Appendix C	Job Performance Measure Worksheet JPM - SA1#2, rev 0	Form ES-C-1

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: INADVERTENT CRITICALITY ACTIONS

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.	
Simulator Guide PQD Code		Rev. No.	
JPM PQD Code		Rev. No.	
Exam PQD Code		Rev. No.	

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Garchow (NRC) DATE: 9/10/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

Facility: CGS	Task No: RO-0559
Task Title: Determine Actions for Criticality outside of ECP	Job Performance Measure No: SA1#2
K/A Reference: 2.1.7 3.7/4.4	
Examinee:	NRC Examiner:
Facility Evaluator:	Date:

Method of testing:

Actual Performance: Perform

JPM SETUP INFORMATION

Initial Conditions:	A plant startup is in progress. PPM 3.1.2 has been completed through step 5.2.3.
Task Standard:	The task will be completed successfully when criticality is recognized and the correct actions have been identified.
Required Materials:	Marked up copy of PPM 3.1.2 Reactor Plant Startup
General References:	PPM 3.1.2 Reactor Plant Startup, rev 43, page 20 - 22
Initiating Cue:	As the RO you are second checking reactor conditions during the startup. You note the following conditions: Reactor Power 20,000 cps and increasing Period 118 seconds and stable Control rod position 26-55 @ pos 14 There has been no control rod motion for the past 3 minutes. Inform the SM of any actions required for these conditions
Time Critical Task:	NO
Validation Time:	8 min.
Simulator ICs:	N/A
Malfunctions/Remote Triggers:	N/A
Overrides:	N/A
Special Setup Instructions:	N/A

PERFORMANCE INFORMATION

START TIME:

Critical Step: YES *	
Performance Step: 1	
Standard:	Determine from given conditions that the reactor is critical prior to the Minimum Critical Position given. *
Comment: SAT / UNSAT	

Critical Step: YES *	
Performance Step: 2	
Standard:	Identify the requirement to: - Stop control rod withdrawal * - Insert control rods in reverse order * - Ask the SNE to provide a rod pattern that will maintain reactor subcritical *
Comment: SAT / UNSAT	

THE EXAMINEE SHOULD ANNOUNCE THE TERMINATION POINT OF THE JPM AT THIS POINT.

JPM TERMINATION TIME: JPM START TIME: - _____ JPM COMPLETION TIME:

VERIFICATION OF COMPLETION

JPM Number: SA1#2	Determine Actions for Criticality outside of ECP NEW ADMIN JPM
Examinee's Name:	
Examiner's Name:	
Date Performed:	
Facility Evaluator:	
Number of Attempts:	
Time to Completed:	

JPM INFORMATION CARD

HAND THE STUDENT INFORMATION CARD TO THE EXAMINEE

READ TO THE EXAMINEE:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiation cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Task Standard:	The task will be completed successfully when criticality is recognized and the correct actions have been identified.
Required Materials:	Marked up copy of PPM 3.1.2 Reactor Plant Startup
Safety Equipment:	N/A
General References:	PPM 3.1.2 Reactor Plant Startup, rev 43, page 20 - 22
Time Critical Task:	NO
Initial Conditions:	A plant startup is in progress. PPM 3.1.2 has been completed through step 5.2.3.

INITIATING CUE

As the CRS you are second checking reactor conditions during the startup. You note the following conditions:

Reactor Power	20,000 cps and increasing
Period	118 seconds and stable
Control rod position	26-55 @ pos 14

There has been no control rod motion for the past 3 minutes. Inform the SM of any actions required for these conditions

INFORMATION BELOW THIS LINE <u>NOT SHARED WITH EXAMINEE</u>

Task Number: RO-0559
NUREG 1123 Reference: 2.1.7 3.7/4.4
Location: ADMIN
Prepared/Revised by: M. Westergren

Validation Time: 8 min.
Time Critical: NO
Performance Method: PERFORM
Revision Date:1/12/99

STUDENT INFORMATION

Initial Conditions: A plant startup is in progress. PPM 3.1.2 has been completed through step 5.2.3.

INITIATING CUE

As the CRS you are second checking reactor conditions during the startup. You note the following conditions:

Reactor Power	20,000 cps and increasing
Period	118 seconds and stable
Control rod position	26-55 @ pos 14

There has been no control rod motion for the past 3 minutes. Inform the SM of any actions required for these conditions

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: DETRMINE THE OPERABILITY OF THE SLC SYSTEM

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: S. Hutchison DATE: 6/20/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

DETERMINE THE OPERABILITY OF THE SLC SYSTEM

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

ADMIN JPM SIMULATOR SETUP NEEDED.

Special Setup Instructions:

ADMIN JPM SIMULATOR SETUP NEEDED.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: SRO-0163-M-TS

Validation Time: 10

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: OSP-INST-H101

Location: Simulator/Classroom

NUREG 1123 Ref: 2.1.12 2.9/4.0

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant is operating at 100% power.
INITIATING CUE:	The CRO has just given you a copy of OSP-INST-H101, Shift and Daily Instrument Checks (MODES 1, 2, & 3) for day shift review. Evaluate steps 54, 55, and 56 to determine if SLC is operable. Notify the CRS with your answer.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
		RECORD START TIME: _____	
	Determines SLC Operability from temp.	From step 54 determines the need to use Att. 9.7 for comparison.	S / U
		Using ATT. 9.7, determines SLC concentration/temperature is outside of the acceptable region.	S / U
		From step 56 determines the need to use Att. 9.8 for comparison.	S / U
		Using Att. 9.8 determines SLC Tank volume is acceptable.	S / U
		Notifies the CRO that SLC is NOT operable.	S / U *
Termination Criteria: Student informs CRS that SLC in NOT operable.			
		RECORD TERMINATION TIME: _____	
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	/ NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant is operating at 100% power.

Cue:

The CRO has just given you a copy of OSP-INST-H101, Shift and Daily Instrument Checks (MODES 1, 2, & 3) for day shift review.

Evaluate steps 54, 55, and 56 to determine if SLC is operable.

Notify the CRS with your answer.

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: TAGOUT CRD-P-1A USING MANUAL FORMS

LESSON LENGTH: .5 HRS

MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Hutchison DATE: 6/28/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

TAGOUT CRD-P-1A USING THE MANUAL FORMS

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

NO SETUP NEEDED, ADMIN JPM

Special Setup Instructions:

NO SETUP NEEDED, ADMIN JPM

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: RO-0695

Validation Time: 30 Minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: OI-12 ATT. 2

Location: TABLE TOP

NUREG 1123 Ref: 2.2.13 3.6/3.8

Performance Method: PERFORM

TAGOUT CRD-P-1A USING THE MANUAL FORMS

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	SOMS is out of service and will not be available for the next 4 hours. CRD-P-1A must be tagged out for a gearbox oil change.
INITIATING CUE:	Using the Manual Clearance Order Process per OI-12, tag out CRD-P-1A for a gearbox oil change. Give the CRS the Manual Clearance Order forms when completed.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			
CUE: Cue response of simulated actions based on procedure and student actions			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Tags the control switch on P601 for CRD-P-1A.	Using an Equipment tag, tags CRD-RMS-S3A for CRD-P-1A in the CENTER AFTER STOP position.	S / U *
	Tags the closing fuses for CRD-P-1A.	Using a Danger Tag, tags E-FUSE-SM7/F6/1/2 fuses REMOVED.	S / U *
	Tags the trip fuses for CRD-P-1A.	Using a Danger Tag, E-FUSE-SM7/F5/1/2 fuses REMOVED.	S / U *
	Tags the 4160 breaker for CRD-P-1A.	Using a Danger Tag, tags CRD-CB-P1A for CRD-P-1A RACKED OUT.	S / U *
Note: The discharge valve, CRD-V-14A is shown as closed on the tagout form. Because the tagout is for a gearbox oil change, the discharge valve has no safety significance and is optional on the manual taggout. It is satisfactory to include it on the tagout, or to leave it off.			
Termination Criteria: Student presents the Manual Clearance Order Forms to the CRS.			
RECORD TERMINATION TIME: _____			

TAGOUT CRD-P-1A USING THE MANUAL FORMS

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: Manual Tag out for CRD-P-1A completed per OI-12.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

SOMS is out of service and will not be available for the next 4 hours. CRD-P-1A must be tagged out for a gearbox oil change.

Cue:

Using the Manual Clearance Order Process per OI-12, tag out CRD-P-1A for a gearbox oil change.

Give the CRS the Manual Clearance Order forms when completed.

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: VALVE LINEUP RWP

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Garchow (NRC) DATE: 9/10/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

TAGOUT CRD-P-1A USING THE MANUAL FORMS

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

NO SETUP NEEDED, ADMIN JPM

Special Setup Instructions:

NO SETUP NEEDED, ADMIN JPM

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: Standard Safety Items Required for Entering the Plant

Task Number: RO-0695

Validation Time: 12 Minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference:

Location: TABLE TOP

NUREG 1123 Ref: 2.3.1 2.6/3.0

Performance Method: PERFORM

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The reactor is operating at 100 percent and all systems are operating normally.
INITIATING CUE:	Because it is suspected that one of the valves for EDR-HX-2 is partially closed, the Shift Manager needs to have the EDR-HX-2 valve lineup inspected. These valves are located at the north end of EDR-HX-2. As part of his decision making process, he has requested you to provide him with the following information as per ALARA Task: WO 00DK27 48 43. • What is the RWP number that will be used to do this inspection? • Based on the most recent HP information, what is the highest general area dose rate that can be expected around this component? • What type of radiation area is this? • Will the person following up on this problem have to enter a contaminated area to do the inspection? • Without any HP extensions or other approvals, what would the maximum allowable stay time be for this task? (Use the highest general dose rate for your determination and assume you have 100 mrem for the current quarter and year.)

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
CUE: Cue response of simulated actions based on procedure and student actions. **CUE: While the candidate may use any reference available in the plant for this JPM, he/she may not request assistance from HP personnel. Because no high radiation area entry will be made for this JPM, no HP briefing is required.** **CUE: Ask the candidate to record the requested information on the CUE card provided with this JPM.** **CUE: The candidate will have to begin the sign in process at the Access Point to get the RWP up on the computer screen. Once the RWP information is obtained, instruct the candidate to abort the sign in process. If the candidate actually signs on to the RWP, ENSURE he/she signs back off again.**			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Reviews the RWP for the referenced ALARA task number.	Goes to the RCA Access Point computer and inputs the ALARA task number.	S / U
		Reviews RWP 30001192 02	S / U *
CUE: Instruct the candidate to abort the sign in process once the RWP has been reviewed.			
		Determines the maximum general area dose is up to 250 mREM/hr.	S / U *
		Determines it is a high radiation area.	S / U *
	Reviews survey map	Locates the hard copy survey map showing EDR-HX-2. (Rx 422 South Side)	S / U
		Determines that the individual will not have to enter a contaminated area to perform this task.	S / U*
	Calculates the maximum stay time.	Determines the maximum stay time is 24 minutes. (100 mrem setpoint on ED / 250 mrem dose rate = .4 hours = 24 minutes)	S / U*
Termination Criteria: When the candidate states all required information has been provided to the Shift Manager.			

TAGOUT CRD-P-1A USING THE MANUAL FORMS

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
		RECORD TERMINATION TIME: _____	
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: Provides the following information to the Shift Manager: RWP #30001192 02, highest general area dose is 250 mrem/hr, it is a high radiation area, a contaminated area need not be entered for the inspection, and the stay time is 24 minutes.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	12 Minutes / NA	

COMMENTS:

Evaluator's Signature: _____ Date: _____

STUDENT JPM INFORMATION CARD

Initial Conditions:

The reactor is operating at 100 percent and all systems are operating normally.

Cue:

Because it is suspected that one of the valves for EDR-HX-2 is partially closed, the Shift Manager needs to have the EDR-HX-2 valve lineup inspected. These valves are immediately adjacent to the north end of EDR-HX-2.

As part of his decision making process, he has requested you to provide him with the following information as per ALARA Task: WO 00DK27 48 43.

- What is the RWP number that will be used to do this inspection?
- What is the highest general area dose rate that can be expected around this component?
- What type of radiation area is this?
- Will the person following up on this problem have to enter a contaminated area to do the inspection?
- Without any RP extensions and/or approvals, what would the maximum allowable stay time be for this task? (Use the highest general dose rate for your determination and assume you have 100 mrem for the current quarter and year.)

No entries into a high radiation area will be made during this JPM.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: Columbia Generating Station	Task No:
Task Title: Complete an INOP Equipment/LCO/RFO Status Sheet	Job Performance Measure No:
K/A Reference: 2.1.18 2.9/3.0	
Examinee:	NRC Examiner:
Facility Evaluator:	Date:

Method of testing: PERFORM

Actual Performance: SIMULATOR

NOTES: Provide the candidate with a blank INOP EQUIP/LCO/RFO STATUS SHEET and INOP EQUIP/LCO/RFO LOG sheet.

JPM SETUP INFORMATION

Initial Conditions:	CGS is operating at 90 percent power with no equipment out of service with the exception of the LAN Operations Log System computer.
Task Standard:	Complete an INOP EQUIP/:LCO/RFO Status Sheet and make a corresponding log entry per PPM 1.3.1.
Required Materials:	A copy of attachments 6.4 and 6.5 of PPM 1.3.1.
General References:	PPM 1.3.1, rev 62, pages 84/85 Tech Specs and LCS.
Initiating Cue:	At 1045, I&C notified the Shift Manager (by telephone) that follow-up troubleshooting on an ADS problem has determined ADS switch MS-RMS-ADS12A, ADS DIV 1 INHIBIT, has failed. Their testing indicates the contacts for S12A have failed in the NORMAL position and do not open when the switch is placed in the INHIBIT position. As a result, placing the switch in the INHIBIT position will not inhibit or reset ADS Channel A logic. The I&C technicians have not discussed this with anyone other than the SM and will generate a PER and WR later today after they discuss it with their supervisor. The Shift Manager has directed you to complete an INOP EQUIP/LCO/RFO Status Sheet and make the corresponding Log entry for this situation. Provide him with the Status and Log Entry Sheets when completed so they can be put on the LAN when it becomes available.
Time Critical Task:	NO
Validation Time:	30 Minutes
Simulator ICs:	N/A
Malfunctions/Remote Triggers:	N/A
Overrides:	N/A
Special Setup	None

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Instructions:

PERFORMANCE INFORMATION

START TIME:

Critical Step:	
Performance Step: 1	PPM 1.3.1, rev 62, page 84
Performance Step: 2	PPM 1.3.1, rev 62, page 85
Task Standard:	Complete the referenced forms as shown in the attached. The candidate's form does not have to be verbatim, however it shall be technically consistent with the attached. The critical steps for this JPM are correctly identifying the LCS number (1.3.5.2) and the INOP time/date (1045 and today's date).
Comments: SAT / UNSAT	

THE EXAIMINEE SHOULD ANNOUNCE THE TERMINATION POINT OF THE JPM AT THIS POINT.

JPM TERMINATION TIME:	
JPM START TIME:	- _____
JPM COMPLETION TIME:	

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

VERIFICATION OF COMPLETION

JPM Number:	Complete an INOP Equipment/LCO/RFO Status Sheet **NEW JPM - ADMIN**
Examinee's Name:	
Examiner's Name:	
Date Performed:	
Number of Attempts:	
Time to Complete:	

JPM INFORMATION CARD

HAND THE STUDENT INFORMATION CARD TO THE EXAMINEE

READ TO THE EXAMINEE:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiation cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Task Standard:	Complete the referenced forms as shown in the attached. The candidate's form does not have to be verbatim, however it shall be technically consistent with the attached. The critical steps for this JPM are correctly identifying the LCS number (1.3.5.2) and the INOP time/date (1045 and today's date).
Required Materials:	A copy of attachments 6.4 and 6.5 of PPM 1.3.1. Tech Specs and LCS
Safety Equipment:	N/A
General References:	PPM 1.3.1, Conduct of Operations Technical Specifications Licensee Controlled Specifications (LCS)
Time Critical Task:	No
Initial Conditions:	CGS is operating at 90 percent power with no equipment out of service with the exception of the LAN Operations Log System computer.

INITIATING CUE

At 1045, I&C notified the Shift Manager (by telephone) that follow-up troubleshooting on an ADS problem has determined ADS switch MS-RMS-ADS12A, ADS DIV 1 INHIBIT, has failed. Their testing indicates the contacts for S12A have failed in the NORMAL position and do not open when the switch is placed in the INHIBIT position. As a result, placing the switch in the INHIBIT position will not inhibit or reset ADS Channel A logic. The I&C technicians have not discussed this with anyone other than the SM and will generate a PER and WR later today after they discuss it with their

supervisor.
The Shift Manager has directed you to complete an INOP EQUIP/LCO/RFO Status Sheet and make the corresponding Log entry for this situation. Provide him with the Status and Log Entry Sheets when completed so they can be put on the LAN when it becomes available

EXAMINER CUE: Provide the candidate with a blank Status Sheet and Log Sheet for this JPM.

INFORMATION BELOW THIS LINE NOT SHARED WITH EXAMINEE

Task Number:
NUREG 1123 Reference: 2.1.18 2.9/3.0
Location: SIMULATOR
Prepared/Revised by: S Garchow (NRC)

Validation Time: 30 minutes
Time Critical: No
Performance Method: PERFORM
Revision Date: New JPM

STUDENT INFORMATION

Initial Conditions: CGS is operating at 90 percent power with no equipment out of service with the exception of the LAN Operations Log System computer.

INITIATING CUE

At 1045, I&C notified the Shift Manager (by telephone) that follow-up troubleshooting on an ADS problem has determined ADS switch MS-RMS-ADS12A, ADS DIV 1 INHIBIT, has failed. Their testing indicates the contacts for S12A have failed in the NORMAL position and do not open when the switch is placed in the INHIBIT position. As a result, placing the switch in the INHIBIT position will not inhibit or reset ADS Channel A logic. The I&C technicians have not discussed this with anyone other than the SM and will generate a PER and WR later today after they discuss it with their supervisor.

The Shift Manager has directed you to complete an INOP EQUIP/LCO/RFO Status Sheet and make the corresponding Log entry for this situation. Provide him with the Status and Log Entry Sheets when completed so they can be put on the LAN when it becomes available.

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: INTERPRET EWDS

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code _____ Rev. No. _____

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: S. Hutchison DATE: 6/20/04

REVISED BY: _____ DATE: _____

TECHNICAL REVIEW BY: _____ DATE: _____

INSTRUCTIONAL REVIEW BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

INTERPRET EWDS

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

ADMIN JPM NO SIMULATOR SETUP NEEDED.

Special Setup Instructions:

ADMIN JPM NO SIMULATOR SETUP NEEDED.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: None

Validation Time: 5 min.

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: EWD 80E001

Location: Simulator

NUREG 1123 Ref: 2.1.24 2.8/3.1

Performance Method: Perform

INTERPRET EWDS

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant is operating at power. ROA-FN-1A has to be started for operability following maintenance.
INITIATING CUE:	The plant is operating at power. ROA-FN-1A has to be started for operability following maintenance. The following scenario occurs: The breaker for the fan has been racked in and the EO has notified the control room he is ready for a start. The CRO notices that the green STOP/OFF indication at the control switch is off. Thinking the light bulb is burned out; the CRO places the control switch for ROA-FN-1A to start. The EO reports the breaker closes by sound and the manual indicators but there is no closed indication on the lights on the breaker door. The CRO also notes there is no closed/running indication in the control room. The CRO places the control switch in the TRIP position. Nothing happens, the fan continues to run. All light bulbs have been verified as good. Using EWD 80E001, explain why there are no indicating lights for ROA-FN-1A and why it did not trip.

INTERPRET EWDS

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			
	Demonstrate on EWD 80E001 the reason for the indications in the Initiating Cue.	Using EWD 80E001, demonstrate the following: 1. Since there was no breaker indication locally or in the control room and the fan would not trip with the control switch the trip fuses FO4-1 and FO4-2 (either or both) are blown or not installed correctly.	S / U *
Termination Criteria: Student informs CRS that the trip fuses are bad/blown, which prevents both the light indications and tripping of the fan.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

INTERPRET EWDS

RESULTS OF JPM:

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: Indications for the start of ROA-FN-1A are explained correctly using EWD 80E-001

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	5 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant is operating at power. ROA-FN-1A has to be started for operability following maintenance.

Cue:

The plant is operating at power. ROA-FN-1A has to be started following maintenance for operability. The following scenario occurs:

The breaker for the fan has been racked in and the EO has notified the control room he is ready for a start.

The CRO notices that the green STOP/OFF indication at the control switch is off. Thinking the light bulb is burned out; the CRO places the control switch for ROA-FN-1A to start.

The EO reports the breaker closes by sound and the manual indicators but there is no closed indication on the lights on the breaker door.

The CRO also notes there is no closed/running indication in the control room.

The CRO places the control switch in the TRIP position.
Nothing happens, the fan continues to run.
All light bulbs have been verified as good.

Using EWD 80E001, explain why there are no indicating lights for ROA-FN-1A and why it did not trip.

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: VERIFY CLEARANCE ORDER FOR CORRECT VALVE LINEUP

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: S. Hutchison DATE: 6/23/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

VERIFY CLEARANCE ORDER FOR CORRECT VALVE LINEUP

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

ADMIN JPM, NO SETUP NEEDED

Special Setup Instructions:

ADMIN JPM, NO SETUP NEEDED

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: Copy of clearance order.

Safety Items: N/A

Task Number: RO-N-1157

Validation Time: 10 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: PPM 1.3.64 step 3.9.1

Location: SIMULATOR/PLANT/TABLE TOP

NUREG 1123 Ref: 2.2.13 3.6/3.8

Performance Method: PERFORM

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The Aux Boiler is in operation to supply seal steam for the main turbine. The Aux Boiler Feedpump, CO-P-2B has a broken discharge flange and must be repaired. The work is expected to last into the next shift. Clearance Order D-CO-P-2B –010 is ready for review.
INITIATING CUE:	You are directed to review Clearance Order D-CO-P-2B –010 using the supplied M513. Notify the Shift Manager when you have found two (2) mistakes with this Clearance Order.

VERIFY CLEARANCE ORDER FOR CORRECT VALVE LINEUP

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
		RECORD START TIME: _____	
CUE: Cue response of simulated actions based on procedure and student actions			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Clearance Order is reviewed for correctness.	The Clearance Order is reviewed against M513 and the following mistakes are identified: CO-V-10 (CO-P-2B discharge) is open instead of closed. CO-V-27B or CO-V-31B (CO-	S / U *
Note: CO-V-711B is used for a vent path and must be closed when returning the system to service. Therefore, it is correct as listed on the return status as closed.			
Termination Criteria: Student informs the Shift Manage of the above mistakes found in the Clearance Order.			
		RECORD TERMINATION TIME: _____	
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

VERIFY CLEARANCE ORDER FOR CORRECT VALVE LINEUP

RESULTS OF JPM:

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Overall Evaluation	**Exam Code**
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev.	**Validation/Critical**	**JPM Completion**
	10 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The Aux Boiler is in operation to supply seal steam for the main turbine.

The Aux Boiler Feedpump, CO-P-2B has a broken discharge flange and must be repaired.

The work is expected to last into the next shift.

Clearance Order D-CO-P-2B –010 is ready for review.

Cue:

You are directed to review Clearance Order D-CO-P-2B –010 using the supplied M513.

Notify the Shift Manager when you have found two (2) mistakes with this Clearance Order.

Appendix C	Admin Job Performance Measure Worksheet SA3JPMreplacement	Form ES-C-1

Facility: Columbia Generating Station	Task No:
Task Title: Calculate Projected dose.	Job Performance Measure No: SA.3JPRMreplacement
K/A Reference: 2.3.11 2.7/3.2	
Examinee:	NRC Examiner:
Facility Evaluator:	Date:

Method of testing:

Perform - Simulator

JPM SETUP INFORMATION

Initial Conditions:	The plant was operating at 100% power when a transient occurred. The reactor scrammed 30 minutes ago. The following conditions exist: • Wind Speed – 14 mph • Wind Direction – from 62° • A release is underway from the Radwaste Building with Radwaste HVAC flowrate of 83,000 scfm. • WEA-RIS-14 indicates 1.92E5 cpm. • The release is expected to last 3 hours.
Task Standard:	Projected dose is calculated to correctly using QEDPS.
Required Materials:	A computer terminal with QEDPS
General References:	PPM 13.8.1 rev. 25 pages 5, 6, & 7
Initiating Cue:	The plant was operating at 100% power when a transient occurred. The reactor scrammed 30 minutes ago. The following are the current conditions: • Wind Speed – 14 mph • Wind Direction – from 62° • A release is underway from the Radwaste Building with Radwaste HVAC flowrate of 83,000 scfm. • WEA-RIS-14 indicates 1.92E5 cpm. • The release is expected to last 3 hours. • Stability class = E You are directed to calculate a projected dose using QEDPS. Notify the CRS when you have completed the dose projection with the results.
Time Critical Task:	NO

Validation Time:	15 minutes
Simulator ICs:	N/A
Malfunctions/Remote Triggers:	N/A
Overrides:	N/A
Special Setup Instructions:	N/A

PERFORMANCE INFORMATION

START TIME:

Critical Step: **Yes**	
Performance Step: 1	**4.2.1: Turn on computer equipment as needed.**
Standard:	Equipment is on and ready for software start.
Comment: SAT / UNSAT	

Critical Step: **Yes**	
Performance Step: 2	**4.2.2: Start QEDPS by double clicking on QEDPS Icon.**
Standard:	Double click on the icon.
Comment: SAT / UNSAT	

Critical Step: **Yes**	
Performance Step: 3	**4.2.2.b: Select Radwaste Building Low Range Monitor, WEA-RIS-14..**
Standard:	Radwaste Low Range (WEA-RIS-14) Monitor selected.
Comment: SAT / UNSAT	

Critical Step: **Yes**	
Performance Step: 4	**4.2.2.b: Enter 1.92E5 for the monitor reading.**
Standard:	Enter 1.92E5 for the monitor reading.
Comment: SAT / UNSAT	

Critical Step: **Yes**	
Performance Step: 5	**4.2.3.a: Enter 3 hours for the release duration.**
Standard:	Enter 3 hours for the release duration.
Comment: SAT / UNSAT	

Critical Step: **Yes**	
Performance Step: 6	**4.2.3.b: Enter 30 min for time since reactor shutdown.**
Standard:	Enter 30 min for time since reactor shutdown.
Comment: SAT / UNSAT	

Critical Step: **Yes**	
Performance Step: 7	**4.2.4: Enter meteorological data:** **Wind Speed – 14 mph** **Wind Direction – 62°** **Stability Class - E**
Standard:	Enters correctly as above.
Comment: SAT / UNSAT	

Critical Step: **YES**	
Performance Step: 8	**4.2.5: Select RUN.**
Standard:	Run selected to run the program.
Comment: SAT / UNSAT	

Critical Step: No	
Performance Step: 9	4.2.6: Select Print for paper output.
CUE:	**If candidate give the results verbally, instruct him to print the output.**
Standard:	Results printed.
Comment: SAT / UNSAT	

THE EXAMINEE SHOULD ANNOUNCE THE TERMINATION POINT OF THE JPM AT THIS POINT.

JPM TERMINATION TIME: JPM START TIME: - _____ JPM COMPLETION TIME:

VERIFICATION OF COMPLETION

JPM Number:	SA.3JPM replacement
Examinee's Name:	
Examiner's Name:	
Date Performed:	
Facility Evaluator:	
Number of Attempts:	
Time to Complete:	

JPM INFORMATION CARD

HAND THE STUDENT INFORMATION CARD TO THE EXAMINEE

READ TO THE EXAMINEE:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiation cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Task Standard: Projected dose is calculated to correctly using QEDPS.

Required Materials: A computer terminal with QEDPS

Safety Equipment: N/A

General References: PPM 13.8.1 rev. 25

Time Critical Task: No

Initial Conditions: The plant was operating at 100% power when a transient occurred. The reactor scrammed 30 minutes ago. The following conditions exist:

- Wind Speed – 14 mph
- Wind Direction – from 62°
- A release is underway from the Radwaste Building with Radwaste HVAC flowrate of 83,000 scfm.
- WEA-RIS-14 indicates 1.92E5 cpm.
- The release is expected to last 3 hours.

INITIATING CUE

The plant was operating at 100% power when a transient occurred. The reactor scrammed 30 minutes ago. The following conditions exist:

- Wind Speed – 14 mph
- Wind Direction – from 62°
- A release is underway from the Radwaste Building with Radwaste HVAC flowrate of 83,000 scfm.
- WEA-RIS-14 indicates 1.92E5 cpm.
- The release is expected to last 3 hours.
- Stability class = E

You are directed to calculate a projected dose using QEDPS.

Provide the CRS with the QEDPS printout with the results of your dose projections.

INFORMATION BELOW THIS LINE NOT SHARED WITH EXAMINEE

Task Number:
NUREG 1123 Reference: 2.3.11 2.7/3.2
Location: Simulator
Prepared/Revised by: S Hutchison

Validation Time: 15 minutes
Time Critical: No

Performance Method: Perform
Revision Date: 9/21/02

STUDENT INFORMATION

Initial Conditions: The plant was operating at 100% power when a transient occurred. The reactor scrammed 30 minutes ago. The following are the current conditions:

- Wind Speed – 14 mph
- Wind Direction – from 62°
- A release is underway from the Radwaste Building with Radwaste HVAC flowrate of 83,000 scfm.
- WEA-RIS-14 indicates 1.92E5 cpm.
- The release is expected to last 3 hours.

INITIATING CUE

The plant was operating at 100% power when a transient occurred. The reactor scrammed 30 minutes ago. The following conditions exist:

- Wind Speed – 14 mph
- Wind Direction – from 62°
- A release is underway from the Radwaste Building with Radwaste HVAC flowrate of 83,000 scfm.
- WEA-RIS-14 indicates 1.92E5 cpm.
- The release is expected to last 3 hours.
- Stability class = E

You are directed to calculate a projected dose using QEDPS.

Provide the CRS with the QEDPS printout with the results of your dose projection.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: CLASSIFY THE EP EVENT

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Hutchison DATE: 4/14/04

REVISED BY: Steve Garchow (NRC) DATE: 9/10/04

TECHNICAL REVIEW BY: _____ DATE: _____

INSTRUCTIONAL REVIEW BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

Operations Training Manager

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: Columbia Generating Station	Task No: SRO-0233-P-PLA
Task Title: Classify the Emergency and PAR	Job Performance Measure No:
K/A Reference: 2.4.41 2.3/4.1	
Examinee:	NRC Examiner:
Facility Evaluator:	Date:

Method of testing: PERFORM

Actual Performance: SIMULATOR

NOTE: This JPM will be done after the performance of the dynamic scenarios run on day 1 and 2 of the 2004 ILC EXAM. The simulator will be frozen following the scenario and the classification will be based on the existing conditions.

NOTE: This JPM will only be performed on day 2 for those SRO candidates that did not complete it on day 1.

JPM SETUP INFORMATION

Initial Conditions:	CGS has experienced the plant event you have just performed.
Task Standard:	Correctly classify the plant event as indicated on the Columbia Generating Station Classification Notification Form as shown in the attached. Note on day one there are three possible answer keys as follows: 1. If RPV level decreases to less than –161" than it is a Site Area Emergency based on 2.1.S.1. 2. If RPV level remains greater than –161" and the SRO declares there was a fire in the EDG room than it is an Alert based on 9.2.A.1 due to a fire in the EDG room. 3. If RPV level remains greater than –161" and the SRO does not declare a fire in EDG room than there is no EP classification. On day two the EP classification is a site area emergency based on 2.2.S.1 based on an ATWS with reactor power remaining above 5 percent.
Required Materials:	Columbia Generating Station Classification Notification Form
General References:	PPM 13.1.1, rev 32, page 14 PPM 13.2.2, rev 14, page 8
Initiating Cue:	As the Shift Manager, you are directed to complete a Columbia Generating Station Classification Form and make a PAR based on the scenario you just completed. Base your classification on the highest EP level reached during the scenario. You have 15 minutes to provide me with your completed form and PAR.
Time Critical Task:	15 minutes
Validation Time:	10 Minutes
Simulator ICs:	N/A
Malfunctions/Remote Triggers:	N/A
Overrides:	N/A

Special Setup Instructions:	This JPM will be done after the performance of all day 1 and day 2 scenarios. For day 2 it will only be performed for those SROs that did not perform this JPM on day 1. The simulator will be frozen following the scenario and the classification will be based on the highest EP level reached during the scenario.

PERFORMANCE INFORMATION

Start Time:

Critical Step:	YES
Performance Step: 1	PPM 13.1.1, rev 32, page 14
Performance Step: 2	PPM 13.2.2, rev 14, page 8
Standard:	Correctly classify the plant event as indicated on the Columbia Generating Station Classification Notification Form as shown in the attached. Note on day one there are three possible answer keys as follows: 1. If RPV level decreases to less than –161" than it is a Site Area Emergency based on 2.1.S.1. 2. If RPV level remains greater than –161" and the SRO declares there was a fire in the EDG room than it is an Alert based on 9.2.A.1 due to a fire in the EDG room. 3. If RPV level remains greater than –161" and the SRO does not declare a fire in EDG room than there is no EP classification. On day two the EP classification is a site area emergency based on 2.2.S.1 based on an ATWS with reactor power remaining above 5 percent.
Comments: SAT / UNSAT	

THE EXAIMINEE SHOULD ANNOUNCE THE TERMINATION POINT OF THE JPM AT THIS POINT.

JPM TERMINATION TIME:	
JPM START TIME:	- _____
JPM COMPLETION TIME:	

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

VERIFICATION OF COMPLETION

JPM Number:	Classify the Emergency and PAR **NEW JPM - ADMIN**
Examinee's Name:	
Examiner's Name:	
Date Performed:	
Facility Evaluator:	
Number of Attempts:	
Time to Complete:	

JPM INFORMATION CARD

HAND THE STUDENT INFORMATION CARD TO THE EXAMINEE

READ TO THE EXAMINEE:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiation cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Task Standard: Correctly classify the plant event as indicated on the Columbia Generating Station Classification Notification Form as shown in the attached. Note on day one there are three possible answer keys as follows:

1. If RPV level decreases to less than –161" than it is a Site Area Emergency based on 2.1.S.1.
2. If RPV level remains greater than –161" and the SRO declares there was a fire in the EDG room than it is an Alert based on 9.2.A.1 due to a fire in the EDG room.
3. If RPV level remains greater than –161" and the SRO does not declare a fire in EDG room than there is no EP classification.

On day two the EP classification is a site area emergency based on 2.2.S.1 based on an ATWS with reactor power remaining above 5 percent.

Required Materials: One Columbia Generating Station Classification Notification Form (CNF)

Safety Equipment: N/A

General References: PPM 13.1.1, rev 32, page 14
PPM 13.2.2, rev 14, page 8

Time Critical Task: 15 minutes

Initial Conditions: CGS has experienced the plant event you have just performed.

INITIATING CUE

As the Shift Manager, you are directed to complete a Columbia Generating Station

Classification Form and make a PAR based on the scenario you just completed. Base your classification on the highest EP level reached during the scenario. You have 15 minutes to provide me with your completed form and PAR.

INFORMATION BELOW THIS LINE <u>NOT SHARED WITH EXAMINEE</u>

Task Number: SRO-0233-P-PLA	Validation Time: 10
NUREG 1123 Reference: 2.4.41 2.3/4.1	Time Critical: 15 minutes
Location: SIMULATOR	Performance Method: PERFORM
Prepared/Revised by: S Garchow (NRC)	Revision Date: 8/29/2004

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

CANDIDATE JPM INFORMATION

Initial Conditions: CGS has experienced the plant event you have just performed.

INITIATING CUE

As the Shift Manager, you are directed to complete a Columbia Generating Station Classification Form and make a PAR based on the scenario you just completed. Base your classification on the highest EP level reached during the scenario. You have 15 minutes to provide me with your completed form and PAR.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: BYPASS CONTROL RODS ON RSCS (SIMULATOR)

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
OJT Guide PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
Student Handout PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Check off Sheet PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: STAFF DATE: 9/92

REVISED BY: Steve Garchow (NRC) DATE: 08/16/04

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

None

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number: RO-0134

Validation Time: 20 Minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: PPM 2.1.5 Section 5.2 Rev. 10

Location: Simulator

NUREG 1123 Ref: 201004 A4.01 (3.4/3.5)

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The SRO has verified bypassing control rod 50-19 is in compliance with Technical Specifications. The Shift Manager has given permission to bypass this control rod. No control rods are currently bypassed.
INITIATING CUE:	The CRS has directed you to bypass control rod 50-19 in the RSCS cabinet per steps 1 through 10 of PPM 2.1.5. Inform the CRS when you have bypassed control rod 50-19. CONTROL MANIPULATIONS WILL NOT BE PERFORMED. ALL ACTIONS AND STEPS WILL BE SIMULATED.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of actions based on procedure and student actions. **CUE:** There are no control rods currently bypassed. **CUE:** The rod sequence in effect is as reflected on P-601. **CUE:** All indications are as reflected by the simulator as this JPM is performed. **NOTE:** Reactor power may be at any level, including shutdown, for the performance of this JPM.			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Determine control rods that are currently bypassed.	Depresses the rod bypass pushbutton (if not already selected) on P-601 to display all bypassed rods.	
CUE: Step 4 (Record and initial verifications in the control room log) is to be simulated (i.e. locate the log and state what would be entered). The entry would be the total number of control rods is three or less and are in compliance with BPWS. Note that the candidate may instead chose to enter reactor power has been verified to be greater than 10%. **NOTE:** The simulator does not require a key to open the door for P-659.			
	Open cabinet door	Obtain the cabinet key and open door for cabinet P659.	
	Determines RSCS binary equivalent.	Determines RSCS binary equivalent X and Y coordinates are 01110 and 01100 utilizing Attachment 6.1.	S / U

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	Selects control rod 50-19 to be bypassed using binary code.	Places toggle switches as follows: $X_0 = 0$, and $Y_0 = 0$ $X_1 = 1$, and $Y_1 = 1$ $X_2 = 1$, and $Y_2 = 1$ $X_3 = 1$, and $Y_3 = 0$ $X_4 = 0$, and $Y_4 = 0$	S / U *
CUE: Provide independent verification of rod toggle switch positions – Inform candidate the toggle switches are in the correct position.			
	Bypasses control rod 50-19.	Places the BYPASSED/NOT BYPASSED Toggle Switch in the BYPASSED position.	S / U *
	Verifies correct rod is bypassed	The switch on P-603 is positioned to ROD BYPASSED position and the rod bypassed indicator light on the full core display for rod 50-19 is verified.	S / U
Termination Criteria: Student informs CRS that control rod 50-19 is bypassed.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:
BYPASS CONTROL RODS ON RSCS

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Control Rod 50-19 indicates it is bypassed in RSCS when verified on P-601 per PPM 2.1.5.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	20 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The SRO has verified bypassing control rod 50-19 is in compliance with Technical Specifications.

The Shift Manager has given permission to bypass this control rod.

No control rods are currently bypassed.

Cue:

The CRS has directed you to bypass control rod 50-19 in the RSCS cabinet per PPM 2.1.5.

Inform the CRS when you have bypassed control rod 50-19.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: RPV DEPRESSURIZATION

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
OJT Guide PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
Student Handout PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Check off Sheet PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Garchow (NRC) DATE: 6/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

Reactor shutdown

Special Setup Instructions:

Reactor initial pressure is about 675 psig.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number:

Validation Time: 20 Minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: PPM 3.2.1 Section 5.6 Rev. 47

Location: Simulator

NUREG 1123 Ref: 241000 A3.08 (3.3/3.2)

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant is being shutdown and reactor pressure is approximately 675 psig. Section 5.4 of procedure 3.2.1 has been completed.
INITIATING CUE:	The CRS has directed you to continue the plant shutdown using section 5.6 of procedure 3.2.1, Normal plant shutdown. You are to perform steps 5.6.5 through 5.6.8. Logging of RPV temperature and pressure will be performed by another operator.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
		RECORD START TIME: _____	
CUE: Cue response of actions based on procedure and student actions.			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Initiate RPV Cooldown	Obtains procedure PPM 3.2.1, Section 5.6.	S / U
Examiner Cue: Inform candidate step 5.6.6, Logging of RPV temperature and pressure, is being performed by another licensed operator.			
	Initiate a pressure setpoint change in PRESS SETPOINT AUTO Mode	Verify PRESS SETPOINT AUTO Mode is lit.	S / U
		Depress PRESS SETPOINT PSI pushbutton.	S / U
		Verify PRESS SETPOINT PSI pushbutton light is lit	S / U
		Verify the current pressure setpoint appears in the display and display demand window	S / U
		Enter the desired pressure setpoint with the numerical keyboard	S / U*
		Verify the desired pressure setpoint appears in the display demand window	S / U
		Depress ENTER	S / U
		Verify the old pressure setpoint remains in the DISPLAY window	S / U
		Verify the HOLD light is lit	S / U
		Depress PRESS RATE, PSI/MIN	S / U

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
		Verify PRESS RATE, PSI/MIN light is lit	S / U
		Verify PRESS SETPOINT PSI light is extinguished	S / U
		Verify the current selected pressure setpoint rate of change appears in the display window	S / U
		Depress the PRESS SETPOINT PSI pushbutton to display the new pressure setpoint and current value in the display window.	S / U*
		Depress GO	S / U
		Verify the GO light backlights, the HOLD light goes out, and the GO light go out when the new setpoint is reached.	S / U
		Verify the steam supply pressure responds as the display value changes	S / U
Perform at 650 psig	Bypass MSIV low vacuum interlock	Obtains keys 51, 52, 71, 72 for the bypass switches	S / U
		Place the condenser low vacuum switches in bypass : • MS-RMS-S24A • MS-RMS-S24C • MS-RMS-S24B • MS-RMS-S24D	S / U*
	Verify Annunciators	Verify main condenser vacuum trip bypass annunciators are lit: • P601-A11-6.2 • P601-A12-2.2	S / U
Termination Criteria: Student informs CRS that step 5.6.8 of procedure PPM 3.2.1, Normal Plant Shutdown has been completed.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedures and remaining JPM pages may be discarded.**			

RESULTS OF JPM:
RPV DEPRESSURIZATION

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

A plant cooldown using the main turbine bypass valves has been established and the MSIV Low Vacuum Isolations have been bypassed per Steps 5.6.5 through 5.6.8 of procedure PPM 3.2.1, Normal Plant Shutdown.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	20 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant is being shutdown for an outage.

Reactor pressure is approximately 675 psig.

Section 5.4 of procedure 3.2.1 has been completed.

Cue:

The CRS has directed you to continue the RPV cooldown by performing section 5.6 of procedure 3.2.1, Normal Plant Shutdown. You are to perform, as required, steps 5.6.5 through 5.6.8. Logging of RPV pressure and temperature will be performed by another operator.

Inform the CRS when you have completed step 5.6.8 of procedure 3.2.1.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: ABN-FIRE/APPENDIX R FIRE AREA RC-13 ATTACHMENT

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
OJT Guide PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
Student Handout PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Check off Sheet PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Garchow (NRC) DATE: 6/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

None

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number:

Validation Time: ? Minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: ABN-FIRE, Attachment 7.1, Section RC-13, Revision 6

Location: HVAC Equipment Room 1

NUREG 1123 Ref: 600000 AK3.04 (2.8/3.4)

Performance Method: Simulate

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant is shutdown because of a serious on-site fire that has affected some appendix R instrumentation.
INITIATING CUE:	The CRS has directed you to complete section RC-13 of attachment 7.1 of procedure ABN-FIRE. CONTROL MANIPULATIONS WILL NOT BE PERFORMED. ALL ACTIONS AND STEPS WILL BE SIMULATED.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and student actions			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Goes to local panel	Goes to West HVAC Chase (RW 525) via RW 501 entrance to the cable chase then up the ladder to RW 525.	
CUE:			
	Pull fuses	Removes fuses TB-F04, TB-F08, TB-F10, TB-F11, TB-F12, TB-F14	S / U
	Stop Fan	Stop fan WMA-FN-53B	S /U
CUE: The CRS wants fan WMA-FN-53A shutdown. Do not cover fire damper WMA-FD-57.			
	Stop Fan	Stop fan WMA-FN-53A	S /U
	RECORD TERMINATION TIME: _____		
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:
ABN-FIRE/APPENDIX R FIRE AREA RC-13 ATTACHMENT

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Fuses removed, and fans WMA-FN-53A and B shutdown per ABN-FIRE.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant is shutdown **because of a serious on-site fire that has affected some appendix R instrumentation**.

Cue:

The CRS has directed you to complete section RC-13 of attachment 7.1 of procedure ABN-FIRE.

Inform the CRS when you have completed section RC-13 of attachment 1 of procedure ABN-Fire.

CONTROL MANIPULATIONS WILL NOT BE PERFORMED.

ALL ACTIONS AND STEPS WILL BE SIMULATED.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: JET PUMP OPERABILITY SURVEILLANCE (CONTROL ROOM) (FAULTED)

LESSON LENGTH: 0.5 hr MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
OJT Guide PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
Student Handout PQD Code		Rev. No.
JPM PQD Code		Rev. No. 0
Check off Sheet PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Garchow (NRC) DATE: 7/2004

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

NA

Special Setup Instructions:

Provide candidate with procedure OSP-RRC-D701, including the attachments. The jet pump dP evaluation found in Attachment 10.1 should be filled in for candidate use. The completed attachment is provided as a part of this JPM.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The instructor should mark off steps as they are completed, note comments, and transfer the comments to the results of JPM page.

Tools/Equipment: Handheld calculator similar to the one used in the control room.

Safety Items: Standard items used to access the plant.

Task Number:

Validation Time: 30 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: OSP-RRC-D701 Rev. 8

Location: Control Room

NUREG 1123 Ref: 202001A.1.02 (3.4/3.4)

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant is operating in a normal lineup at 100 percent power.
INITIATING CUE:	The CRS has directed you to perform surveillance procedure OSP-RRC-D701, Jet Pump Operability and Recirculation Loop Flow Mismatch. Sections 7.5, 7.6, 7.7 will not be performed and step 7.1.3 should be NA'd. Note that another reactor operator has already recorded jet pump dP data in Attachment 10.1. The plant Process Computer is inoperable due to a faulty power supply. Inform the CRS when the surveillance has been completed and provide him/her with all completed paperwork/forms. THE PERFORMANCE OF THIS JPM WILL BE PERFORMED. CONTROL MANIPULATIONS WILL NOT BE PERFORMED.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of actions based on procedure and student actions			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
Examiner Cues: • **Provide the candidate with a calculator** • **Provide the candidate with the partially completed surveillance procedure.** • **Data recorded should be at or near 100 percent reactor power.**			
	Determines correct procedure section.	Performs section 7.2.3 and 7.2.4 for Normal Two Loop Operation	S / U
Examiner Cue: Surveillance steps 7.2.1 and 7.2.2 should be NA'd due to the process computer being INOP.			
	Reviews data.	Checks the NO box contained in step 7.2.3.b	S / U*
	Records data.	Records data as indicated for steps 7.2.3.c, d, and e	S / U
	Records data	Records date for recirc loop flows	S / U
	Evaluates data.	Checks the YES box for steps 7.2.3.f, g, and h.	S /U*
	Records data.	Records data in step 7.4.2	S / U

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	Evaluates data	Verifies loop flow mismatch is LE 2086 gpm.	S / U*
	Communicates	Informs the CRS the surveillance has been completed satisfactorily. The candidate should report the anomaly with jet pump 7.	S / U
Cue:			
Termination Criteria: Student informs CRS that the surveillance has been completed.			
RECORD TERMINATION TIME: _____			
Transfer to JPM Results Page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

JET PUMP dP EVALUATION

LOOP A	PERCENT	% DEVIATION	MAX. ALLOWED	MIN. ALLOWED
JP1	37	- 9.76 %	15.20	- 24.80
JP2	40	- 2.44 %	16.88	- 23.12
JP3	41	0 %	19.77	- 20.23
JP4	40	- 2.44 %	19.69	- 20.31
JP5	41	0 %	27.61	- 12.39
JP6	43	+ 4.88 %	22.27	- 17.73
JP7	49	+ 19.51 %	19.43	- 20.57
JP8	42	+ 2.44 %	21.52	- 18.48
JP9	40	- 2.44 %	19.48	- 20.52
JP10	37	- 9.76%	18.15	- 21.85
SUM	410			
AVG=SUM/10 SUM/10 SUM/10 (=SUM/10)	41			

LOOP B	PERCENT	% DEVIATION	MAX. ALLOWED	MIN. ALLOWED
JP11	41	- 1.68 %	18.03	- 21.97
JP12	37	- 11.27 %	12.68	- 27.32
JP13	41	- 1.68 %	16.65	- 23.35
JP14	39	- 6.47 %	15.28	- 24.72
JP15	45	+ 7.91 %	25.46	- 14.54
JP16	46	+ 10.31 %	25.51	-14.49
JP17	43	+ 3.12 %	18.82	- 21.18
JP18	39	+ 6.47 %	23.49	- 16.51
JP19	43	+ 3.12 %	25.39	-14.61
JP20	43	+ 3.12 %	18.69	- 21.31
SUM	417			
AVG=SUM/10 (=SUM/10)	41.7			

RESULTS OF JPM:
PREPARE FOR EMERGENCY WETWELL VENTING
(JET PUMP OPERABILITY SURVEILLANCE)

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Performs Jet Pump Operability and Recirculation Loop Flow Mismatch surveillance in accordance with OSP-RRC-D701. All appropriate sections of the surveillance are correctly filled out including the cover page. The candidate informs the CRS the surveillance passed.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	30 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant is operating at indicated power and the daily Jet Pump Operability and Recirculation Loop Flow Mismatch, OSP-RRC-D701, is due.

Cue:

The CRS has directed you to complete sections 7.1 and 7.2 of procedure OSP-RRC-D701, Jet Pump Operability and Recirculation Loop Flow Mismatch. Sections 7.5, 7.6, 7.7 will not be performed. Note that another reactor operator has already recorded jet pump dP data in Attachment 10.1. The plant Process Computer is inoperable due to a faulty power supply. Inform the CRS when sections 7.1 and 7.2 have been completed and provide him with all completed paperwork/forms.

THE PERFORMANCE OF THIS JPM WILL BE PERFORMED. CONTROL MANIPULATIONS WILL NOT BE PERFORMED.

ENERGY NORTHWEST
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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: RAISE SUPPRESSION POOL LEVEL USING HPCS SYSTEM (SIM)

LESSON LENGTH: .5 HRS

MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code	LR000153	Rev. No. 6
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Staff DATE: 8/92

REVISED BY: Steve Garchow (NRC) DATE: 8/31/04

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

RAISE SUPPRESSION POOL LEVEL USING HPCS SYSTEM

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

Any IC

Insert MAL-RHR001 with a severity of 8400 (Suppression pool leak at RHR loop "A" suction)

Special Setup Instructions:

After initializing to the desired IC, place the simulator in RUN. From the action window, select MAL and then RHR001. Place the severity of the malfunction to 8400. Allow the simulator to run until Suppression Pool level is approximately –4 inches. Clear the malfunction. If this JPM will be run more than once during the day, snapshot this setup.

Advance the Wetwell Level Recorders to hide the induced level transient.

Ensure RHR-V-4A is closed and tagged.

JPM Instructions:

Verify the current procedure against the JPM. If the procedure is a different revision than listed in the JPM, ensure the critical steps still match. If the critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number: RO-0713

Validation Time: 10 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: PPM 5.5.23 rev 4

Location: SIMULATOR

NUREG 1123 Ref: 209002A4.09 (3.4/3.5)

Performance Method: PERFORM

RAISE SUPPRESSION POOL LEVEL USING HPCS SYSTEM

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	Fatigue cracking of RHR Loop 'A' suction has caused a suppression pool leak with a suppression pool level at –3.4 inches. HPCS is in a normal standby lineup with no initiation signal present. RHR-V-4A has been closed.
INITIATING CUE:	PPM 5.2.1 has been entered due to low Suppression Pool Level. You have been directed by the CRS to raise Suppression Pool level using the HPCS system per PPM 5.5.23. Notify the CRS when Suppression Pool Level has been returned to 0 inches and HPCS-P-1 is closed.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and student actions			
	Verify Pump Suction From CST, is open.	Ensures HPCS-V-1, Pump Suction From CST, is open.	S / U
	Start HPCS-P-1 and ensure Minimum Flow Bypass valve opens.	Starts HPCS-P-1 and ensures HPCS-V-12, HPCS-P-1 Minimum Flow Bypass, opens.	S / U* Critical Step
	If HPCS Service Water Pump, is not running, then start.	Starts HPCS-P-2.	S / U
	Ensure Service Water Pump Discharge, opens.	Ensures SW-V-29, Service Water Pump Discharge, opens.	S / U
Note: HPCS initiation signal is NOT present, override of HPCS-V-23 is not necessary			
	Open Test Bypass To Suppression Pool and adjust flow as necessary to a maximum of 7175 GPM.	Opens HPCS-V-23, Test Bypass To Suppression Pool to a maximum of 7175 GPM to fill the suppression pool.	S / U* Critical Step
	Ensure HPCS-V-12 closes.	Ensures HPCS-V-12 closes.	S / U

RAISE SUPPRESSION POOL LEVEL USING HPCS SYSTEM

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	Monitor suppression pool level	Monitors suppression pool level	S / U
	When suppression pool level reaches zero inches, then close HPCS-V-23.	When suppression pool level reaches zero inches, then closes HPCS-V-23.	S / U* Critical Step
	Ensure HPCS-V-12 opens	Ensures HPCS-V-12 opens	S / U
	Refer to Attachment 6.1 and remove contact boot previously installed on HPCS-RLY-K3.	Removes contact boot previously installed on HPCS-RLY-K3.	N / A
	If HPCS is not required for injection, then stop HPCS-P-1 and ensure HPCS-V-12 closes.	Stops HPCS-P-1 and ensures HPCS-V-12 closes.	S / U
Termination Criteria: Student informs CRS that Suppression Pool level is 0 inches and HPCS-P-1 is shutdown.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RAISE SUPPRESSION POOL LEVEL USING HPCS SYSTEM

RESULTS OF JPM:

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Suppression Pool Level is returned to 0 inches (+ or – 1 inch) in accordance with PPM 5.5.23.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	10 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

Fatigue cracking of RHR Loop A suction has caused a suppression pool leak with a suppression pool level at –3.4 inches

HPCS is in a normal standby lineup with no initiation signal present.

RHR-V-4A has been closed.

Cue:

PPM 5.2.1 has been entered due to low Suppression Pool Level.

You have been directed by the CRS to raise Suppression Pool level using the HPCS system per PPM 5.5.23.

Notify the CRS when Suppression Pool Level has been returned to 0 inches and HPCS-P-1 is shutdown.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: REMOVE DECAY HEAT FROM SGTS CARBON BED (SIM)

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.	
OJT Guide PQD Code		Rev. No.	
Simulator Guide PQD Code		Rev. No.	
Student Handout PQD Code		Rev. No.	
JPM PQD Code	LR000180	Rev. No.	2
Check off Sheet PQD Code		Rev. No.	
Exam PQD Code		Rev. No.	

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Ken Elliott DATE: 10/95

REVISED BY: S Hutchison DATE: 6/26/04

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

Insert necessary commands to cause SGT carbon Bed High Temperature.

Special Setup Instructions:

Ensure high temperature alarm is in and temperature indicates GT alarm setpoint.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number: RO-0380

Validation Time: 9 Minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: ABN-SGT-TEMP/RAD rev. 0

Location: Simulator

NUREG 1123 Ref: 261000 A4.03 (3.0/3.0)

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	SGT Train A charcoal adsorber bed has experienced steadily increasing temperature. It is believed that the increase is NOT due to a fire. All Div. 1 and 2 SGT components have been verified to be in normal standby lineup. HP and OPS 2 are stationed at the A SGT Unit. SGT Train B is in service as required by ABN-SGT-TEMP/RAD.
INITIATING CUE:	The CRS has directed you to respond to the SGT A system charcoal adsorber high temperature using ABN-SGT-TEMP/RAD at step 4.2. Inform the CRS when flow has been established in SGT Train A at 4000 scfm.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and student actions			
	VERIFY SGT-V-1A is CLOSED (Inlet From Containment).	Verifies SGT-V-1A is CLOSED	
	VERIFY SGT-V-5A1 and SGT-V-5A2 are CLOSED (Exhaust to Stack).	Verifies SGT-V-5A1 and SGT-V-5A2 are CLOSED	
	VERIFY SGT-V-2A is OPEN (Inlet from Reactor Building).	Verifies SGT-V-2A is OPEN	
	VERIFY SGT-V-3A2 is OPEN (Fan Inlet).	Verifies SGT-V-3A2 is OPEN	
	IF possible, STATION an HP technician near SGT to MONITOR for airborne contamination/smoke. Otherwise, N/A.	Notifies HP. (This is given in the cue)	
Cue: Hp is stationed as required.			
	OPEN SGT-V-4A1 (Exhaust to Reactor Building).	Opens SGT-V-4A1	S / U* Critical Step

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	PLACE SGT-EHC-1A1control switch to ON (Main Heater).	Places SGT-EHC-1A1control switch to ON	S / U* Critical Step
	VERIFY SGT-FN-1A1 starts within 10 seconds after the Main Heaters energize.	Verifies SGT-FN-1A1 starts within 10 seconds after the Main Heaters energize.	
	IF the SGT system is required to be operable, THEN DECLARE the SGT train inoperable in the Plant Logging System.	Notifies the SRO that SGT A is inop.	
Cue: Acknowledge that SGT A is inop and that it will be entered in the inop log.			
	Place SGT-DPIC-1A1 in MANUAL, AND ADJUST the flow rate to approximately 4000 CFM as indicated by SGT-FR-2A1.	Places SGT-DPIC-1A1 in MANUAL, AND Adjusts the flow rate to approximately 4000 CFM as indicated by SGT-FR-2A1.	S / U* Critical Step
Termination Criteria: The candidate notifies the SRO when the flow is approximately 4000 (+ o – 20 %) CFM..			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:
REMOVE DECAY HEAT FROM SGT CARBON BED

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Actions have been completed per ABN-SGT-TEMP/RAD

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critica Time	JPM Completion Time
	9 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

SGT Train A charcoal adsorber bed has experienced steadily increasing temperature.

It is believed that the increase is NOT due to a fire.

All Div. 1 and 2 SGT components have been verified to be in normal standby lineup.

HP and OPS 2 are stationed at the A SGT Unit.

SGT Train B is in service as required by ABN-SGT-TEMP/RAD.

Cue:

The CRS has directed you to respond to the SGT A system charcoal adsorber high temperature using ABN-SGT-TEMP/RAD at step 4.2.

Inform the CRS when flow has been established in SGT Train A at 4000 scfm.

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Material verified current prior to use.

Initials_____
Date:_____

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: OPERATIONS TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: RESTORATION OF RPS ELECTRICAL ALIGNMENT TO NORMAL (FAULTED)

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
OJT Guide PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
Student Handout PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Checkoff Sheet PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Dan Hughes DATE: 4/14/95

REVISED BY: Steve Garchow (NRC) DATE: 06/16/04

TECHNICAL REVIEW BY: _____ DATE: _____

INSTRUCTIONAL REVIEW BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

None

Special Setup Instructions:

Have procedure PPM 2.7.6 including the attachments ready to provide to candidate.

JPM Instructions:

Verify the current procedure against the JPM. If the procedure is a different revision than listed in the JPM, ensure the critical steps still match. If the critical steps have changed, the JPM should be revised.

Evaluator and student shall use the current procedure. The instructor should mark off steps as they are completed, note comments, and transfer the comments to the results of JPM page.

Tools/Equipment: None.

Safety Items: None

Task Number: EO-0158

Validation Time: 20 Minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: PPM 2.7.6 Rev. 18

Location: Plant

NUREG 1123 Ref: 212000A2.01 (3.7/3.9)

Performance Method: Simulate

JPM CHECKLIST

PROCEDURE VALIDATION	Verify the revision number of procedure copies for evaluator and student. If the procedure revision is different from that listed on the JPM, the critical tasks must be verified. The evaluator copy may be used for marking step completion and comments.
INITIAL CONDITIONS:	RPS Division A is energized from the alternate source of power. The RPS A MTR GEN MG-1 supply breaker (RPS-DISC-7A1B) on MC-7A is closed.
INITIATING CUE:	The CRS has directed you to place the A RPS motor generator and associated EPA breakers in service in accordance with PPM 2.7.6 section 5.3. You are to complete this procedure through step 5.3.6. The division will be restored to a normal lineup following the post maintenance test. Inform the CRS when the GENERATOR A FEED white power available indicating light on H13-P610 is illuminated. The performance of this task is simulated. Control manipulations will not be performed.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and operator actions			
	Performs all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Locates Procedure	Locates procedure PPM 2.7.6 in the control room.	
CUE: When the candidate locates PPM 2.7.6, provide him/her with a "For Information Only" copy for JPM use.			
	Obtains Keys.	Obtains EPA breaker keys # 166 & 168.	S / U
NOTE: If the keys are not obtained when in the control room getting the procedure, it is not necessary to return to the control room. Have the candidate verbalize the location of the keys. (The keys are located in the key locker located on the wall to the left of the Shift Manager's office door.)			
CUE: **After candidate locates the correct breaker, inform him/her it is**	Checks MG Power Supply	Verifies RPS-DISC-7A1B is closed.	Given as closed in the initial conditions

Comments	Element	Standard	Sat/Unsat
closed.			
CUE: Green light is lit.	Starts the RPS MG set	a. Ensure the MOTOR OFF (green) indicating light is illuminated.	S / U
CUE: The output breaker is open.		b. Ensure RPS-CB-MG1, Generator Output breaker, is open.	S / U
		c. Hold RPS-RMS-MG1/START, MOTOR ON, pushbutton depressed.	S / U
CUE: The green light goes out and the red light comes on.		d. Ensure the MOTOR OFF (green) indicating light extinguishes and the MOTOR ON (red) indicating light illuminates.	S / U
		e. When RPS-MG-1 has come up to speed, release RPS-RMS-MG1/START pushbutton. <u>NOTE</u>: MOTOR ON pushbutton doubles as an Over Voltage Trip Reset pushbutton.	S / U
		f. If voltage is not indicated at rated speed, momentarily depress RPS-RMS-MG1/START, MOTOR ON, pushbutton to reset the overvoltage trip.	S / U
CUE: The voltage stabilizes at 120 VAC.		g. Ensure RPS-VM-MG1A voltage stabilizes at *120 VAC.	
CUE: The output breaker is closed.	Closes the RPS MG output breaker	At RPS-MG-1 panel, places GENERATOR OUTPUT breaker in ON (pushed up)	S / U

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	Closes EPAs	Obtain required Electrical Protection Assembly (EPA) breaker keys, numbers 166 and 168, from the Control Room key locker.	S / U
		5.3.3 In RPS-MG2 Room, close EPA breaker RPS-EPA-3A as follows:	S / U*
CUE: Switch S-1 is in the normal position.		a. Ensure breaker keylock switch S-1 is in the NORMAL position.	S / U
CUE: S-2 is in the OPER position.		b. Ensure breaker keylock switch S-2 is in the OPER position.	S / U
CUE: The POWER IN indicator is lit.		c. Ensure the POWER IN indicator is illuminated.	S / U
CUE: Inform operator that all indicators are extinguished <u>except UNDERFREQUENCY</u>.		d. <u>IF</u> any of the following indicators are not extinguished, <u>THEN</u> rotate keylock switch S-2 to the RESET position and return to OPER. Otherwise, N/A. • OVERVOLTAGE • UNDERVOLTAGE • UNDERFREQUENCY • POWER OUT	S / U*

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
CUE: Inform operator that all indicators are extinguished.		e. Ensure the following indicators are extinguished: • OVERVOLTAGE • UNDERVOLTAGE • UNDERFREQUENCY • POWER OUT	S / U

Comments	Element	Standard	Sat/Unsat
		f. Reset EPA breaker RPS-EPA-3A by opening it fully.	S / U
CUE: RPS-EPA-3A is closed.		g. Close the EPA breaker RPS-EPA-3A.	S / U*
CUE: The POWER OUT indicator is lit.		h. Ensure POWER OUT indicator is illuminated.	S / U
		NOTE: EPA breakers are designed such that the undervoltage lights for RPS-EPA breakers may illuminate indicating an undervoltage condition without activating the undervoltage trip circuit.	
The UNDER-VOLTAGE light is not lit.		i. IF the UNDERVOLTAGE light is illuminated and the breaker is closed, THEN initiate a work request to evaluate. Otherwise, N/A.	
		NOTE: EPA breakers use key numbers 166 and 168.	S / U
		5.3.4 In RPS-MG2 Room, close EPA breaker RPS-EPA-3C as follows:	S / U*
CUE: S-1 is in the NORMAL position.		a. Ensure breaker keylock switch S-1 is in the NORMAL position.	S / U
CUE: S-2 is in the OPER position.		b. Ensure breaker keylock switch S-2 is in the OPER position.	S / U

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
Termination Criteria: Operator informs the CRS that the EPA breakers are closed.			
RECORD TERMINATION TIME: _____			
Transfer to JPM Results Page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time. Marked Up procedure and remaining JPM pages may be discarded.			

RESULTS OF JPM
RESTORATION OF RPS ELECTRICAL ALIGNMENT TO NORMAL

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: EPA breakers are closed.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial box)	Validation/Critical Time	JPM Completion Time
	? Minutes / NA	

COMMENTS:

Evaluator's Signature: _____ Date: _____

STUDENT JPM INFORMATION CARD

Initial Conditions:

RPS Division A is being powered from the alternate power supply.

The RPS transfer switch is in the ALT A position.

Maintenance has completed their work on the RPS A MTR GEN MG-1.

The RPS A MTR GEN MG-1 supply breaker (RPS-DISC-7A1B) on MC-7A is closed.

Cue:

The CRS has directed you to place the A RPS motor generator and associated EPA breakers in service in accordance with PPM 2.7.6. You are to complete this procedure through step 5.3.7. RPS will be restored to a normal electrical lineup following the post maintenance test.

Inform the CRS when the GENERATOR A FEED white power available indicating light on H13-P610 is illuminated.

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THE PERFORMANCE OF THIS JPM IS SIMULATED.

CONTROL MANIPULATIONS WILL <u>NOT</u> BE PERFORMED.

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: STARTUP A REACTOR FEED PUMP

LESSON LENGTH: 0.5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.	
OJT Guide PQD Code		Rev. No.	
Simulator Guide PQD Code		Rev. No.	
Student Handout PQD Code		Rev. No.	
JPM PQD Code	LR000232	Rev. No.	9
Checkoff Sheet PQD Code		Rev. No.	
Exam PQD Code		Rev. No.	

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: L. Monroe DATE: 04/13/95

REVISED BY: M. Evosevich DATE: 10/13/98

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Superintendent

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

IC-5

Special Setup Instructions:

Shutdown the "A" RFP per PPM 2.2.4 Section 5.10 by performing only the following steps in sequence:

- Transfer RFW-SC-601A to MDEM
- Trip the RFP by placing the Turbine Emergency Trip/Reset switch to Trip
- Lower RFW-SC-601A until the MIN light illuminates
- Close RFW-V-102A
- Open MS-V-105A
- Open BS-V-17A
- Reset RFW A Trip
- Ensure RFT-P-MOPA ON
- Ensure RFT-P-EOPA OFF

Verify the following:

- RPV level is stable
- The "A" RFP is on the turning gear
- The turning gear C/S is ON
- COND-V-149 is open

JPM Instructions:

Verify the current procedure against the JPM. If the procedure is a different revision than listed in the JPM, ensure the critical steps still match. If the critical steps have changed, the JPM should be revised.

The evaluator and student shall use the current procedure. The instructor should mark off steps as they are completed, note comments, and transfer the comments to the results of JPM page.

Tools/Equipment: None

Safety Items: None

Task Number: RO-0371

Validation Time: 30 min.

Prerequisite Training: N/A

Time Critical: No

PPM Reference: PPM 2.2.4 Rev. 26

Location: Simulator

NUREG 1123 Ref: 259001A4.02 (3.9/3.7)

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Verify the revision number of procedure copies for evaluator and student. If the procedure revision is different from that listed on the JPM, the critical tasks must be verified. The evaluator copy may be used for marking step completion and comments.
INITIAL CONDITIONS:	A reactor startup is in progress and a feed pump must be started. Both of the RFPs are fully operational. CPU "A" is in service.
INITIATING CUE:	You have been directed by the CRS to perform a start of the "A" RFP in accordance with PPM 2.2.4. The procedure has been completed to Section 5.6, step 5.6.2. Inform the CRS when RFP "A" is in service maintaining level in accordance with PPM 2.2.4.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and operator actions			
	Performs all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Opens pump discharge.	Opens RFW-V-102A	S / U*
CUE: If asked cue operator that the turning gear is not wired up.			
	Checks status of speed controller	Ensures RFW-SC-601A is in MDVP at 0% and the MIN indicator is illuminated.	S / U*
	Rolls the turbine.	Using RFW-SC-601A, increases speed to 800 rpm.	S / U*
	Ensures turning gear disengages.	Ensures the Turning Gear disengages.	S / U*
	Transfers speed controller	Depresses the MDEM pushbutton and increases turbine speed to 1000 rpm.	S / U*
Cue: Turbine has rolled for greater than 30 minutes.			
Cue: Turbine was not jacked using minimum flow.			
	Increases turbine speed.	Using RFW-SC-601A, increases speed to 1800 rpm.	S / U*
	Closes bypass valve	Closes COND-V-149	S / U*
	Adjusts turbine speed.	Using RFW-SC-601A, adjusts turbine speed to maintain proper 10 valve position.	S / U*
Termination Criteria: Operator informs the CRS that RFP "A" is in service and maintaining level in accordance with PPM 2.2.4.			
	RECORD TERMINATION TIME: _____		
Transfer to JPM Results Page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time. Marked Up procedure and remaining JPM pages may be discarded.			

RESULTS OF JPM:
STARTUP A REACTOR FEED PUMP

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: A feed pump is maintaining RPV level.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM	Validation/Critical Time	JPM Completion Time
	30 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions: A reactor startup is in progress and a feed pump must be started. Both of the RFPs are fully operational. CPU "A" is in service.

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Cue:

You have been directed by the CRS to perform a start of the "A" RFP in accordance with PPM 2.2.4. The procedure has been completed to Section 5.6, step 5.6.2. Inform the CRS when RFP "A" is in service maintaining level in accordance with PPM 2.2.4.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: SHIFTING SHUTDOWN COOLING

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
OJT Guide PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
Student Handout PQD Code		Rev. No.
JPM PQD Code		Rev. No.
Check off Sheet PQD Code		Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Garchow (NRC) DATE: 6/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

Normal shutdown IC – see special setup instructions

Special Setup Instructions:

RHR-RMS-FCV/64A is danger tagged. RHR-42-7BA7B breaker is open. RRC-V-67A is closed. SW-P-1A is running. Reactor pressure is less than 100 psig. There is less than 80 degree differential between the A RHR heat exchanger outlet and the RRC-P-1A suction. Reactor vessel level is +80 inches. SW-P-1A is in operation.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number:

Validation Time: ? Minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: SOP-RHR-SDC, Section 5.8, Revision 3

Location: Simulator

NUREG 1123 Ref: 205000 A4.09 (3.1/3.1)

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant is shutdown for a refueling outage. RRC-P-1A is shutdown and RRC-P-1B is operating. Service water pump 1A is in service.
INITIATING CUE:	The CRS has directed you to shift shutdown cooling from loop B to RHR loop A using section 5.8 of procedure SOP-RHR-SDC. You are to perform, as required, steps 5.8.1 through 5.8.27. Inform the CRS when you have completed step 5.8.27 of SOP-RHR-SDC.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and student actions			
Examiner Cues: • **There is no degraded core condition.** • **There is no reactor recirc pump (RRC) start planned** • **The reactor has been shutdown for 30 days** • **Step 5.8.1 – Section 5.5, Securing RHR Loop B Shutdown Cooling, has been completed**	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Close Valve	Close RHR-V-6B	S / U
	Open Valve	Open RHR-V-4B	S /U
	Verify	Verify RRC-V-67B is Open	S /U

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	Verify	Verify RRC-V-23B is Open	S /U
		Examiner Cue: • **Step 5.8.9 has been waived by the CRS based on ALARA considerations**	
	Verify	Verify RHR-V-4A is Closed	S /U
	Verify	Verify RHR-V-6A is Open	S /U
	Verify	Verify RHR-V-8 is Open	S /U
	Verify	Verify RHR-V-9 is Open	S /U
	Verify	Verify RRC-V-67A or RRC-V-23A is closed	
	Verify	Verify the differential temperature between RHR Heat Exchanger outlet and RRC-P-1A suction is less than 80 degrees	
	Close Valve	Close RHR-V-48A	S /U
	Throttle Open Valve	Throttle Open RHR-V-48A for 8 seconds.	S /U
	Close Valve	Close RHR-V-3A	S /U
	Start Pump	Start RHR-P-2A	S /U
	Open Valve	Immediately Open RHR-V-53A	S /U
	Throttle Valve	Throttle RHR-V-48A to obtain flow of about 3000 gpm	S /U
	Throttle Valve	Throttle RHR-V-48A to obtain flow of GT 5400 gpm.	S /U

RECORD TERMINATION TIME: _____

Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time;

Marked Up procedure and remaining JPM pages may be discarded.

RESULTS OF JPM:
SHIFTING SHUTDOWN COOLING

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

RHR loop A is in service providing shutdown cooling.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant is shutdown for a refueling outage.
RRC-P-1A is secured.
RRC-P-1B is operating.
Section 5.5 of SOP-RHR-SDC is complete.
Reactor vessel level is +80 inches.

Cue:

The CRS has directed you to shift shutdown cooling from loop B to loop A using section 5.8 of procedure SOP-RHR-SDC. You are to perform, as required, steps 5.8.1 through 5.8.27.

Inform the CRS when you have completed step 5.8.27 of SOP-RHR-SDC.

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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: START AN RRC PUMP WITH THE REACTOR AT POWER (FAULTED)

LESSON LENGTH: .5 HRS

MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code	?????	Rev. No.
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Steve Hutchison DATE: 4/14/04

REVISED BY: DATE:

TECHNICAL REVIEW BY: DATE:

INSTRUCTIONAL REVIEW BY: DATE:

APPROVED BY: DATE:

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

TITLE

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

IC-14 or special IC created for JPM set.

Special Setup Instructions:

Trip RRC-P-1A, open breakers CB-RRA, CB-RPT4A, CB-RPT3A, and allow conditions to stabilize.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: RO-0061-N-RRC

Validation Time: ??

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: SOP-RRC-START rev. 0

Location: Simulator

NUREG 1123 Ref: 202001A4.01 (3.7/3.7)

Performance Method: Perfrom

TITLE

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant was operating at 99% power when RRC-P-1A tripped. The cause has been corrected and RRC-P-1A is ready for a start. The SNE is in the control room and has evaluated Core Maximum Peaking Factor and RPV inlet temperater as satifactory per PPM 9.3.12. A startup plan is in place. RRC seal purge has been in service GT 30 minutes.
INITIATING CUE:	The CRS has directed you to start RRC-P-1A per SOP-RRC-START section 5.1 step 5.1.2. Notify the CRS when RRC-P-1A has been started and is operating at 15 Hz.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and student actions			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
	Lowers operating loop drive flow	Lower and maintain the operating loop drive flow at approximatelyh 20,800 gpm.	S / U *
	Closes RRC-P-1A but tie breaker	Places control switch for Breaker CB-RRA to the CLOSE postion.	S / U *
	Closes RRC-P-1A motor interlock breaker	Places control switch for Breaker CB-RPT4A to the CLOSE postion.	S / U *
	Closes RRC-P-1A motor interlock breaker	Places control switch for Breaker CB-RPT3A to the CLOSE postion.	S / U *
	Ensures temperatures are within limits	Verifies temperatures are within the limits of OSP-RRC-C103 – Pen 1 & 2 on RRC-TR-650 is LE 50°.	S / U *
	Starts RRC-P-1A	Momentarily pushes the ASD Pushbutton to start the pump.	S / U *

TITLE

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	Verifies speed of RRC-P-1A	Stops the pump by pressing the ASD STOP pushbutton when the pump speed does not reach 15 hz LE 50 seconds.	S / U *
			S / U *
Termination Criteria: Student informs CRS that RRC-P-1A has been tripped due to inadequate speed.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

TITLE

RESULTS OF JPM:
PUT YOUR JPM TITLE HERE

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	Minutes / NA	

COMMENTS:

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

TITLE

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant was operating at 99% power when RRC-P-1A tripped. The cause has been corrected and RRC-P-1A is ready for a start.

The SNE is in the control room and has evaluated Core Maximum Peaking Factor and RPV inlet temperater as satifactory per PPM 9.3.12. A startup plan is in place.

RRC seal purge has been in service GT 30 minutes.

Cue:

The CRS has directed you to start RRC-P-1A per SOP-RRC-START section 5.1 step 5.1.2.

Notify the CRS when RRC-P-1A has been started and is operating at 15 Hz.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: VENT CRD OVERPISTON AREA FOR ROD INSERTION (PLANT)

LESSON LENGTH: .5 HRS

MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.	
OJT Guide PQD Code		Rev. No.	
Simulator Guide PQD Code		Rev. No.	
Student Handout PQD Code		Rev. No.	
JPM PQD Code	LR000258	Rev. No.	12
Check off Sheet PQD Code		Rev. No.	
Exam PQD Code		Rev. No.	

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Donald Hughes DATE: 4/95

REVISED BY: Jim Redwine DATE: 10/29/02

TECHNICAL REVIEW BY: Pat Bagan (Signature on File) DATE: 10/24/01

INSTRUCTIONAL REVIEW BY: Jim Redwine (Signature on File) DATE: 10/23/01

APPROVED BY: Randy Guthrie (Signature on File) DATE: 10/25/01

Operations Training Manager

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

N/A

JPM Instructions:

Verify the current procedure against the JPM. If the procedure is a different revision than listed in the JPM, ensure the critical steps still match. If the critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number: RO-0683, EO-1443

Validation Time: 8 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: PPM 5.5.11 Rev. 4

Location: PLANT

NUREG 1123 Ref: 295037EA1.05 (3.9/4.0)

Performance Method: SIMULATE

JPM CHECKLIST

PROCEDURE VALIDATION	Regarding procedure copies for evaluator and student, if the procedure revision is different from that listed on the JPM, verify that the critical task steps are the same. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	A scram has been initiated. All rods are NOT fully inserted. Reactor pressure is 930 psig, stable. Health Physics is standing by, ready to support the work. Communications have been established between the control room and the HCUs.
INITIATING CUE:	The CRS has directed you to vent control rod 26-31 over-piston area in accordance with PPM 5.5.11. Inform the CRS when Rod 26-31 venting has commenced. **THE PERFORMANCE OF THIS JPM WILL BE SIMULATED. CONTROL MANIPULATIONS WILL NOT BE PERFORMED.**

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and student actions			
	Obtain continuous HP coverage prior to venting.		
	Using Att. 6.3 selects correct row if HCUs for control rod 26-31.		S / U * Critical Step
	Establish communications between the HCUs and the control room.		
	Ensure leather gloves are worn to prevent burns.		
	Connect CRD vent hose to EDR drain.		
	At the HCU close CRD-V-102 withdraw vent isolation.		S / U * Critical Step

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
Caution: Pressurized water could be trapped behind dragon vent valve plugs and cause personal injury or contamination.			
	Remove the bottom and end plugs from CRD-V-102A withdraw vent valve		S / U * Critical Step
	Connect CRD vent hose to the bottom of CRD-V-102A, withdraw vent valve.		S / U * Critical Step
Caution: Opening CRD-V-102A may eject the valve and cause severe personal injury.			
	Open CRD-V-102A ONE turn. Inform the SRO of the results.		S / U * Critical Step
Termination Criteria: Student informs CRS that rod 26-13 venting has commenced.			
RECORD TERMINATION TIME: _____			
Transfer the following information to the "Results of JPM" page: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time. **The marked up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:
VENT CRD OVERPISTON AREA FOR ROD INSERTION

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: Control rod 26-31 over-piston area vented per PPM 5.5.11.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	8 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

- A scram has been initiated
- All rods are NOT fully inserted
- Reactor pressure is 930 psig, stable
- Health Physics is standing by, ready to support the work
- Communications have been established between the control room and the HCUs.

Cue:

The CRS has directed you to vent control rod 26-31 over-piston area in accordance with PPM 5.5.11.

Inform the CRS when Rod 26-31 venting has commenced.

THE PERFORMANCE OF THIS JPM WILL BE SIMULATED.

CONTROL MANIPULATIONS WILL NOT BE PERFORMED.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: PREPARE FOR EMERGENCY WETWELL VENTING (HIGH H_2 AND O_2 CONCENTRATIONS (CONTROL ROOM)

LESSON LENGTH: 0.5 MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.	
OJT Guide PQD Code		Rev. No.	
Simulator Guide PQD Code		Rev. No.	
Student Handout PQD Code		Rev. No.	
JPM PQD Code	LR000162	Rev. No.	6
Check off Sheet PQD Code		Rev. No.	
Exam PQD Code		Rev. No.	

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Larry Monroe DATE: 10/21/94

REVISED BY: Ron Hayden DATE: 10/01/01

TECHNICAL REVIEW BY: Pat Bagan (Signature on File) DATE: 10/24/01

INSTRUCTIONAL REVIEW BY: Jim Redwine (Signature on File) DATE: 10/17/01

APPROVED BY: Randy Guthrie (Signature on File) DATE: 10/25/01

Operations Training Manager

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

NA

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The instructor should mark off steps as they are completed, note comments, and transfer the comments to the results of JPM page.

Tools/Equipment: Flashlight, if required

Safety Items: High voltages inside panels

Task Number: RO-0690

Validation Time: 20 Minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: PPM 5.5.20 Rev. 5

Location: Control Room

NUREG 1123 Ref: 295024GA.12 (3.9/4.5)

Performance Method: Simulate

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	A LOCA has occurred coincident with a loss of Off Site power. Parameters now indicate that Primary Containment integrity may be challenged due to potentially flammable atmosphere in containment. The Reactor Building is inaccessible.
INITIATING CUE:	The CRS has directed you to use SGT B to emergency vent the wetwell per PPM 5.5.20 due to high H_2 and O_2 concentrations. Inform the CRS when Wetwell Venting has been initiated. THE PERFORMANCE OF THIS JPM WILL BE SIMULATED. CONTROL MANIPULATIONS WILL NOT BE PERFORMED.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
		RECORD START TIME: _____	
CUE: Cue response of simulated actions based on procedure and student actions			
	Perform all non-critical steps IAW current procedure.	Applies initial conditions & P/L, completes steps IAW procedure.	S / U
		Obtains screwdriver, tape, and jumpers.	
CUE: The tools should be located but need not be taken to the affected panels.			
	Override Inlet From Containment isolation logic.	Lifts and tapes the gray (top) lead on terminal 16 of TM-K2-1-09 at H13-P891 Bay 1.	S / U*
CUE: Inform candidate the selected lead is lifted and taped.			
	Prevent B SGT Lead and Lag Heater and Fan Operation.	Places SGT-EHC-1B-2 to PTL at H13-P811. At H13-P892 Bay 1: Lifts/tapes the gray lead on term. 10 TM-K1-1-18. Lifts/tapes the gray lead on term. 4 TM-K1-1-20. Lifts/tapes the gray lead on term. 5 TM-K1-1-20.	S / U*
CUE: Inform candidate each of the leads is lifted and taped.			
CUE: CAUTION - K2-21/23 terminal strip cover SHOULD NOT BE REMOVED FOR JPM			
	Override wetwell exhaust outboard isolation logic.	Overrides CEP-V-3A by installing jumper between terminal 6 and 7 on TM-K1-4-7 at H13-P892 Bay 4.	S / U *

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
CUE: Inform candidate the jumper is installed where the candidate indicated.			
	Override wetwell exhaust inboard isolation logic.	Overrides CEP-V-4A by installing jumper between terminal 14 and 15 on TB H28 at H13-P813.	S / U *
CUE: If student checks, cue CEP-V-11 green light is lit, SGT-V-2B red light is lit, and SGT-V-3B-1 red light is lit.			
CUE: Each of the valves "operated" below have a red position indicator light lit after the candidate operates the valve.			
	Open Exhaust to stack.	Opens SGT-V-5B-2.	S / U *
	Open inlet from Containment.	Opens SGT-V-1B.	S / U *
	Opens WW Exh Outbd Isol.	Opens CEP-V3A.	S / U *
	Opens WW Exh Inbd Isol.	Opens CEP-V4A	S / U *
Termination Criteria: Student informs CRS that Wetwell Venting has been initiated.			
RECORD TERMINATION TIME: _____			
Transfer to JPM Results Page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

RESULTS OF JPM:
PREPARE FOR EMERGENCY WETWELL VENTING
(HIGH H_2 AND O_2 CONCENTRATIONS)

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

Initiates Emergency Wetwell Venting via SGT Train B in accordance with PPM 5.5.20.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	20 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

A LOCA has occurred coincident with a loss of Off Site power. Parameters now indicate that Primary Containment integrity may be challenged due to potentially flammable atmosphere in containment.

The Reactor Building is inaccessible.

Cue:

The CRS has directed you to use SGT B to emergency vent the wetwell per PPM 5.5.20 due to high H_2 and O_2 concentrations.

Inform the CRS when Wetwell Venting has been initiated.

The performance of this JPM will be simulated.

Control manipulations will NOT be performed.

ENERGY NORTHWEST
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INSTRUCTIONAL COVER SHEET

PROGRAM TITLE: LICENSED OPERATOR/STA REQUALIFICATION TRAINING

COURSE TITLE: JOB PERFORMANCE MEASURE

LESSON TITLE: TRANSFER SM-1 FROM TR-N TO TR-S (SIM) (FAULTED)

LESSON LENGTH: .5 HRS MAXIMUM STUDENTS: 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code		Rev. No.
Simulator Guide PQD Code		Rev. No.
JPM PQD Code	LR001515	Rev. No. 0
Exam PQD Code		Rev. No.

DIVISION TITLE: Nuclear Training

DEPARTMENT: Operations Training

PREPARED BY: Ron Hayden DATE: 10/01/01

REVISED BY: DATE:

TECHNICAL REVIEW BY: Pat Bagan DATE: 10/24/01

INSTRUCTIONAL REVIEW BY: Jim Redwine DATE: 10/17/01

APPROVED BY: Randy Guthrie DATE: 10/25/01

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

TRANSFER SM-1 FROM TR-N TO TR-S

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

Any IC where SM-1 is powered from N1-1 breaker.

Special Setup Instructions:

BKR-EPS038 CB-N1/1 Fail to Auto Trip

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: None

Safety Items: None

Task Number: RO-0414-N-AC

Validation Time: 5 Minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: PPM 2.7.1A Section 5.6 Rev. 13

Location: Simulator

NUREG 1123 Ref: 262001A4.04(3.6/3.6)

Performance Method: Perform

TRANSFER SM-1 FROM TR-N TO TR-S

JPM CHECKLIST

PROCEDURE VALIDATION	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	A plant shutdown is in progress. All conditions, limitations, and prerequisites for this evolution are completed.
INITIATING CUE:	The CRS has directed you to transfer SM-1 from the Normal transformer to the Startup transformer. Inform the CRS when SM-1 is being powered from the Startup transformer.

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	RECORD START TIME: _____		
CUE: Cue response of simulated actions based on procedure and student actions			
	At H13-P842 (Bd. F), ensure the white Lockout TR-S Lockout Rly 86TS light for Startup Transformer (TR-S) is illuminated.	At H13-P842 (Bd. F), ensures the white Lockout TR-S Lockout Rly 86TS light for Startup Transformer (TR-S) is illuminated.	S / U
	Ensure the CB-S1 white LOCKOUT CIRCUIT AVAIL light and green tripped light are illuminated.	Ensures the CB-S1 white LOCKOUT CIRCUIT AVAIL light and green tripped light are illuminated.	S / U
	Ensure the green position flag is being displayed in the CB-S1 control switch window.	Ensures the green position flag is being displayed in the CB-S1 control switch window.	S / U
	Ensure the CB-N1/1 white LOCKOUT CIRCUIT AVAIL light and red closed light are illuminated.	Ensures the CB-N1/1 white LOCKOUT CIRCUIT AVAIL light and red closed light are illuminated.	S / U
	Place the CB-S1 Sync Selector switch in the MANUAL position.	Places the CB-S1 Sync Selector switch in the MANUAL position.	S / U * Critical step

TRANSFER SM-1 FROM TR-N TO TR-S

*** Items are Critical Steps**

Comments	Element	Standard	Sat/Unsat
	Check voltage present on both incoming and running buses (not required to be matched). NOTE: The blue sync permit light for CB-S1 is illuminated from the initiation of closure until closure actually occurs. NOTE: CB-N1/1 should be manually tripped if it does not trip at the time of CB-S1 closure.	Checks voltage present on both incoming and running buses (not required to be matched).	S / U
	Place the CB-S1 control switch to the CLOSE position.	Places the CB-S1 control switch to the CLOSE position.	S / U * Critical step
	Ensure CB-S1 closes.	Ensures CB-S1 closes.	
	Ensure CB-N1/1 auto trips at time of breaker CB-S1 closure. Manually trip CB-N1/1 if it does not auto trip.	Recognizes that breaker CB-n1/1 does not opene. Manually trips CB-N1/1 when it does not auto trip.	S / U * Critical step
	Place the CB-N1/1 control switch to the TRIP position and ensure a green flag is displayed in the CB-N1/1 control switch window.	Ensures a green flag is displayed in the CB-N1/1 control switch window.	S / U
Termination Criteria: Student informs CRS that SM-1 is being powered from TR-S.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; **Marked Up procedure and remaining JPM pages may be discarded.**			

TRANSFER SM-1 FROM TR-N TO TR-S

RESULTS OF JPM:

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard:

SM-1 power supply has been transferred from N1-1 to TR-S per PPM 2.7.1A..

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	**LR001515**

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	5 Minutes / NA	

COMMENTS:

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

STUDENT JPM INFORMATION CARD

Initial Conditions:

A plant shutdown is in progress. All conditions, limitations, and prerequisites for this evolution are completed.

Cue:

The CRS has directed you to transfer SM-1 from the Normal transformer to the Startup transformer.

Inform the CRS when SM-1 is being powered from the Startup transformer.

Facility: COLUMBIA **Final Scenario No. 2**
Op-Test No.: 1

Examiners: _____ **Operators:** _____

_____ _____

_____ _____

Plant Status: The reactor has been operating at 100% power for the last 131 days except for a few minor downpowers for control rod adjustments. Control rod xx-yy is selected per step xx of the rod pull sheet. Thirty days remain until the start of the next refueling outage. Reactor water cleanup pump RWCU-P-1A was isolated and tagged out of service at 0345 this morning to repair a leak on the pump shaft. Mechanical maintenance completed the work near the end of the previous shift, the tags have been lifted, and the pump needs to be run for 24 hours as a post maintenance test. SRV MS-RV-5B has a high tail pipe temperature alarm and engineering is working on developing a troubleshooting plan.

Turnover: Maintain reactor power at 100%. Place RWCU-P-1A in service per PPM 2.2.3 and run the pump for at least 24 hours. The procedure was started by the previous crew and they completed steps 5.9.1 though step 5.9.3. The 40 minute run has been completed. Completing this procedure should be done expeditiously because RWCU-P-1B also needs to have the shaft seals adjusted. Perform control rod surveillance OSP-CRD-W701, Control Rod Exercise for Fully Withdrawn Control Rods. Closely monitor SRV MS-RV-5B for increased leakage.

Scenario: This scenario includes two normal evolutions (shifting RWCU pumps and performing control rod overtravel surveillances), two component failures (RWCU pump seal failure/trip and a control rod overtravel), one instrument failure (Main Steam Line flow element fails high) and one main event. The main event is initiated with a ground fault on the Division 3 4160 volt bus supply breaker that causes a fire in the Division

	3 auxiliary transformer and a loss of the Division 3 4160 bus (SM-4). This ultimately causes a trip of the main transformer. The auto transfer to the startup transformer fails to occur and consequently, all non-safety related AC power is lost. (Electrical power can be restored manually.) The RCIC turbine overspeeds on startup and there is a loss of all high pressure injection systems. One SRV fails open.

Event No.	Malf. No.	Event Type	Event Description
1.	Initiated by turnover T=0	N (BOP)	Place RWCU-P-1A in service and secure RWCU-P-1B.
2.	Initiated by turnover T=0	N (RO)	Perform rod over travel surveillance OSP-CRD-W701.
3.	Trigger 1 T»15 min	C (RO)	The third rod tested fails the overtravel surveillance. The control rod is recoupled.
4.	Trigger 2 T~25	I (SRO, BOP)	Main steam line flow instrument MS-DPIS-10B fails high.
5.	Trigger 2 T»35 min	C (BOP)	RWCU-P-1A trips.
6.	Trigger 3 T=45 min	M (All)	SM-2 and SM-4 ground fault alarms and loss of SM-4 (51N and 59 relays trip).
7.	Trigger 4 T=50 min	M (All)	Normal Aux Power TR-N1 fire alarm.
8.	Trigger 5 T=0 min	M (All)	Supply breaker to TR-N1 interbus transformer will not open.
9.	Trigger 6	C	Auto transfer switch is disabled.

	T=0 min	(BOP)	
10.	Trigger T = 55 min	M (All)	Trip of the main transformer TR-M1 on ground fault (neutral current).
11.	Trigger 8 T = 0 min	C (All)	RCIC turbine over speed trip on startup. (Loss of all high pressure injection systems.)
12.		C (BOP)	One SRV fails open.

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

Event No. 1
Description: Place RWCU-P-1A in service and shutdown RWCU-P-1B. *This event is initiated by the turnover sheet. The event endpoint occurs when the 'B' pump is shutdown.*

Time	Position	Applicants Actions or Behavior
T=0	SRO	Directs the BOP to complete placing RWCU-P-1A in service and securing the 'B' pump per PPM 2.2.3, section 5.9, RWCU, starting with step 5.9.4.
	BOP	Carries out actions of PPM 2.2.3, starting with step 5.9.4: When RWCU-P-1A has run on its Discharge Bypass valve for 40 minutes, open RWCU-V-13A and ensure normal pump flow indicated by an increase on RWCU-FI-609. Secure RWCU-P-1B and ensure RWCU system flow is normal on RWCU-FI-609. Close RWCU-V-13B for the previously running pump. Place the RWCU Demineralizers in service per Section 5.14. (Local activity) Reports to the CRS RWCU-P-1B is in service.

COMMENTS:

Event No. 2

Description: Perform control rod over travel surveillance for 3 control rods.

This event is initiated by the turnover sheet. The end point occurs when the third control rod fails the over travel test.

Critical Task for this event:

Time	Position	Applicants Actions or Behavior
T=0	SRO	Directs RO to perform OSP-CRD-W701, Control Rod Exercise of Fully Withdrawn Control Rods
	RO	If available, obtain a control rod position printout. NA (Provided)
		Select a control rod to be moved and initial on Attachment 9.1 of OSP-CRD-W701. (Provided)
		A second licensed operator or STA/SNE is to verify the correct control rod is selected and initial Attachment 9.1.
		Insert the control rod one notch (to notch 46) as indicated on Four-Rod display.
		Verify the indicated control rod position changes during control rod movement.
		If the rod position is not available or is lost, withdraw the rod to its original position. Record this condition on Attachment 9.3 and exercise the rod per Step 7.6.

		Continuously withdraw the control rod one notch (to notch 48) as indicated on the Four-Rod display. Verify the indicated control rod position changes during control rod movement. NOTE: A valid coupling integrity check requires the ROD OVERTRAVEL annunciator (H13-P603-A7-1.8) not received when a continuous withdrawal signal is applied to the control rod drive. **Simulator Cue: The ROD OVERTRAVEL alarm is recieved on the third rod tested.** Verify coupling integrity of the control rod. Verify position 48 is illuminated or verify the FULL OUT indicating light is illuminated. For control rods that were highlighted per step 7.4 re-perform steps 7.5.9 and 7.5.10 to promote the restoration of cooling. NA Initial on Attachment 9.2 for each control rod that has been exercised satisfactorily. A second licensed Operator or STA is to verify the correct final control rod position after the settle function light has extinguished. Initial on Attachment 9.2. Record any difficulties while performing this exercise on Attachment 9.3. This may include double

		notches, failure to notch, or increase drive water pressure required. Repeat Steps 7.5.2 through 7.5.14 for all rods to be exercised. If available, obtain a control rod position printout and compare it with Step 7.5.1. Notify the CRS/SM and STA of any discrepancies. CAUTION: If any rod is accidently inserted more than one notch, the rod should be withdrawn one notch at a time to avoid overnotching on the withdrawal.

Event No. 3

Description: A control rod fails the rod over travel surveillance.

This event is initiated by the procedure addressed in Event #2. The event endpoint occurs when the control rod is recoupled and restored to the original position.

Time	Position	Applicants Actions or Behavior
	RO	Notify the Shift Manager and Shift Engineer of the control rod over travel alarm.
T=20	SRO	Directs the RO to insert the affected control rod to position 00 to accomplish recoupling.
	RO	Inserts the control rod to attempt recoupling.
		Simulator Cue: The control rod is recoupled on the first attempt.
	SRO	Directs RO to withdraw rod to notch 48 to determine if the rod has been recoupled.
	RO	Reports to CRS control rod is recoupled.

COMMENTS:

Event No. 4

Description: Main steam line flow instrument MS-DPIS-10B fails high.

Time	Position	Applicants Actions or Behavior
	BOP	Reports MSIV Half Trip System B Alarm and that MS-DPIS-10B has failed upscale.
	SRO	Refers to TS 3.3.6.1.A and is required to place channel B in the tripped condition within 12 hours.

COMMENTS:

Event No. 5

Description: RWCU-P-1A trips. *The event endpoint occurs when RWCU-P-1B is in service.*

Time	Position	Applicants Actions or Behavior
	BOP	Reports that RWCU-P-1A has tripped.
	SRO	Directs BOP to perform a quick restart of pump 1B
	BOP	1. Open RWCU-V-1 and RWCU-V-4. ____ 2. If in Mode 4 or 5, place LD-RMS-S6A and LD-RMS-S6B in the TEST position at H13-P632 and H13-P642. NA 3. Ensure RWCU-V-104 is closed. ____ NOTE: Perform Steps 5.17.4 and 5.17.5 simultaneously. 4. Place the control switch for RWCU-P-1B in START and hold in this position. ____

		5. Open RWCU-V-44, Demineralizer Bypass until the RWCU Pump Flow Low alarm clears (approximately 70 gpm). ____ 6. Let the RWCU-P-1B control switch spring return to the AUTO position. ____ 7. Contact the Radwaste Control Room to place filter demineralizers in service, per Section 5.14. ____ 8. If required, place LD-RMS-S6A and LD-RMS-S6B in the NORMAL position, after System Flow has stabilized and RWCU Differential Flow Alarm is cleared. NA

COMMENTS:

Event No. 6 Main Event

Description: SM-2 and SM-4 ground fault alarms and loss of SM-4 (51N and 59 relays trip). Breaker N1-2 fails to open. *This event is **initiated with** **TRIGGER 6**. The event endpoint occurs when the main event scenario is terminated.*

Time	Position	Applicants Actions or Behavior
	BOP	Reports HPCS SYSTEM UNDERVOLTAGE/HPCS SYSTEM GROUND Alarms and loss of SM-4
	SRO	Refers to procedure ABN-ELEC-SM2/SM4 time permitting. Directs EO to check status of SM-2 and SM-4 trip relays

COMMENTS: This event is continued in Event No. 11.

Events No. 7/8: Normal Aux Power Transformer TR-N1 fire alarm and normal supply breaker to SM-2, N1-2, fails to trip open.

Description: *This trigger is initiated 2 minutes after event 6 is triggered. The event endpoint occurs when the scenario is terminated.*

Critical Task for this event:

Time	Position	Applicants Actions or Behavior

COMMENTS: See Event No. 11 for description.

Event No. 9/10: Trip of the main transformer, TR-M1, with a failure of the electrical auto transfer.

Description: *On the loss of the main transformer TR-N1, there is a failure to auto transfer to off-site power. Off-site power can be manually restored by closing the appropriate circuit breakers.* *The event endpoint occurs when the main event scenario is terminated.*

Time	Position	Behavior
	BOP	*Restores electrical power from off-site sources.

COMMENTS: This event is continued in Event No. 11.

Event No. 11: RCIC turbine over speed trip on startup. (Loss of all high pressure injection systems.) One SRV fails open after initial opening.

Description: *Note: The applicants actions are described assuming the MSIVs are closed and power has been restored from off-site power.*

The event endpoint occurs when RPV level and pressure are stable.

Time	Position	Applicants Actions or Behavior
	SRO	Enters EOP 5.1.1 and directs:
	BOP	Opens SRVs until RPV pressure drops to 945 psig. (P-3)
	BOP	*Stabilize RPV pressure below 1060 psig with SRVs. (P-5) Reports one SRV will not close.
	RO	Takes SCRAM immediate actions
	BOP/RO	Verifies all isolations, ECCS initiations, and EDGs have started (L-1)
	SRO	*Directs the MSIVs re-opened. (P-5)
	BOP	*Takes necessary actions to reopen MSIVs: (P-5) Starts a circ water pump Starts a mechanical vacuum pump (hogger) Opens MSIV bypass valves After pressure has been equalized, opens MSIVs
	RO	*Places RPV pressure control on the main turbine bypass valves. (P-5)
	BOP	Restores and maximizes CRDH flow (L-3/8)
	RO/BOP	*Restores RPV level with reactor feedpump and/or condensate booster pumps (depending on RPV pressure) (L-3/6/8)

COMMENTS:

SCENARIO ENDPOINT: The endpoint is when RPV pressure and level are stable and/or being recovered.

SRO TURNOVER INFORMATION

The plant has been at 100% power for the last 131 days except for a few minor downpowers.

Reactor water cleanup pump RWCU-P-1A was isolated and tagged out of service at 0345 this morning to repair a leak on the pump shaft. Mechanical maintenance completed the work near the end of the previous shift, the tags have been lifted, and the pump needs to be run for 24 hours as a post maintenance test. Place RWCU-P-1A in service per PPM 2.2.3, RWCU, and run the pump for at least 24 hours. PPM 2.2.3 was started by the previous crew and they completed steps 5.9.1 though step 5.9.3. The procedurally required 40 minute run for pump 1A has been completed. Completing this procedure should be done expeditiously because RWCU-P-1B also needs to have the shaft seals adjusted.

Perform control rod surveillance OSP-CRD-W701, Control Rod Exercise for Fully Withdrawn Control Rods, for rods xx-yy, xx-yy, and xx-yy.

SRV MS-RV-5B has a high tail pipe temperature alarm and engineering is working on developing a troubleshooting plan. Closely monitor SRV MS-RV-5B for increased leakage.

Appendix D **SCENARIO OUTLINE** **FORM ES-D-1**

Columbia Generating Station September 2004

Facility: Columbia Scenario Set No: 1 Scenario No: 5

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial conditions: Plant is at approximately 20% with the main turbine generator synchronized and a startup in progress. Reactor feedwater control is in 3 element on feedpump speed control.

Turnover: RCC-P-1A is OOS for motor replacement. BPA is selling power to CA. and power should be increased as soon as possible following turnover. The reactivity brief has been given and the power increase is to begin immediately.

Event No.	Timeline	Event Type*	Event Description
1.	T=0	N SRO RO	Power increase with rods to 24%.
2.	T=5	I ALL	LPRM 08-41A fails upscale. TRG-1
3.	T=15	C SRO BOP	Failure of RB exhaust fan requires entry into PPM 5.3.1. TRG-2
4.		I SRO RO	Failure of RFW-LIC-600 to manual. OVERRIDE TO MANUAL DURING POWER INCREASE.
5.	T=30	M ALL	Loss of SL-81 results in a loss of RCC and subsequent trip of RWCU, RRC, and a manual reactor scram. TRG 3
6.		M ALL	Failure of enough rods to insert such that reactor power is GT 5%. Active at the beginning of the scenario.
7.		C SRO RO	SLC fails – neither squib valve fires. Active at the beginning of the scenario.
8.			Termination Cue: Power is being controlled with level less than LL>

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

Event No. 1		
Description: Power reduction in preparation to take the unit off line. *This event is initiated by the Control Room Supervisor.*		
Time	**Position**	**Applicants Actions or Behavior**
T=0 when crew assumes shift	SRO	Directs RO to increase reactor power to 24% per PPM 3.1.2 step 5.8.8.
	RO	Withdraws control rods to continue the startup per PPM 3.1.2. Closely monitors reactor power during rod withdrawal. Verifies prior to each rod movement: correct rod selected correct start/stop position
	BOP	Monitors plant conditions
COMMENTS: Rod pull starts at RWM group (TBD).		

Event No. 2

Description: LPRM 08-41A fails upscale.

The event is initiated by TRIGGER 1 during the control rod withdrawal approximately 5 minutes following

Time	Position	Applicants Actions or Behavior
T=5	RO	Acknowledges the LPRM UPSCALE annunciator and announces to the SRO. Refers to ARP 4.603.A8 and identifies the upscale LPRM as 08-41A.
	SRO	Directs BOP to the back panel to read the output of the affected LPRM.
	BOP	Using the function and selector switches at P608 and determine that 08-41A is greater than 100 watts/cm^2. Inform the SRO of the upscale reading.
	SRO	Direct that the affected LPRM be bypassed per PPM 9.3.4 Failed or Drifting LPRMs.
	BOP	Using PPM 9.3.4: Notify the SRO to check Tech Spec Table 3.3.1.1-1 to ensure APRM operability. Gets permission from the SRO prior to bypassing the APRM as required by PPM 9.3.4. Bypasses both APRM A and LPRM 08-41A at P608. Notify the SRO that the LPRM is bypassed.
	SRO	Ensure APRM A indicates within ½% of CTP (CGS Admin Requirement per PPM 9.3.4) prior to directing the BOP to un-bypass the APRM.
	BOP	Return APRM A to service.

COMMENTS:

Event No. 3		
Description: Loss of REA-FN-1B resulting in a high reactor building pressure and entry into EOP Secondary Containment Control, 5.3.1. *This event is MANUALLY initiated with* TRIGGER 2 *approximately 15 minutes following the start of the scenario..*		
Critical Task for this event: Directs or takes action to maintain Secondary Containment Pressure negative with regards to outside pressure		
Time	**Position**	**Applicants Actions or Behavior**
T=15	BOP	Reports the receipt of the Secondary Containment ΔP High alarm and notes that it is a possible EOP entry. Goes to the back panel (P812) to investigate the cause of the abnormal condition in secondary containment. Reports that REA-FN-1B has tripped and that Reactor Bldg. pressure is positive on REA-DPR-1A(B).
	SRO	E**nters EOP 5.3.1, Secondary Containment Control**, based on Reactor Bldg. pressure at or above 0" H_2O
	BOP	Refers to the annunciator response procedures (PPM 4.812.R2, 9-1) Attempts to start REA-FN-1A, Rx Bldg. Exhaust Fan *(fan will not start)* If neither reactor bldg. exhaust fan can be started: Immdiately secures Rx Bldg. Inlet Fan (ROA-FN-1B)

		Closes ROA-V-1 & 2, REA-V-1 & 2 (Inlet and Outlet dampers) Starts A train of SGT to maintain Rx Bldg. Pressure negative Refers to PPM 2.3.5, SGT System, to verify steps taken to start SGT. Notifies Chemistry to monitor Rx Bldg Refers to ODCM 6.1.2.1 and LCS 1.3.3.1 (the examinee should inform the SRO that this procedure makes reference to these, it is not expected for the RO/BOP to enter these) Refers to ABN-HVAC, HVAC Trouble Procedure, (all applicable actions have already been carried out in the Annunciator Response Procedure) Ensures Rx Bldg. pressure is maintained negative (monitors back panel or Secondary Containment ΔP High annunciator on P602) May send an equipment operator to investigate the loss of fan 1B and check the start of fan 1A
Cue: If asked to investigate the loss of REA-FN-1B, report that there is no apparent cause identified in your visual inspection. If requested to do pre or post fan start checks on REA-FN-1A or SGT, report that the checks are satisfactory		
	RO	Monitors plant Continues with plant shutdown (see event 1)

	SRO	**May exit EOP 5.3.1, Secondary Containment Control** when Rx Bldg. Pressure is restored and with shift manager permission
Cue: When asked, as the Shift Manager, for permission to exit the EOP 5.3.1, provide permission to exit since the entry condition has cleared and no emergency exists.		
COMMENTS:		

Event No. 4		
Description: Failure of RFW-LIC-600 to manual. *The event is initiated shortly after the power increase is started.* **Note: Override RFW-LIC-600 to manual.**		
Time	**Position**	**Applicants Actions or Behavior**
T=5	RO	Notes that reactor level is no longer tracking during the power increase and notifies the SRO. Notes that RFW-LIC-600 has gone to manual and tells the SRO. Operates RFW-LIC-600 in manual to maintain reactor level. May refer to ABN-LEVEL and/or PPM 4.603.A8 drop 3-7 depending on conditions when the failure is noticed.
	SRO	May refer to ABN-LEVEL and/or PPM 4.603.A8 drop 3-7 depending on conditions when the failure is noticed. Should direct the RO to attempt to place RFW-LIC-600 back in AUTO. (Authority to operate equipment given in PPM 1.3.1)
	RO	Places RFW-LIC-600 in auto.
COMMENTS:		

Event No. 5		
Description: Overcurrent on SL-81 causes BKR 8-81 to trip open. *This event is **MANUALLY initiated by** **TRIGGER 3** ,*at approximately 30 minutes following the start of the scenario, and *after the crew has exited EOP 5.3.1, Secondary Containment Control, or at the direction of the lead examiner.*		
Time	**Position**	**Applicants Actions or Behavior**
T=30	BOP	Announces loss of SL-81 due to the trip of BKR 8-81. Refers to PPM 4.800.C5. drop 1-5: Announce monitoring of drywell temperature and pressure. **Refer to ABN-RCC.** Note: The BOP operator must recognize that there is a complete loss of RCC due to the loss of power to RCC-P-1B and 1C with 1A out of service.
	SRO	**Refers to ABN-RCC:** Directs the RO to scram the reactor. Directs the BOP operator to stop both RRC Pumps. Directs the BOP operator to stop RWCU-P-1A/B, close RWCU-V-4, and throttle open RWCU-V-104. Directs the BOP operator to place all RCC pumps in PTL.

	RO	Scrams the reactor as directed and gives the scram report of Power, Pressure, and Level, noting an ATWS (hydraulic) condition. Takes the immediate scram actions from PPM 3.3.1: Place the Mode Switch in SHUTDOWN. Monitor reactor power, pressure and level. Verify all control rods have inserted and since they did not insert, depress the manual scram pushbuttons and initiate ARI. Insert SRMs and IRMs.
Comments:		

Event No. 6		
Description: Hydraulic ATWS *This event is setup at the beginning of the scenario and occurs automatically.*		
Critical Task for this event: **1. Enters PPM 5.1.2 and maintains power with level controlled less than LL.**		
Time	**Position**	**Applicants Actions or Behavior**
	RO	Announce EOP entry into PPM 5.1.1 on reactor level or the ATWS. Takes immediate scram actions: MS to SHUTDOWN Monitor Power, Pressure, and Level Verify all CRs have not fully inserted. Depress the manual scram pushbuttons Initiate ARI. Insert SRMs and IRMs.
	SRO	Enters PPM 5.1.1 and directs/verifies that the Mode Switch has been placed in SHUTDOWN and enters the Level, Pressure and Power leg concurrently and **exits PPM 5.1.1 via the Power leg to PPM 5.1.2 RPV Control ATWS.** Directs BOP to: Verify all appropriate isolations and initiations have occurred. Verify pressure is being maintained by the main turbine/bypass valves and if not, maintain pressure 800# to 1000# with SRVs. Directs RO to: Ensure both RRC Pumps are off. Initiate both SLC pumps before WW temp reaches 110°F.

	RO	Takes actions as directed: Stop both RRC Pumps if not already off. Initiate both SLC pumps before WW temp reaches 110°F. Announce that the SLC Squib valves did not fire and SLC is NOT injecting into the core.
	SRO	Direct the BOP operator to bypass the MSIV isolation interlocks per PPM 5.5.6. Call OPS 3 on the radio and align firewater to the air compressors.
Note: Agree as Ops 3 to align firewater to the air compressors. 2 minutes after being called as OPS 3 activate triggers 23 and 24 to align FW to the air compressors.		
	SRO	Direct the RO to: Stop and prevent all injection into the RPV except by Boron injection systems, RCIC, and CRD. Lower level to a band less than –65 inches but greater than –183 inches. Record the upper limit as LL. Maintain level as directed from LL to –183 inches with outside the shroud injection systems listed in Table 5.
	BOP	Takes actions as directed: Using PPM 5.5.6, bypass the MSIV isolation interlocks.
	SRO	Directs BOP operator to Perform PPM 5.5.10 and appropriate steps of 5.5.11 for a hydraulic ATWS, Tabs B, F, and G.

	BOP	Takes actions as directed: Performs PPM 5.5.10 Override ARI Logic. Performs Tabs B, F, and G of PPM 5.5.11 to: Reset, Scram, Reset Drive control rods Vent the overpiston area
COMMENTS:		

Event No. 7		
Description: Both SLC Squib valves fail to fire and will not operate. *Note: This failure is discussed under Event #6.*		
Time	**Position**	**Applicants Actions or Behavior**
COMMENTS:		
Termination cue for this scenario: Level has been reduced by stopping and preventing injection too less than LL and power is controlled by the evolution.		
Critical Task for this event: Reactor power is being controlled at less than 5% with reactor level below LL. When this task is completed, the scenario can be terminated at the discretion of the Lead Examiner.		

Columbia Generating Station September 2004
SRO TURNOVER INFORMATION

Initial conditions: Plant is at approximately 20% with the main turbine generator synchronized and a startup in progress. Reactor feedwater control is in 3 element on feedpump speed control.

Turnover: RCC-P-1A is OOS for motor replacement. BPA is selling power to CA. and power should be increased as soon as possible following turnover. The reactivity brief has been given and the power increase is to begin immediately.

Columbia Generating Station September 2004

SPECIAL SETUP

1. Ensure RCC-P-1A is racked out and tagged out.

Facility: Columbia Scenario Set No: 1 Scenario No: 10
Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial conditions: The crew assumes the shift with the reactor at 90% power.

Turnover Information: HPCS-P-1 is OOS for motor bearing replacement. It is expected to be returned to service in two days. Tech. Spec. 3.5.1, condition B, was entered four hours ago. A reactivity brief for the power increase has been held and power is to be increased to 100% immediately following shift turnover.

Event No.	Timeline	Event Type*	Event Description
1.	T=0	N SRO RO	Increase power with flow.
2.	T=5	I SRO RO	APRM-A fails upscale Tech Spec TRG 1
3.	T=7	C SRO BOP	DEH-P-1A shaft break with a fail to auto start of DEH-P-1B. TRG 2
4.	T=10	C ALL	ASD Channel A2 alarm and fault TRG 3
5.	T=20	C ALL	ASD UPS trouble alarm TRG 4
6.	T=20	C ALL	Trip of E-PP-ASD1/4 and ASD CH A1 and B1 fault which results in a manual scram by the crew. TRG 5
7.	T=30	M ALL	OBE and RHR-B Suction Break with a trip of both RFW pumps. TRG 6
8.	T=31	C ALL	RCIC trips on initiation and cannot be re-started Automatic upon RCIC initiation.
9.			Termination cue: The scenario can be terminated when the ED has been performed and reactor level is being controlled in the band from +13 inches to +54 inches.

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

Event No. 1		
Description: increase reactor power with flow to 100% power.		
Time	**Position**	**Applicants Actions or Behavior**
T=0	SRO	Directs the RO to increase reactor power to 100% power with RRC flow at the rate of 10 mwe/minute.
	RO	Increases reactor power with RRC flow as directed.
	BOP	Monitors plant equipment.
COMMENTS:		

Event No. 2		
Description: APRM-C fails upscale. *This event is triggered with* ***TRIGGER 1*** *5 minutes following the start of the scenario.*		
Time	**Position**	**Applicants Actions or Behavior**
T=5	RO	Reports APRM-A upscale and a ½ scram on RPS-A. Refers to ARP and recommends; Consider bypassing APRM-A. Refer to TS 3.3.1.1. LCS 1.3.2.1, and 1.3.3.1 Verify no rods have scrammed. Recommend resetting the ½ scram Verify Scram Group Lights are illuminated. Verify Backup Scram Lights have extinguished.
	SRO	Acknowledges the report. Refers to Tech Specs and LCS and determines there are no regulatory requirements with this failure. Directs RO to bypass APRM-A. Directs RO to reset the ½ scram. Directs BOP to make announcement to stop all testing and maintenance with a potential for generating a trip in the unaffected channel. Calls PSRO/WC
	BOP	Makes announcement to stop all testing and maintenance with a potential for generating a trip in the unaffected channel.
	RO	Bypasses the APRM. Resets the ½ scram.
COMMENTS:		

Event No. 3		
Description: DEH-P-1A shaft breaks with a failure of DEH-P-1B to auto start. *This event is triggered with* ***TRIGGER 2*** ***approximately 7 minutes following the start of the scenario.***		
Time	**Position**	**Applicants Actions or Behavior**
	BOP	Announce the loss of pressure to DEH Verify the start of the backup pump, and when it does not start, manually start DEH-P-1B. Verify pressure returns to normal.
Note: When the operator places the control switch for DEH-P-1B in start, delete the override for the control switch for DEH-P-1A.		
	SRO	Acknowledges report. Directs BOP to take actions as directed in the ARP. Directs OPS 3 to check system for indications of failure. Notifies PSRO/WC.
Cue: Call back as OPS 3 with the information that the shaft on DEH-P-1A is sheared.		
	RO	Monitors reactor; Power Pressure Level
	BOP	Verifies system operation per PPM 2.5.1. Sends OPS 3 to verify lineup in ARP. Refers to ABN-DEH-LEAK.

COMMENTS:

Event No. 4		
Description: ASD Channel A2 alarm and fault. *This event is triggered with* ***TRIGGER 3 10 minutes following the start of the scenario.***		
Time	**Position**	**Applicants Actions or Behavior**
	RO	Reports ASD 1A/2 alarm and Fault alarms. Verifies trip of channel ASD1 A/2. Ensures RRC-P-1A has runback to 51 Hz. Reports power decrease due to runback. Checks ASD video Display Unit for source of alarm. Sends OPS4 to investigate @ ASD BLD
	SRO	Directs actions per ARPs.
Cue: Using the telephone, call x2242 and report as OPS4 that there is a GTO freeze alarm on Channel A2.		
	SRO	Directs actions per ARP for high delta flow. Directs RO to match RRC loop flows. Enters Tech. Spec. 3.4.1. Tech. Spec. 3.4.1 flow mismatch is applicable until flows are matched. Notifies PSRO/WC
	RO	Reduces RRC-P-1B speed to 51 Hz. Performs PPM OSP-RRC-D701, Jet Pump Operability and RRC loop Flow mismatch.
COMMENTS:		

Event No. 5

Description: ASD UPS trouble alarm.

This event is imitated with ***TRIGGER 4*** ***20 minutes following the start of the scenario and should be initiated when RRC loop flows are matched.***

Time	Position	Applicants Actions or Behavior
	RO	Reports ASD UPS Trouble Alarm and refers to ARP.
	SRO	Directs actions per ARP for ASD UPS Trouble. Refers to ABN-ASD-INV
	RO	Sends OPS4 to investigate. Notifies PSRO/WC.

Cue: Thirty seconds after Trigger 4 is activated, call x2242 and report as OPS4 that there is arching and sparking coming from E-PP-ASD 1 / 4.

COMMENTS:

Event No. 6		
Description: Trip of E-PP-ASD1/4 and ASD CH A1 and B1 fault. *This event is activated by **TRIGGER** 5 and is activated 45 seconds after the preceding report from OPS 4.*		
Time	**Position**	**Applicants Actions or Behavior**
Cue: **45 seconds after the report from OPS4 activate Trigger 3, trip of E-PP-ASD1/4 and ASD CH A1 and B1 fault.**		
	RO	Reports both ASD Channels A1 and B1 are in alarm. Reports that both RRC pumps have tripped. Reports reactor scram.
	SRO	Directs RO to perform PPM 3.3.1Reactor Scram.
	RO	Takes immediate scram actions: MS to SHUTDOWN Monitor Power, Pressure, and Level Verify all CRs have not fully inserted. Insert SRMs and IRMs. Reports EOP entry condition on RPV Level into PPM 5.1.1 and loss of feedwater due to reactor high level.
	SRO	Enters PPM 5.1.1 and directs: RO to restore and maintain reactor level to the band of +13 inches to +54 inches and continue in PPM 5.3.1 with RCIC or reset 1 feedpump and restart. BOP to verify all isolations and initiations and to monitor pressure on the turbine BPVs less than 1060 psig

	RO	Reports the trip of RCIC. Resets feedpump and returns level to the band directed and performs actions of PPM 3.3.1.
	BOP	Reports initiations and isolations sat and monitors pressure.
COMMENTS:		

Event No. 7 and 8.		
Description: OBE and RHR-B Suction Break *This event is initiated by* ***TRIGGER 6*** *approximately 30 minutes following the start of the scenario.* .		
Time	**Position**	**Applicants Actions or Behavior**
Cue: As OPS1, call the control room on the radio and report that you felt severe shaking/ movement in the turbine building.		
	BOP	Reports OBE annunciator and goes to the back to Bd. L. Reports indications from Bd. L.
	SRO	Directs actions for earthquake. Directs plant tours to determine damage.
	RO	Reports Suppression Pool level lowering. Reports the trip of both feed pumps. Reports RHR B Room level Hi EOP entry.
	SRO	Enters PPM 5.2.1 on low SP level and directs actions per ABN-FLOODING. Enters PPM 5.3.1 on RHR B room level Hi. Directs OPS2 to investigate water level in RHR B room. Determines that RHR B is not operational due to flooding. May direct the RO to close RHR-V-4B in an attempt to isolate the leak. Directs pulling of RHR-P-2B control power fuses.
	RO	If directed, closes RHR-V-4B. Reports continued lowering trend on Suppression Pool level.
	SRO	Determines that Suppression Pool level will not be able to be maintained above 19’2”. Determines Emergency Depressurization is required. Enters PPM 5.1.3 and directs 7 ADS SRVs open. Re-enters PPM 5.5.1 concurrently with 5.1.3.
Cue: 2 minutes after being called to reset RCIC, report that RCIC will not reset.		

	RO	Opens 7 ADS SRVs to depressurize the reactor.
	SRO	Directs injection with systems to return RPV level to +13" to +54".
	RO	Returns RPV level to band as directed.

Comments:

This scenario will be terminated when the reactor has been emergency depressurized and RPV level is stable/increasing.

SRO TURNOVER INFORMATION

Initial conditions: The crew assumes the shift with the reactor at 90% power.

Turnover Information: HPCS-P-1 is OOS for motor bearing replacement. It is expected to be returned to service in two days. Tech. Spec. 3.5.1, condition B, was entered four hours ago. A reactivity brief for the power increase has been held and power is to be increased to 100% immediately following shift turnover.

Columbia Generating Station October, 2004

SETUP INFORMATION

1. Ensure HPCS-P-1 is racked out and tagged out.