. A security emergency situation classified as a Site Area Emergency exists in Unit 1. Assembly is required. All personnel report to your designated Assembly Area. Avoid U1 and it's immediate surrounding area. This is NOT a drill."

6. **Determine all the applicable designated assembly areas inside the protected area for Unit 2 per EPIP-01.**

CANDIDATE

JPM B1

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1300020401 Direct Refueling Machine Operations per 78OP-9FX01
TASK STANDARD: Place fuel assembly into designated core location
K/A: 2.2.27 K/A RATING: RO: 2.6 SRO: 3.5

APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 20 min
REFERENCES: 78OP-9FX01, Refueling Machine Operations
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 8/29/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT X

TESTING METHOD: SIMULATE X PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)

EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM B1

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- N/A

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

- N/A

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **You are performing core reload on Unit 2. A fuel assembly has been moved from the upender, to position Mike 7, using Semi-Auto mode. The refueling machine has just stopped at position Mike 7. You are to seat the assembly in core location Mike 7 per 78OP-9FX01. The fuel spreader is being used.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Supervisor of in-plant JPM performance.

STEP		ELEMENT	STANDARD
1.		Verify orientation of the mast to prevent damage to the TV camera.	Examinee references appendix D. Any mast orientation is allowed in Central Core Region. **IF REQUESTED:** **Mast orientation is 0^{o}.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	Verify Position of the refueling machine over position M7.	Examinee references bridge/trolley position indicator. **WHEN REQUESTED:** **Position indicator reads:** **Unit 2 Bridge 675.50 Trolley 683.56**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.	*	Ensure that the location is not already occupied.	Examinee references core position Mike 7. **WHEN REQUESTED:** **Location Mike 7 is empty.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
4.	*	Verify with the Control Room that previous 1/M plot is complete. (Request permission to lower assembly)	Examinee radio's Control room asks if 1/M plot is complete. **WHEN REQUESTED: 1/M plot complete, you have permission to lower the assembly into position Mike 7.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
5.	*	Lower the hoist.	Examinee simulates placing hoist control to down position. **WHEN REQUESTED: The hoist is lowering. The "HOIST OPERATED" light is lit. The "B/T LOCKOUT" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6.	Examinee continues to lower the hoist in the down direction.	Verify Hoist contacts DOWN STOP **INFORM CUE: The hoist is lowering. The "HOIST OPERATED" light is lit. The "B/T LOCKOUT" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7.	Verify Hoist contacts DOWN STOP	Examinee references hoist cable load display. **WHEN CUE: Cable load display indicates 1470 lbs.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8.	Verify HOIST POSITION INDICATOR reads ~211.	Examinee references hoist position display. **WHEN CUE: Hoist position display indicates hoist position of 211 inches.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9.	Turn the FUEL SPREADER CONTROL to extend position.	Examinee simulates turning "Fuel Spreader" control to the extend position. **IF REQUESTED:** **Fuel spreader "EXTEND" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10.	Continue to lower the assembly into the core.	When hoist position indicator reads ~300, or after examinee continues to lower the assembly. **INFORM CUE: Hoist position indicator reads 300". Hoist cable load reads 1350 lbs. The "UNDER LOAD" light is on.** (At this point the examinee should recognize an abnormal condition)

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
11.		Release the HOIST CONTROL SWITCH to neutral position.	Examinee simulates releasing hoist control to neutral position. **WHEN CUE: The hoist has stopped. The "HOIST OPERATED" light is on.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
12.		Proceed to Appendix M of 78OP-9FX01, Action Plan for movement of a difficult assembly.	Appendix obtained.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
13.		Visually verify or using TV camera determine assembly position.	Examinee references TV Monitor screen or simulates visual references per Appendix "M". **WHEN REQUESTED: Assembly is bound on the Northwest corner.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
14.		Notify CR of problem with assembly being lowered into core.	Examinee simulates contacting control room. **WHEN REQUESTED: Evaluator repeats back CR communication.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
15.	*	If underload exists, Raise Hoist until underload clears.	Underload light is verified clear or cleared. **IF REQUESTED CUE: The "UNDERLOAD" light is out.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
16.	*	Manually move the bridge East using Appendix H.	Examinee installs the handwheel on the input shaft extension to the gear reducer, releases the motor brake and simulates manually moving the bridge east. **WHEN REQUESTED CUE: Bridge position for the Unit requested:** **1 2 3** **675.91 676.00 675.80** (Bridge moved 1/2") **NOTE:** Distance bridge moves is at the discretion of the LSRO. Cues are based on 1/2" **INFORM CUE: The Assembly is still making contact on the North side of the fuel assembly.** **NOTE:** Step 16 & 17 may be done in any order. The assembly appears to be hung-up until the examinee moves both the bridge and trolley manually south and east.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
17.	*	Manually move the trolley South.	Examinee simulates manually moving the trolley south. **WHEN REQUESTED CUE: Trolley position for the Unit requested:** **1 2 3** **684.15 684.06 684.12** (Trolley moved 1/2") **NOTE:** Distance bridge moves is at the discretion of the LSRO. Cues are based on 1/2". **IF REQUESTED CUE: The assembly now appears to be clear of the other assemblies.** **NOTE:** Step 16 & 17 may be done in any order. The assembly appears to be hung-up until the examinee moves both bridges and trolleys manually south & east.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
18.	Lower assembly into core by moving HOIST control switch to down position.	Examinee simulates placing hoist control to down position. **WHEN REQUESTED CUE: The hoist is lowering. The "HOIST OPERATED" light is lit. There is no change in the Startup neutron count rate.** **NOTE:** About 1 min later, **INFORM CUE: Hoist position indicator reads 390 inches.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
19.	Release the HOIST CONTROL SWITCH to neutral position.	Examinee simulates releasing hoist control to neutral position prior to cable slack light. **WHEN REQUESTED CUE: The hoist has stopped.** **NOTE:** The operator will need to realign the bridge/trolley back to its original coordinates to properly seat it.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
20.	*	Hand cranks the bridge West using handwheel.	Examinee simulates manually moving the bridge west. **WHEN CUE: Bridge position Unit:** **Unit Bridge** **2 675.50**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
21.	*	Hand cranks the trolley North using handwheel.	Examinee simulates manually moving the trolley north. **WHEN CUE: Trolley position Unit:** **Unit Trolley** **2 683.56** **WHEN REQUESTED: Weight on assembly 1470 lbs.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
22.	*	Lower assembly into core by moving HOIST control switch to down position.	Examinee simulates placing hoist control to down position. **WHEN REQUESTED: The hoist is lowering. The "HOIST OPERATED" light is lit. There is no change in the Startup neutron count rate.** **INFORM CUE: Hoist has automatically stopped.** If examinee references the Cable Slack Light; **CUE: The "SLACK CABLE" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
23.		Release the HOIST CONTROL SWITCH to neutral position.	Examinee simulates releasing hoist control to neutral position.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
24.		Verify assembly is fully lowered by hoist position indication (Z Number).	Examinee references hoist position display. **WHEN REQUESTED: Hoist position display indicates Hoist position 402".**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
25.		Verify SLACK CABLE light on.	Examinee references control panel. **WHEN REQUESTED: The "SLACK CABLE" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
26.		Verify LOWER GRAPPLE OPERATE ZONE light is on.	Examinee references control panel. **WHEN REQUESTED: The "LOWER GRAPPLE OPERATE ZONE" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
27.	*	Verify with the Control room that count rate has stabilized, and Z coordinate is acceptable.	Examinee references Control Room. **WHEN REQUESTED: Count rate has stabilized, and Z coordinate of 402 inches is acceptable.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
28.	Use TV camera or visual methods to ensure the fuel assembly is properly seated per Appendix L.	Examinee references Appendix L and uses TV Monitor, or simulates looking at pins with binoculars. **WHEN REQUESTED: Assembly is properly seated.**

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

JPM B1
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	8/30/02		Developed from JPM FX016

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **You are performing core reload. A fuel assembly has been moved from the upender, to position Mike 7, using Semi-Auto mode. The refueling machine has just stopped at position Mike 7. You are to place the assembly in core location Mike 7 per 78OP-9FX01.**

CANDIDATE

JPM B2

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1300040403 DIRECT OPERATIONS OF THE SPENT FUEL HANDLING MACHINE
TASK STANDARD: Operate the Spent Fuel Handling Machine
K/A: 2.1.30 K/A RATING: RO: 3.9 SRO: 3.4
APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 15 min
REFERENCES: 78OP-9FX03, Spent Fuel Handling Machine Operations
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 09/03/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____

TESTING METHOD: SIMULATE X PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)

EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM B2

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- N/A

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

- Copy of 78OP-9FX03, Spent Fuel Handling Machine

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- The examiner will provide all responses and indications required from inside the Control Room.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **You are the Spent Fuel Handling Machine Operator performing core offload on Unit 1. A fuel assembly has been removed from the upender, and the hoist is presently at the UP LIMIT. Place the assembly into Spent Fuel Pool Storage Location Zulu 7 (Z7) per 78OP-9FX03.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed IAW OTG-01.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Supervisor of in-plant JPM performance.

SAFETY CONSIDERATIONS:

- N/A

STEP		ELEMENT	STANDARD
1.	*	Position the trolley over the specified location.	Examinee simulates holding trolley control in the forward position. **WHEN Requested CUE: Trolley is at "Zulu"**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	Position the bridge over the specified location.	Examinee simulates holding bridge control to the left. **WHEN Requested CUE: Bridge is at the "7" position.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.		Verify that the bridge and trolley are over the specified location.	Examinee references Bridge position display. **WHEN Requested CUE: Bridge position is 7.** Examinee references Trolley position markers. **WHEN Requested CUE: Trolley position is at Zulu.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
4.	*	Lower the fuel assembly into its location.	Examinee simulates placing the hoist control switch in "LOWER" **WHEN Requested CUE: Hoist is lowering**

SAT UNSAT (UNSAT requires comments)

STEP		ELEMENT	STANDARD
5.		Monitor load cell	Examinee references Hoist load indication. **WHEN Requested CUE: Hoist load indicates 1450 lbs.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
6.		Stop lowering the assembly when the "Hoist Underload light" comes on.	Examinee simulates releasing hoist control. **INFORM CUE: Hoist has automatically stopped.** Examinee references Hoist underload light on Spent Fuel Handling Machine console. **WHEN Requested CUE: hoist underload light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
7.	*	Press the bypass switch to actuate the underload bypass.	Examinee simulates pressing the underload bypass switch. **WHEN Requested CUE: the underload bypass light is lit.**

_____ _____

COMMENTS:

SAT UNSAT (UNSAT requires comments)

STEP		ELEMENT	STANDARD
8.	*	Continue to lower the hoist.	Examinee simulates placing the hoist control switch in "LOWER" or **WHEN Requested CUE: Hoist is lowering.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9.	Hoist should be automatically stopped by the cable slack interlock.	Examinee references cable slack light on Spent Fuel Handling Machine console. **INFORM CUE: The hoist has automatically stopped.** **WHEN Requested CUE: The cable slack light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10.	Ensure the fuel assembly is fully down by checking the following: Hoist position is approximately 195".	Examinee references hoist position indication. **WHEN CUE: Hoist position is reading 195 inches.** **NOTE:** hoist position is located near hoist drum

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
11.		Ensure the fuel assembly is fully down by checking the following: Hoist load is less than full weight of the handling tool	Examinee references hoist load display. **WHEN Requested CUE: Hoist load display indicates 50 lbs.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
12.	*	Raise the hoist until the weight of the spent fuel handling tool is indicated on the load cell.	Examinee simulates placing the hoist control switch in "RAISE" **WHEN Requested CUE: Spent Fuel Handling Machine Long tool is raising.** Examinee references hoist load display. **INFORM CUE: Hoist load display indicates 270 lbs.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
13.		Stop raising the hoist.	Examinee simulates releasing hoist control. **WHEN Requested CUE: The hoist has stopped.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
14.	*	Disengage grapple by going to unlock position on the grapple handle.	Examinee simulates Holding upper "T" while pulling on the lower "T" and rotating the lower "T" until it stops. **WHEN Requested CUE: The Grapple is open**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
15.	While observing hoist load, begin to raise hoist.	Examinee simulates placing the hoist control switch in "RAISE" **WHEN Requested CUE: The hoist is raising.** Examinee references hoist load display. **IF Requested CUE: Hoist load display indicates 270 lbs.** **INFORM CUE: Spent Fuel Handling Tool has cleared the top of the fuel assembly.**

SAT UNSAT (UNSAT requires comments)

STEP	ELEMENT	STANDARD
16.	Once the spent Fuel Handling tool has cleared the fuel assembly top fitting, stop the hoist.	Examinee simulates releasing hoist control. **WHEN Requested CUE: The hoist has stopped.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
17.		Go to the locked position on the grapple (**This step should not be performed because the hoist will not be raised to the up limit**)	Examinee simulates holding the upper "T" and rotating the lower "T" until the handle snaps into place. **IF Requested CUE: The handle has snapped into place, the grapple is closed.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
18.		Continue to raise the hoist.	Examinee simulates placing the hoist control switch in "RAISE" **WHEN Requested CUE: The hoist is raising.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
19.	*	Raise the hoist to a minimum of 165 on the hoist readout.	Examinee references hoist position indicator. **INFORM CUE: The hoist position indicator reads 165.** Examinee simulates releasing hoist control. **WHEN Requested CUE: The hoist has stopped.**

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

JPM B2
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	9/03/02		From FX022

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- The examiner will provide all responses and indications required from inside the Control Room.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **You are the Spent Fuel Handling Machine Operator performing core offload on Unit 1. A fuel assembly has been removed from the upender, and the hoist is presently at the UP LIMIT. Place the assembly into Spent Fuel Pool Storage Location Zulu 7 (Z7) per 78OP-9FX03.**

SAFETY CONSIDERATIONS:

- N/A

CANDIDATE

JPM B3
PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1310040602 DIRECT NEW FUEL ELEVATOR OPERATIONS
TASK STANDARD: Lift/Lower a component using the New Fuel Elevator
K/A: 2.2.27 K/A RATING: RO: 2.6 SRO: 3.5
APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 10 min
REFERENCES: 78OP-9FX03, Spent Fuel Handling Machine
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 9/3/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT X

TESTING METHOD: SIMULATE X PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)
EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

1. SIMULATOR SETUP:

A. IC# : None

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- None

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

Copy of 78OP-9FX03, Spent Fuel Handling Machine

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **A new experimental fuel assembly has been placed in the New Fuel Elevator by the previous shift.**
- **Reactor Engineering personnel have requested this fuel assembly be lifted using the New Fuel Elevator for inspection.**
- **Using the steps of 78OP-9FX03, Spent Fuel Handling, assist Reactor Engineering.**
- **All pre-requisites and pre-operational checks for the New Fuel Elevator and Spent Fuel Handling Machine have been completed.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed IAW NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.

SAFETY CONSIDERATIONS:

- None

STEP		ELEMENT	STANDARD
1.		Obtain copy of 78OP-9FX03, Spent Fuel Handling Machine	Examinee obtains copy of 78OP-9FX03, Spent Fuel Handling Machine and goes to step 6.3.2, Lifting a component with the New Fuel Elevator.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	Obtain the New Fuel Elevator bypass key from the Shift Manager.	Examinee makes effort to obtain the New Fuel Elevator bypass key from the Shift Supervisor. **WHEN requested CUE: You have obtained the New Fuel Elevator bypass key.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.		Contact Reactor Engineering or Refueling Team Leader \ Designated Alternate before raising the new fuel elevator for their concurrence.	Examinee makes effort to contact Reactor Engineering or Team Leader prior operating the New Fuel Elevator. **WHEN requested CUE: The Refueling Team Leader has been informed and concurs with the proposed New Fuel Elevator Operations.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
4.	*	Ensure an RP Tech is present to monitor general area radiation.	Examinee makes effort to contact RP for continuous radiation monitoring. **WHEN requested CUE: A Radiation Protection Technician is standing by and is continuously monitoring the area radiation.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
5.	*	Ensure the Spent Fuel Handling Machine bridge and trolley are clear of the transfer canal.	Examinee demonstrates basic process of how to move bridge trolley clear of the transfer canal. **INFORM CUE: The bridge and trolley are clear of the transfer canal. Another operator is standing by at panel PCN-D04 with the New Fuel Elevator Bypass key.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
6.	*	Hold the key operated bypass switch on PCN-D04 to ON.	Examinee directs the operator to hold the key operated bypass switch to "ON" **NOTE:** This will bypass the "Elevator Lockout," thus enabling the new fuel elevator with a load to be raised. **WHEN requested CUE: An Operator is holding the keyswitch on Panel PCN-D04 to the ON position.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
7.	*	Push the "RAISE" pushbutton on the Spent Fuel Handling Machine control panel to raise the fuel assembly.	Examinee simulates pushing the "RAISE" pushbutton. **IF requested CUE: The fuel assembly is raising.** **INFORM CUE: The RP Tech informs you that the general area Radiation levels are increasing dramatically.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
8.	*	Depress the "STOP" pushbutton	Examinee simulates depressing the "STOP" pushbutton. **IF requested CUE: The fuel assembly has stopped raising.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
9.	*	Depress the "LOWER" pushbutton	Examinee simulates depressing the "LOWER" pushbutton. **IF requested CUE: The fuel assembly is lowering in the New Fuel Elevator.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10.	Contact the Shift Supervisor and determine the cause for the increase in radiation.	Examinee makes effort to contact the Shift Supervisor of the radiation increase. **WHEN requested CUE: The Shift Supervisor has been informed and efforts are being made to determine the cause of the high radiation.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
11.	Monitor the elevator until it stops automatically.	Examinee continues to monitor fuel assembly lowering. **INFORM CUE: The fuel assembly has been lowered completely and the elevator has stopped automatically. RP reports that general area radiation levels are decreasing**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP	ELEMENT	STANDARD
12.	Release the key operated bypass switch and remove the key	Examinee directs the operator to release the key operated bypass switch ensuring it spring returns to the OFF position and remove the key. **WHEN requested CUE: The other operator has released the key operated bypass switch and then removed the key.** **INFORM CUE: Reactor Engineering and the Refueling Team Leader have decided to leave the fuel assembly in the New Fuel Elevator until the reason for the elevated radiation levels is determined.**

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

JPM B3
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	9/3/02	0	Developed from JPM FX004

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **A new experimental fuel assembly has been placed in the New Fuel Elevator by the previous shift.**
- **Reactor Engineering personnel have requested this fuel assembly be lifted using the New Fuel Elevator for inspection.**
- **Using the steps of 78OP-9FX03, Spent Fuel Handling, assist Reactor Engineering.**
- **All pre-requisites and pre-operational checks for the New Fuel Elevator and Spent Fuel Handling Machine have been completed.**

SAFETY CONSIDERATIONS:

- None

CANDIDATE

JPM B4
PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1250530302 DIRECT ACTIONS FOR LOSS OF SPENT FUEL POOL LEVEL AND/OR COOLING FROM THE REFUELING DECK
TASK STANDARD: Respond to two questions for Loss of Spent Fuel Pool Level
K/A: 38033K401 K/A RATING: RO: 2.9 SRO: 3.2
APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 15 min
REFERENCES: 40AO-9ZZ06 Loss of Instrument Air 40AO-9ZZ23, Loss of SFP Level or Cooling
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 9/3/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT X

TESTING METHOD: SIMULATE X PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)
EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM B4

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : None

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- None

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

Copy of 40AO-9ZZ23, Loss of SFP Level or Cooling & 40AO-9ZZ06, Loss of Instrument Air

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

The unit is in MODE 6 offloading fuel.

The RP Technician on the spent fuel pool floor informs the Control Room of a slow loss of spent fuel pool level.

The CRS directs the Auxiliary Operator to walkdown the spent fuel pool area with Radiation Protection personnel.

At this same time, the Spent Fuel Handling Machine operator is in the process of moving an offloaded fuel bundle to it's required storage location but notices the assigned location is already occupied. He reports this to the Control Room.

The CRS informs you as the LSRO that the Cask Loading Pit Area Gate seal is leaking.

1. **What actions are appropriate for the Spent Fuel Handling Machine operator?**
2. **The AO resolves the leak by aligning local air/nitrogen bottles to supply pressure to the Decon Area Gate seal. The CRS asks the Spent Fuel Handling Machine operators to assist the AO in monitoring that proper pressure is being maintained to the seals on the Spent Fuel Pool.**

   What pressure should be maintained to the "A" Train Instrument Air Supply to the Cask Loading Pit Gate (IAN-PI-281A)?

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed IAW NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.

SAFETY CONSIDERATIONS:

- None

STEP		ELEMENT	STANDARD
1.	*	For the first question, the candidate obtains a copy of 40AO-9ZZ23, Loss of SFP Level or Cooling	Examinee obtains copy of 40AO-9ZZ23, Loss of SFP Level or Cooling and goes to Section 3.0, contingency action step 3.1 and identifies either of the following responses as a minimum: (See attached) • Place the assembly in an available storage rack location. • Lowers the assembly to just above the floor in a deep area of the Spent Fuel Pool. **NOTE**: This response may be derived without the assistance of the reference procedure.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	For the second question, the candidate transitions to 40AO-9ZZ06, Loss of Instrument Air for the correct response. This transition occurs at step 12 of 40AO-9ZZ23, Loss of SFP Level or Cooling or by recognition of the AOP entry condition for Loss of Instrument Air, "The loss of instrument air pressure in one or more instrument air headers".	Examinee obtains copy of 40AO-9ZZ06, Loss of Instrument Air and goes to Section 3.0, step 15 "**IF** Instrument air pressure in the Fuel Building is 28 psig or less**, THEN** PERFORM Appendix H, Aligning Local Air / Nitrogen Bottles and identifies the following response as a minimum: (See attached) Step 6 of Appendix H informs the operator to check that pressure is being maintained at 36.5 to 43.5 psig. **NOTE**: A response within this band is acceptable and may be derived without the assistance of the reference procedure.

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

PALO VERDE NUCLEAR GENERATING STATION LOSS OF SFP LEVEL OR COOLING	40AO-9ZZ23 Revision 7 Page 4 of 88

3.0 LOSS OF SPENT FUEL POOL LEVEL

INSTRUCTIONS		CONTINGENCY ACTIONS	
____1.	Ensure that the event is being classified.		
____2.	Direct an operator to ensure that the Fuel Building Roll-up Door is closed.		
____3.	**IF** movement of a fuel assembly is in progress, **THEN** direct the spent fuel crew to place the assembly into a storage rack.	___ 3.1	Lower the assembly to just above the floor in a deep area of the Spent Fuel Pool.
____4.	Announce the following over the plant communications system: "Attention all personnel. Attention all personnel. A loss of Spent Fuel Pool level has occurred in Unit ___. All non-essential personnel evacuate the Fuel Building. All non-essential personnel evacuate the Fuel Building."		

COMMENTS:

PALO VERDE NUCLEAR GENERATING STATION	40AO-9ZZ06 Revision 12
LOSS OF INSTRUMENT AIR	Page 113 of 133
	Appendix H Page 4 of 8

Appendix H, Aligning Local Air / Nitrogen Bottles

INSTRUCTIONS	CONTINGENCY ACTIONS
____5. Open **ALL** of the following: • IAA-VF98, IAN-PI-282A Isolation Valve • IAA-VF89, IAN-PI-278 Isolation Valve • IAA-VF94, IAN-PI-281A Isolation Valve	
____6. Check that pressure on **ALL** of the following is 36.5 - 43.5 psig: • IAN-PI-282A, "A" TRAIN IA SUPPLY TO DECON WASHDOWN PIT GATE • IAN-PI-278, "A" TRAIN IA BACKUP SUPPLY TO CASK LOADING & DECON WASHDOWN GATE • IAN-PI-281A, "A" TRAIN IA SUPPLY TO CASK LOADING PIT GATE	___ 6.1 Perform the following to ensure that the nitrogen bottle for the Cask Loading Pit and Decon Area A seals is properly aligned: a. Ensure that the nitrogen bottle is hooked up. b. Ensure that the nitrogen bottle isolation valve is open. c. Ensure IAA-PCV-276 is set for 36.5 - 39.5 psig. d. Ensure **ALL** of the following valves are open: • IAA-VF88, IAE-PSL-277A Isolation Valve • IAA-VF91, Train A Nitrogen / Air Bottle Isolation Valve • IAA-VF92, Train A Cask Loading Pit Isolation Valve • IAA-VF96, Train A Decon Area Gate Isolation Valve

JPM B4
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	9/4/02	0	New JPM

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

The unit is in MODE 6 offloading fuel.

The RP Technician on the spent fuel pool floor informs the Control Room of a slow loss of spent fuel pool level.

The CRS directs the Auxiliary Operator to walkdown the spent fuel pool area with Radiation Protection personnel.

At this same time, the Spent Fuel Handling Machine operator is in the process of moving an offloaded fuel bundle to it's required storage location but notices the assigned location is already occupied. He reports this to the Control Room.

The CRS informs you as the LSRO that the Cask Loading Pit Area Gate seal is leaking.

1. **What actions are appropriate for the Spent Fuel Handling Machine operator?**
2. **The AO resolves the leak by aligning local air/nitrogen bottles to supply pressure to the Decon Area Gate seal. The CRS asks the Spent Fuel Handling Machine operators to assist the AO in monitoring that proper pressure is being maintained to the seals on the Spent Fuel Pool.**

   What pressure should be maintained to the "A" Train Instrument Air Supply to the Cask Loading Pit Gate (IAN-PI-281A)?

SAFETY CONSIDERATIONS:

- None

CANDIDATE

JPM B5

PVNGS JOB PERFORMANCE MEASURE

JPM BASIS INFORMATION

TASK: 1300070102 DIRECT CORE RELOADING
TASK STANDARD: Take corrective action for high NI count rate IAW 78OP-9FX01 and 72IC-9RX03
K/A: 2.2.27 K/A RATING: RO: 2.6 SRO: 3.5

APPLICABLE POSITION(S): Refueling SRO VALIDATION TIME: 10 min
REFERENCES: 78OP-9FX01, Refueling Machine Operations
72IC-9RX03, Core Reload
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT X
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 9/4/02 APPROVAL:

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR _____ PLANT X

TESTING METHOD: SIMULATE X PERFORM _____

EVALUATION

EXAMINEE NAME: _____
(print)
EVALUATOR NAME: _____
(print)

SATISFACTORY _____ UNSATISFACTORY _____

Time Start _____ Time Stop _____

REMEDIAL TRAINING REQUIRED? YES _____ NO _____

JPM B5

PVNGS JOB PERFORMANCE MEASURE

1. SIMULATOR SETUP:

A. IC# : N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.	N/A	
3.	N/A	
4.	N/A	

C. SPECIAL INSTRUCTIONS:

- N/A

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

Copy of 78OP-9FX01, Refueling Machine Operations & 72IC-9RX03, Core Reload

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **You are performing core reload on Unit 1. A fuel assembly has been moved from the upender, to position Alpha 7, using Semi-Automatic mode. The refueling machine has just stopped at position Alpha 7. You are to seat the assembly in core location Alpha 7 per 78OP-9FX01. It is necessary to use the fuel spreader.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed IAW NUREG-1021.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.

JPM B5

PVNGS JOB PERFORMANCE MEASURE

STEP		ELEMENT	STANDARD
1.		Verify orientation of the mast to prevent damage to the TV camera. NOTE: 90 & 180 degrees are acceptable	Examinee references appendix D. **WHEN requested CUE: Mast orientation is 90°.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	Verify Position of the refueling machine over position Alpha 7.	Examinee references bridge/trolley position indicator. **When requested CUE: Position indicator reads:** **Unit Bridge Trolley** **1 765.44 683.58**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.	*	Ensure that the location is not already occupied.	Examinee references core position Alpha 7. **IF requested CUE: Location Alpha 7 is empty.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
4.	*	Verify with the Control Room that previous 1/M plot is complete/ count rate is stable.	Examinee radio's Control room asks if 1/M plot is complete. **When requested CUE: 1/M plot complete, you have permission to lower the assembly into position Alpha 7.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
5.	*	Lower the hoist.	Examinee simulates placing hoist control to down position. **WHEN requested CUE: The hoist is lowering. The "HOIST OPERATED" light is lit. The "B/T LOCKOUT" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6.	Examinee simulates placing hoist control to down position.	Verify Hoist contacts DOWN STOP **Inform CUE: The hoist is lowering. The "HOIST OPERATED" light is lit. The "B/T LOCKOUT" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7.	Verify Hoist contacts DOWN STOP	Examinee references hoist cable load display. **When requested CUE: Cable load display indicates 1470 lbs.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8.	Verify HOIST POSITION INDICATOR reads ~211.	Examinee references hoist position display. **When requested CUE: Hoist position display indicates hoist position of 211 inches.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP	ELEMENT	STANDARD
9.	Turn the FUEL SPREADER CONTROL to extend position.	Examinee may simulate turning "Fuel Spreader" control to the extend position. Step is LSRO's discretion. **If requested CUE: Fuel spreader "EXTEND" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10.	Continue Lowering the hoist.	Examinee simulates holding hoist control to down position. **When requested CUE: The hoist is lowering. The "HOIST OPERATED" light is lit.** **INFORM CUE: The Audible count rate is increasing significantly.**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
11.	*****	Immediately withdraw the assembly	Examinee simulates to withdraw the assembly. **WHEN requested Cue. The hoist is raising . Counts are decreasing.** Examinee notifies the control room of actions in progress. **WHEN requested CUE: The Control Room responds that <u>both</u> channels of Startup NI's were increasing to greater than 5 times initial counts**.

SAT UNSAT (UNSAT requires comments)

STEP		ELEMENT	STANDARD
12.		Hoist has stopped.	Examinee simulates releasing hoist control to neutral position. **When requested CUE: The hoist has stopped. The "Up Limit " light is on.**

SAT UNSAT (UNSAT requires comments)

STEP		ELEMENT	STANDARD
13.	*	The LSRO requests to secure from core alterations and place the bundle in a safe location.	Examinee recommends secure from core alterations and designates a safe location for the assembly on the hoist. **WHEN requested CUE: The Control Room directs to place the assembly back in the upender and secure from core alterations**.

SAT UNSAT (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

JPM B5
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	9/4/02		Developed from FX025

REASON REVISED — Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **You are performing core reload on Unit 1. A fuel assembly has been moved from the upender, to position Alpha 7, using Semi-Automatic mode. The refueling machine has just stopped at position Alpha 7. You are to place the assembly in core location Alpha 7 per 78OP-9FX01. It is necessary to use the fuel spreader.**

CANDIDATE

Facility: PVNGS Scenario No. 1 Op-Test Number: C1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Core Reload is in progress on Unit 1

Turnover: A fuel bundle is in transit to the upender from the spent fuel pool

Event No.	Malf No.	Event Type*	Event Description
1.	N/A	C	Minor leakage reported from the Transfer Carriage Makeup Tank.
2.	N/A	M	A fuel bundle is dropped onto the core with significant fuel damage.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No. C1 Scenario No. 1 Event No.: 1 Page 1 of 1

Event Description:

Minor leakage is reported from the Transfer Carriage Makeup Tank causing an incomplete auto transfer sequence and suspension of core offload.

Examiner Cue:

The Spent Fuel Handling Machine operator is standing by outside the transfer canal waiting for the upender to go vertical. As the upender with the carriage begins to go vertical in the spent fuel pool, the Spent Fuel Handling Machine operator informs you as the LSRO that the Transfer Carriage Makeup Tank is almost empty and there is a puddle of water under the tank. The upender has stopped short of vertical and did not complete its auto sequence. The Spent Fuel Handling Machine operator informs you that the hydraulic line from the pump for the Fuel Transfer Machine has a crack and will need to be replaced. Maintenance estimates that this will take at least 2 hours.

Time	Position	Applicant's Actions or Behavior
	LSRO	Contact the Control Room and Reactor Engineer to inform them of the situation and that core offload is temporarily suspended until the leak is repaired and the Transfer Carriage Makeup tank is refilled.
	LSRO	*Suspends fuel movement. (The LSRO should provide input to the CRS/RE that the current fuel bundle on the hook in the Fuel Building should be placed in a safe condition if it is going to take some time to repair the fuel transfer machine. The acceptable locations would be into a deep area of the spent fuel pool or back into its original or lowered number storage location. This is at the LSRO's discretion) Ref. 72IC-9RX03, Core Reload, step 7.17.1
Examiner Cue: ***After about 90 minutes, the* Spent Fuel Handling Machine *operator contacts you and informs you that the water leak on the fuel transfer machine has been repaired and the upender has been restarted and tested satisfactorily. The upender is vertical in the Fuel Building. The* Spent Fuel Handling Machine *operator requests permission to recommence fuel movement to place the next fuel assembly into the upender.***		
	LSRO	Confers with the Control Room and Reactor Engineer to request permission to recommence fuel movement activities. The Spent Fuel Handling Machine operator is given permission to recommence fuel handling activities.

* Denotes critical task

Op-Test No. C1 Scenario No. 1 Event No.: 2 Page 1 of 1

Event Description:

A fuel bundle is dropped from the refuel handling machine onto the core with significant fuel damage

Examiner Cue:

(Wait until after the spent fuel handling machine operator has been given permission to recommence fuel handling activities)

The Spent Fuel Handling Machine operator has sequenced the upender to Containment. The Refuel Machine operator has retrieved the fuel bundle from the upender and is the process of moving the bridge toward the core target cell location in semi-automatic. The bridge engages debris on the bridge tracks and suddenly stops which causes the mast to fail. The fuel bundle falls onto the core below.

The bundle is now lying partly on the fuel and partly in the core. Bubbles and cloudy water can be seen rising toward the surface.

The Control Room Supervisor has contacted the bridge and reported that the containment purge isolation has automatically initiated due to high radiation level. The refuel bridge area radiation monitor is now alarming.

Time	Position	Applicant's Actions or Behavior
	LSRO	Enter 40AO-9ZZ22, FUEL DAMAGE per Section 3 (Irradiated Fuel Damage)
	LSRO/RP	*Evacuates the containment of all nonessential personnel
	LSRO	Contacts CRS and Reactor Engineering ***CUE: The CRS/RE directs you to leave the bundle in the current location, ensure the containment is evacuated, and come to the main control room***
		CUE: You have reached the termination point for the scenario

* Denotes critical task

PVNGS Scenario 1

INITIAL CONDITIONS

Limited SRO
Unit 1
MODE 6
Core Reload is in progress

TURNOVER:

All prerequisites for core alterations are met and a fuel bundle is in-transit to the upender from the spent fuel pool. The Spent Fuel Handling Machine operator is standing by with a fuel bundle on the hook outside the transfer canal waiting for the upender to go vertical in the Fuel Building.

The Refuel Machine Operator is standing by outside the RTMZ (Refueling Transfer Machine Zone) waiting for the next bundle to be sent to containment.

Facility: PVNGS Scenario No. 2 Op-Test Number: C2

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Core reload is in progress.

Turnover: A fuel bundle is in the upender on the containment side. The upender is vertical.

Event No.	Malf No.	Event Type*	Event Description
1.	N/A	I	Startup Range Nuclear Monitoring (SRM) Instrument failure requires suspension of core alterations
2.	N/A	M	A severe thunderstorm warning has been issued

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No. C2 Scenario No. 2 Event No.: 1 Page 1 of 2

Event Description:

Startup Range Nuclear Monitoring instrument failure requires suspension of core alterations

Examiner Cue:

The refuel platform is in the trolley index zone heading toward the RTMZ (Refueling Transfer Machine Zone) in semi-automatic control to pick up the next fuel bundle in the upender. The Reactor Engineer contacts the bridge crew and reports a Startup Range NI has just failed and the cause has not been determined at this time.

Time	Position	Applicant's Actions or Behavior
	LSRO	*Directs the Refuel Machine operator to stop fuel movement (core alterations) due to failure to meet required operable nuclear instruments Ref: T.S. L.C.O 3.9.2 72IC-9RX03, Core Reload, Step 8.2.8 40OP-9ZZ23, Outage GOP, Step 11.31 ***CUE: The Refuel Machine operator has stopped the bridge. The Spent Fuel Handling Machine operator is standing by outside the transfer canal waiting to receive permission to grapple the next assembly.***
	LSRO	Notify Control Room/Reactor Engineering that core alterations have been suspended ***CUE: Reactor engineering has been informed of the cause of the SRM failure and the SRM is expected to be returned to service within the next few minutes. Reactor Engineering directs you to place the bundle in a safe intermediate storage location until the SRM is restored.***
	LSRO	*Returns the bundle to the safe intermediate location. Ref: 72IC-9RX03, Core Reload, Step 7.17.1 guideline action is to lower the upender to horizontal. ***CUE: The upender is travelling to the horizontal position. The upender is horizontal.***

Op-Test No. C2 Scenario No. 2 Event No.: 2 Page 2 of 2

* Denotes Critical Task

Event Description:

Severe Thunderstorm warning issued

CUE:

The SRM has been restored and core alterations are in progress. The Spent Fuel Handling Machine operator has just grappled a bundle from the storage rack and raised it to the spent fuel handling machine upper limit and is ready to move the Spent Fuel Machine to the upender. The Refuel Machine operator is lowering a bundle into the core. The CRS informs you that a Severe Thunderstorm Warning has been issued for our immediate area and to suspend all fuel handling operations and to place the fuel in a safe storage location.

Time	Position	Applicant's Actions or Behavior
	LSRO	*Informs the Spent Fuel Handling Machine operator to place the fuel assembly back into its storage rack and suspend fuel movement. - Ref: 72IC-9RX03, Core Reload, Step 7.17.1 -
	LSRO	*Inform the Refuel Machine operator to complete lowering the fuel assembly into the core and then suspend further core alterations. - - Ref: 72IC-9RX03, Core Reload, Step 7.17.1 ***CUE: The fuel assemblies have been placed into the position designated by the LSRO.***
		CUE: You have reached the termination point for the scenario

* Denotes Critical Task

PVNGS Scenario 2

INITIAL CONDITIONS

Limited SRO
Unit 2
Mode 6
Core Reload in progress
Unit 2 Refuel Platform is in semi-automatic mode

TURNOVER:

All prerequisites for core alterations are met and the bridge is in the trolley index zone with motion toward the upender.

CANDIDATE