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: 10/2/02 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 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 you as the LSRO and your 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. You and the Refuel Machine Operator are scheduled to work dayshift today, 11/6

INITIATING CUE:

- **You are to evaluate the working hour history for yourself and the Refuel Machine Operator to determine whether both of you 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 Surveillance Test 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.

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 you as the LSRO and your 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. You and the Refuel Machine Operator are scheduled to work dayshift today, 11/6

INITIATING CUE:

- **You are to evaluate the working hour history for yourself and the Refuel Machine Operator to determine whether both of you 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: 10/31/02 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. 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 8 is available.

D. REQUIRED CONDITIONS:

- N/A

2. SPECIAL TOOLS/EQUIPMENT:

- **Blank copy** of "Sensitive Issues Manual", 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 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 the Sensitive Issues associated with the required controls placed on this activity for:

- **Planning & Preparation**
- **Performance**
- **Other Department Involvement**

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 A1-2
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 (Maintenance Evolutions) & Appendix B (Activity & Evolution Controls).

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, 4	I1, F1	5, 15
RADIOLOGICAL DIVING	2, 4, 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	4	E1	0
ACTIVITIES INVOLVING SFP AND OR SUPPORTING EQUIPMENT WHICH IMPACT REACTIVITY OR INVENTORY SUCH AS RECEIPT/MOVEMENT OF NEW FUEL OR WORK ON GATES/SEALS	3, 4, 7, 8	0	2

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
0	10/31/02		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 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 the Sensitive Issues associated with the required controls placed on this activity for:

- **Planning & Preparation**
- **Performance**
- **Other Department Involvement**

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: 10/25/02 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 Reactor Core location E7 on Unit 3. A Refuel Machine Operator trainee inadvertently looses his glasses while looking over the side of the Refuel Machine. The location of the glasses is given on the attached map. Identify the LSRO actions that are required by 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. NOTE: If the candidate inquires if Appendix O, Event Recovery Checklist, from the Refueling Procedure (78OP-9FX01) will be required, respond that Appendix O will not be required for this evolution.

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	10/25/02		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:

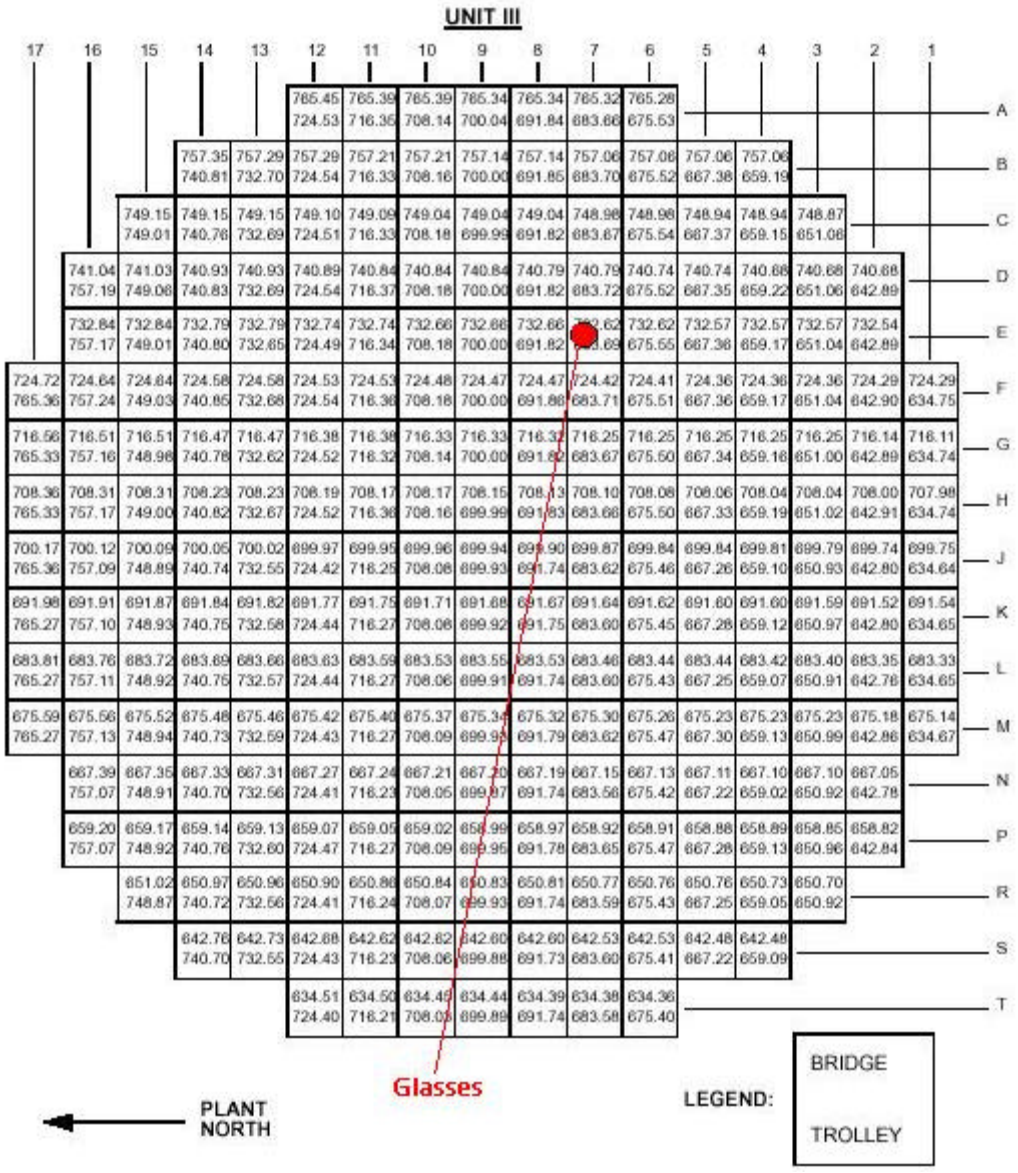
SPECIAL CONSIDERATIONS:

- 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 Reactor Core location E7 on Unit 3. A Refuel Machine Operator trainee inadvertently looses his glasses while looking over the side of the Refuel Machine. The location of the glasses is given on the attached map. Identify the LSRO actions that are required by procedure for the Loss of FME.

CANDIDATE


UNIT III
17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
A
B
C
D
E
F
G
H
J
K
L
M
N
P
R
S
T
Glasses
PLANT NORTH
LEGEND:
BRIDGE
TROLLEY

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: 10/31/02 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 is scheduled to start on your shift
2. You are the oncoming LSRO
3. No other activities are in progress or planned
4. You have signed into the RCA and received an RP brief for REP 3-3022A Task #1
5. RP informs you that core offload has not started and RP is not stationed at the SFP
   - **As you prepare to dress out in the Spent Fuel Pool area you are asked by the Fuel Services group to assist to remove the Weir Gate from the SFP.**
   - **Your qualifications are current and all SWMS criteria are met to perform this work.**
6. **Identify any additional RP criteria that must me met to perform this work.**

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.		Obtains REP 3-3022A.	Examinee is given a copy of REP 3-3022A.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	Candidate identifies that the task has changed from the REP task he signed in on and needs to review the new task criteria for removal of the SFP Weir gate (Task #2).	Candidate does NOT proceed with this task without RP coverage nor without reviewing and signing onto REP 3-3022A for Task #2.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.		Locate task #2 REP criteria.	Locates items on REP.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
4.	*	Identifies the items on the REP for task #2.	Examinee determines the following 4 items have changed or have to be met prior to moving the SFP Weir Gate: 1) Task number to be signed in on is task #2. 2) A RP pre-job brief is required for removing the SFP Weir Gate. 3) Continuos RP coverage is required during movement of the SFP Weir Gate. (An RP Tech needs to be stationed prior to start of work) 4) EPD (Electronic Dosimetry) Dose setting has changed to 100 mRem. (This should occur when the candidate signs back in on the correct task at the RCA EPD station)

NORMAL TERMINATION POINT

JPM A3
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	10/31/02		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 is scheduled to start on your shift
2. You are the oncoming LSRO
3. No other activities are in progress or planned
4. You have signed into the RCA and received an RP brief for REP 3-3022A Task #1
5. RP informs you that core offload has not started and RP is not stationed at the SFP
   - **As you prepare to dress out in the Spent Fuel Pool area you are asked by the Fuel Services group to assist to remove the Weir Gate from the SFP.**
   - **Your qualifications are current and all SWMS criteria are met to perform this work.**
6. **Identify any additional RP criteria that must me met to perform this work.**

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	100	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: Emergency Procedures / Plan for LSRO
TASK STANDARD: Respond to two questions for Knowledge of Emergency Plan
K/A: 2.4.29 Knowledge of Emergency Plan K/A RATING: RO: 2.6 SRO: 4.0
APPLICABLE POSITION(S): Limited SRO VALIDATION TIME: 15 min
REFERENCES: EPIP-1, Appendix I
SUGGESTED TESTING ENVIRONMENT: SIMULATOR _____ PLANT _____
ADMIN AREA X

APPROVAL

DEVELOPER: Phillip Capehart TECH REVIEW:
REVISION DATE: 10/31/02 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 A4

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 EPIP-1, Appendix I, "SATELLITE TECHNICAL SUPPORT CENTER ACTIONS"

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.
- Unless stated, you may use any source of information normally available.

INITIATING CUE:

- You are a Licensed Senior Reactor Operator escorting 2 spent fuel handling machine vendor representatives to the 140' Fuel Building.
- Upon arriving at the 140' Fuel Building floor, you hear a loud "slow whoop" (a high pitch in 3 second bursts)

1. **What does this alarm mean? (This is a CLOSED reference question)**
2. **Where must you escort your assigned visitors? (This is an OPEN reference question)**

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

JPM A4

PVNGS JOB PERFORMANCE MEASURE

STEP		ELEMENT	STANDARD
1.	*	For the first question, the candidate states from memory the meaning of the alarm.	This is an assembly/accountability alarm.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	For the second question, the candidate may refer to EPIP-1, Appendix I, Assembly.	Examinee may obtain a copy of EPIP-1, and use Appendix I, Assembly step 2.1.5.4: (See attached) **The LSRO should respond:** Report to the nearest Assembly Area outside the Protected Area. (These are considered to be non-essential personnel). **Another acceptable response is**: To any major buildings outside the Protected Area, which is any building within the Owner Controlled Area that has Public Address capability.

SAT _____ UNSAT _____ (UNSAT requires comments)

NORMAL TERMINATION POINT

COMMENTS:

NUCLEAR ADMINISTRATIVE AND TECHNICAL MANUAL	Page 178 of 441	
SATELLITE TECHNICAL SUPPORT CENTER ACTIONS	EPIP-01	Revision 12
	Appendix I Page 2 of 6	

2.1.5 Personnel assembly is accomplished as follows:

2.1.5.1 Personnel in Containment are to secure work safely, report to the 140' hatch, and await instructions.

2.1.5.2 Emergency Response Organization members are to report to their Emergency Response Facilities.

2.1.5.3 Personnel in the Power Plant Protected Area engaged in EC-authorized critical work are to report to the OSC, STSC, or TSC and card in on the ACAD card reader before returning to work.

2.1.5.4 All other personnel, whether inside or outside the Power Plant Protected Area, are to report to the nearest Assembly Area outside the Power Plant Protected Area. These are considered to be non-essential personnel.

COMMENTS:

JPM A4

PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	10/31/02		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:

- You are a Licensed Senior Reactor Operator escorting 2 spent fuel handling machine vendor representatives to the 140' Fuel Building.
- Upon arriving at the 140' Fuel Building floor, you hear a loud "slow whoop" (a high pitch in 3 second bursts)

1. **What does this alarm mean? (This is a CLOSED reference question)**
2. **Where must you escort your assigned visitors? (This is an OPEN reference question)**

SAFETY CONSIDERATIONS:

- None

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: 10/31/02 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:

- Blank copy of **78OP-9FX01, "Refueling Machine Operations", Rev. 15**

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, CUE:** **Mast orientation is 0^{o}.** Note: The TV camera has been removed from the mast. The camera is mounted off the bridge. **Examiner's note:** The mast position is verified at the base of the mast. The mast can only be moved and locked in 90-degree increments. Moved manually by a hand crank at the base of the mast.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	Verify Position of the refueling machine over position M7.	Examinee references bridge/trolley position indicator on the SFHM console. The position should also be verified by using the gross coordinate indication on the North wall of the refuel pool for the Bridge (Letter designation, i.e. "M") and on the West side of the bridge for the Trolley (Number designation, i.e. "7"). **WHEN REQUESTED, CUE:** **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 on attached core map and sees that it is empty. **INFORM CUE:** (Give the candidate the attached core map, Attachment 1, designating the fuel assemblies already placed into the core with an "X" and showing the next logical location being Mike 7.) **Inform the candidate that the grid locations without an "X" are 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, CUE: 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 and holds to maintain motion in the down direction. **WHEN REQUESTED, CUE: The hoist is lowering. The "HOIST OPERATED" light is lit. The "Bridge/Trolley LOCKOUT" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6.	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
7.	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)

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

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9.	Continue to lower the assembly into the core.	When hoist position indicator reads ~300, or after examinee continues to lower the assembly. It will take approximately 2 min. from the start of lowering until this position is reached. **INFORM CUE:** **2 minutes have passed, Hoist position indicator reads 300". Hoist cable load reads 1350 lbs.** **The "UNDERLOAD" light is on. The hoist has stopped moving downward.** (AT THIS POINT THE EXAMINEE SHOULD RECOGNIZE AN ABNORMAL CONDITION)

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
10.		Release the HOIST CONTROL SWITCH to neutral position.	Examinee simulates releasing hoist control to neutral position. **If requested, CUE: The "HOIST OPERATED" light is on.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
11.		Contact the CRS for concurrence & Proceed to Appendix M of 78OP-9FX01, Action Plan for movement of a difficult assembly and request concurrence from CRS to move the assembly.	Appendix M obtained. **When requested, CUE: Repeat back the information related to the bound assembly and give permission to move the fuel assembly.**

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
12.		Visually verify or using TV camera determines assembly position.	Examinee references TV Monitor screen or simulates visual references per Appendix "M". **INFORM CUE:** **Give the attached handout, Attachment 2, to the candidate. It shows the overhead view of the assembly being lowered into position M7.** (The Assembly is bound on the Northwest corner)

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
13.	*	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
14.	*	Manually move the bridge East using Appendix H.	The LSRO would direct the bridge operator to install the handwheel on the input shaft extension to the gear reducer, releases the motor brake by rotating the flip switch 90 degrees on the side of the motor and move the handwheel while he observes the digital readout on the SFHM console to confirm the bridge moves east. The readout should go up. If it goes down the handwheel is being turned in the wrong direction. **WHEN REQUESTED CUE: Bridge position for the Unit requested** **Unit Bridge** **2 676.00** (Bridge moved 1/2" with approximately a ¼ turn of the handwheel) **NOTE:** Distance bridge moves is at the discretion of the LSRO. Cues are based on 1/2" **INFORM CUE:** **Give the candidate Attachment 3.** (The Assembly is still making contact on the North side of the fuel assembly.) **NOTE:** Step 14 & 15 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
15.	*	Manually move the trolley South.	Examinee simulates manually moving the trolley south. **WHEN REQUESTED CUE: Trolley position for the Unit requested** **Unit Trolley** **2 683.06** (Trolley moved 1/2" with approximately a ¼ turn of the handwheel) **NOTE:** Distance bridge moves is at the discretion of the LSRO. Cues are based on 1/2". **INFORM CUE:** **Give the candidate Attachment 4.** **NOTE:** Step 14 & 15 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
16.	*	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
17.		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
18.	*	Hand cranks the bridge West using handwheel.	Examinee simulates manually moving the bridge west. **WHEN REQUESTED, CUE: Bridge position Unit:** **Unit Bridge** **2 675.50**

SAT _____ UNSAT _____ (UNSAT requires comments)

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

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
20.	*	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.** **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
21.	Release the HOIST CONTROL SWITCH to neutral position.	Examinee simulates releasing hoist control to neutral position.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
22.	Verify assembly is fully lowered by hoist position indication (Z Number).	Examinee references hoist position display. **WHEN REQUESTED, CUE: Hoist position display indicates Hoist position 402".** **Note: If steps 18 & 19 are not performed then change the CUE to 400". The fuel assembly will not seat properly. If steps 18 & 19 are performed then this step is recoverable.**

SAT _____ UNSAT _____ (UNSAT requires comments)

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

SAT _____ UNSAT _____ (UNSAT requires comments)

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

SAT _____ UNSAT _____ (UNSAT requires comments)

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

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
26.		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. Checks that all observable alignment pins are showing outside the fuel assembly foot and that the gap between adjacent assemblies is < ¼" and is consistent along the length of the assembly. **WHEN REQUESTED, CUE: All observable alignment pins are showing outside the fuel assembly foot and the gap between this assembly and the adjacent assemblies is <1/4".**

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	10/31/02		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 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.**

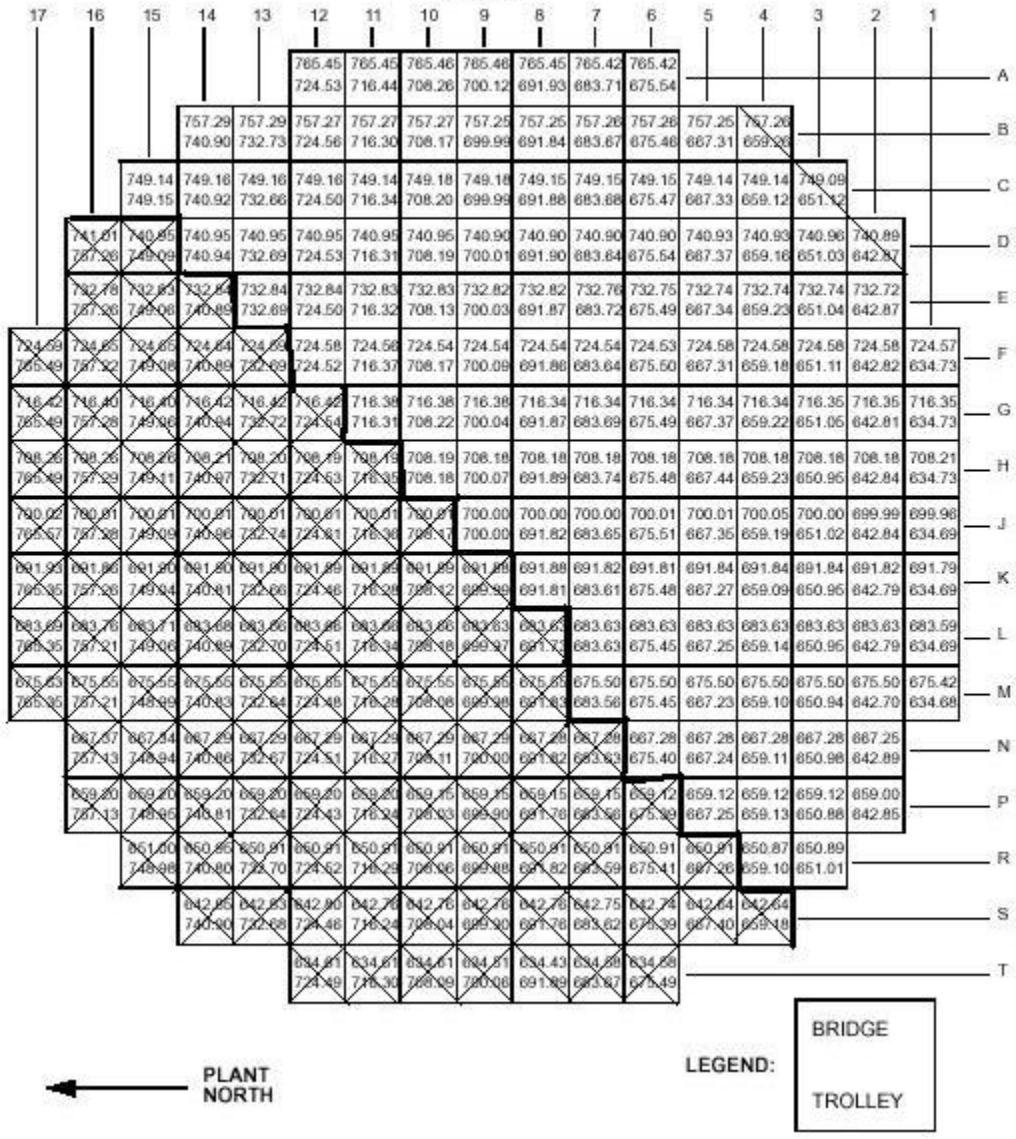
CANDIDATE

Attachment 1

(Provide @ step 3)

Core Coordinates (cont.)

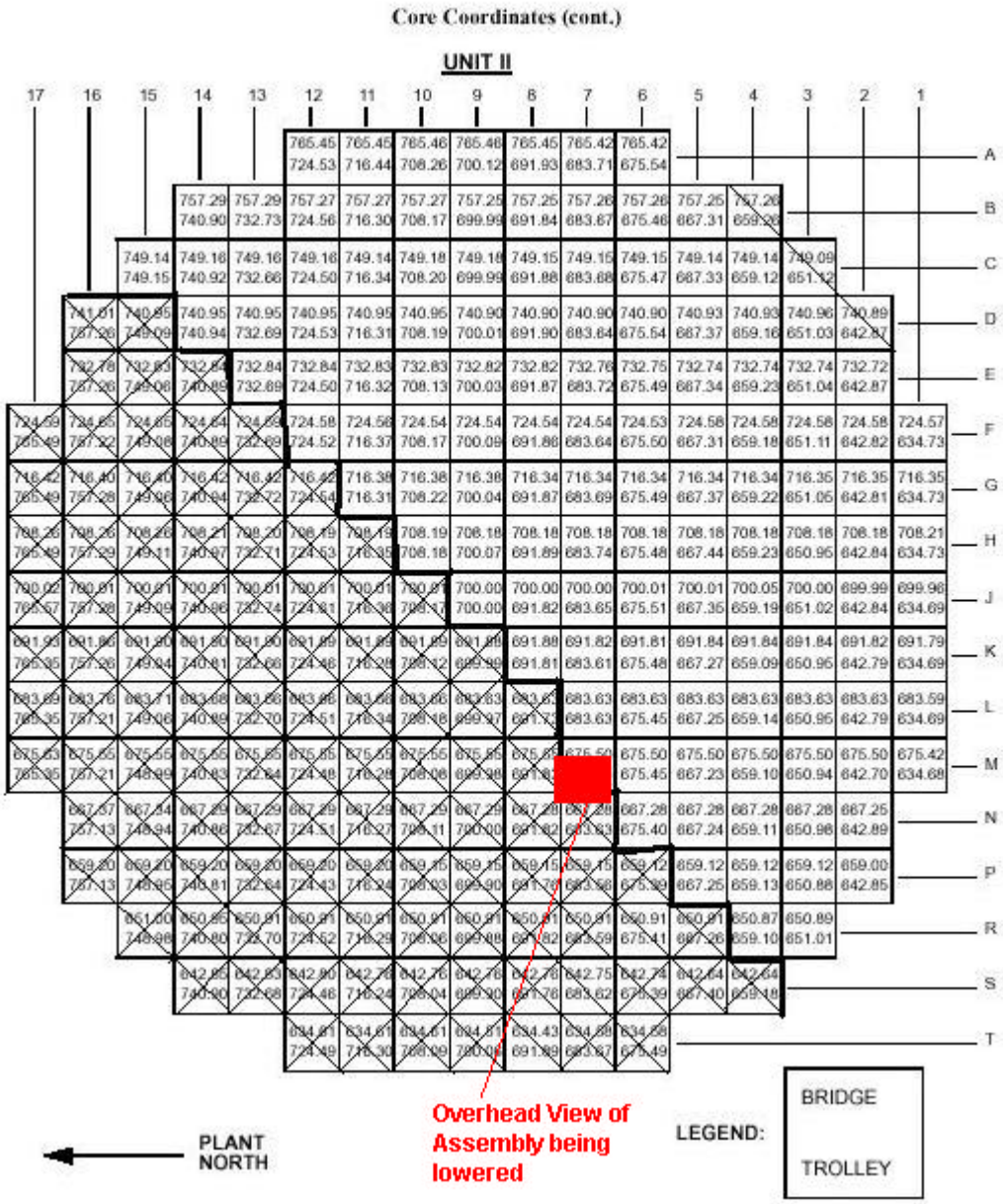
UNIT II



CANDIDATE

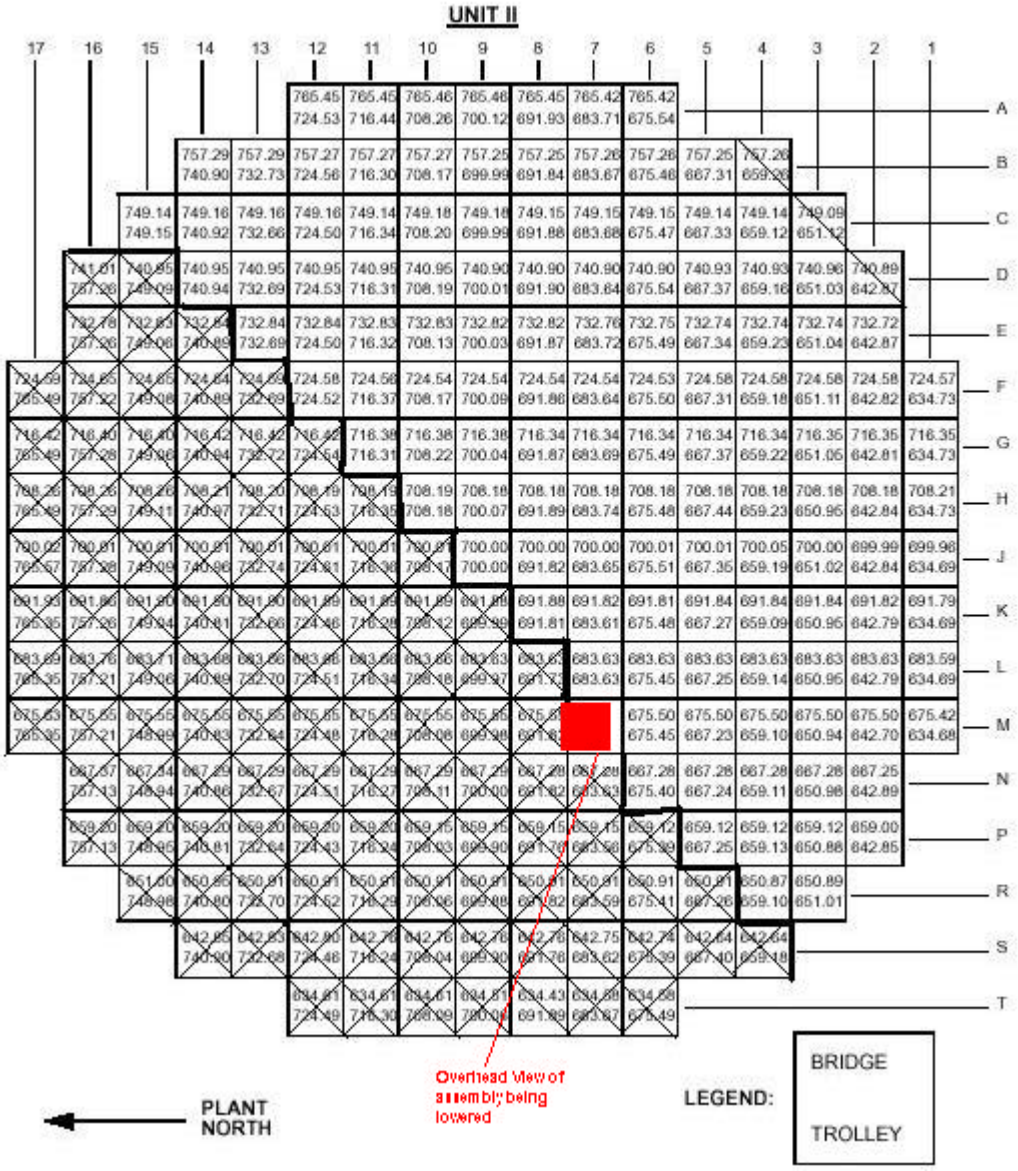
Attachment 2

(Provide @ step 12)



Attachment 3

(Provide @ step 14)

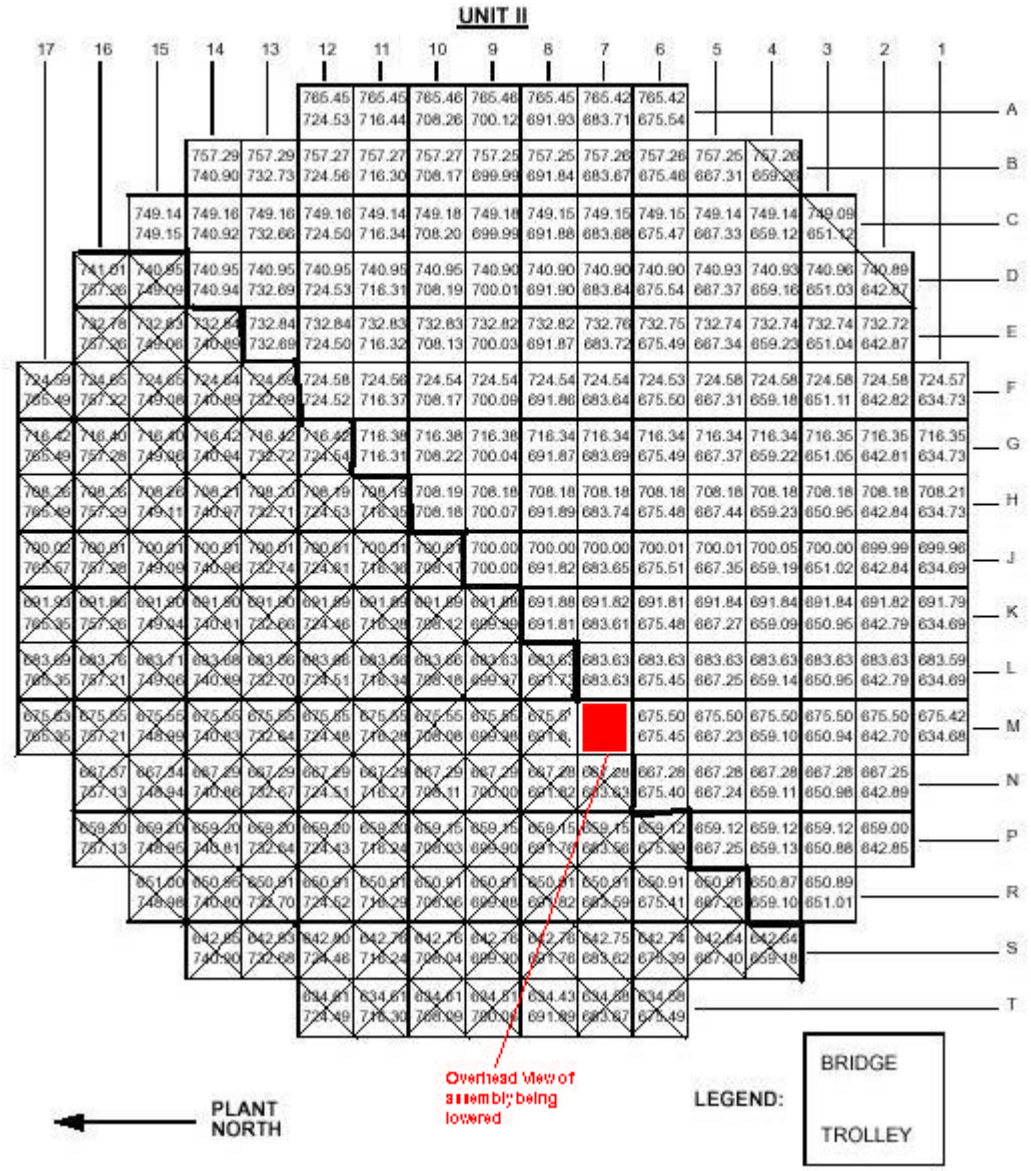


CANDIDATE

JPM B1
PVNGS JOB PERFORMANCE MEASURE

Attachment 4

(Provide @ step 15)



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: 10/31/02 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, Rev. 17

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

JPM B2

PVNGS JOB PERFORMANCE MEASURE

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"** Note: The Letter designations are located on the West side of the bridge.

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.** Note: The Number designations are located on the SF Pool North side.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
3.		Verify that the bridge and trolley are over the specified location.	Examinee references Bridge position markers. **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. **Wait approximately 10 seconds, then give the following inform cue.** **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)

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.**

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.	**INFORM CUE:** **The hoist has automatically stopped. The hoist underload 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 Requested, CUE: Hoist position is reading 195 inches on the Durant counter.** **NOTE:** hoist position (Durant counter) 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. **Steps 16 & 17 of this JPM should not be performed because the hoist will not be raised to the up limit.**	Examinee simulates releasing hoist control. **If Requested, CUE: The hoist has stopped.** **Note: Steps 16 & 17 of this JPM should not be performed because the hoist will not be raised to the up limit.**

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" **IF 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	10/31/02		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: 10/31/02 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 B3

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 78OP-9FX03, Spent Fuel Handling Machine, Rev. 17

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 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 personal indoctrination items 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: Repeat back as the Shift Supervisor, "I understand that radiation levels increased sharply when the new fuel elevator was raised, efforts are being made to determine the cause of the high radiation."**

SAT _____ UNSAT _____ (UNSAT requires comments)

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.** **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	10/31/02		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 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: 10/31/02 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, Rev. 7, 40AO-9ZZ06, Loss of Instrument Air, Rev. 12, & 72IC-9RX03, Core Reloading, Rev 18

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 Cask Loading Pit is empty due to a special variance approved by operations to allow for testing of the Dry Cask Storage Process.

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? (This is a CLOSED reference question)**
2. **The AO informs the LSRO that the normal Instrument Air header pressure is only reading 20 psig and is insufficient to maintain the Cask Loading Pit Area Gate Seal pressurized.**

   What guidance should the LSRO give the AO to stop or minimize the leak? (This is an OPEN reference question)

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 states from memory one of the authorized storage locations for the fuel bundle. NOTE: The assembly can not be placed into its designated storage rack location because a bundle is already located there. The candidate would not be aware of the "qualified" locations to place the assembly without contacting RE for approval.	40AO-9ZZ23, Loss of SFP Level or Cooling, Section 3.0, and 72IC-9RX03, Core Reloading, step 7.17.1, identifies valid locations to place the bundle. Any one of the following responses are acceptable as a minimum: (See attached) • Lowers the assembly to just above the floor in a deep area of the Spent Fuel Pool. • Place the assembly in the upender and lower the upender to the horizontal position. • Place the assembly into a storage rack location in a SFP region that has the same or lower number than that for which the assembly qualifies.

SAT _____ UNSAT _____ (UNSAT requires comments)

STEP		ELEMENT	STANDARD
2.	*	For the second question, the candidate may refer to 40AO-9ZZ06, Loss of Instrument Air for the correct response. The procedure could be obtained via transition at step 12 from 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 answers based on system knowledge or obtains a 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 les**s, THEN** PERFORM Appendix H, Aligning Local Air / Nitrogen Bottles: (See attached) **The LSRO should respond that the AO should align the local air/nitrogen bottles to supply pressure to stop the leakage.**

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		

ANSWER KEY

COMMENTS:

7.17 Actions to be taken if the refueling is interrupted for any reason:

7.17.1 Any fuel assembly in transit shall be moved to a safe intermediate storage location (RCTS #039703). The following are guidelines; placement will be at the Refueling SRO's discretion.

Fuel Assembly Location	Required Action
Above the Reactor Core	Insert the assembly into the core at its designa location.
Upender Vertical Position	Lower the upender to the horizontal positior.
Transfer Canal Area	Place the fuel assembly in the upender and lov horizontal position.
In Transit Between Reactor Vessel and Upender	Lower fuel assembly into a deep area of the po
Spent Fuel Pool Area	Place the assembly into a storage rack locatior region that has the same or lower number than which the assembly qualifies.
Spent Fuel Pool Area	Place the assembly into a deep area of the poo lower it to just above the floor.

COMMENTS:

ANSWER KEY

PALO VERDE NUCLEAR GENERATING STATION LOSS OF INSTRUMENT AIR	40AO-9ZZ06 Revision 12 Page 9 of 133

3.0 LOSS OF INSTRUMENT AIR

INSTRUCTIONS	CONTINGENCY ACTIONS
___ 14. **IF** a leak has been identified, **THEN** perform the following: a. **IF** the leak is on an individual component, **THEN** isolate the individual component. b. **IF** the leak can only be isolated using a header isolation, **THEN** PERFORM Appendix B, Instrument Air Header Evaluation and Isolation to isolate the appropriate header.	
___ 15. **IF** Instrument air pressure in the Fuel Building is 28 psig or less, **THEN** PERFORM Appendix H, Aligning Local Air / Nitrogen Bottles.	

ANSWER KEY

JPM B4
PVNGS JOB PERFORMANCE MEASURE

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	10/31/02	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 Cask Loading Pit is empty due to a special variance approved by operations to allow for testing of the Dry Cask Storage Process.

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? (This is a CLOSED reference question)**
2. **The AO informs the LSRO that the normal Instrument Air header pressure is pressure is only reading 20 psig and is insufficient to maintain the Cask Loading Pit Area Gate Seal pressurized.**

   What guidance should the LSRO give the AO to stop or minimize the leak? (This is an OPEN reference question)

SAFETY CONSIDERATIONS:

- None

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: 10/24/02 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, Rev. 15, & 72IC-9RX03, Core Reloading, Rev. 18

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.

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^{o}.** Note: The TV camera has been removed from the mast. The camera is mounted off the bridge. **Examiner's note:** The mast position is verified at the base of the mast. The mast can only be moved in 90-degree increments. Moved manually by a hand crank at the base of the mast.

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 on the SFHM console. The position should also be verified by using the gross coordinate indication on the North wall of the refuel pool for the Bridge (Letter designation, i.e. "A") and on the West side of the bridge for the Trolley (Number designation, i.e. "7"). **When requested, CUE: Position indicator reads:** **Unit Bridge Trolley** **1 765.44 683.58**

SAT _____ UNSAT _____ (UNSAT requires comments)

COMMENTS:

STEP		ELEMENT	STANDARD
3.	*	Ensure that the location is not already occupied.	Examinee references core position Alpha 7. **INFORM CUE:** (**Give the candidate the attached core map, Attachment 1**, designating the fuel assemblies already placed into the core with an "X" and showing the next logical location being Alpha 7.) **Inform the candidate that the grid locations without an "X" are 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)

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 "Bridge/Trolley LOCKOUT" light is lit.**

SAT _____ UNSAT _____ (UNSAT requires comments)

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 "Bridge/Trolley 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)

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)

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)

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)

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	10/24/02		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

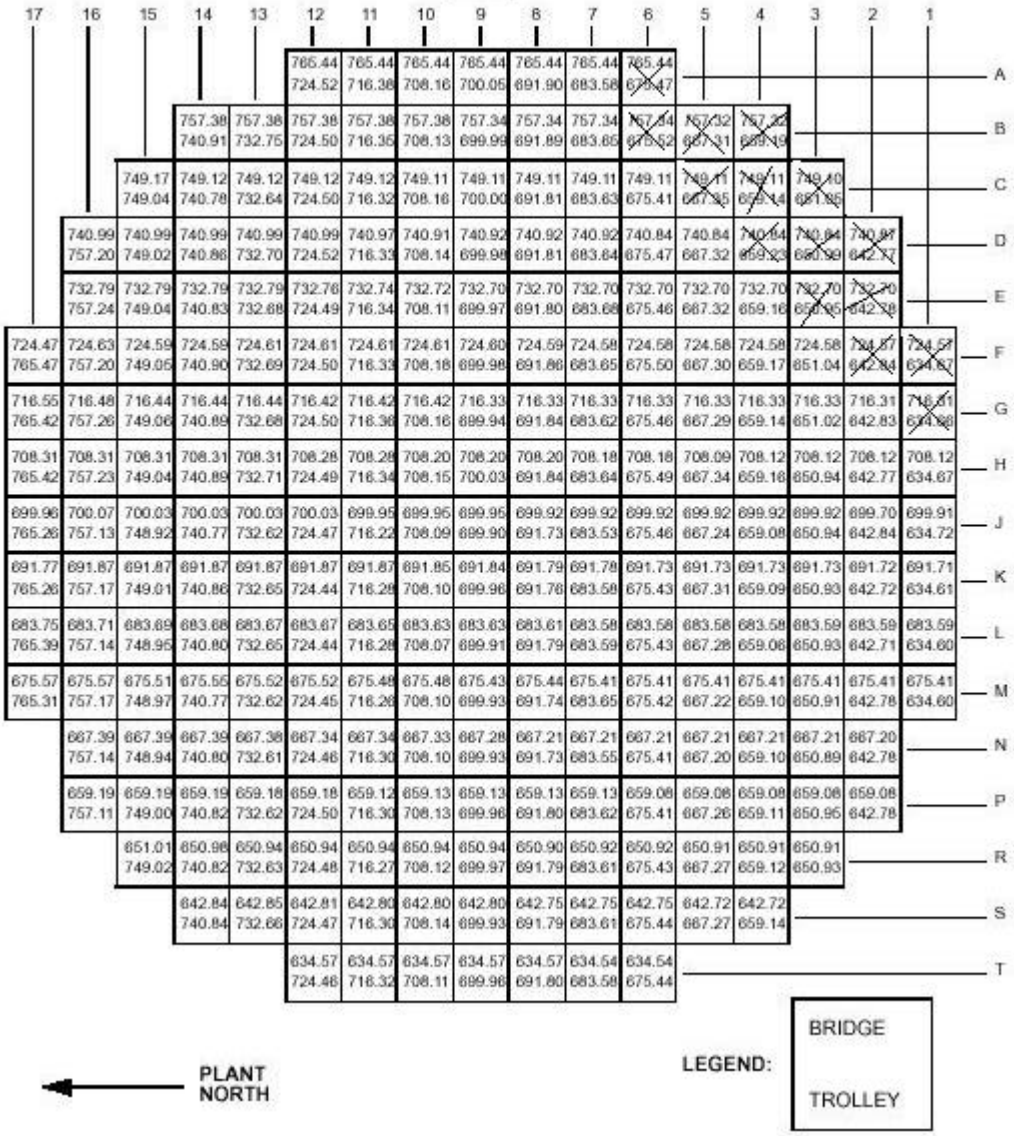
Attachment 1

JPM B5
PVNGS JOB PERFORMANCE MEASURE

(Provide @ step 3)

Attachment 1

UNIT 1



CANDIDATE

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

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Core Reload is in progress on Unit 1. MBA Transfer Set Number 1-11-1 has just been started at Line 1.

Turnover: The Spent Fuel Handling Machine operator is standing by with a fuel bundle from storage location N-27 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.

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

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
5 min.	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. Complete 78OP-9FX03, Appendix L (Event Recovery Checklist) **INFORM CUE: The event recovery checklist will be performed by an off duty LSRO.**
5 min.	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, N-27, or lowered number storage location. This is at the LSRO's discretion. N-27 would be verified using the gross coordinate indication on the North wall of the refuel pool for the number designation which corresponds to the Bridge location and on the West side of the bridge for letter designation which corresponds to the Trolley location.) Ref. 72IC-9RX03, Core Reload, step 7.17.1 **If requested: Repeat back to the SFHM operator the placement of the fuel bundle.**

* Denotes critical task

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

8 min.	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

Examiner Cue:

The Refuel Machine operator has received the fuel bundle from the Fuel Building. The upender is vertical in Containment. The Refuel Machine is located over the upender #2 position. Describe the steps necessary to retrieve the bundle and move it from the upender to the next designated core location.

Time	Position	Applicant's Actions or Behavior
10 min	LSRO	Enter 72OP-9FX01, REFUELING MACHINE OPERATIONS, per Section 4 (Powered Operations) and completes the following steps: The operator should go to section 4.6 to lower the hoist down to latch the fuel assembly in the upender. Complete section 4.6 to complete raising the fuel assembly then proceeds to section 4.5 to move the fuel assembly to the core. **If requested, CUE:** ***The bridge and trolley are aligned to Upender position #2.*** Once the steps have been completed through step 4.5.11 continue on with the next cue.

* Denotes critical task

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

Examiner Cue:

The bridge engages debris on the bridge tracks that has fallen from the overhead 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 horn is activated along with its associated red light.

15 min	LSRO	Enter 40AO-9ZZ22, FUEL DAMAGE per Section 3 (Irradiated Fuel Damage)
17 min.	LSRO/RP	*Evacuates the containment of all nonessential personnel
20 min.	LSRO	Contacts CRS, RP 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:

Core Reload is in progress on Unit 1
MBA Transfer Set Number 1-11-1 has just been started at Line 1. (See Attached MBA Form)

TURNOVER:

The Spent Fuel Handling Machine operator is standing by with a fuel bundle from storage location N-27 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.

MBA TRANSFER FORM

TRANSFER SET NUMBER 1 - 11 - 1

FORM SET PAGE 1 OF 63

LINE #	SNM IDENT.	CURR MAST DET.	ROT. TO DET.	FROM MBA	FROM CORD	FROM ORN.	FROM Bridge Trolley Hoist	ROT. TO DET.	TO MBA	TO CORD	TO ORN.	TO Bridge Trolley Hoist	DOCUMENTED BY INIT	DOCUMENTED BY TIME	DOCUMENTED BY DATE	COMMENTS	REV #
1	P1L202	N/A	N/A	SFP	N-27	N	N/A	N/A	FTPB	2	N	N/A					
2	P1L202	N/A	N/A	FTBP	2	N	N/A	N/A	FTPC	2	N	42.18 595.47 213.89					
3	RM: ROTATE RM mast to 270 degrees PRIOR to picking up assy from FTB.																
3	RM,RXE: SELECT SU-1 audible, EXPECT SU-1 increase, BDAS-1 may alarm.																
3	RM,RXE: U1C11 MODE 6 ENTRY as RM hoistbox is lowered over P-02.																
3	P1L202	270	N/A	FTBC	2	N	42.18 595.47 213.89	N/A	RX	P-02	N	659.08 642.78 401.77					
4	P1L201	N/A	N/A	SFP	N-24	N	N/A	N/A	FTBP	2	N	N/A					
5	P1L201	N/A	N/A	FTBP	2	N	N/A	N/A	FTBC	2	N	42.18 595.47 213.89					
6	N/A																
6	RM: ROTATE RM mast to zero degrees PRIOR to picking up assy from FTB.																
6	RM,RXE: SELECT SU-2 audible, EXPECT SU-2 increase, BDAS-2 may alarm.																
6	P1L201	270	0	FTBC	2	N	42.18 595.47 213.89	N/A	RX	D-16	N	740.99 757.20 401.79					

TRANSFER PACKAGE PAGE _____ of _____

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

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions:

Core Reload is in progress on Unit 1
MBA Transfer Set Number 1-11-1 is complete for the current fuel moves. (See Attached MBA Form)
Unit 1 Refuel Platform is in semi-automatic mode

Turnover: All prerequisites for core alterations are met. The refuel machine is at the upender. The Refuel Machine Operator has just received the up limit on the Refuel Console for the fuel assembly listed on the MBA form and is preparing to move the Refuel Machine to the core area.

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

Event Description:

Startup Range Nuclear Monitoring instrument failure requires suspension of core alterations

Examiner Cue:

The Reactor Engineer contacts the LSRO and reports a Startup Range Monitor (SRM) has just failed and the cause has not been determined at this time.

Time	Position	Applicant's Actions or Behavior
5 min.	LSRO	*The LSRO refers to Tech Spec 3.9.2 and directs the Refuel Machine operator to stop fuel movement due to failure to meet required operable nuclear instruments. T.S. 3.9.2 Action statements are to: A.1 Suspend CORE ALTERATIONS immediately. AND A.2 Suspend positive reactivity additions immediately. (This step may take several minutes depending on whether or not the candidate refers to the below referenced procedures prior to directing action) Ref: T.S. L.C.O 3.9.2 72IC-9RX03, Core Reload, Step 8.2.8 40OP-9ZZ23, Outage GOP, Step 11.31 **NOTE: With the fuel bundle in the upender, no core alts or positive reactivity additions are being performed.**
5 min.	LSRO	Notify Control Room/Reactor Engineering that no core alterations or positive reactivity additions are in progress. ***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 hour. Reactor Engineering directs you to place all fuel bundles in a safe intermediate storage location until the SRM is restored.***

* Denotes Critical Task

Op-Test No. C2	Scenario No. 2	Event No.: 1
Event Description: Startup Range Nuclear Monitoring instrument failure requires suspension of core alterations(continued)		
10 min.	LSRO	*The LSRO should direct the Refuel Machine operator to place the bundle into the upender and lower the upender to the horizontal position. Ref: 72IC-9RX03, Core Reload, Step 7.17.1 guideline action is to place the bundle into the upender and to lower the upender to horizontal. ***IF Necessary, CUE: State the steps necessary to place the fuel bundle in a safe condition. Operate the RFM in Manual Electric.***
15 min	LSRO	Enter 72OP-9FX01, REFUEL MACHINE OPERATIONS, section 4.8 (Placing an assembly into the upender) and completes steps 4.8.1 to 4.8.25. Once the steps have been completed through step 4.8.25 the RFM operator is ready to proceed to section 4.4 to move the RFM out of the RTMZ so that he can start the AUTO TRANSFER SEQUENCE to lower the upender to its horizontal position per steps 4.4.1 to 4.4.6. After moving the bridge out of the transfer canal, the RFM operator can lower the upender to horizontal by activating the Auto Transfer sequence at step 4.4.7 from the RFM console. Pushing the STOP button once the upender is horizontal will stop the AUTO TRANSFER SEQUENCE. He can also go to the Fuel Transfer Console and position the upender to the horizontal position by performing steps 5.3.1 to 5.3.8 of 78OP-9FX02. **INFORM CUE: The upender is travelling to the horizontal position. The upender is horizontal.**

* Denotes Critical Task

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

Event Description:

Severe Thunderstorm warning issued

CUE:

The SRM has been restored and core alterations can be resumed. In containment, the RFM operator has the bundle from the upender in the hoist and is moving over the core. The Auto Transfer Sequence has been initiated. The RFM is in semi-automatic mode. Using the MBA form, describe the steps necessary to place the fuel assembly into its designated core location.

Time	Position	Applicant's Actions or Behavior
22 min.	LSRO	The operator should continue at step 4.5.12 of 78OP-9FX01 to complete the fuel assembly move to the storage rack position P-02 per the MBA transfer form. The bridge/trolley should be aligned to the storage rack position using the letter designations on the North wall for the Bridge location and the numbers on the West side of the bridge for the Trolley position. Continue to section 4.8 to lower the fuel assembly into the core. **If requested, CUE:** ***The alpha/numeric indicators agree with position P-02 as the location of the bridge and trolley*** ***As soon as the candidate reaches step 4.8.8 and verifies that an "automatic load bypass" has initiated.*** ***INFORM CUE: The CRS informs you that a Severe Thunderstorm Warning has been issued for our immediate area, wind speeds are approximately 20 mph and are expected to increase to as high as 50 mph within the next 3 hours. The CRS has entered into the "Acts of Nature" abnormal operating procedure and directs you to suspend all fuel handling operations in both the containment and the spent fuel pool and to direct the machine operators to place the fuel in an appropriate safe storage location***

* Denotes Critical Task

Op-Test No. C2	Scenario No. 2	Event No.: 2
Event Description: Severe Thunderstorm warning issued (continued)		
25 min.	LSRO	*Inform the Refuel Machine operator to complete lowering the fuel assembly into the core. **If necessary, Cue:** ***State the steps necessary to finish lowering the bundle into the core.*** The RFM operator will need to complete the remaining steps from 4.8.8 to 4.8.25 to complete lowering the bundle into the core. **INFORM CUE*****: The Refuel Machine operator has placed the assembly back into the core.*** **INFORM CUE:** ***The Refuel Machine ARM horn is sounding and the red light is flashing. The ARM is reading at its maximum level. The frisker at the Containment RP station is also in alarm. No other abnormal conditions are noted.***
30 min.	LSRO	Recognize that the alarm is not due simply to a bundle positioned near a monitor because the alarm would have been received prior to lowering the bundle.
35	LSRO	Inform Health Physics of the condition
35	LSRO	Notify the Main Control Room crew
35	LSRO	*Direct the refuel crew to evacuate from Containment.
		CUE: You have reached the termination point for the scenario

* Denotes Critical Task

PVNGS Scenario 2

INITIAL CONDITIONS:

Core Reload is in progress on Unit 1
MBA Transfer Set Number 1-11-1 is complete for the current fuel moves. (See Attached MBA Form)
Unit 1 Refuel Platform is in semi-automatic mode

TURNOVER:

All prerequisites for core alterations are met. The refuel machine is at the upender. The Refuel Machine Operator has just received the up limit on the Refuel Console for the fuel assembly listed on the MBA form and is preparing to move the Refuel Machine to the core area.

CANDIDATE

MBA TRANSFER FORM

TRANSFER SET NUMBER 1 - 11 - 1

FORM SET PAGE 1 OF 63

LINE #	SNM IDENT.	CURR MAST DET.	ROT. TO DET.	FROM MBA	FROM CORD	FROM ORN.	FROM Bridge Trolley Hoist	ROT. TO DET.	TO MBA	TO CORD	TO ORN.	TO Bridge Trolley Hoist	DOCUMENTED BY INIT	DOCUMENTED BY TIME	DOCUMENTED BY DATE	COMMENTS	REV #
1	P1L202	N/A	N/A	SFP	N-27	N	N/A	N/A	FTBP	2	N	N/A	PGC	10:10	Today	NONE	0
2	P1L202	N/A	N/A	FTBC	2	N	N/A	N/A	FTBC	2	N	42.18 595.47 213.89	PGC	10:12	Today	NONE	0
3	RM: ROTATE RM mast to 270 degrees PRIOR to picking up assy from FTB.																
3	RM,RXE: SELECT SU-1 audible, EXPECT SU-1 increase, BDAS-1 may alarm.																
3	RM,RXE: U1C11 MODE 6 ENTRY as RM hoistbox is lowered over P-02.																
3	P1L202	270	N/A	FTBC	2	N	42.18 595.47 213.89	N/A	RX	P-02	N	659.08 642.78 401.77					
4	P1L201	N/A	N/A	SFP	N-24	N	N/A	N/A	FTBP	2	N	N/A					
5	P1L201	N/A	N/A	FTBP	2	N	N/A	N/A	FTBC	2	N	42.18 595.47 213.89					
6	N/A																
6	RM: ROTATE RM mast to zero degrees PRIOR to picking up assy from FTB.																
6	RM,RXE: SELECT SU-2 audible, EXPECT SU-2 increase, BDAS-2 may alarm.																
6	P1L201	270	0	FTBC	2	N	42.18 595.47 213.89	N/A	RX	D-16	N	740.99 757.20 401.79					

TRANSFER PACKAGE PAGE _____ of _____

CANDIDATE

2002 INITIAL LIMITED SENIOR REACTOR OPERATOR LICENSE
OPERATING EXAMINATION FINAL OUTLINE

EXAM DATE: 11/18/02

FACILITIES: PVNGS UNITS 1, 2, & 3

A. CATEGORY A - ADMINISTRATIVE TOPICS OUTLINES

ES-301 ADMINISTRATIVE TOPICS OUTLINE Form ES-301-1

Facility: PVNGS Units 1,2,3 Date of Examination: 11/18/02-11/22/02

Examination Level: LSRO Operating Test Number: _____

Administrative Topic / Subject Description		Method of Evaluation: 1. ONE Administrative JPM, or 2. TWO Administrative Questions
A.1	Shift Staffing Requirements JPM	2.1.5(3.4) Ability to locate and use procedures and directives related to shift staffing and activities. JPM: Evaluate the working hour history for the oncoming refuel crane operator and the oncoming LSRO and determine whether one or both individuals can work a full dayshift of 12 hours.
	Station Reference Material Interpretation JPM	2.1.5(3.4) Ability to locate and use procedures and directives related to shift staffing and activities JPM: In planning to recover a foreign object from the spent fuel pool, identify all controls that are required by the Sensitive Issues Manual.
A.2	FME Control JPM	2.2.18 (3.6) Knowledge of the process for managing maintenance activities during shutdown operations. JPM: Given that work is ongoing in a FME area, determine what actions must be taken for inadvertently losing an item into a FME area in accordance with 30DP-0WM12.
A.3	Radiation Work Permits JPM	2.3.1 (3.0) Knowledge of 10 CFR: 20 and related facility radiation control requirements. JPM: Given a copy of the refueling RWP, verify radiological entry requirements for the fuel floor RWP
A.4	Emergency Plan Questions	2.4.29 (4.0) Knowledge of the emergency plan. Questions: Identify Assembly/Accountability alarm and where to take escorted visitors.

B. CATEGORY B - SYSTEMS EXAMINATION OUTLINES

ES-301 INDIVIDUAL WALK-THROUGH TEST OUTLINE Form ES-301-2

Facility: PVNGS 1,2,3 Date of Examination: 11/18/02-11/22/02

Examination Level: LSRO Operating Test Number: _____

System / JPM Title	Type Code*	Safety Function
a. Fuel Handling Equipment / Simulate Movement of fuel bundle in the refuel pool– alt path due to fuel bundle hitting adjacent bundle requiring realignment of Fuel Handling Machine.	DASR	FHE
b. Fuel Handling Equipment / Place fuel assembly from the upender into the correct spent fuel pool storage location.	DPR	FHE
c. Fuel Handling Equipment / Inspection of new fuel in the new fuel elevator – alt path due to high general area dose rates created by fuel bundle.	DAPR	FHE
d. Aux Systems / Response to loss of air to gate seals (Two questions related to loss of instrument air/loss of spent fuel pool level will be utilized to fulfill this JPM requirement)	NPR	AUX
e. Instrumentation & Control / Take corrective action for high NI count rate IAW 78OP-9FX01 and 72IC-RX03.	MAPR	IC
g.		
B.2 Facility Walk-Through		
a.		
b.		
c.		

* Type Codes: (D) irect from bank, (M) odified from bank, (N) ew, (A) lternate path, (C) ontrol room, (S) imulator, (L) ow-Power, (P) lant, (R) CA

Safety Function: FHE: Fuel Handling Equipment, AUX: Auxiliary Systems, IC: Instrumentation and Control; DHR: Decay Heat Removal, RM: Radiation Monitoring

C. CATEGORY C - INTEGRATED PLANT (REFUELING EQUIPMENT) EXAMINATION OUTLINE

Appendix D SCENARIO OUTLINE Form ES-D-1

Facility: PVNGS 1,2,3 Scenario No. 1 Op-Test Number: C1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Core offload is in progress

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

Event No.	Malf No.	Event Type*	Event Description
1.	N/A	C	Minor leakage from Transfer Carriage Makeup Tank temporarily suspends fuel movement until tank is refilled.
2.	N/A	R	A fuel bundle is dropped onto spent fuel pool with significant fuel damage.

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

C. CATEGORY C - INTEGRATED PLANT (REFUELING EQUIPMENT) EXAMINATION OUTLINE

Appendix D SCENARIO OUTLINE Form ES-D-1

Facility: PVNGS 1,2,3 Scenario No. 2 Op-Test Number: C2

Examiners: Operators:

Initial Conditions: Core onload is in progress

Turnover: A fuel assembly is in transit from the upender to the core

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	Severe Thunderstorm Warning issued with High ARM reading

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

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
1	9/18/02	6	JPM A1-2 changed to state: recover a "foreign" material from the "spent fuel pool" vice "CEA" material from the refuel pool to coincide with the guidance in the Sensitive Issues Manual. JPM B5 was changed from a "Radiation Monitoring" category to an I&C category. The original item was considered an Admin JPM and not suitable. The new JPM "Take corrective action for high NI count rate" better reflects the criteria for this area. Scenario C-1 was altered such that the "fuel bundle is in transit from the spent fuel pool to containment" instead of containment to the spent fuel pool. This was necessary to support the original requirements for the JPM. Scenario C-2 second event was changed from "Loss of fuel pool level" to "Severe Thunderstorm Warning Issued with a High ARM reading". Loss of fuel pool level is already taken credit for in the written exam.

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)