

Page 2 of			
Applicant Docket Number: 50-352/353		Date of Examination: JUN 13 2005	
Facility: LGS			
Title / Description of Tasks (JPMs)	Type Codes*	Evaluation (S or U)	Comment Page Number
Administrative			
1. Complete FHD turn over checklist	NT		
2. Calculate Stay Time	M		
3. CCTAS revision (2014)	D		
Systems			
1. FHE – movement of dummy bundle in SFP Alt Path due to debris obstruction (NRC2001)	DPAI		
2. FHE – Fuel movement from the FP to fuel prep machine. Alt Path due to grapple engage light goes out (2045)	DAI		
3. Install rod position test box (2029)	DI		
4. Respond to fuel floor *0C222 alarm	NI		
Emergency/Abnormal Plant Evolutions			
1. Response to an unexpected rise in SRM count rate during fuel handling in the reactor core (NRC1999)	MPI		
2. Transfer of fuel in the spent FP, response to a dropped fuel assembly	NIRA		
3. EAL classification, spent FP level	NTIR		
Type Codes & Criteria: <ul style="list-style-type: none"> (A)lternative path (2 systems; 1 E/APE) (C)ontrol room (D)irect from bank (≤ 7) (I)n-plant (N)ew or (M)odified form bank including 1(A) (≥ 1 / section) (P)revious two exams (≤ 1 / section) (R)efueling accident (1) (T)echnical specification (≥ 2) 			

Limerick Generating Station

Job Performance Measure

COMPLETE FUEL HANDLING DIRECTOR SHIFT TURNOVER CHECKLIST

JPM Number: 2700

Revision Number: 000

Date: / /

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (SUMMARY)

New Revision

SIMULATOR SETUP INSTRUCTIONS:

None

INITIAL CONDITIONS:

- Unit 1 is in OPCON 5*
- Unit 2 is in OPCON 1
- The electronic OP's Log is unavailable due to a software error

INITIATING CUES:

Complete Fuel Handling Director Shift Turnover Checklist prior to turn over.

TASK STANDARD:

Find TS violation prior to relieving the FHD.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Job Performance Measure (JPM)

Evaluator's Signature: _____

Date: _____

Job Performance Measure (JPM)

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
(Cue: Provide candidate the Fuel Handling Director Shift Turnover Checklist)	N/A			
1. FHD Log and information on page 1 reviewed.	Reviews the FHD Log and finds the following:			
*1.a Find that Not receiving Rod Black while Fuel Hoist Loaded INOP's the Refueling Platform.	Per TS 3.9.6, Refueling Operations (Refueling Platform) Refueling Platform is INOP and all Refueling Platform operations must be stopped.			
*1.b Find that no audible SRM alarm in MCR requires TS entry.	Per TS 3.9.2, Instrumentation (Refueling Operations) all operations involving core alterations must be suspended.			
(CUE: "You may stop here, you have met the termination criteria for this JPM")	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

- Unit 1 is in OPCON 5*
- Unit 2 is in OPCON 1
- The electronic OP's Log is unavailable due to a software error

INITIATING CUES:

Complete Fuel Handling Director Shift Turnover Checklist prior to turn over.

CANDIDATE

Limerick Generating Station

Job Performance Measure

CALCULATE STAY TIME

JPM Number: 2701

Revision Number: 000

Date: / /

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Review By: _____
Operations Representative Date

Approved By: _____
Training Department Date

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
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Procedure Rev. _____ Date _____
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 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (SUMMARY)

New Revision

SIMULATOR SETUP INSTRUCTIONS:

None

INITIAL CONDITIONS:

- Unit 1 is in OPCON 5
- Reactor Cavity Work Platform (RCWP) is being used to conduct RPV Cavity Maintenance
- Additional high radiation exposure controls are required due to failed fuel
- Two workers are performing the work using the RCWP
- Job conditions and information are as follows:
 - Dose Rate Alarms on their Electronic Dosimeter for both workers: 600 mrem/hr
 - Accumulated Dose Alarms on their Electronic Dosimeter for both workers: 1200 mrem
 - RWP Approval Dose Alarm for both workers: 1200 mrem
 - Stop Work Dose Rate for both workers: 600 mrem/hr
 - Worker 1 has 600 mrem accumulated dose on his Electronic Dosimeter from his first entry
 - Worker 2 has 800 mrem accumulated dose on his Electronic Dosimeter from his first entry
 - 3 man-hrs are required to finish the work
 - Time required to enter: 5 minutes
 - Time required to exit: 5 minutes
 - Work is to be performed in the Unit 1

INITIATING CUES:

Use RP-AA-460-1001, "Additional High Radiation Exposure Controls" attachment 3 and survey map to determine:

1. Maximum Stay Times (Worst Case) to reach the Electronic Dosimeter accumulated dose alarms for worker 1 and worker 2
2. If the workers can finish the work without receiving accumulated dose alarms

Job Performance Measure (JPM)

TASK STANDARD:

Calculate stay time for workers 1 and 2 until dose alarms reached and if work can be finished in the allotted time.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

EXELON NUCLEAR

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
(Cue: Provide copy of RP-AA-460-1001 and survey map)	N/A			
1. Determine Maximum Stay Time for the required entry	Maximum Stay Time Determined to be:			
2. For worker 1:				
*2.a Subtract accumulated dose of 600 mr from accumulated dose alarm of 1200 mr to get remaining dose until alarm	Accum - Accum = Remain Dose Dose Dose Alarm Alarm 1200 mr - 600 mr = 600 mr			
*2.b Divide Allowable Work Dose by the Maximum Whole Body Dose Rate in work area to get Maximum Stay Time (Worst Case)	Remain / Max = Max Dose Dose Stay Alarm Rate Time 600mr / 400 mr/hr = 1.5 hr			
2.c Subtract entry and exit time of 10 minutes (5 minutes+5 minutes) from the Maximum Stay Time	Max - Entry = Max Stay Exit Allow Time Time Time 90 min - 10 min = 80 min			
3. For worker 2:				
*3.a Subtract accumulated dose of 800 mr from accumulated dose alarm of 1200 mr to get remaining dose until alarm	Accum - Accum = Remain Dose Dose Dose Alarm Alarm 1200 mr - 800 mr = 400 mr			
*3.b Divide Allowable Work Dose by the Maximum Whole Body Dose Rate in work area to get Maximum Stay Time (Worst Case)	Remain / Max = Max Dose Dose Stay Alarm Rate Time 400mr / 400 mr/hr = 1 hr			

EXELON NUCLEAR

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
3.c Subtract entry and exit time of 10 minutes (5 minutes+5 minutes) from the Maximum Stay Time	Max - Entry = Max Stay Exit Allow Time Time Time 60 min - 10 min = 50 min			
4. Calculate if man-hrs are exceeded:				
4.a Add worker 1 Maximum Stay Time of 80 minutes to worker 2 Maximum Stay Time of 50 minutes	Worker + Worker = Total 1 Stay 2 Stay Stay Time Time Time 80 min + 50 min = 130 min			
*4.b Determine work can not be competed due to combined stay time less than required 3 man-hrs (180 minutes) remaining	Determine work can not be completed			
(CUE: "You may stop here, you have met the termination criteria for this JPM")	N/A			

JPM Stop Time: _____

INITIAL CONDITIONS:

- Unit 1 is in OPCON 5
- Reactor Cavity Work Platform (RCWP) is being used to conduct RPV Cavity Maintenance
- Additional high radiation exposure controls are required due to failed fuel
- Two workers are performing the work using the RCWP
- Job conditions and information are as follows:
 - Dose Rate Alarms on their Electronic Dosimeter for both workers: 600 mrem/hr
 - Accumulated Dose Alarms on their Electronic Dosimeter for both workers: 1200 mrem
 - RWP Approval Dose Alarm for both workers: 1200 mrem
 - Stop Work Dose Rate for both workers: 600 mrem/hr
 - Worker 1 has 600 mrem accumulated dose on his Electronic Dosimeter from his first entry
 - Worker 2 has 800 mrem accumulated dose on his Electronic Dosimeter from his first entry
 - 3 man-hrs are required to finish the work
 - Time required to enter: 5 minutes
 - Time required to exit: 5 minutes
 - Work is to be performed in the Unit 1

INITIATING CUES:

Use RP-AA-460-1001, "Additional High Radiation Exposure Controls" attachment 3 and survey map to determine:

1. Maximum Stay Times (Worst Case) to reach the Electronic Dosimeter accumulated dose alarms for worker 1 and worker 2
2. If the workers can finish the work without receiving accumulated dose alarms

CANDIDATE

Limerick Generating Station

Job Performance Measure

CCTAS Revision (LGS)

JPM Number: 2014

Revision Number: 003

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

Revision 003, Format Change

SIMULATOR SETUP INSTRUCTIONS:

1. N/A

TASK STANDARD:

CCTAS revised in accordance with NF-AA-310.

INITIAL CONDITIONS:

1. A series of fuel assembly movements have been scheduled.
2. Reactor Engineering has developed a CCTAS to support the movement of fuel bundles to and from the sipping can and the spent fuel pool storage racks.

INITIATING CUES:

You are assigned as the Fuel handling Director for the fuel bundle movements to support fuel sipping. Seven movements are scheduled.

Prior to the first move, the sipping vendor representative informs you that they have placed damaged fuel in Spent Fuel storage cell AA-21, which cannot be removed at this time.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

Job Performance Measure (JPM)

Operator's Name: _____
Job Title: NLO RO SRO STA SRO Cert

JPM Title: CCTAS Revision (LGS)

JPM Number: NLSRO2014

Revision Number: 003

K/A Number and Importance: 202001 A3.02 3.1/3.0

Suggested Testing Environment: Any

Actual Testing Environment: Any

Testing Method: Perform **Faulted:** No

Alternate Path: No

Time Critical: No

Estimated Time to Complete: 15 minutes **Actual Time Used:** ____ minutes

References: NF-AA-310, Special Nuclear Material and Core Component Movement

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? Yes No

The operator's performance was evaluated against the standards contained in this JPM, and has been determined to be: Satisfactory Unsatisfactory

Comments: _____

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ **Date** _____

Job Performance Measure (JPM)

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain NF-AA-310	NF-AA-310 obtained			
2. If it is deemed necessary to change the Move Sheet(s) due to Operational Considerations, then PERFORM the following:(Fuel Handling Director)	N/A			
*2.a. Suspend Move Sheet execution prior to step requiring change. (CUE: Fuel movements are stopped.)	FHD stops fuel movements to obtain a change to the CCTAS prior to resuming.			
*2.b. CONTACT Reactor Engineering to update the Move Sheet Package, if required. (SEE the Move Sheet Cover Page) (CUE: I am the Reactor Engineer)	FHD reviews the Move Sheet Cover Page and contacts the on-call Reactor Engineer.			
*2.c. Describe the reason for the change and a proposed revision. (CUE: Repeat back the information provided by the FHD.)	FHD describes that step 1 of CCTAS is being performed, and that "move to" location of AA-21 is reported to contain other material. FHD requests revision and suggests a proposed revision.			
3. PERFORM the following steps: (Authorized Reactor Engineer)	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
3.a. Evaluate the effect of the change(s) using Attachment 5 guidance and the precautions, limitations and prerequisites in this and any site-specific procedure.	N/A			
3.b. EVALUATE the effect of the change(s) on the remainder of the Move Sheet movements and all other previously approved Move Sheets (including completed and partially completed movements).	N/A			
3.c. If any of the changes involve a fuel assembly with a change in core configuration (including orientation), then EVALUATE the effect on shutdown margin or CONTACT NFM or the Fuel Vendor for such an evaluation.	N/A			
3.d. IF all the changes involve one of the affected situations listed below, THEN the changes do not effect shutdown margin a. Nuclear Instrumentation b. Fuel in or being moved to the new fuel storage vault c. Fuel in or being moved to the spent fuel pool d. Fuel in or being moved to the spent fuel cask e. Control rod / Control component / rod control cluster assembly movement in the spent	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
fuel pool f. Blade guides (BWRs only) e. Control rod blade changes in defueled core cells (BWRs only) (CUE: I have determined that this change does not effect shutdown margin. I will approve a pen & ink change.) (CUE: Change the "move to" location in step 1 to indicate AA-22.)				
3.c. If the change could have a significant adverse effect on decay heat calculations, then REVIEW the decay heat analysis and, if necessary, RE-PERFORM the decay heat analysis. (Reactor Engineer) (CUE: The proposed change does not effect decay heat calculations.)	N/A			
3.d. MAKE appropriate changes to maintain congruency of movements	N/A			
3.e. <u>IF</u> the changes do not adversely affect shutdown margin or connectivity requirements, the PERFORM the following to update the Move Sheets otherwise GO to step 5.5.2.7	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3.e.1. PERFORM pen and ink change(s) to the refuel floor copies of the Move Sheets. (Fuel Handling Supervisor or the Senior Reactor Operator or Authorized Reactor Engineer)	FHD revises RPO and spotter copies of CCTAS.			
3.e.2. PERFORM pen and ink change(s) to the SNM Custodian copy of the Move Sheets. (Authorized Reactor Engineer)	N/A			
3.e.3. PERFORM pen and ink change(s) to the control room copy of the Move Sheets, if applicable. (Authorized Reactor Engineer or Fuel Handling Supervisor, or Control Room Operator) (CUE: (If asked) The Control Room does not have a copy of this CCTAS.)	N/A			
3.e.4. Make the change(s) to the movement sequence saved in SHUFFLEWORKS or TRAKWORKS or other computer software that generates fuel movements electronically, if applicable. (Authorized Reactor Engineer)	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*3.e.5 FORMAT the pen and ink changes as follows: (Authorized Reactor Engineer / Fuel Handling Supervisor / Control room Operator)</p> <ul style="list-style-type: none"> - Line once through item to be changed. - INITIAL and DATE the change with the initials of the Fuel Handling Supervisor and Authorizing Reactor Engineering. 	<p>FHD draws single line through "AA-21" of CCTAS step no. 1</p> <p>FHD writes "AA-22" near lined out item on step 1 of CCTAS.</p> <p>FHD writes the current date at the change on step 1 of CCTAS.</p> <p>FHD writes their initials at the change on step 1 of CCTAS.</p> <p>FHD writes the approving Reactor engineer's initials at the change on step 1 of CCTAS.</p>			
<p>3.f. If the changes were determined to adversely affect shutdown margin or connectivity requirements, then FOLLOW the approval process in section 5.1.</p>	N/A			
<p>(CUE: "You can stop here you have met the termination criteria for this JPM")</p>	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. A series of fuel assembly movements have been scheduled.
2. Reactor Engineering has developed a CCTAS to support the movement of fuel bundles to and from the sipping can and the spent fuel pool storage racks.

INITIATING CUES:

You are assigned as the Fuel handling Director for the fuel bundle movements to support fuel sipping. Seven movements are scheduled.

Prior to the first move, the sipping vendor representative informs you that they have placed damaged fuel in Spent Fuel storage cell AA-21, which cannot be removed at this time.

Limerick Generating Station

Job Performance Measure

MOVEMENT OF DUMMY FUEL BUNDLE IN THE SPENT FUEL POOL
(ALTERNATE PATH)

JPM Number: 2063

Revision Number: 001

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
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 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

Revision 1, Format Change

SIMULATOR SETUP INSTRUCTIONS:

N/A

TASK STANDARD:

Dummy fuel bundle transferred IAW the attached CCTAS and associated procedures

INITIAL CONDITIONS:

1. Secondary containment integrity is established
2. The Unit ___ refuel platform is ready for operation per S97.0.M and S97.1.A
3. FH-106 prerequisites are complete
4. Reactor Engineering has required a CCTAS for the movement of the dummy fuel bundle.
5. The CCTAS has been provided to you.
6. Shift supervision permission has been obtained to operate the refueling platform

INITIATING CUES:

You are directed by shift supervision to transfer the dummy fuel bundle in the Unit ___ spent fuel pool per the attached CCTAS. You are expected to perform the actions of the Platform Operator and to perform actual operation of the equipment, rather than a simulation.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

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DIRECTIONS TO EVALUATOR:

Job Performance Measure (JPM)

NOTE: When used as an exam item for initial LSRO candidates, a qualified LSRO/DA and RPO are required on the bridge to ensure correct Double Verification. Initial LSRO candidates will be acting as platform operator during most of the exam, and as FHD when addressing the CCTAS revision. This exam exercise will require the candidate to perform the first check as the RPO, with the qualified Fuel Handling Director performing the second check. In addition, the second qualified operator will perform a double verification.

NRC examiners will generally limit themselves to observing and will not provide direction or cueing to the candidate because actual equipment will be manipulated. Pre-brief the qualified FHD that he or she is the accountable individual who is responsible for equipment safety, personal safety, and reactivity controls during operation by the candidate. The FHD is expected to maintain constant attention on bridge and mast operation such that intervention is possible prior to any misoperation or contact with obstructions. As a minimum, this includes (1) immediately stopping the bridge if a CCTAS error is committed or if unsafe bridge operation is taking place (2) restoring to starting conditions between each JPM, (3) collecting and returning the CCTAS signed final copies, and (4) shutting down the refueling platform after the exams. **The qualified FHD will interact with the candidate in as realistic a fashion as practicable in an exam setting. The FHD will not provide cues other than specified, and should concur with all verifications up to the point just prior to a misoperation.**

The qualified Operator should perform startup and checkout of the refueling platform and have on-hand the marked up copies of the procedures for review by the candidates. The actual CCTAS and bridge operating procedure in-use will be on the refuel platform.

The support of and coordination with the following is necessary to permit the conduct of the JPM:

1. NMD to schedule bridge availability and provide qualified operators
2. Operations for Refuel Floor Secondary Containment Integrity if required
3. Reactor Engineering for CCTAS generation
4. Health Physics for Refuel Floor and RWP support. The grappling and movement of components may require use of the refuel floor RWP in lieu of the work group standing RWP. Ensure a HP briefing is received prior to the exam.

Job Performance Measure (JPM)

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ Date _____

Job Performance Measure (JPM)

The timeclock starts when the candidate acknowledges the initiating cue.

The qualified LSRO will have completed portions of the following procedures to allow actual use of the refuel platform. These copies will be signed off and should remain on or near the refuel platform. The candidate may wish to review the signoffs.

1. FH-106, CORE COMPONENT AND IRRADIATED ITEM MOVEMENT – NO CORE TRANSFER
2. S97.1.A , ELECTRICAL, MECHANICAL, AND PNEUMATIC ALIGNMENT/CHECKOUT OF REFUELING PLATFORM, BRIDGE, TROLLEY, AND MAIN HOIST FOR OPERATION

Ensure a blank copy of the approved CCTAS is on the FHD desk. Ensure S97.0.M is available in the binders located at the FHD desk.

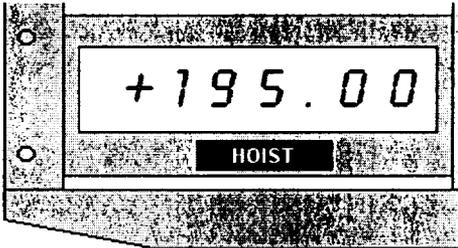
JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Bundle Pickup per S97.0.M				
*1. Position Refuel Platform Mast over the desired core component in accordance with the CCTAS	Bridge, and Trolley controls manipulated until the mast is positioned over the dummy bundle (Evaluator Note: Small adjustments in position may be required once the grapple is near the bundle)			
2. LOWER grapple until grapple is near bail	Grapple is near bail			
3. Ensure grapple is open	Grapple is open as indicated by <u>lack of</u> green backlighting on grapple control rocker switch (green=closed; out=open)			
4. Rotate grapple as necessary to achieve grapple to bail alignment	Grapple is aligned with bail. Verify using mast camera.			
*5. Slowly LOWER grapple until SLACK CABLE Light is lit	Grapple is lowered until red SLACK CABLE lamp is lit with grapple being seated on the dummy bundle bail handle			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>6. FHD & Spotter, PERFORM Concurrent Verification of proper core component location AND orientation.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Although this step is important, it is non-critical for this JPM because the bundle will already be aligned correctly. It would have been critical if this were an alternate path JPM with the bundle found rotated at this point.</p> </div>	<p>Grapple is on the dummy bundle in the correct fuel pool location. The bundle channel fastener is oriented per the CCTAS (use mast video image and compass rose painted on refuel bridge deckplates or alternative indication. The mast image is of the corner of the bundle CLOSEST to the operator. (If you cannot see the channel fastener, then the bundle is oriented in the same compass direction as the operator is facing when holding the mast handles)</p>			
<p>8. FHD, VERIFY the following,</p> <ul style="list-style-type: none"> ■ SLACK CABLE Light is lit ■ Grapple is centered over bail handle ■ Hoist Position indication agrees with value listed in Attachment 2 for item seated in Fuel Pool Storage Rack ■ Grapple appears seated on bail handle using underwater camera for component seated in cask <p>THEN DIRECT RPO to engage grapple</p> <p>(FHD CUE: "Engage the grapple")</p>	<p>FHD performs verifications, then directs RPO to engage grapple.</p>			
<p>*9. RPO, VERIFY the following,</p>	N/A			
<p>*a. SLACK CABLE Light is lit</p>	<p>SLACK CABLE Light is lit</p>			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*b. Grapple is centered over the bail handle</p>	<p>Grapple is landed and centered on the DUMMY bundle bail handle.</p> <p>Video image will be similar to the image below. When properly landed, only the corner of the bundle is visible, with a symmetric, even appearance.</p>  <p>Image is looking almost straight down toward top of bundle. The shiny portion is the grapple and the dark portion is the bundle</p> <p>FHD is notified that grapple is centered on the bundle</p>			
<p>*c. Hoist position agrees with values listed in Attachment 2 for item seated in the Fuel Storage Pool Rack</p>	<p>Hoist encoder (bottom LED display in front of RPO console) reads approximately 195"</p>  <p>FHD is notified that the hoist position is correct</p>			
<p>*d. Grapple appears seated on bail handle using underwater camera for component seated in the</p>	<p>N/A</p> <p>(Not in the cask)</p>			

EXELON NUCLEAR

NLSRO2063 REV001

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
cask				
*8. When directed by the FHD, then engage the grapple and verify grapple engaged light is lit (FHD CUE: "Engage the grapple")	Grapple control switch actuated to ENGAGE Green backlighting on grapple switch lit			
*9. FHD & RPO, PERFORM Concurrent Verification that GRAPPLE ENGAGED Light is lit.	FHD & RPO verify GRAPPLE ENGAGED Light lit.			
*10. Slowly RAISE load while ensuring HOIST LOADED light is lit (fuel/dummy bundle only)	RAISE actuated on grapple console Red HOIST Loaded lamp lit on hoist console			
*11. Continue raising until grapple is fully raised then verify NORMAL UP lamp is lit	Green NORMAL UP lamp received on hoist console			
12. IF a double blade guide is being transferred through the cattle chute, THEN RAISE the grapple beyond NORMAL UP using the Hoist Override to – 4.0 inches as indicated by Hoist Encoder.	N/A			
13. Go to appropriate "Release Location" section of this procedure as directed by the FHD	Move to Section 4.5, "Release Location-Fuel Pool Storage Rack or Cask Pit"			
*14. Position core component over desired location in accordance with the Core Component Transfer Authorization Sheet (CCTAS) (FHD CUE: (After the bridge is driven to the drop-off location):	Operate bridge and trolley controls to position the mast over the target location on the CCTAS Stop component transfer when obstruction is cued			

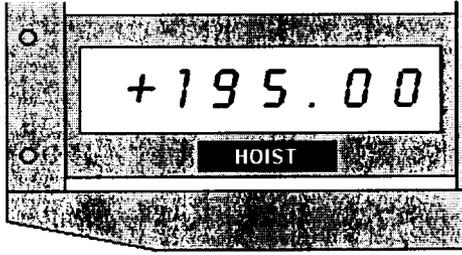
Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>“The fuel rack target location is obstructed by some plastic packing material and does not appear to allow bundle insertion”)</p>				
Alternate Path – CCTAS Step Cannot be Completed (FH-106 and NF-LG-310-2000)				
<p>Examiner Note:</p> <p>At this point, the candidate needs to ask for a change in the CCTAS because a step cannot be performed. The qualified FHD will initial the actual change to the CCTAS.</p>				
<p>FHD Cue: The reactor engineer wants us to return the dummy bundle to the original pickup location.</p>				
Resumption of Component Transfers in S97.0.				
<p>*17. Position core component over desired location in accordance with the Core Component Transfer Authorization Sheet (CCTAS)</p>	<p>Operate bridge and trolley controls to position the mast over the target location on the CCTAS</p>	3, 13	3	
<p>*18. Rotate core component as necessary to achieve proper orientation</p>	<p>Mast rotated to orient the bundle in the direction called for in the CCTAS.</p> <p>The bundle channel fastener is oriented per the CCTAS (use mast video image and compass rose painted on refuel bridge deckplates. The mast image is of the corner of the bundle CLOSEST to the operator. (If you cannot see the channel fastener, then the bundle is oriented in the same compass direction as the operator is facing when holding the mast handles)</p>			
<p>19. FHD & Spotter, PERFORM Concurrent Verification of proper core component location AND orientation.</p>	<p>Concurrent verification performed</p>			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*20. Lower the hoist until core component is seated and SLACK CABLE is lit.	Bundle lowered until red SLACK CABLE lamp is lit on hoist control console.			
21. FHD, VERIFY the following, <ul style="list-style-type: none"> ■ SLACK CABLE Light is lit ■ Component elevation appears equivalent to other stored components in the rack ■ Hoist Position indication agrees with Attachment 2 for item seated in Fuel Storage Rack, OR per M-53-006, subsection 5.4, for a bundle seated in a cask. <p>THEN DIRECT RPO to release and raise grapple.</p> <p>(FHD CUE: "Release and raise the grapple")</p>	FHD performs verifications, then directs RPO to release and raise grapple.			
22. RPO, VERIFY the following,	N/A			
*a. SLACK CABLE Light is lit	SLACK CABLE Light is lit			
b. Component elevation appears equivalent to other stored components in the rack <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-top: 10px;"> Not critical because next step covers same thing </div>	Elevation of the handle for the still-grappled dummy bundle is the same as the other bundles			
*c. Hoist position agrees with the value listed in Attachment 2 for item seated in Fuel Storage Rack, OR per M-53-006, subsection 5.4, for a bundle seated in a cask.	Hoist encoder (bottom LED display in front of RPO console) reads approximately 195"			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
				
*23. When directed by the FHD, then release grapple (FHD CUE: ""Release the grapple")	Grapple switch taken to RELEASE			
24. Verify grapple is open	Green backlighting out on the grapple control switch			
*25. Slowly raise grapple while verifying HOIST LOADED remains out and grapple remains free of bail handle	Grapple control taken to RAISE HOIST LOADED yellow lamp on left side of hoist control console remains out			
26. FHD & RPO, PERFORM Concurrent Verification that grapple is clear of core components.	Concurrent Verification performed			
27. Record completion of component transfer in CCTAS	CCTAS updated with date, time, and RPO initials			
(CUE: "You can stop here you have met the termination criteria for this JPM")	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. Secondary containment integrity is established
2. The Unit ___ refuel platform is ready for operation per S97.0.M and S97.1.A
3. FH-106 prerequisites are complete
4. Reactor Engineering has required a CCTAS for the movement of the dummy fuel bundle.
5. The CCTAS has been provided to you.
6. Shift supervision permission has been obtained to operate the refueling platform

INITIATING CUES:

You are directed by shift supervision to transfer the dummy fuel bundle in the Unit ___ spent fuel pool per the attached CCTAS. You are expected to perform the actions of the Platform Operator and to perform actual operation of the equipment, rather than a simulation.

You are directed by shift supervision to transfer the dummy fuel bundle in the Unit ___ spent fuel pool per the attached CCTAS. You are expected to perform the actions of the Platform Operator and to perform actual operation of the equipment, rather than a simulation.

Limerick Generating Station

Job Performance Measure

FUEL MOVEMENT FROM THE FUEL POOL TO THE FUEL PREP MACHINE -
GRAPPLE ENGAGED LIGHT GOES OUT UNEXPECTEDLY DURING
OPERATION (ALTERNATE PATH)

JPM Number: 2045

Revision Number: 002

Date: __/__/__

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Review By: _____
Operations Representative Date

Approved By: _____
Training Department Date

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

Revision 2, Format Change

SIMULATOR SETUP INSTRUCTIONS:

N/A

TASK STANDARD:

Dummy Fuel Bundle moved from one location in the Fuel Pool to the Fuel Prep Machine.

INITIAL CONDITIONS:

1. Prerequisites have been completed.
2. A dummy fuel bundle will be moved from one location in the fuel pool to the Fuel Prep Machine
3. Fuel Prep Machine is operable and visually verified full down.

INITIATING CUES:

You are directed by the Fuel Handling Director to move the Dummy Fuel Bundle from one location in the fuel pool to the Fuel Prep Machine

The Dummy Bundle is in Unit * Spent Fuel Pool Rack Location V V – 19 SW

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

Job Performance Measure (JPM)

Operator's Name: _____
Job Title: NLO RO SRO STA SRO Cert

JPM Title: FUEL MOVEMENT FROM THE FUEL POOL TO THE FUEL PREP MACHINE -
GRAPPLE ENGAGED LIGHT GOES OUT UNEXPECTEDLY DURING OPERATION
(ALTERNATE PATH)

JPM Number: NLSRO2045 **Revision Number:** 002

K/A Number and Importance: 234000 K3.03/3.8

Suggested Testing Environment: In-Plant

Actual Testing Environment: In-Plant

Testing Method: Simulate **Faulted:** No

Alternate Path: No

Time Critical: No

Estimated Time to Complete: 20 minutes **Actual Time Used:** ____ minutes

References: S97.0.M, REFUELING PLATFORM OPERATION

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? Yes No

The operator's performance was evaluated against the standards contained in this JPM, and has been determined to be: Satisfactory Unsatisfactory

Comments: _____

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ **Date** _____

Job Performance Measure (JPM)

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain current version of S97.0.M	Current revision of S97.0.M			
<p>NOTE</p> <p>A CCTAS is not required for pickup of the dummy bundle</p>				
*2. POSITION Refuel Platform Mast over desired core component in accordance with Core Component Transfer Authorization Sheet (CCTAS) (CUE: Mast is positioned over the dummy bundle)	Refuel Platform Mast over desired core component IAW CCTAS <i>Factor 4.1</i>			
3. LOWER grapple until grapple is near bail (CUE: The grapple is near bail)	Grapple Lowered near bail			
4. ENSURE grapple is open (CUE: The grapple is open)	Grapple is open			
*5. ROTATE grapple as necessary to achieve grapple to bail alignment (CUE: Grapple is aligned with the bail)	Grapple rotated and aligned with bail alignment			
*6. Slowly LOWER grapple until SLACK CABLE Light is lit (CUE: Grapple lowers, SLACK CABLE light illuminates)	Grapple is lowered until the SLACK CABLE Light is lit			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>7. FHD & Spotter, PERFORM Concurrent Verification of proper core component location AND orientation.</p> <p>(CUE: Core component location and orientation is verified as VV-19 SW by FHD & Spotter)</p>	N/A			
<p>8. FHD, VERIFY the following,</p> <ul style="list-style-type: none"> ■ SLACK CABLE Light is lit ■ Grapple is centered over bail handle ■ Hoist Position indication agrees with value listed in Attachment 2 for item seated in Fuel Pool Storage Rack ■ Grapple appears seated on bail handle using underwater camera for component seated in cask <p>THEN DIRECT RPO to engage grapple</p> <p>(CUE: FHD verifies SLACK CABLE Light is lit)</p> <p>(CUE: FHD verifies Grapple is centered over the bail handle)</p> <p>(CUE: FHD verifies Hoist encoder reads approximately 195")</p> <p>(CUE: FHD verifies Grapple appears to be properly seated)</p> <p>(CUE: FHD directs you to engage grapple)</p>	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*9. RPO, VERIFY the following,	N/A			
*10. SLACK CABLE Light is lit (CUE: FHD verifies SLACK CABLE Light is lit)	SLACK CABLE Light verified lit			
*11. Grapple is centered over bail handle (CUE: Grapple is centered over the bail handle)	Grapple is verified centered over bail handle			
*12 Hoist Position indication agrees with value listed in Attachment 2 for item seated in Fuel Pool Storage Rack (CUE: Hoist encoder reads approximately 195")	Hoist Position reads approximately 195"			
13 Grapple appears seated on bail handle using underwater camera for component seated in cask (CUE: Grapple appears to be properly seated)	N/A			
*14. WHEN directed by FHD, THEN ENGAGE grapple (CUE: Grapple is engaged)	Grapple engaged and grapple engaged light lit.			
*15. FHD & RPO, PERFORM Concurrent Verification that GRAPPLE ENGAGED Light is lit. (CUE: Grapple engaged light is lit. The FHD verifies Grapple engaged light is lit.)	Grapple engaged light is verified lit.			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*16. Slowly RAISE load while ensuring HOIST LOADED Light is lit (fuel/dummy bundle only)</p> <p>(CUE: The bundle is rising. Hoist Loaded Light is lit, Grapple engaged light goes out.)</p>	Recognize Hoist load lit and Grapple light goes out.			
<p>*17. If during hoist operation Grapple Engaged light goes out unexpectedly during operation, THEN movement shall be stopped immediately, and FHD notified.</p>	Recognize need to immediately stop hoist movement and notify FHD.			
<p>(CUE: "You can stop here you have met the termination criteria for this JPM")</p>	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. Prerequisites have been completed.
2. A dummy fuel bundle will be moved from one location in the fuel pool to the Fuel Prep Machine
3. Fuel Prep Machine is operable and visually verified full down.

INITIATING CUES:

You are directed by the Fuel Handling Director to move the Dummy Fuel Bundle from one location in the fuel pool to the Fuel Prep Machine

The Dummy Bundle is in Unit * Spent Fuel Pool Rack Location V V – 19 SW

Limerick Generating Station

Job Performance Measure

INSTALL ROD POSITION TEST BOX (LGS)

JPM Number: 2029

Revision Number: 004

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

Revision 4, Format Change

SIMULATOR SETUP INSTRUCTIONS:

N/A

TASK STANDARD:

Rod Position Test Box installed.

INITIAL CONDITIONS:

1. ST-6-097-630-* is in progress and has been completed to step 4.4.2.

INITIATING CUES:

The Outage Shift supervisor has directed you to perform ST-6-097-630-* step 4.4.2 to install the Rod Position Test Box on Unit *.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

Job Performance Measure (JPM)

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
EVALUATOR: Provide copy of ST procedure completed Through step 4.4.2				
1. Perform the following to install test box in Auxiliary Equipment Room:	N/A			
2. REQUEST Reactor Operator to select rod 38-59. (CUE: Unit RO reports that rod 38-59 is selected.)	LSRO requests the Unit RO select rod 38-59.			
*3. DISCONNECT four rod group J38-63 at panel *0C615 (BAY B). (CUE: Four rod group cannon plug J38-63 is disconnected.)	Four rod group J38-63 cannon plug is disconnected.			
*4. IF using single rod test box, THEN POSITION test box as follows, OTHERWISE ENTER N/A. <u>ROD</u> <u>SWITCH POSITION</u> 38-59 00 (Cue: The single rod test will be used)	Switch is at position "00".			
5. IF using 4-rod test box, THEN POSITION test box switches as follows, OTHERWISE ENTER N/A.	N/A			
6. All test box switches initially in the DOWN position.	N/A			
7. Cable end 1,0 (Rod 38-59) switch "00" in the UP position.	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8. Cable end 0,0 (Rod 34-59) switch "00" in the UP position.	N/A			
*9. CONNECT test box cable to connector J38-63 at panel *0C615 (Bay B). (CUE: Test box group cannon plug is connected to J38-63.)	Test box cannon plug connected.			
(CUE: "You can stop here you have met the termination criteria for this JPM")	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. ST-6-097-630-* is in progress and has been completed to step 4.4.2.

INITIATING CUES:

The Outage Shift supervisor has directed you to perform ST-6-097-630-* step 4.4.2 to install the Rod Position Test Box on Unit *.

Limerick Generating Station

Job Performance Measure

RESPOND TO FUEL FLOOR *0C222 ALARM

JPM Number: 2060

Revision Number: 000

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

New Revision

SIMULATOR SETUP INSTRUCTIONS:

N/A

TASK STANDARD:

Backup air bottle simulated connected to #3 seal and regulator simulated at 56.5 psig.

INITIAL CONDITIONS:

1. RPV cavity is flooded.
2. The Unit __ RO has reported to you that the Service Air Compressor has tripped and the cause CANNOT be determined.
3. #4 Reactor Cavity Seal has been inoperable since the beginning of the outage.
4. Backup Service Air Compressor is NOT available.

INITIATING CUES:

Annunciator *0C222, B-1 "Seal No. 3 Reactor Well (Top Seal)" is alarming. No leakage from the Reactor Well is observed.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

Job Performance Measure (JPM)

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. OBTAIN a copy of ARC *0C222 B-1, and refer to S15.3.C.	Current revision of ARC *0C222, B-1 obtained.			
2. OBTAIN a copy of S15.3.C.	Current revision of S15.3.C is obtained.			
3. CHECK *0C222 for any annunciators indicating low seal air pressure. (CUE: LOW PRESSURE annunciators for seal #3 and seal #4 are currently lit.)	Visually check status of *0C222 panel alarms or requests the refuel floor HP report status of alarms on panel.			
NOTE				
<p>1. Seal alarms may come in periodically due to the need for a small adjustment in the pressure regulator setting. This is particularly true for seals which have a narrow operating pressure range.</p> <p>2. The MCR should be kept informed about actions taken on the seals due to their affect on Secondary Containment or Pool water levels.</p>				
*4. IF Service Air is still available as evidenced by observing pressure gauge PI-015-*44C. THEN ADJUST service air pressure to the seal per S15.3.E AND EXIT this procedure. (CUE: PI-015-*44C 48 psig and slowly lowering)	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*5 IF Service Air pressure is dropping noticeably or gone evidenced by observing pressure gauge PI-015-*44C, THEN PROCEED to step 4.2 and attach Secondary Back up Bottles.</p> <p>(CUE: PI-015-*44C is slowly lowering)</p>	<p>Visually verifies that PI-015-*44C is slowly lowering and proceeds to step 4.2</p>			
NOTE				
<p>1. Backup air bottles are maintained on the Refuel Floor <u>AND</u> are readily accessible for use as secondary backup air for inflatable seals. Bottles are labeled denoting their function.</p> <p>2. Primary location for backup air bottles is along the North Side of the Refuel Floor. Bottles may be located in other refuel floor locations due to refuel floor activities.</p> <p>3. Hoses <u>AND</u> regulators are stored in toolbox along north wall of Refuel Floor.</p>				
<p>6. IF backup air is being used for a planned maintenance activity, THEN USE air bottles obtained for maintenance activity AND GO TO step 4.2.3</p> <p>(CUE: backup air is NOT being used for a planned maintenance activity)</p>	N/A			
<p>7. OBTAIN cart containing two backup air bottles with regulators, hose AND appropriate quick disconnect fittings.</p>	<p>Locates backup air bottle cart on the refuel floor.</p>			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
WARNING				
To prevent possible personnel injury OR Equipment Damage, Air Bottles shall be secured in place.				
8. POSITION cart/air bottle near seal station	Positions cart near air tubing for "C" reactor cavity seal on North side of Unit 1 reactor cavity.			
*9. AND CONNECT one bottle to quick disconnect attached to calibration port of PI-015-*49C, "Seal Supply Press Indicator."	Locates PI-015-149C calibration port, ensures one end of hose connected to bottle, simulates connecting other end of hose to the appropriate calibration port.			
*10. CLOSE 15-*411C, "Supply Valve," AND "Root Valve" for PI-015-*49C. (Both valves located in PIT next to manifolds.)	Proper valve is located, valve handwheel is simulated to be operated in the clockwise direction to shut the valve.			
UNIT 2 ONLY 11. ENSURE "Plug Valve" for PI-015-249C closed. (Plug valve located on manifold.)	UNIT 2 ONLY Proper valve is located, and ensured closed.			
WARNING				
IF any seal is inflated past its specified pressure, THEN serious personnel OR equipment damage may result.				

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*12. OPEN bottle valve AND ADJUST regulator for pressure setting on applicable seal as follows:</p> <p>Preferred: 56.5 Acceptable: 52.5 to 57.5 (CUE: Point to a rising pressure indication as the valve is manipulated clockwise and then a final regulator pressure indication of 56 psig.)</p>	<p>Regulator valve is simulated to be turned clockwise to establish a pressure regulator pressure between 52.5 psig to 57.5 psig.</p> <p><i>(INSTRUCTOR NOTE: Clockwise to raise pressure, counterclockwise to lower pressure.)</i></p>			
<p>UNIT 2 ONLY</p> <p>*13. OPEN "Plug Valve" for PI-015-249C.</p>	<p>UNIT 2 ONLY</p> <p>Proper valve is located, and plug valve is opened.</p>			
<p>*14. OPEN "Root Valve" for PI-015-*49C AND ENSURE it indicates accordingly.</p> <p>(CUE: Point to a rising pressure indication as the valve is manipulated clockwise and then a final regulator pressure indication of 56 psig.)</p>	<p>Proper valve is located, valve handwheel is simulated to be operated in the counterclockwise direction to open the valve. Pressure gauge PI-015-*49C is read.</p>			
<p>(CUE: "You can stop here you have met the termination criteria for this JPM")</p>	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. RPV cavity is flooded.
2. The Unit __ RO has reported to you that the Service Air Compressor has tripped and the cause CANNOT be determined.
3. #4 Reactor Cavity Seal has been inoperable since the beginning of the outage.
4. Backup Service Air Compressor is NOT available.

INITIATING CUES:

Annunciator *0C222, B-1 "Seal No. 3 Reactor Well (Top Seal)" is alarming. No leakage from the Reactor Well is observed.

Limerick Generating Station

Job Performance Measure

RESPONSE TO AN UNEXPECTED RISE IN SRM COUNT RATE DURING FUEL HANDLING IN THE REACTOR CORE(LIMERICK)

JPM Number: 2053

Revision Number: 003

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

Revision 3, Format Change

SIMULATOR SETUP INSTRUCTIONS:

N/A

TASK STANDARD:

All necessary actions are performed in response to an unexpected rise in SRM count rate during fuel handling in the core.

INITIAL CONDITIONS:

1. LGS Unit ___ is in OPCON 5
2. Fuel handling is in progress per GP 6.1(Core Shuffle)
3. As a fuel bundle has just been seated in the core.

INITIATING CUES:

The Reactor Operator has just reported that SRM count rate in the core quadrant where you have inserted a fuel bundle has doubled 2 times and is still rising.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

Job Performance Measure (JPM)

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>1. IF SRM count rate doubles two times between CCTAS steps THEN PERFORM the following.</p> <p>*a. IF grappled, RAISE fuel assembly from core so it clears upper grid (approximately 360 inches hoist position)</p> <p>(Cue: The hoist position indicator displays 360.00.)</p>	<p>LSRO directs the platform operator to RAISE the main hoist to bring the fuel assembly above the upper grid.</p>			
<p>*b. Notify Shift Supervision</p> <p>(Cue: The Shift Supervisor has acknowledged your communication.)</p>	<p>LSRO uses PA system or Telephone or direct verbal communication to inform shift management that SRM count rate double during fuel handling.</p>			
<p>*c. DETERMINE SRM count rate trend</p> <p>(Cue: The Reactor Operator has acknowledged your communication and reports SRM Count rate continues to increase.)</p>	<p>RO/SSV Contacted and SRM Count rate data requested</p>			
<p>*d. IF SRM count rate continues to increase (criticality) THEN EVACUATE fuel floor</p> <p>(Cue: Refuel Floor personnel have evacuated to HP Muster area Elevation 217 per ERP-110)</p>	<p>LSRO verbally orders all personnel on the refuel floor to evacuate</p>			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>e. and ENSURE all insertable control rods are inserted</p> <p>(Cue: Reactor Operator reports that all insertable control rods inserted.)</p>	<p>LSRO verbally requests shift supervisor or reactor operator to verify that all insertable control rods are fully inserted.</p>			
<p>f. NOTIFY Health Physics</p> <p>(Cue: Health Physics has acknowledged your communication to perform appropriate surveys following an unexpected rise in SRM count rate during fuel handling.)</p>	<p>LSRO uses PA system or Telephone or direct verbal communication to inform Health Physics of the unexpected rise in SRM count rate during fuel insertion and to request Health Physics perform appropriate radiological surveys</p>			
<p>g. and Reactor Engineering</p> <p>(Cue: Reactor Engineering has acknowledged your communication of an unexpected rise in SRM count rate during fuel handling.)</p> <p>(Cue: Reactor Engineering will develop a plan to properly disposition the bundle)</p>	<p>LSRO uses PA system or Telephone or direct verbal communication to inform and Reactor Engineering of the unexpected rise in SRM count rate during fuel insertion.</p>			
<p>(CUE: "You can stop here you have met the termination criteria for this JPM")</p>	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. LGS Unit __ is in OPCON 5
2. Fuel handling is in progress per GP 6.1(Core Shuffle)
3. As a fuel bundle has just been seated in the core.

INITIATING CUES:

The Reactor Operator has just reported that SRM count rate in the core quadrant where you have inserted a fuel bundle has doubled 2 times and is still rising.

Limerick Generating Station

Job Performance Measure

TRANSFER OF FUEL IN THE SPENT FP, RESPONSE TO A DROPPED FUEL ASSEMBLY (ALTERNATE PATH)

JPM Number: 2061

Revision Number: 002

Date: __/__/__

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Review By: _____
Operations Representative Date

Approved By: _____
Training Department Date

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

Revision 2, Format Change

SIMULATOR SETUP INSTRUCTIONS:

N/A

TASK STANDARD:

All necessary actions are performed in response to a single fuel rod dropped in the spent fuel pool.

INITIAL CONDITIONS:

1. Secondary containment integrity is established
2. The Unit 2 refuel platform is ready for operation per S97.0.M and S97.1.A
3. FH-106 prerequisites are complete
4. The CCTAS has been provided to you.
5. Shift supervision permission has been obtained to operate the refueling platform

INITIATING CUES:

You are the Fuel Handling Director and have been directed by shift supervision to transfer seven fuel bundles in the Unit 2 spent fuel pool per the attached CCTAS to the Unit 1 spent

spent

r's Use:

Comments on respective step.

he "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

Job Performance Measure (JPM)

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain current version of S97.0.M	Current revision of S97.0.M			
2. POSITION Refuel Platform Mast over desired core component in accordance with Core Component Transfer Authorization Sheet (CCTAS) (CUE: Mast is positioned over KK-158 by RPO)	N/A			
3. LOWER grapple until grapple is near bail (CUE: RPO lowers the grapple near bail)	N/A			
4. ENSURE grapple is open (CUE: RPO ensures the grapple is open)	N/A			
5. ROTATE grapple as necessary to achieve grapple to bail alignment (CUE: RPO rotates grapple and aligns with the bail)	N/A			
6. Slowly LOWER grapple until SLACK CABLE Light is lit (CUE: RPO slowly lowers grapple until SLACK CABLE light illuminates)	N/A			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*7. FHD & Spotter, PERFORM Concurrent Verification of proper core component location AND orientation. (CUE: Core component location is at KK-158 and orientation is SW)</p>	<p>Candidate and Spotter use proper 3 part communication to perform concurrent verification of grapple over KK-158 and SW orientation</p>			
<p>*8. FHD, VERIFY the following,</p> <ul style="list-style-type: none"> ■ SLACK CABLE Light is lit ■ Grapple is centered over bail handle ■ Hoist Position indication agrees with value listed in Attachment 2 for item seated in Fuel Pool Storage Rack ■ Grapple appears seated on bail handle using underwater camera for component seated in cask <p>THEN DIRECT RPO to engage grapple (CUE: SLACK CABLE Light is lit) (CUE: Grapple is centered over the bail handle) (CUE: Hoist encoder reads approximately 195") (CUE: Grapple appears to be properly seated)</p>	<ul style="list-style-type: none"> ■ SLACK CABLE Light verified lit ■ Grapple is verified centered over bail handle ■ Hoist Position reads U/1 approximately 195" ■ N/A ■ FHD directs RPO to engage grapple 			
<p>9. RPO, VERIFY the following,</p>	<p align="center">N/A</p>			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
10. SLACK CABLE Light is lit (CUE: RPO verifies SLACK CABLE Light is lit)	N/A			
11. Grapple is centered over bail handle (CUE: RPO verifies grapple is centered over the bail handle)	N/A			
12 Hoist Position indication agrees with value listed in Attachment 2 for item seated in Fuel Pool Storage Rack (CUE: RPO verifies Hoist encoder reads approximately 195")	N/A			
13 Grapple appears seated on bail handle using underwater camera for component seated in cask (CUE: RPO verifies that grapple appears to be properly seated)	N/A			
*14. WHEN directed by FHD, THEN ENGAGE grapple	FHD directs RPO to engage grapple			
*15. FHD & RPO, PERFORM Concurrent Verification that GRAPPLE ENGAGED Light is lit. (CUE: Grapple engaged light is lit.)	Candidate and RPO use proper 3 part communication to perform concurrent verification of GRAPPLE ENGAGED Light lit			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>16. Slowly RAISE load while ensuring HOIST LOADED Light is lit (fuel/dummy bundle only)</p> <p>(CUE: RPO slowly raises the bundle. Hoist Loaded Light is lit)</p> <p>(CUE: You feel a vibration of the refuel platform structure, you observe that the fuel assembly dropping)</p>	Recognize dropped fuel assembly, exit S97.0.M and enter ON-120.			
17. Obtain copy of ON-120	Procedure ON-120 obtained.			
18. IF irradiated fuel bundle is dropped or damaged, THEN PERFORM the following:	N/A			
<p>*19. EVACUATE Fuel Floor.</p> <p>(CUE:All personnel have evacuated the refuel floor)</p>	The fuel floor is evacuated.			
<p>*20. REQUEST disposition of damaged bundle from SSV.</p> <p>(CUE:SSV acknowledges communication that a fuel assembly has been dropped in the spent fuel pool)</p>	Disposition is requested from SSV.			
<p>21. VERIFY Normal Ventilation is isolated AND SGTS is initiated. IF Normal Ventilation has not isolated THEN ISOLATE Ventilation per S76.8.B Section 4.5.</p> <p>(CUE:The refuel floor HVAC is isolated, SBGT is in service)</p>	The Refuel Floor HVAC is isolated, and SBGT is in service, drawing from the Refuel Floor HVAC Zone.			

Job Performance Measure (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
22. IF spent fuel damage results in refueling area ventilation isolation OR major damage to spent fuel is observed, THEN ENTER LGS Emergency Plan Annex, Table 3-1. (CUE:Control room personnel are reviewing LGS Emergency Plan Annex, Table 3-1)	LGS Emergency Plan Annex, Table 3-1 is entered and performed by Shift Management personnel in the Main Control Room			
*23. NOTIFY Health Physics. (CUE:Health physics has been notified.)	Health Physics is notified.			
24. NOTIFY Reactor Engineering. (CUE:Reactor Engineering has been notified.)	Reactor Engineering is notified.			
(CUE: "You can stop here you have met the termination criteria for this JPM")	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. Secondary containment integrity is established
2. The Unit 2 refuel platform is ready for operation per S97.0.M and S97.1.A
3. FH-106 prerequisites are complete
4. The CCTAS has been provided to you.
5. Shift supervision permission has been obtained to operate the refueling platform

INITIATING CUES:

You are the Fuel Handling Director and have been directed by shift supervision to transfer seven fuel bundles in the Unit 2 spent fuel pool per the attached CCTAS to the Unit 1 spent fuel pool.

Limerick Generating Station

Job Performance Measure

EAL CLASSIFICATION, SPENT FUEL POOL LEVEL

JPM Number: 2062

Revision Number: 000

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

Job Performance Measure (JPM)

REVISION RECORD (Summary)

New Revision

SIMULATOR SETUP INSTRUCTIONS:

N/A

TASK STANDARD:

ALERT is declared for the initial conditions given

INITIAL CONDITIONS:

1. Unit 1 is in OPCON 5
2. Unit 2 is at 100% Reactor Power
3. Refueling is not in progress
4. Leak in the Spent Fuel Pool has caused level to drop to 19 feet above irradiated fuel
5. Make up to the Fuel Pool was able to hold Spent Fuel Pool level steady at 23 feet above irradiated fuel
6. Maximum Rad level of 400 mr/hr on ARM RIS29-M1-1, currently reading 200 mr/hr
7. Maximum Rad level of 600 mr/hr on ARM RIS31-M1-1, currently reading 450 mr/hr

INITIATING CUES:

Use EP-AA-1008, LGS Emergency Action Level (EAL) Matrix, to identify if an EAL classification is required for the initial conditions above. If an EAL classification is required, then determine the appropriate Emergency Declaration.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

Job Performance Measure (JPM)

Evaluator's Signature: _____ Date _____

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Provide copy of EAL Matrix to candidate.				
*1. Identifies that there is a EAL classification for initial conditions under Irradiated Fuel Accidents	Enters the EAL Matrix for Irradiated Fuel Accidents			
2. Reviews EAL Threshold Values for applicable Initial Conditions.	Identifies MA11 and MU11			
*3. Selects highest classification for applicable Initial Conditions.	Identifies MU11			
*4. Identify event declaration.	Classifies event as an ALERT			
(CUE: "You can stop here you have met the termination criteria for this JPM")	N/A			

JPM Stop Time: _____

EXELON NUCLEAR

INITIAL CONDITIONS:

1. Unit 1 is in OPCON 5
2. Unit 2 is at 100% Reactor Power
3. Refueling is not in progress
4. A leak in the Spent Fuel Pool has caused level to drop to 19 feet above irradiated fuel
5. Make up to the Fuel Pool was able to hold Spent Fuel Pool level steady at 23 feet above irradiated fuel
6. Maximum Rad level of 400 mr/hr on ARM RIS29-M1-1, currently reading 200 mr/hr
7. Maximum Rad level of 600 mr/hr on ARM RIS31-M1-1, currently reading 450 mr/hr

INITIATING CUES:

Use EP-AA-1008, LGS Emergency Action Level (EAL) Matrix, to identify if an EAL classification is required for the initial conditions above. If an EAL classification is required, then determine the appropriate Emergency Declaration.

Applicant Docket Number: 50-277/278			Page 2 of
Facility: PBAPS		Date of Examination: JUN 13 2005	
Title / Description of Tasks (JPMs)	Type Codes*	Evaluation (S or U)	Comment Page Number
Administrative			
1.			
2.			
3.			
Systems			
1. FHE – Semi-Automatic dummy bundle transfer in the spent FP (NRC 2001)	MPI		
2. FHE – Fuel movement in the spent FP, hoist loaded light extinguished (3019)	DAI		
3. Refueling Interlock Functional Test with the Inability to Move Control Rods – Testing Rod Withdraw Interlocks	NI		
4. Remove Unit * RF floor ARM from service	NI		
Emergency/Abnormal Plant Evolutions			
1. EAL classification, loss of spent FP water level	NTIR		
2.			
3.			
Type Codes & Criteria: <ul style="list-style-type: none"> (A)lternative path (2 systems; 1 E/APE) (C)ontrol room (D)irect from bank (≤ 7) (I)n-plant (N)ew or (M)odified form bank including 1(A) (≥ 1 / section) (P)revious two exams (≤ 1 / section) (R)efueling accident (1) (T)echnical specification (≥ 2) 			

Peach Bottom Atomic Power Station

Job Performance Measure

Semi-Automatic Fuel Transfer Within the Spent Fuel Pool

JPM Number: NLSRO3037

Revision Number: 002

Date: / /

Developed By: _____ **Date** _____
Instructor

Validated By: _____ **Date** _____
SME or Instructor

Review By: _____ **Date** _____
Operations Representative

Approved By: _____ **Date** _____
Training Department

JOB PERFORMANCE MEASURE (JPM)

Revision Record (Summary)

1. Revision 001, New Format. Rev bars omitted.
2. Revision 002, Revised JPM to reflect revisions to SO 18.1.A-2(3)

INITIAL CONDITIONS:

1. There are NO irradiated components grappled to any refueling platform hoist.
2. Auxiliary hoists are full up on hoist override with attached tooling (if present) clear of obstructions.
3. The Daily Bridge Checkout has been completed in accordance with SO 18.1.C-2(3), "Electrical, Mechanical and Pneumatic Alignment/Checkout of Refueling Platform".
4. Primary and Redundant encoders are selected for Bridge, Trolley and Hoist travel in accordance with SO 18.1.A-2(3).
5. REFUELING normal up limit has been selected for operation in accordance with SO 18.1.A-2(3).
6. Spent Fuel Pool Gate status is set at INSTALLED in the Refuel Platform Computer per SO 18.1.A-2(3).
7. REFUELING PLATFORM OPERATOR access level user is logged on to refuel platform computer.
8. An approved CCTAS for transfer of the dummy bundle has been obtained from Reactor Engineering. The Spent fuel rack locations specified on the CCTAS are within the Secure Travel Zone.
9. Prerequisites for dummy bundle transfer within the Spent Fuel Pool are completed per FH-35.

INITIATING CUES:

The Control Room Supervisor has directed you, as the Refuel Platform Operator (RPO), to perform transfer of the dummy bundle within the U/2(3) spent fuel storage racks using the **XY mode semi-automatic refueling platform operation**, in accordance with the attached CCTAS.

JOB PERFORMANCE MEASURE (JPM)

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The time clock starts when the candidate acknowledges the initiating cue.

Critical Element(s) indicated by "*" in Performance Checklist.

EXELON NUCLEAR

NLSROJPM3037

JOB PERFORMANCE MEASURE (JPM)

JPM Start Time _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
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NOTE:

Provide the following to the candidate :

- a. INITIATING CUE(S) and Task Conditions sheet
- b. Copy of SO 18.1.A-2(3) IF requested.

NOTE TO EVALUATOR:

The verb "VERIFY" in PB SO procedures is defined as follows in A-C-1 App. 3 Exh. 2:

"To observe an expected condition and, if not as expected, to take action to place it in the expected condition. Usually applies for response to automatic actions, but is not limited to only those actions."

<p>1. Position Refuel Platform Mast over desired core component in accordance with Core Component Transfer Authorization Sheet (CCTAS).</p>	<p>Operator branches to section 4.6 of procedure to execute semi-auto positioning of platform to pickup location.</p>			
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NOTES

The following steps are performed on the Refueling Platform lower level, at XC-8(9)0832 "U/2(3) Refueling Platform Operator Interface Console"

The Refuel Platform computer does NOT recognize Fuel Pool Storage Rack locations outside the Secure Travel Zone, the Fuel Preparation Machines, Bundle Sipping Canisters OR Spent Fuel Storage Cask locations as valid locations for automatic moves.

An automatic move can be terminated at any time by performing one of the following:

- touching "AUTO STOP" on the MAIN OR HOIST screen
- deflecting any of the master joysticks
- depressing "STOP" push button on START/STOP STATION
- depressing "TRAVEL OVERRIDE" on RIGHT HAND CONTROLLER

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>CAUTION</p> <p>Operation in Semi-Automatic <u>OR</u> Full Automatic modes requires both Primary <u>AND</u> Redundant Encoders to be selected (i.e. "0") for each axis in order to prevent collision of the mast <u>OR</u> handled component in the event a single encoder fails.</p> <p>NOTE</p> <p>The following steps are from section 4.6 of SO 18.1.A-2(3)</p>				
a. * Touch "SHOW MENU".	"SHOW MENU" touch screen button actuated.			
b. * Touch "XY/XY&Z MODE ACTIVE" as necessary to select the desired mode of multiple axis automatic operation.	"XY/XY&Z MODE ACTIVE" touch screen button is actuated (toggled) to select XY mode of operation.			
c. * Touch "PRESS FOR OPERATION".	"PRESS FOR OPERATION" touch screen button actuated.			
d. <u>IF</u> operating in the XY mode, <u>THEN</u> perform the following, <u>OTHERWISE</u> continue with step 4.6.5 of this procedure:	Operator continues at step 4.6.2.1.1 of procedure.			
e. * <u>IF</u> in the Fuel Pool <u>AND</u> grapple is released, <u>THEN</u> verify hoist position indicates less than 164 inches.	<p>Candidate verifies that Main Hoist position indication is less than 164 inches.</p> <p>Remaining substeps in 4.6.2 are correctly identified as N/A.</p>			

EXELON NUCLEAR

NLSROJPM3037

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
f. <u>IF</u> operating in the XY&Z mode, <u>THEN</u> perform the following, <u>OTHERWISE</u> continue with step 4.6.4 of this procedure:	Candidate correctly identifies that section 4.6.3 is N/A. Operator continues to step 4.6.4 of procedure.			
g. Verify Bridge <u>AND</u> Trolley are within the Secure Travel Zone.	Bridge <u>AND</u> Trolley are verified to be within the Secure Travel Zone.			
h. Verify Bridge <u>AND</u> Trolley are <u>NOT</u> in the Transfer Canal.	Bridge <u>AND</u> Trolley are verified <u>NOT</u> in the Transfer Canal.			
i. * Touch "SELECT AUTO" on the Main <u>OR</u> Hoist screens.	"SELECT AUTO" touch screen pushbutton is actuated.			
j. <u>IF</u> during auto move selection it is desired to return to manual operation, <u>THEN</u> touch "SELECT MANUAL", <u>OTHERWISE</u> continue with this procedure subsection.	N/A	N/A		
k. * Touch "Manual Step Selection Active"/ "Auto Step Selection Active" as necessary to select "Manual Step Selection Active".	"Manual Step Selection Active" / "Auto Step Selection Active" touch screen pushbutton is actuated (toggled as necessary) to select "Manual Step Selection Active" .			
l. * Touch "REQUEST" <u>AND</u> ...	"REQUEST" touch screen pushbutton is actuated bringing up the alpha-numeric " keypad" screen.			

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
m. * ... enter the desired location on the keypad screen.	"MOVE FROM" location from CCTAS is entered.			
n. * Touch "VERIFY".	Candidate verifies requested location is correct and then actuates the "VERIFY" touch screen pushbutton. If incorrect location identified prior to actuating "VERIFY" pushbutton, candidate touches "REQUEST" and enters the correct location.			
o. * Touch "AUTO RUN" to initiate Refueling Platform movement.	"AUTO RUN" touch screen pushbutton is actuated to initiate motion of the refueling platform to the desired Fuel Pool location.			
The following steps are performed in accordance with Section 4.8 for "Pick-up Location Fuel Pool Storage Rack"				
2. Lower hoist until grapple is near the bail handle.	The hoist is lowered using the grapple joystick in the LOWER direction.			
3. Verify grapple is open.	Candidate verifies grapple is OPEN by observing that the green "GRAPPLE ENGAGED" light is NOT lit OR direct observation of the grapple on the mast mounted camera (if available).			

PRESS ENTER

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
4. * Rotate grapple as necessary to achieve grapple to bail alignment.	The mast is rotated so that the dummy bundle bail handle is aligned with the fuel grapple.			
5. * Slowly lower hoist until "SLACK CABLE" light is lit.	Candidate lowers the hoist using the Grapple joystick in the LOWER direction. Hoist lowering is stopped when the red SLACK CABLE light is LIT.			
<u>NOTE</u>				
Procedure allows the CV in step 6 below to be performed by the FHD and Spotter or, if Spotter not used, between the FHD and RPO (Reference SO 18.1.A-2(3) Step 4.0 Note 4)				
<u>CV</u>				
6. * Verify proper core component location and orientation.	Candidate CORRECTLY determines core component location and orientation are in agreement with the CCTAS. Candidate informs Spotter OR FHD (if acting as spotter) of component location and orientation.			
NOTE: The verifications in the following step (by RPO and FHD) may be performed in parallel.				

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p style="text-align: center;"><u>CV</u></p> <p>7. * RPO (and FHD) verify the following:</p> <ul style="list-style-type: none"> a. "SLACK CABLE" light is LIT b. Grapple is centered over bail handle. c. Hoist position indication agrees with Attachment 9 of SO 18.1.A-2(3) for item seated in Fuel Pool Storage Rack. 	<p>Candidate verifies "SLACK CABLE" light is LIT.</p> <p>Candidate verifies grapple is centered over bail handle.</p> <p>Candidate compares hoist encoder position with Attachment 9 of SO 18.1.A-2(3) to verify grapple is full down on the component as evidenced by hoist encoder reading of ~ 188.0".</p>			
<p style="text-align: center;"><u>CV</u></p> <p>8. * <u>WHEN</u> directed by FHD, <u>THEN</u> engage grapple, AND verify "GRAPPLE ENGAGED" light is lit.</p>	<p>When directed, Candidate engages grapple by depressing the "GRAPPLE ENGAGE" rocker switch on the Right Hand Controller.</p> <p>Candidate observes the "GRAPPLE ENGAGED" light illuminates.</p> <p>Candidate reports that the grapple light is LIT (grapple is engaged).</p>			

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
9. * Slowly raise the load <u>AND</u> verify "HOIST LOADED" light is lit (fuel only).	Upon completion of the CV for Grapple Engaged, candidate slowly raises the dummy bundle using the GRAPPLE joystick deflected in the RAISE direction. Candidate observes the HOIST LOADED light is LIT.			
10. * Continue raising until grapple is fully raised, <u>THEN</u> verify "GRAPPLE NORMAL UP" light is lit.	Grapple is raised until NORMAL UP light becomes lit. RPO observes that GREEN normal up light, located on the LH controller, is illuminated.			
11.* Perform appropriate "Set Down Location" subsection of this procedure as directed by FHD.	Operator branches to section 4.13 of procedure for "Set-Down Location, Fuel Pool Storage Rack".			
12. * Position core component over desired location in accordance with Core Component Transfer Authorization Sheet (CCTAS).	Operator branches to section 4.6 of procedure to execute semi-automatic positioning of refueling platform to setdown location as specified in the "MOVE TO" location on the CCTAS.			
a. <u>IF</u> operating in the XY mode, <u>THEN</u> perform the following, <u>OTHERWISE</u> continue with step 4.6.3 of this procedure:	Operator continues with step 4.6.2 of the procedure.			

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
b. * <u>IF</u> in the Fuel Pool <u>AND</u> grapple is engaged, <u>THEN</u> verify grapple is at the normal up position.	Candidate verifies that the grapple is at NORMAL UP. Note to evaluator: Remaining 4.6.2 substeps are N/A.			
c. <u>IF</u> operating in the XY&Z mode, <u>THEN</u> perform the following, <u>OTHERWISE</u> continue with step 4.6.4 of this procedure:	Operator branches to step 4.6.4 of the procedure			
d. Verify Bridge <u>AND</u> Trolley are within the Secure Travel Zone.	Bridge <u>AND</u> Trolley are verified to be within the Secure Travel Zone.			
e. Verify Bridge <u>AND</u> Trolley are <u>NOT</u> in the Transfer Canal.	Bridge <u>AND</u> Trolley are verified <u>NOT</u> in the Transfer Canal.			
f. * Touch "SELECT AUTO" on the Main <u>OR</u> Hoist screens.	"SELECT AUTO" touch screen pushbutton is actuated.			
g. <u>IF</u> during auto move selection it is desired to return to manual operation, <u>THEN</u> touch "SELECT MANUAL", <u>OTHERWISE</u> continue with this procedure subsection.	N/A	N/A	N/A	

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
h. * Touch "Manual Step Selection Active"/ "Auto Step Selection Active" as necessary to select "Manual Step Selection Active".	"Manual Step Selection Active" / "Auto Step Selection Active" touch screen pushbutton is actuated (toggled) as necessary to select "Manual Step Selection Active" .			
i. * Touch "REQUEST" <u>AND</u> ...	"REQUEST" touch screen pushbutton is actuated bringing up the alpha-numeric "keypad" screen.			<i>Press ENTER</i>
j. * ... enter the desired location on the keypad screen.	"MOVE TO" location from CCTAS is entered.			
k. * Touch "VERIFY".	Candidate verifies requested location is correct and then actuates the "VERIFY" touch screen pushbutton. If incorrect location identified prior to actuating "VERIFY" pushbutton, candidate touches "REQUEST" and enters the correct location.			
l. * Touch "AUTO RUN" to initiate Refueling Platform movement.	"AUTO RUN" touch screen pushbutton is actuated to initiate motion of the refueling platform to the desired Fuel Pool location. Operator returns to section 4.13 of procedure.			

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
13. * Rotate core component as necessary to achieve proper orientation.	The mast is rotated so that the dummy bundle channel fastener is correctly oriented to the corner of the storage rack cell in accordance with CCTAS.			
NOTE: Component may be inserted into the fuel rack, up to hoist position 25" , in parallel with verification of core component location and orientation.				
16. * <u>CV</u> FHD AND SPOTTER, perform Concurrent Verification to ensure proper core component location and orientation.	The FHD and RPO or FHD and Spotter CV location and orientation of the dummy bundle in accordance with the CCTAS. RPO does NOT exceed 25" hoist encoder position prior to completion of verification activities.			
17. * <u>WHEN</u> directed by FHD, <u>THEN</u> lower hoist until component is seated AND "SLACK CABLE" light is lit.	Candidate lowers the dummy bundle into the storage rack and observes illumination of the SLACK CABLE light.			
NOTE: The verifications in the following step (by RPO and FHD) may be performed in parallel.				

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>18. * RPO (and FHD) verifies the following:</p> <ul style="list-style-type: none"> • "SLACK CABLE" light is LIT • Component elevation appears equivalent to other stored components in the rack • Hoist position indication agrees with Attachment 9 for item seated in Fuel Pool Storage Rack. 	<p>Candidate verifies "SLACK CABLE" light is LIT.</p> <p>Seated dummy bundle bail handle appears to be at the same height as surrounding bundles.</p> <p>Hoist position, as indicated on the hoist encoder readout on the LH/RH controller or Main/Hoist screens indicates approximately 188"</p>			
<p>19. * <u>WHEN</u> directed by FHD, <u>THEN</u> release <u>AND</u> raise the grapple.</p>	<p>Candidate performs the following to "RELEASE and RAISE":</p> <p>Release the grapple by placing the GRAPPLE switch to the RELEASE position.</p> <p>The hoist is slowly raised, using the Grapple joystick deflected in the raise direction.</p>			
<p>20. * FHD AND RPO, perform Concurrent Verification that grapple is clear of core components.</p>	<p>As the hoist is slowly raised, the FHD AND RPO observe the grapple head rising above seated components and communicate that the grapple is CLEAR.</p>			

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
21. Record completion of component transfer on CCTAS. (CUE: You can stop here. You have met the termination criteria for this JPM.)	If candidate is acting as spotter, initials of the candidate are written in the RPO column of the CCTAS. The TIME and DATE columns are filled with the current date and time.			
22. As an evaluator, ENSURE that you have positive control of ALL exam material provided to the examinee (Initial Conditions/Initiating Cue) AND procedures.				

JPM Stop Time _____

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TASK CONDITIONS:

1. There are NO irradiated components grappled to any refueling platform hoist.
2. Auxiliary hoists are full up on hoist override with attached tooling (if present) clear of obstructions.
3. The Daily Bridge Checkout has been completed in accordance with SO 18.1.C-2(3), "Electrical, Mechanical and Pneumatic Alignment/Checkout of Refueling Platform".
4. Primary and Redundant encoders are selected for Bridge, Trolley and Hoist travel in accordance with SO 18.1.A-2(3).
5. REFUELING normal up limit has been selected for operation in accordance with SO 18.1.A-2(3).
6. Spent Fuel Pool Gate status is set at INSTALLED in the Refuel Platform Computer per SO 18.1.A-2(3).
7. REFUELING PLATFORM OPERATOR access level user is logged on to refuel platform computer.
8. An approved CCTAS for transfer of the dummy bundle has been obtained from Reactor Engineering. The Spent fuel rack locations specified on the CCTAS are within the Secure Travel Zone.
9. Prerequisites for dummy bundle transfer within the Spent Fuel Pool are completed per FH-35.

INITIATING CUES:

The Control Room Supervisor has directed you, as the Refuel Platform Operator (RPO), to perform transfer of the dummy bundle within the U/2(3) spent fuel storage racks using the **XY mode semi-automatic refueling platform operation**, in accordance with the attached CCTAS.

Peach Bottom Atomic Power Station

Job Performance Measure

**ALTERNATE PATH – Fuel Movement in the Spent Fuel Pool – Hoist Loaded
Light Extinguished**

JPM Number: 3019

Revision Number: 005

Date: / /

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

JOB PERFORMANCE MEASURE (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- 1. Task description and number, JPM description and number are identified.
2. Knowledge and Abilities (K/A) references are included.
3. Performance location specified. (in-plant, control room, or simulator)
4. Initial setup conditions are identified.
5. Initiating and terminating cues are properly identified.
6. Task standards identified and verified by SME review.
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
8. Verify the procedure referenced by this JPM matches the most current revision of that procedure: Procedure Rev. Date
9. Pilot test the JPM: a. verify cues both verbal and visual are free of conflict, and b. ensure performance time is accurate.
10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

SME/Instructor Date
SME/Instructor Date
SME/Instructor Date

JOB PERFORMANCE MEASURE (JPM)

Revision Record (Summary)

1. Revision 004, New JPM format; Update JPM to latest revision of SO 18.1.A-3.
2. Revision 005, Update JPM to latest revision of SO 18.1.A-2(3) and to be consistent with similar JPMs.

INITIAL CONDITIONS:

1. There are NO irradiated components grappled to any Refuel Platform Hoist.
2. The auxiliary hoists are full up on hoist override with attached tooling (if present) clear of obstructions.
3. All of the applicable prerequisites for procedure FH-35 have been completed for Dummy Bundle transfer in the Spent Fuel Pool.
4. The main hoist grapple is at Refueling Normal Up in accordance with SO 18.1.A-2(3).
5. The Daily Bridge Checkout has been completed in accordance with SO 18.1.C-3, "Electrical, Mechanical and Pneumatic Alignment/Checkout of Refueling Platform".
6. Primary and Redundant Encoders are selected for the Trolley and Hoist travel ONLY in accordance with SO 18.1.A-2(3). The REDUNDANT Bridge Encoder is out-of-service awaiting replacement.
7. Spent Fuel Pool Gate status is set at INSTALLED in the Refuel Platform Computer per SO 18.1.A-2(3).
8. REFUELING PLATFORM OPERATOR access level user is logged on to refuel platform computer.
9. An approved CCTAS for transfer of the dummy bundle has been obtained from Reactor Engineering. The spent fuel rack locations specified on the CCTAS are within the Secure Travel Zone.

INITIATING CUES:

1. The Fuel Handling Director directs you to move the Dummy Fuel Bundle from one location in the fuel pool to another in accordance with the CCTAS.
2. You are to COMPLETE this activity as the Refuel Platform Operator.

JOB PERFORMANCE MEASURE (JPM)

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The time clock starts when the candidate acknowledges the initiating cue.

Critical Element(s) indicated by "*" in Performance Checklist.

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JOB PERFORMANCE MEASURE (JPM)

JPM Start Time

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>NOTE TO EVALUATOR: Provide a CCTAS for dummy bundle movement prior to starting JPM. <u>The attached CCTAS should only be used IF this task is SIMULATED.</u> Otherwise, obtain a CCTAS from Reactor Engineering.</p> <p>IF this task will actually be PERFORMED, THEN:</p> <ul style="list-style-type: none"> • Ensure FH-35 is completed prior to start. • Cues on movement of the bridge, trolley, and hoist, as well as status light indications will NOT be needed. 				
<p>PROVIDE the following to the candidate:</p> <ol style="list-style-type: none"> 1. INITIATING CUE(S) and Task Conditions sheet 2. SO-18.1.A-2(3), "Operation of the Refueling Platform" if requested. 				
<p>The following steps are contained in SO 18.1.A-2(3), section 4.8.</p>				
<p>* 1. Position Refuel Platform Mast over desired core component in accordance with the CCTAS.</p> <p>CUE: Bridge and Mast are positioned over the component given in the "MOVE FROM" location of the CCTAS.</p>	<p>Candidate recognizes that he/she does NOT meet encoder prerequisite for full or semi-automatic moves and must maneuver manually.</p> <p>Candidate maneuvers Refuel Platform over desired core component, per the CCTAS, using the Console Bridge and Trolley controls.</p>			

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*2. Lower hoist until grapple is near the bail.</p> <p>NOTE: PROVIDE hoist encoder "readouts", as the candidate lowers the hoist, in 20" increments, up to 100". Continue providing "readouts" in 10" increments until candidate stops hoist lowering.</p> <p>CUE: Hoist encoder reads _____ inches (indicate elevation based on given "readouts").</p>	<p>Candidate lowers the hoist using the Grapple joystick in the LOWER direction.</p>			
<p>*3. Verify grapple is open</p> <p>CUE: The grapple is open.</p>	<p>Candidate verifies grapple is OPEN by observing that the green "GRAPPLE ENGAGED" light is NOT lit OR direct observation of the grapple on the mast mounted camera (if available).</p>			
<p>*4. Rotate grapple as necessary to achieve grapple to bail alignment.</p> <p>CUE: The grapple is aligned over the bail handle.</p>	<p>Candidate rotates the mast as necessary to align the grapple with the bail handle.</p>			
<p>*5. Slowly lower hoist until "SLACK CABLE" light is lit.</p> <p>CUE: The "SLACK CABLE" light is LIT.</p>	<p>Candidate lowers the hoist using the Grapple joystick in the LOWER direction. Hoist lowering is stopped when the red SLACK CABLE light, on the Left Hand Controller, is LIT.</p>			

NOTE

Procedure allows the CV in step 6 below to be performed by the FHD and Spotter or, if Spotter not used, between the FHD and RPO (Reference SO 18.1.A-2(3) Step 4.0 Note 4)

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p align="center"><u>CV</u></p> <p>*6. Verify proper core component location and orientation.</p> <p>CUE: Acknowledge location and orientation – Agree or Disagree as appropriate with respect to bundle position.</p>	<p>Candidate CORRECTLY determines core component location and orientation are in agreement with the CCTAS. Candidate informs Spotter or FHD (if acting as spotter) of component location and orientation.</p>			
<p>NOTE: The verifications in the following step (by RPO and FHD) may be performed in parallel.</p>				
<p align="center"><u>CV</u></p> <p>*7. RPO (and FHD) verify the following:</p> <ul style="list-style-type: none"> a. "SLACK CABLE" light is LIT b. Grapple is centered over bail handle. c. Hoist position indication agrees with Attachment 9 of SO 18.1.A-2(3) for item seated in Fuel Pool Storage Rack. <p>CUE: Slack Cable light is LIT Grapple is centered over the bail handle. Hoist encoder reads 187.6".</p>	<p>Candidate verifies "SLACK CABLE" light is LIT.</p> <p>Candidate verifies grapple is centered over bail handle.</p> <p>Candidate compares hoist encoder position with Attachment 9 of SO 18.1.A-2(3) to verify grapple is full down on the component as evidenced by hoist encoder reading of ~ 188.0".</p>			

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p align="center"><u>CV</u></p> <p>*8. WHEN directed by FHD, THEN engage grapple, AND verify "GRAPPLE ENGAGED" light is lit.</p> <p>CUE: Engage the grapple. CUE: Grapple engaged light is LIT. CUE: I agree, grapple engaged light is LIT.</p>	<p>When directed, Candidate engages grapple by depressing the "GRAPPLE ENGAGE" rocker switch on the Right Hand Controller.</p> <p>Candidate observes the "GRAPPLE ENGAGED" light illuminates.</p> <p>Candidate reports that the grapple light is LIT (grapple is engaged).</p>			
<p>*9. Slowly raise load AND verify "HOIST LOADED" light is LIT (fuel only).</p> <p>CUE: The dummy bundle is rising and the HOIST LOADED light is LIT.</p>	<p>Upon completion of the CV for Grapple Engaged, candidate slowly raises the dummy bundle using the GRAPPLE joystick deflected in the RAISE direction.</p> <p>Candidate observes the HOIST LOADED light is LIT.</p>			
<p>*10. Continue raising until grapple is fully raised, THEN verify GRAPPLE NORMAL UP" light is LIT.</p> <p>CUE: Grapple is fully raised and has automatically stopped. The NORMAL UP light is ON.</p>	<p>The GRAPPLE joystick is released after hoist motion stops automatically.</p> <p>Candidate observes "GRAPPLE NORMAL UP" light is LIT.</p>			
<p>11. Perform appropriate "Set Down Location" subsection of SO 18.1.A-2(3) as directed by FHD.</p>	N/A	N/A	N/A	
The following steps are contained in SO 18.1.A-2(3), Section 4.13				

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
12. Set Down Location – Fuel Pool Storage Rack	N/A	N/A	N/A	
*13. Position core component over desired location in accordance with Core Component Transfer Authorization Sheet (CCTAS). CUE: The dummy bundle is positioned directly over the "MOVE TO" location per the CCTAS.	Candidate positions the platform, using the Console controls, so that the dummy bundle is hanging over the correct spent fuel pool storage location in accordance with the CCTAS.			
*14. Rotate core component as necessary to achieve proper orientation. CUE: The mast console is facing _____. Give appropriate direction based on orientation for release location.	The mast is rotated so that the dummy bundle channel fastener is correctly oriented to the corner of the storage rack cell.			
<u>CV</u> *15. Verify proper core component location and orientation. CUE: Acknowledge location and orientation – Agree or Disagree as appropriate with respect to bundle position.	Candidate CORRECTLY determines core component location and orientation are in agreement with the CCTAS "MOVE TO" location. Candidate informs Spotter or FHD (if acting as spotter) of component location and orientation.			
*16. <u>WHEN</u> directed by FHD, <u>THEN</u> lower bundle until "SLACK CABLE" light is LIT. CUE: Lower the bundle.	When directed, Candidate lowers the bundle using the GRAPPLE joystick deflected to lower the hoist.			

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
NOTE TO EVALUATOR: The Cue in the following step represents an ABNORMAL condition.				
17. As the bundle is lowered into the rack, PROVIDE the following Cue: CUE: The Hoist Loaded Light has extinguished.	N/A	N/A	N/A	
The following steps are contained in SO 18.1.A-2(3), Section 3.8.2				
18. IF during hoist operation, the "HOIST LOADED" light goes out prematurely, OR the load starts to lean, THEN:	N/A	N/A	N/A	
*18a. Immediately stop lowering the hoist. CUE: The hoist has stopped lowering.	Candidate immediately releases the GRAPPLE joystick to stop hoist lowering.			
*18b. Verify grapple switch is in "ENGAGE" position. CUE: The grapple switch is in the ENGAGED position.	The grapple switch is verified in the ENGAGED position by observing the position of the Grapple Engage rocker switch on the Right Hand Controller.			
*18c. Verify "GRAPPLE ENGAGED" light is LIT. CUE: The GRAPPLE ENGAGED light is LIT.	The GRAPPLE ENGAGED light is verified LIT by observing the status of the Grapple Engaged light on the Right Hand Controller.			
*18d. Slowly raise hoist to regain the weight of the load. CUE: The hoist is rising. CUE: The HOIST LOADED light is LIT.	The Candidate deflects the GRAPPLE joystick to slowly raise the hoist while monitoring hoist load. The Candidate reports that the HOIST LOADED light is LIT.			

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JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*18e. Inform the Fuel Handling Director CUE: Acknowledge report of extinguished HOIST LOADED light.	The Candidate informs the Fuel Handling Director of the abnormal condition.			
Cue: You can stop here, you have met the termination criteria for this JPM.	N/A	N/A	N/A	
As an evaluator, ENSURE that you have positive control of ALL exam material provided to the examinee (Initial Conditions/Initiating Cue) AND procedures.	<i>modify to move + center</i>	<i>complete</i>	<i>up + grapple</i>	

JPM Stop Time _____

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TASK CONDITIONS:

1. There are NO irradiated components grappled to any Refuel Platform Hoist.
2. The auxiliary hoists are full up on hoist override with attached tooling (if present) clear of obstructions.
3. All of the applicable prerequisites for procedure FH-35 have been completed for Dummy Bundle transfer in the Spent Fuel Pool.
4. The main hoist grapple is at Refueling Normal Up in accordance with SO 18.1.A-2(3).
5. The Daily Bridge Checkout has been completed in accordance with SO 18.1.C-3, "Electrical, Mechanical and Pneumatic Alignment/Checkout of Refueling Platform".
6. Primary and Redundant Encoders are selected for the Trolley and Hoist travel ONLY in accordance with SO 18.1.A-2(3). The REDUNDANT Bridge Encoder is out-of-service awaiting replacement.
7. Spent Fuel Pool Gate status is set at INSTALLED in the Refuel Platform Computer per SO 18.1.A-2(3).
8. REFUELING PLATFORM OPERATOR access level user is logged on to refuel platform computer.
9. 9. An approved CCTAS for transfer of the dummy bundle has been obtained from Reactor Engineering. The spent fuel rack locations specified on the CCTAS are within the Secure Travel Zone.

INITIATING CUES:

1. The Fuel Handling Director directs you to move the Dummy Fuel Bundle from one location in the fuel pool to another in accordance with the CCTAS.
2. You are to COMPLETE this activity as the Refuel Platform Operator.

EXELON NUCLEAR

CCTAS Instruction/Approval Page

Core Component Transfer Authorization Sheet

Page 1 of 2

Unit Peach Bottom Atomic Power Station

Date CURRENT DATE

Title Dummy Bundle Move in the Spent Fuel Pool

(Rev. #) 0

1. This CCTAS provides the moves necessary to SIMULATE a LSRO Job Performance Measure.
2. This CCTAS must be used in conjunction with appropriate maintenance procedures.
4. This CCTAS must be used in conjunction with appropriate fuel handling procedures.
5. All changes to this CCTAS must be made in accordance with procedure RE-C-40.
6. Return completed CCTAS (or a copy if original is contaminated) to Reactor Engineering.

Fred Buckley
Jeff Holley

(610) 555-1212,
(717) 555-1212,

Beeper (610) 555-1313
Beeper (610) 555-1313

Prepared By: TRAINING DISCUSSION USE ONLY
Reviewed By: TRAINING DISCUSSION USE ONLY
Authorized By: TRAINING DISCUSSION USE ONLY

Peach Bottom Atomic Power Station

Job Performance Measure

**REFUELING INTERLOCKS FUNCTIONAL TEST WITH THE INABILITY TO
MOVE CONTROL RODS – Testing Rod Withdraw Interlocks**

JPM Number: NLSRO3048

Revision Number: 000

Date: __/__/__

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Review By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

_____	SME/Instructor	_____	Date
_____	SME/Instructor	_____	Date
_____	SME/Instructor	_____	Date

JOB PERFORMANCE MEASURE (JPM)

Revision Record (Summary) - None

INITIAL CONDITIONS (Circle Unit JPM is to be simulated on UNIT 2 UNIT 3)

1. Fuel Shuffle Part I is scheduled to begin once the Bridge ST is complete.
2. The Control Rod Drive System for Unit 2(3) is out of service for pump replacement.
3. All prerequisites for performance of ST-O-018-125-2(3), "Refueling Interlocks Functional Test With The Inability To Move Control Rods" have been satisfied.
4. ST-O-018-125-2(3) has been completed SAT up through and including step 6.2.7.
5. AO 62.2-2(3), "Simulating 'All Rods In' in the Refueling Mode" is NOT in effect.
6. The following tools/equipment are assembled in the Cable Spread Room:
 - a. Multimeter **M&TE No.** 2345 **Cal Due Date** 3/15/06
 - b. Electrical Tape
 - c. Holding Flat Blade Screwdriver
 - d. Flat Blade Screwdriver
 - e. Phillips Screwdriver
 - f. Wire jumpers
7. A second LSRO is available to perform Concurrent Verifications as needed.
8. A Reactor Operator is available in the MCR to perform MCR portions of the ST.

INITIATING CUES:

ST-O-018-125-2(3), "Refueling Interlocks Functional Test With The Inability To Move Control Rods" is in progress on Unit _____. The LSRO stationed in the Cable Spread Room has become ill and has requested relief. You have been directed to relieve the LSRO in the Cable Spread Room and complete this ST.

JOB PERFORMANCE MEASURE (JPM)

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

• Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The time clock starts when the candidate acknowledges the initiating cue.

Critical Element(s) indicated by "*" in Performance Checklist.

JOB PERFORMANCE MEASURE (JPM)

JPM Start Time _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>NOTE:</p> <p>Provide the following to the candidate :</p> <p style="margin-left: 40px;">a. INITIATING CUE(S) and Task Conditions sheet</p> <p style="margin-left: 40px;">b. Copy of ST-O-018-125-2(3), initialed SAT up to and including step 6.2.7.</p> <p>The Candidate will commence the ST at step 6.3, Rod Withdraw Interlocks</p>				
<p>NOTE:</p> <p>The next two steps simulate a control rod withdrawn by de-energizing the RMCS 3A-K4A relay.</p>				
<p>At Cable Spreading Room Panel 20(30)C028:</p> <p style="text-align: center;"><u>CV</u></p> <p>* 1. IF a jumper is installed from terminal AA-33 to AA-31 in accordance with procedure AO 62.2-2 "Simulating 'All Rods In' in the Refueling Mode", THEN LIFT AND TAPE jumper from terminal AA-33. OTHERWISE N/A this step.</p> <p>Cue: Jumper is NOT installed.</p>	<p>Candidate recognizes that AO 62.2-2(3) is NOT in effect and there should NOT be a jumper from terminal AA-33 to AA-31.</p> <p>Candidate marks step N/A</p>			
<p>At Cable Spreading Room Panel 20(30)C028:</p> <p style="text-align: center;"><u>CV</u></p> <p>*2. LIFT AND TAPE lead (Wire #CM-8) from terminal AA-33.</p> <p>Cue: Wire CM-8 has been lifted from terminal AA-33 and taped.</p>	<p>Candidate identifies correct lead to be lifted/taped.</p> <p>Candidate lifts wire #CM-8 from terminal AA-33 and tapes.</p>			

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>3. At Control Room Panel 20(30)C005A:</p> <p>VERIFY computer point H033(H333) is indicating "NOT IN".</p> <p>TURN Rod Select Power OFF.</p> <p>TURN Rod Select Power ON.</p> <p>SELECT a control rod AND VERIFY the following:</p> <p style="padding-left: 40px;">White Rod Withdraw Permissive Light (3A-DS1) is OFF.</p> <p>CUE: Steps 6.3.3 through 6.3.6.1 are complete SAT.</p> <p>The RO's initials are "JP".</p>	<p>Candidate requests the Main Control Room Reactor Operator to perform steps 6.3.3 through 6.3.6.1</p>			
<p>At Cable Spreading Room Panel 20(30)C028:</p> <p>*4. 120 VAC (nominal) exists across terminal points BB-46 AND BB-52. RECORD voltage.</p> <p>Cue: Voltage read is 120.2 VAC.</p>	<p>Candidate uses voltmeter to obtain voltage reading across terminal points BB-46 and BB-52.</p> <p>Candidate records voltage in step 6.3.6.2</p>			
<p>At Cable Spreading Room Panel 20(30)C028:</p> <p>*5. Only induced voltage (0 to 50 VAC) exists across terminal points BB-47 AND BB-52. RECORD voltage.</p> <p>Cue: Voltage read is 1.7VAC</p>	<p>Candidate uses voltmeter to obtain induced voltage reading across terminal points BB-47 and BB-52.</p> <p>Candidate records voltage in step 6.3.6.3</p>			

EXELON NUCLEAR

NLSROJPM3048

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p style="text-align: center;"><u>CV</u></p> <p>*6. LAND lead (Wire #CM-8) that was lifted previously on terminal AA-33.</p> <p>Cue: Wire #CM-8 has been relanded on terminal AA-33.</p>	Candidate untapes lead and re-connects to terminal AA-33.			
<p style="text-align: center;"><u>CV</u></p> <p>7. IF an AO 62.2-2 jumper was lifted in Step 6.3.1, THEN LAND jumper on terminal AA-33, OTHERWISE, N/A this step.</p> <p>Cue: None</p>	Candidate marks this step N/A.			
<p>8. At Control Room Panel 20(30)C005A: VERIFY computer point H033(H333) is indicating "ALL IN".</p> <p>Cue: Computer point H033(H333) is indicating "ALL IN".</p>	Candidate requests Reactor Operator to perform step 6.3.9.			

EXELON NUCLEAR

NLSROJPM3048

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
NOTE				
The next two steps simulate a control rod withdrawn by de-energizing the RMCS 3A-K4B relay.				
<p>At Cable Spreading Room Panel 20C028</p> <p style="text-align: center;"><u>CV</u></p> <p>9. IF a jumper is installed from terminal AA-34 to AA-31 in accordance with procedure AO 62.2-2 "Simulating "All Rods In" in the Refueling Mode", THEN LIFT AND TAPE jumper from terminal AA-34, OTHERWISE, N/A this step.</p> <p>Cue: Jumper is NOT installed.</p>	<p>Candidate recognizes that AO 62.2-2(3) is NOT in effect and there should NOT be a jumper from terminal AA-34 to AA-31.</p> <p>Candidate marks step N/A</p>			
<p style="text-align: center;"><u>CV</u></p> <p>*10. LIFT AND TAPE lead (Wire #CN-8) from terminal AA-34.</p> <p>Cue: Wire #CN-8 has been lifted and taped from terminal AA-34.</p>	<p>Candidate identifies correct lead to be lifted/taped.</p> <p>Candidate lifts wire #CN-8 from terminal AA-34 and tapes.</p>			

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>11. At Control Room Panel 20(30)C005A:</p> <p>VERIFY computer point H034(H334) is indicating "NOT IN".</p> <p>TURN Rod Select Power OFF.</p> <p>TURN Rod Select Power ON.</p> <p>SELECT a control rod AND VERIFY the following:</p> <p style="padding-left: 40px;">White Rod Withdraw Permissive Light (3A-DS1) is OFF.</p> <p>CUE: Steps 6.3.12 through 6.3.15.1 are complete SAT.</p> <p>The RO's initials are "JP".</p>	<p>Candidate requests the Main Control Room Reactor Operator to perform steps 6.3.12 through 6.3.15.1</p>			
<p>At Cable Spreading Room Panel 20(30)C028:</p> <p>*12. 120 VAC (nominal) exists across terminal points BB-42 AND BB-52. RECORD voltage.</p> <p>Cue: Voltage read is 120.4 VAC.</p>	<p>Candidate uses voltmeter to obtain voltage reading across terminal points BB-42 and BB-52.</p> <p>Candidate records voltage in step 6.3.15.2</p>			
<p>At Cable Spreading Room Panel 20(30)C028:</p> <p>*13. Only induced voltage (0 to 50 VAC) exists across terminal points BB-41 AND BB-52. RECORD voltage.</p> <p>Cue: Voltage read is 2.4VAC</p>	<p>Candidate uses voltmeter to obtain induced voltage reading across terminal points BB-41 and BB-52.</p> <p>Candidate records voltage in step 6.3.15.3</p>			

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p style="text-align: center;"><u>CV</u></p> <p>*14. LAND lead (Wire #CN-8) that was lifted previously on terminal AA-34.</p> <p>Cue: Wire #CN-8 has been relanded on terminal AA-34.</p>	Candidate untapes lead and re-connects to terminal AA-34.			
<p style="text-align: center;"><u>CV</u></p> <p>15. IF an AO 62.2-2 jumper was lifted in Step 6.3.10, THEN LAND jumper on terminal AA-34, OTHERWISE, N/A this step.</p> <p>Cue: None</p>	Candidate marks this step N/A.			
<p>16. At Control Room Panel 20(30)C005A: VERIFY computer point H034(H334) is indicating "ALL IN".</p> <p>Cue: Computer point H034(H334) is indicating "ALL IN".</p>	Candidate requests Reactor Operator to perform step 6.3.18.			
<p>Cue: You can stop here, you have met the termination criteria for this JPM.</p>				
<p>As an evaluator, ENSURE that you have positive control of ALL exam material provided to the examinee (Initial Conditions/Initiating Cue) AND procedures.</p>				

JPM Stop Time _____

EXELON NUCLEAR

TASK CONDITIONS (CIRCLE UNIT: UNIT 2 UNIT 3)

1. Fuel Shuffle Part I is scheduled to begin once the Bridge ST is complete.
2. The Control Rod Drive System for Unit 2(3) is out of service for pump replacement.
3. All prerequisites for performance of ST-O-018-125-2(3), "Refueling Interlocks Functional Test With The Inability To Move Control Rods" have been satisfied.
4. ST-O-018-125-2(3) has been completed SAT up through and including step 6.2.7.
5. AO 62.2-2(3), "Simulating 'All Rods In' in the Refueling Mode" is NOT in effect.
6. The following tools/equipment are assembled in the Cable Spread Room:
 - a. Multimeter **M&TE No.** 2345 **Cal Due Date** 3/15/06
 - b. Electrical Tape
 - c. Holding Flat Blade Screwdriver
 - d. Flat Blade Screwdriver
 - e. Phillips Screwdriver
 - f. Wire jumpers
7. A second LSRO is available to perform Concurrent Verifications as needed.
8. A Reactor Operator is available in the MCR to perform MCR portions of the ST.

INITIATING CUES:

ST-O-018-125-2(3), "Refueling Interlocks Functional Test With The Inability To Move Control Rods" is in progress on Unit _____. The LSRO stationed in the Cable Spread Room has become ill and has requested relief. You have been directed to relieve the LSRO in the Cable Spread Room and complete this ST.

Peach Bottom Atomic Power Station

Job Performance Measure

Remove Refuel Floor ARM from Service

JPM Number: 3049

Revision Number: 000

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

JOB PERFORMANCE MEASURE (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

SME/Instructor Date

SME/Instructor Date

SME/Instructor Date

JOB PERFORMANCE MEASURE (JPM)

Revision Record (Summary) None

INITIAL CONDITIONS (Circle appropriate unit: UNIT 2 UNIT 3)

1. Unit 2(3) is in Mode 5 for it's Refueling Outage.
2. Unit 2(3) reactor vessel disassembly is in progress in accordance with M-004-200, "Reactor Pressure Vessel Disassembly"
3. Preparations are underway to remove the Steam Separator.
4. Radiation Protection is performing frequent surveys on the Refuel Floor.
5. Refuel Floor ARMs are currently reflecting the following Refuel Floor radiological conditions:
 - a. ARM 3-7 1.2 mR/hr e. ARM 7-9 1.0 mR/hr
 - b. ARM 3-8 1.0 mR/hr f. ARM 7-10 1.2 mR/hr
 - c. ARM 3-9 1.1 mR/hr g. ARM 7-11 1.0 mR/hr
 - d. ARM 3-10 1.2 mR/hr h. ARM 7-12 1.2 mR/hr
6. Shift Supervision does NOT want associated Downscale Alarms cleared when ARMS are bypassed.
7. There are NO High Radiation Alarms present in the Main Control Room.
8. A Reactor Operator is available to perform Concurrent Verifications if required.

INITIATING CUES:

In preparation for removal of the Steam Separator on Unit _____, you have been directed, by the Control Room Supervisor, to remove the Refuel Floor ARMs from service in accordance with M-004-200, Section 5.20.

JOB PERFORMANCE MEASURE (JPM)

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The time clock starts when the candidate acknowledges the initiating cue.

Critical Element(s) indicated by "*" in Performance Checklist.

EXELON NUCLEAR

NLSROJPM3049

JOB PERFORMANCE MEASURE (JPM)

JPM Start Time

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>NOTE:</p> <p>Provide the following to the candidate :</p> <ul style="list-style-type: none"> a. INITIATING CUE(S) and Task Conditions sheet. b. M-004-200-2(3), Section 5.20. (Step 5.20.1 should be filled in). c. Copy of AO 63C.1-2(3) ONLY if requested. <p>Role play as necessary during the performance of AO 63.C.1-2(3).</p>				
<p>* 1. Obtain current revision of AO 63C.1-2(3)</p> <p>Cue: Once the trainee demonstrates the ability to locate the current revision of the procedure, provide him/her a copy.</p>	<p>Current revision of AO 63C.1-2(3) has been obtained.</p>			
<p>NOTE: The following is obtained from Section 4.1 of AO 63C.1-2(3)</p>				
<p>2. Remove ARM from service by performing the following:</p>	N/A	N/A	N/A	

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*2a. Record the following information for ARM to be removed from service:</p> <ol style="list-style-type: none"> 1) ARM # 2) A/R# if applicable 3) Reason for removal from service <p>Cue: None</p>	<p>Candidate documents the following in step 4.1.1</p> <p>ARM #: For UNIT 2: ARMs 3-7, 3-8, 3-9, 3-10</p> <p>For UNIT 3: ARMs 7-9, 7-10, 7-11, 7-12</p> <p>A/R#: N/A</p> <p>Reason for Removal: M-004-200 Section 5.20</p>			
<p>*2b. Shift Management permission to remove ARM from service.</p> <p>Cue: Shift Management grants permission to remove the Refuel Floor ARMs from service AND signs off step 4.1.2 with current Date and Time.</p>	<p>Candidate obtains Shift Management permission to remove the Refuel Floor ARMs from service as evidenced by SM signoff on step 4.1.2.</p>			
<p>*2c. Reactor Operator permission to remove ARM from service.</p> <p>Cue: The Unit Reactor Operator has granted permission to remove the Refuel Floor ARMs from service AND signs off step 4.1.3 with current Date and Time.</p>	<p>Candidate obtains Unit Reactor Operators approval to remove the ARMs from service as evidenced by RO signoff on step 4.1.3.</p>			

EXELON NUCLEAR

NLSROJPM3049

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*2d. Health Physics Supervision permission to remove ARM from service.</p> <p>Cue: The Refuel Floor HP Supervisor has granted permission to remove the Refuel Floor ARMs from service AND signs off step 4.1.4 with current Date and Time.</p>	<p>Candidate obtains Refuel Floor HP Supervisor approval to remove the ARMs from service as evidenced by HP signoff on step 4.1.4.</p>			
<p>3. IF the ARM indication reflects plant conditions, THEN record initial ARM reading on Attachment 1. OTHERWISE N/A this Step AND perform step 4.1.11.1.</p> <p>Cue: None</p>	<p>Candidate reviews ARM data and determines that ARMs reflect plant conditions.</p> <p>Candidate completes Attachment 1 of AO 63C.1-2(3) with the following information:</p> <p>Date/time – current</p> <p>Rad level for effected area:</p> <p>UNIT 2(3): 1.0–1.2 mR/hr</p> <p>Candidates name/initials</p>			
<p align="center"><u>CV</u></p> <p>*4 Place MODE switch for ARM to be removed from service to the ZERO position.</p> <p>Cue: ARM indicating needle dropped downscale. White downscale light has illuminated.</p>	<p>Candidate turns control knob to "ZERO" position for each ARM to be removed from service.</p> <p>Candidate observes white downscale light illuminate and needle deflection downscale.</p>			

EXELON NUCLEAR

NLSROJPM3049

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*5. IF desired to clear downscale alarm, THEN perform the following. OTHERWISE N/A steps 4.1.7.1 through 4.1.7.5.</p> <p>Cue: Shift Management does NOT want to clear the associated downscale alarms on the ARMs.</p>	<p>Candidate does NOT remove the K1 relays from the ARMs.</p> <p>Candidate N/As steps 4.1.7.1 through 4.1.7.5</p>			
<p>6. Verify applicable "AREA HI RADIATION" alarm is RESET.</p> <p>Cue: None (No Hi Rad Alarms per initial conditions)</p>	<p>Candidate marks step N/A</p>			
<p>7. Attach Equipment Status Tag to the applicable ARM trip unit on the Control Room Panel</p> <p>Cue: None</p>	<p>Candidate completes Equipment Status Tags for each ARM removed from service.</p>			
<p>8. Inform the Reactor Operator that the ARM has been removed from service.</p> <p>Cue: Acknowledge notification</p>	<p>Candidate informs the Unit Reactor Operator of Refuel Floor ARM removal from service.</p>			
<p>Cue: You can stop here, you have met the termination criteria for this JPM.</p>	<p>N/A</p>	N/A	N/A	
<p>As an evaluator, ENSURE that you have positive control of ALL exam material provided to the examinee (Initial Conditions/Initiating Cue) AND procedures.</p>				

JPM Stop Time

EXELON NUCLEAR

TASK CONDITIONS: (CIRCLE appropriate Unit: UNIT 2 UNIT 3)

1. Unit 2(3) is in Mode 5 for it's Refueling Outage.
2. Unit 2(3) reactor vessel disassembly is in progress in accordance with M-004-200, "Reactor Pressure Vessel Disassembly"
3. Preparations are underway to remove the Steam Separator.
4. Radiation Protection is performing frequent surveys on the Refuel Floor.
5. Refuel Floor ARMs are currently reflecting the following Refuel Floor radiological conditions:
 - a. ARM 3-7 1.2 mR/hr
 - b. ARM 3-8 1.0 mR/hr
 - c. ARM 3-9 1.1 mR/hr
 - d. ARM 3-10 1.2 mR/hr
 - e. ARM 7-9 1.0 mR/hr
 - f. ARM 7-10 1.2 mR/hr
 - g. ARM 7-11 1.0 mR/hr
 - h. ARM 7-12 1.2 mR/hr
6. Shift Supervision does NOT want associated Downscale Alarms cleared when ARMS are bypassed.
7. There are NO High Radiation Alarms present in the Main Control Room.
8. A Reactor Operator is available to perform Concurrent Verifications if required.

INITIATING CUES:

In preparation for removal of the Steam Separator on Unit _____, you have been directed, by the Control Room Supervisor, to remove the Refuel Floor ARMs from service in accordance with M-004-200, Section 5.20.

Peach Bottom Atomic Power Station

Job Performance Measure

EAL Classification – Loss of Spent Fuel Pool Water Level

JPM Number: NLSRO3050

Revision Number:

Date: __/__/__

Developed By: _____
Instructor **Date**

Validated By: _____
SME or Instructor **Date**

Review By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

JOB PERFORMANCE MEASURE (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

SME/Instructor Date

SME/Instructor Date

SME/Instructor Date

JOB PERFORMANCE MEASURE (JPM)

Revision Record (Summary) - None

INITIAL CONDITIONS:

1. Unit 2 is in Mode 5 in a Refueling Outage.
2. Fuel Shuffle Part I was stopped due to unexpected lowering of Unit 2 Spent Fuel Pool Water Level.
3. The on-bridge LSRO has entered ON-124, "Fuel Floor and Fuel Handling Problems" and is executing section 2.6.
4. The Fuel Pool Gates have been installed. Reactor vessel level is +470 inches and steady.
5. Spent Fuel Pool Water level is at 232' 6" and continuing down at approximately 1" every 10 minutes.
6. There are NO alarms on the 20C075 panel.
7. A breach has been identified in the liner of the Spent Fuel Pool, ABOVE the level of the Fuel Storage racks.
8. Shift is attempting to add water to restore spent fuel level in accordance with FH-74, "Actions In Response To An Unexpected Loss Of Fuel Pool, Reactor Cavity, Or Equipment Storage Pool Water Inventory".

INITIATING CUES:

As the off-bridge LSRO, you have been directed to assist the Shift Manager to determine the EAL classification and identify the appropriate Emergency Declaration.

JOB PERFORMANCE MEASURE (JPM)

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

- Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. Then annotate that comment in the "Comments" section. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The time clock starts when the candidate acknowledges the initiating cue.

Critical Element(s) indicated by "*" in Performance Checklist.

JOB PERFORMANCE MEASURE (JPM)

JPM Start Time

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>NOTE:</p> <p>Provide the following to the candidate :</p> <ul style="list-style-type: none"> a. INITIATING CUE(S) and Task Conditions sheet b. EP-AA-1007, "Radiological Emergency Plan Annex for PBAPS", Table PBAPS 3-1 "EAL Matrix" c. EP-AA-111, "Emergency Classification and Protective Action Recommendations" if requested 				
* 1. Refer to EP-AA-1007, Table PBAPS 3-1 EAL Matrix	EP-AA-1007, Table PBAPS 3-1 is obtained.			
2. Identify the applicable mode for Unit 2.	Unit 2 is identified as Mode 5.			
3. Review and identify the Initiating Conditions (ICs) applicable to the Operating Mode.	Candidate identifies SYSTEM MALFUNCTIONS Irradiated Fuel Accidents.			
4. Review EAL Threshold Values for applicable ICs.	Candidate identifies and reviews MA11 and MU11.			
*5. Select the highest IC that may have been met.	Candidate identifies MU11.			
*6. Identify the event declaration.	Candidate identifies UNUSUAL EVENT			
7. Inform the Shift Manager of event classification and declaration.	Candidate informs Shift Manager that MU11 and UNUSUAL EVENT apply to current plant conditions.			
Cue: Acknowledge report.				

JOB PERFORMANCE MEASURE (JPM)

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8. You can stop here, you have met the termination criteria for this JPM.	N/A	N/A	N/A	
9. As an evaluator, ENSURE that you have positive control of ALL exam material provided to the candidate (Task Conditions/Initiating Cue) AND procedures.	Positive Control Established	N/A	N/A	

JPM Stop Time

TASK CONDITIONS:

1. Unit 2 is in Mode 5 in a Refueling Outage.
2. Fuel Shuffle Part I was stopped due to unexpected lowering of Unit 2 Spent Fuel Pool Water Level.
3. The on-bridge LSRO has entered ON-124, "Fuel Floor and Fuel Handling Problems" and is executing section 2.6.
4. The Fuel Pool Gates have been installed. Reactor vessel level is +470 inches and steady.
5. Spent Fuel Pool Water level is at 232' 6" and continuing down at approximately 1" every 10 minutes.
6. There are NO alarms on the 20C075 panel.
7. A breach has been identified in the liner of the Spent Fuel Pool, ABOVE the level of the Fuel Storage racks.
8. Shift is attempting to add water to restore spent fuel level in accordance with FH-74, "Actions In Response To An Unexpected Loss Of Fuel Pool, Reactor Cavity, Or Equipment Storage Pool Water Inventory".

INITIATING CUES:

As the off-bridge LSRO, you have been directed to assist the Shift Manager to determine the EAL classification and identify the appropriate Emergency Declaration.