3

North Atlantic

JOB PERFORMANCE MEASURE ADMJPM07 Rev. 01

EVALUATE PLANT CONDITIONS FOR CBA DESIGN MODIFICATION

Student Name: _____ Badge #: _____

Evaluator Name: _____ Badge #: _____

Student Signature: _____ Date: _____
(optional)

Evaluator Signature: _____ Date: _____

Training Coordinator Signature: _____ Date: _____

SAT UNSAT

This JPM was administered for qualification: NO

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PREPARED BY: _____ DATE: 02/23/00
INSTRUCTOR

REVIEWED BY: _____ DATE: _____
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: _____ DATE: 2/23/00
TRAINING SUPERVISOR

JOB PERFORMANCE WORKSHEET

1.0 Task Number and Description:

Position: SM
1190403903 Interpret and ensure compliance with administrative procedures during normal plant operations.

2.0 Conditions:

A. The plant is preparing to begin work on the safety related CBA design change. A pre-job briefing is to be conducted today for entry into the Technical Specification ACTION for CONTROL ROOM SUBSYSTEMS – AIR CONDITIONING.

3.0 Standards:

Determine that the conditions required by Standing Operating Order 99-015 / 00-003 are NOT satisfied for entry into the TS ACTION for CBA.

4.0 Student Materials:

Copy of the Tear-Off Sheet
Technical Specifications
Technical Clarifications
Standing Operating Order 99-015 / 00-003
OS1023.51, CONTROL ROOM VENTILATION AND AIR CONDITIONING SYSTEM OPERATION
MPCS SDS terminal, if possible, for VAS procedures

5.0 Limitations on performance:

Perform all steps. Verbalize all actions to the evaluator.

6.0 References:

Procedures

Technical Specifications
Technical Clarifications
Standing Operating Order 99-015 / 00-003
OS1023.51, CONTROL ROOM VENTILATION AND AIR CONDITIONING SYSTEM OPERATION

Sys	KA	Description	Value SRO
	2.1.12	Ability to apply technical specifications for a system.	4.0

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

7.0 Setting:

Plant / Classroom / Simulator

8.0 Safety Considerations:

IF performed in the plant, ensure both student and evaluator have proper PPE for entry into the plant.

9.0 Approximate Completion Time:

20 minutes

10.0 Directions to the Student:

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are the Shift Manager.

B. The following information is provided to you:

The plant is preparing to begin work on the safety related CBA design change. A pre-job briefing is to be conducted today for entry into the Technical Specification ACTION for CONTROL ROOM SUBSYSTEMS – AIR CONDITIONING.

C. **(NA for NRC Exam)**
The performance must meet the following standard:

Determine that the conditions required by Standing Operating Order 99-015 / 00-003 are NOT satisfied for entry into the TS ACTION for CBA.

D. **(NA for NRC Exam)**
Perform the task utilizing the applicable program manuals.

E. **(NA for NRC Exam)**
To perform the task successfully, you must perform/simulate all critical steps correctly and verbalize all your actions to the evaluator. Practicing STAR techniques and using the station communication standard will safeguard successful completion of the task.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

F. **(NA for NRC Exam)**
During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternative method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on the facility's procedural guidance and the indications available.

G. **(NA for NRC Exam)**
(Statement optional for multiple JPMs)
Failure to perform or simulate a critical element within the prescribed standard will result in a failure of the task.

H. **(NA for NRC Exam)**
I will inform you when the JPM is complete

I. **(NA for NRC Exam)**
We will begin after the Initiating Cue is read.

J. The evaluator will act as the Assistant Operations Manager (AOM) and provide cues and communications for this JPM. Do you have any questions?

11.0 Initiating Cue:

AOM to SM, **"Using the applicable Standing Operating Order, verify that the CBA related operating requirements are satisfied for entry into the Technical Specifications ACTION for CONTROL ROOM SUBSYSTEMS – AIR CONDITIONING. The ACTION is to be entered for Train ALPHA CBA."**

PERFORMANCE CHECKLIST

D=Discuss :Perform ;=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	UNSAT	INITIALS/DATE
1. P	Start time_____	Initiating cue read.			_____

NOTE: It is desirable, but not required, that this JPM be administered in a location that has the reference material and a MPCS SDS terminal available. If the location that the JPM is being administered does not have any of the above, provide suitable information to the candidate when asked.

NOTE: The order of steps that the candidate takes to determine whether the required conditions are satisfied is not critical. The scripted **CUES** should be provided, as appropriate, based on the tack taken.

*2. P	REFER to Standing Operating Order 99-015 / 00-003:	*	REFERS to Standing Operating Order 99-015 / 00-003:		_____

CUE: IF the candidate checks the status of the non-safety related chill water subsystem with a watchstander: Watchstander to SM: **"The non-safety related chill water subsystem is operating normally".**

NOTE: **There is no specific set of criteria that the operator is required to verify to determine that the non-safety related chill water subsystem is functional. The candidates are NOT expected to verify all of the parameters listed below.**

CUE: If the candidate checks parameters on the MPCS, provide the following information, as applicable:

CBA-FN-14B is running
There are no trouble alarms active for the non-safety related chill water subsystem
Chilled Water Pumps P-432 <u>and</u> P-433 are running
A4813 → P-432/433 discharge pressure ~ 84 psig
A4816 → Chiller outlet (E-226/227) temperature ~51°F
A4817 → E-226/227 outlet pressure ~ 43.5 psig
A4818 → E-229A/B inlet pressure ~ 29 psig
A4819 → E-229A/B inlet temperature ~ 51°F
A4821 → E-229A/B outlet temperature ~ 66°F
A4810 → E-229A/B outlet pressure ~ 29 psig
A4814 → E-229A/B outlet / Bypass mix temperature ~ 52°F
A4811 → P-432/433 suction pressure ~ 30 psig

D=Discuss Perform S=Simulate		ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	 UNSAT	INITIALS/DATE
		VERIFY that the non-safety related (CBA) chill water subsystem is functional.	* VERIFIES that the non-safety related (CBA) chill water subsystem is functional.	____	____	

CUE: When the candidate verifies the status of the TRN B safety related CBA: Watch~~stander to the SM,~~ **"TRN B safety related CBA is in STANDBY. There are no alarm conditions present. The TRN B CBA surveillance RTS 1-CBA-OT005 was performed satisfactorily one week ago."**

CUE: When the candidate verifies that the TRN B diesel generator is OPERABLE: Watchstander to SM, **"VAS alarms D6627, DG B WATER JACKET TEMPERATURE LOW and D6628 DG B NOT OPERATIONAL have just gone into alarm. The roving NSO reports DG B jacket water temperature is 89°F."**

		Verify that TRN B CBA is OPERABLE and capable of being powered by an OPERABLE diesel generator. • TRN B CBA OPERABLE • TRN B EDG OPERABLE	* DETERMINES that the TRN B diesel generator is INOPERABLE (due to low jacket water temperature).	____	____	
*3.	P	Determine that the requirements of the SOO are NOT met due to the TRN B diesel being INOPERABLE.	* DETERMINES that the requirements of the SOO are NOT met due to the TRN B diesel being INOPERABLE.	____	____	
4.	P	Inform the AOM that the CBA system operating requirements are NOT satisfied.	INFORMS the AOM that the CBA system operating requirements are NOT satisfied.	____	____	_____

CUE: The JPM is complete.

		Stop time _____ Evaluator calculates the time to complete the task.	Start - Stop time is ≤ 20 minutes.	____	____	_____

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE SUMMARY

Provide comments on unsatisfactory performance of an element/step or for deviation from performance as stated. Record interruptions in performance such as retraining, shift change, and processing of procedure changes. Recommend remedial training, if necessary.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

TEAR-OFF SHEET FOR JPM ADMJPM07

Directions to the Student:

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are the Shift Manager.

B. The following information is provided to you:

The plant is preparing to begin work on the safety related CBA design change. A pre-job briefing is to be conducted today for entry into the Technical Specification ACTION for CONTROL ROOM SUBSYSTEMS – AIR CONDITIONING.

C. The evaluator will act as the AOM and provide cues and communications for this JPM. Do you have any questions?

Initiating Cue:

AOM to SM, **"Using the applicable Standing Operating Order, verify that the CBA related operating requirements are satisfied for entry into the Technical Specifications ACTION for CONTROL ROOM SUBSYSTEMS – AIR CONDITIONING. The ACTION is to be entered for Train ALPHA CBA."**

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

North Atlantic

JOB PERFORMANCE MEASURE L0033I Rev. 01

ECP CALCULATION

Student Name: _____ Badge #: _____

Evaluator Name: _____ Badge #: _____

Student Signature: _____ Date: _____
(optional)

Evaluator Signature: _____ Date: _____

Training Specialist Signature: _____ Date: _____
(optional)

SAT UNSAT

This JPM was administered for qualification: NO

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PREPARED BY: _____ DATE: 02/22/00
INSTRUCTOR

REVIEWED BY: _____ DATE: _____
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: _____ DATE: 2/23/00
TRAINING SUPERVISOR

JOB PERFORMANCE WORKSHEET

1.0 Task Number and Description:

Position: RO

0010100201 Perform Estimated Critical Position (ECP) Calculations

2.0 Conditions:

A. The plant is preparing for a startup following a 2 week outage to repair a 25 kV bus fault.
B. Plant condition/history is as follows:
   1. Shift turnover has been completed and no surveillances are planned or in progress.
   2. MODE 3 with RCS at 557°F and 2235 psig.
   3. RE has given the US an ECP.
   4. The plant has been shutdown for two weeks as of 0000 today. It is now 0200.
   5. Criticality planned for today at 0800, 100 steps, Control Bank D.
   6. Core burnup is 8.0 GWD/MTU.
   7. RCS boron concentration is 1702 ppm. The sample time was 0030 this morning. No boration / dilution has been performed since 1930 yesterday.

3.0 Standards:

A. Independently compute critical boron concentration within ± 30 ppm using RE-1 in the Primary Tech Data Book.
B. Determine max rod insertion limit within ± 10 steps.
C. Determine max rod withdrawal limit consistent with RE-5 or monthly full out position.

4.0 Student Materials:

Copy of the Tear-Off Sheet
Calculator
Copy of RS-1735, Rev. 2, Chg. 2.
Seabrook Primary Tech Data Book
   RE-1, Critical Boron Concentration, Rev. 01-07-00.
   RE-5, Overlap Integral Rod Worth vs Rod Position, Rev. 01-07-02.
   RE-3, Differential Boron Worth, Rev. 01-07-00.
   RE-16, Control Bank D Operating Band, Rev. 01-07-00.
   RE-20, Monthly RCCA Full Out Position, Rev. 01-07-00.
   RE-21, Core Operating Limits Report, Rev. 01-07-00.

5.0 Limitations on performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

6.0 References:

Procedures:

OS1000.07, Approach to Criticality.
RS-1735, Reactivity Calculations.
Primary Technical Data Book.

Technical Specifications:

3.1.1.4, Minimum Temp for Criticality
3.1.3.6, Control Rod Insertion Limits

Sys	KA	Description	Value RO/SRO
192008	K1.07	Calculate ECP using procedures and given plant procedures.	3.5/3.6

7.0 Setting:

Simulator, Plant or Classroom

A. The Examiner must prepare a completed ECP in advance. Use simulator data curves in Primary Tech Data Book based on 8.0 GWD/MTU. The poison value is 0 (Xenon free startup).
B. The completed ECP worksheet RS1735A can be used to show satisfactory completion of the JPM.
C. The evaluator will act as the US and/or RE Engineer to complete communications with the candidate.

8.0 Safety Considerations:

None

9.0 Approximate Completion Time:

20 Minutes

10.0 Directions to the Student(s):

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)

JOB PERFORMANCE WORKSHEET

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are the Primary Operator. You are going to calculate an ECP.

B. The following information is provided to you:

1. The plant is preparing for a startup following a 2-week outage to repair a 25 kV bus fault.
2. Plant condition/history is as follows:
   a. Shift turnover has been completed and no surveillances are planned or in progress.
   b. MODE 3 with RCS at 557°F and 2235 psig.
   c. RE has given the US an ECP.
   d. The plant has been shutdown for two weeks as of 0000 today. It is now 0200.
   e. Criticality planned for today at 0800, 100 steps, Control Bank D.
   f. Core burnup is 8.0 GWD/MTU.
   g. RCS boron concentration is 1702 ppm. The sample time was 0030 this morning. No boration / dilution has been performed since 1930 yesterday.

C. **(NA for NRC Exam)**
The performance must meet the following standard:

1. Independently compute critical boron concentration.
2. Determine min and max rod withdrawal limits.

D. **(NA for NRC Exam)**
Perform the task using RS-1735, Reactivity Calculations.

E. **(NA for NRC Exam)**
To perform the task successfully, you must perform/simulate all critical steps correctly and verbalize all your actions to the evaluator. Practicing STAR techniques and using the station communication standard will safeguard successful completion of the task.

F. **(NA for NRC Exam)**
During the course of the walkthrough examination, there may be some tasks you will be asked to perform that may require you to implement an alternative method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on the facility's procedural guidance and the indications available.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

G. **(NA for NRC Exam)**
Failure to perform or simulate a critical element within the prescribed standard will result in a failure of the task.

H. **(NA for NRC Exam)**
I will inform you when the JPM is complete.

I. **(NA for NRC Exam)**
We will begin after the Initiating Cue is read.

J. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

11.0 Initiating Cue:

US to PSO, **"Primary Operator (or student's name), using RS1735, perform a manual Estimated Critical Position (ECP) and verify the results are within control rod insertion limits of TS 3.1.3.6."**

PERFORMANCE CHECKLIST

D=Discuss =Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	EVALUATION UNSAT	INITIALS/DATE
1. P	Start time_____	Initiating cue read.			_____

NOTE: If the setting is Simulator or Control Room, after the correct procedure is located, give the student a copy of the data sheet. Otherwise, give the student a copy of the procedure. After the student has located the appropriate RE curve, provide the copy included with the JPM (ensures the revision level used by the candidate matches the revision used to generate the answer key).

NOTE: All values should be entered as positive values.

2. P	Refer to section 4.1.2, of ECP Procedure (ECP Data & Analysis Form RS 1735A):	Performs the following:			_____
	a. ENTER the Estimated Condition for Criticality in Section 1. Include the Date, Time, Burnup and Desired Rod Position for the next criticality.	a. Enters Section 1 conditions:			
		• Criticality date *(Today)*	____	____	
		• Criticality time *(0800)*	____	____	
		• Core burnup *(8 GWD/MTU)*	____	____	
		• Bank D desired rod position *(CBD @ 100)*	____	____	
	b. RECORD in Section 2 the value of Hot Zero Power, No Xenon, Critical Boron Concentration (C_o), from Seabrook TDB Figure RE-1, for the Burnup listed in Section 1. The value of C_o may be alternately supplied by the Reactor Engineering Department to take advantage of critical boron data measured at the present burnup.	b. Records C_o (Critical Boron Concentration) from TDB Figure RE-1. *(1740 ppm)*	____	____	

ote to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

D=Discuss :Perform ɔ=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	 UNSAT	INITIALS/DATE

CUE: If asked for Net Poison Worth (ρ_I), then respond **"Net Poison Worth is 0 pcm."** (xenon free startup)

c. RECORD in Section 3 the value of the Net Poison Worth at the expected Time of Criticality (ρ_I) as determined by Reactor Engineering or computer prediction.	c. Records ρ_I (Net Poison Worth). *(zero)*	____	____
d. RECORD in Section 4 the value of inserted rod worth (ρ_R), from Seabrook TDB Figure RE-5, for the desired Rod Position listed in Section 1.	d. Records ρ_R (Inserted Rod Worth) from TDB Figure RE-5. *(450 pcm)*	____	____
e. RECORD in Section 5 the Differential Boron Worth (DBW) at HZP, from Seabrook TDB Figure RE-3, for the Burnup listed in Section 1.	e. Records DBW (Differential Boron Worth) from TDB Figure RE-3 for the Burnup listed in Section 1. *(6.76 pcm/ppm)*	____	____
f. COMPLETE the calculation in Section 6 to determine the estimated Critical Boron Concentration (CB) as follows: $C_B = C_O - [(\rho_I + \rho_R)/DBW]$	*f. Calculates C_B (Est. Critical Boron Conc.) within ± 30 ppm of RE ECP. *(1673 ppm)*	____	____

ɹte to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

D=Discuss =Perform =Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	UNSAT	INITIALS/DATE
	h. COMPLETE Section 7 prior to the approach to criticality. RECORD the present boron concentration (C_P) and CALCULATE the present excess in boron concentration to criticality (ΔC) as follows: $\Delta C = C_P - C_B$	g. Completes section 7: • Records present boron concentration. *(1702 ppm)*	____	____	
		• Calculates excess boron concentration. *(29 ppm)*	____	____	

CUE: If asked for present Boron Concentration, then respond with " **1702 ,"** the value determined in the Answer Key, Form A, step 7 (C_P). **"The sample time was 0030 this morning. No boration / dilution has been performed since 1930 yesterday."**

NOTE: The zero power RIL shall be used as the Min. Rod position if the calculated minimum rod position is less than the zero power Rod Insertion Limit.

	h. COMPLETE Section 8 to determine the ± 500 pcm ECP Limits. ADD ± 500 pcm to the value of Inserted Rod Worth recorded in Section 4. From the Minimum and Maximum inserted rod worth (ρ_R Min. and (ρ_R Max.) determine the ADMIN. WITHDRAWAL LIMIT and ADMIN. INSERTION LIMIT respectively using TDB Figure RE-5.	h. Calculates rod limits: • Inserts values for P_R from Section 4 and *(450 pcm)*	____	____	
		• Calculates $\rho_{R.\,Min.}$ *(zero)*	____	____	
		• Calculates $\rho_{R.\,Max.}$ *(950 pcm)*	____	____	

CUE: If student asks about RE-16 limits, **"There are no rod withdrawal limits this cycle."**

.te to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE CHECKLIST

D=Discuss =Perform =Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT UNSAT	INITIALS/DATE

NOTE: Use the March 2000 full out position on RE-20:

- That required by RE-20, Monthly RCCA Full Out Position for the current month.

OR

- A value ≥ 225 steps based on RE-5.

		* • Determines Rod Withdrawal Limit (bank/position) from TDB Figure RE-5 – *(221 – 231 steps)*	____ ____	

NOTE: RIL @ HZP is the Tech Spec RIL. TS 3.1.3.6, Control Rod Insertion Limits references the COLR.

		* • Determines Rod Insertion Limit from TDB Figure RE-5. *(20 – 40 steps CBD)*	____ ____	

CUE: **"The JPM is complete."**

11.	Stop time _____ Evaluator calculates the time to complete the task.	Start - Stop time is ≤ 20 minutes.		_____

ote to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE SUMMARY

Provide comments on unsatisfactory performance of an element/step or for deviation from performance as stated. Record interruptions in performance such as retraining, shift change, and processing of procedure changes. Recommend remedial training, if necessary.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

TEAR-OFF SHEET FOR JPM L0033I

Directions to the Student:

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are the Primary Operator. You are going to CALCULATE an ECP.

B. The following information is provided to you:

1. The plant is preparing for a startup following a 2 week outage to repair a 25 kV bus fault.
2. Plant condition/history is as follows:
   a. Shift turnover has been completed and no surveillances planned/in progress.
   b. MODE 3 with RCS at 557 °F and 2235 psig.
   c. RE has given the US an ECP.
   d. The plant has been shutdown for two weeks as of 0000 today. It is now 0200.
   e. Criticality planned for today at 0800, 100 steps, Control Bank D.
   f. Core burnup is 8.0 GWD/MTU.
   g. RCS boron concentration is 1702 ppm. The sample time was 0030 this morning. No boration / dilution has been performed since 1930 yesterday.

C. The evaluator will act as the US and provide the cues and communications for this JPM. Do you have any questions?

Initiating Cue:

US to PSO, **"Primary Operator (or student's name), using RS1735, perform a manual Estimated Critical Position (ECP) and verify the results are within control rod insertion limits of TS 3.1.3.6."**

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

Form A: Estimated Critical Position Data & Analysis Form

(Sheet 1 of 2)

Calculated By: _____ Date: _____ Time: _____

Approved By: _____ Date: _____ Time: _____

NOTE: Enter all input data as positive values.

1) Estimated Condition for Criticality

Date: _____ Time: _____ Burnup: _____ GWD/MTU

Desired Rod Position: _____ @ _____
Bank Steps

2) Critical Boron Concentration @ Current Burnup (HZP, ARO, No Xenon)

$C_O =$ _____ ppm from TDB Figure RE-1

3) Net Poison Worth @ Expected Time of Criticality

$\rho_I =$ _____ pcm from computer prediction or Reactor Engineering

4) Inserted Rod Worth @ Criticality

$\rho_R =$ _____ pcm from TDB Figure RE-5

5) Differential Boron Worth @ Current Burnup (HZP)

$DBW =$ _____ pcm / ppm from TDB Figure RE-3

6) Estimated Critical Boron Concentration

$$C_B = C_O - \left[\frac{\rho_I + \rho_R}{DBW}\right]$$

$$C_B = _____\ ppm - \left[\frac{_____\ pcm + _____\ pcm}{_____\ pcm / ppm}\right]$$

$$C_B = _____\ ppm$$

Form A: Estimated Critical Position Data & Analysis Form

(Sheet 2 of 2)

7) Present excess in Boron Concentration to Criticality, ΔC

Present RCS Boron Concentration, C_P = _____ ppm
(C_P)

Sample Time & Date _____ Hrs. _____

ΔC = _____ ppm − _____ ppm = _____ ppm
(C_P) (C_B) (ΔC)

Borate if ΔC is Negative, Dilute if ΔC is Positive.

---

8) Limits on Control Rod Position @ Criticality

ρ_R Min. = _____ $pcm - 500pcm$ = _____ pcm
(ρ_R) (ρ_R Min.)

ρ_R Max. = _____ $pcm + 500pcm$ = _____ pcm
(ρ_R) (ρ_R Max.)

ADMINISTRATIVE WITHDRAWAL LIMIT = _____ @ _____
Bank Steps

From TDB Figure RE-5 @ (ρ_R Min.), or RE-16 @ HZP

ADMINISTRATIVE INSERTION LIMIT = _____ @ _____
Bank Steps

From TDB Figure RE-5 @ (ρ_R Max.), or RIL @ HZP

---

9) Reference Data To Be Taken After Criticality @ 10^{-8} Amps IR

Reference Data Time & Date _____ Hrs. _____

Rod Position CBD @ _____ & CBC @ _____
Steps Steps

Net Poison Worth, ρ_I = _____ pcm from MPCS C0036

T_{AVG} = _____ $^{\circ}F$ from MCB

IR Channel N35 = _____ Amps IR Channel N36 = _____ Amps

Measured Critical Boron Concentration, C_M = _____ ppm
(C_M)

NOTE: Return this completed form to Reactor Engineering

ADMIN QUESTION 1

Answer with the aid of reference materials.

For each of the following activities determine whether SRO oversight is **REQUIRED**:

1. Lifting the reactor vessel head from the reactor with fuel in the reactor.
2. Withdrawing the reactor vessel upper internals assembly to begin core off-load.
3. Latching an RCCA extension shaft after core re-load.
4. Transferring a spent fuel assembly from one spent fuel pool storage location to another.
5. Moving an RCCA from one fuel assembly in the spent fuel pool to another fuel assembly in the spent fuel pool.

QUESTION: 1	TIME:

Answer with the aid of reference materials.

For each of the following activities determine whether SRO oversight is **REQUIRED**:

1. Lifting the reactor vessel head from the reactor with fuel in the reactor.
2. Withdrawing the reactor vessel upper internals assembly to begin core off-load.
3. Latching an RCCA extension shaft after core re-load.
4. Transferring a spent fuel assembly from one spent fuel pool storage location to another.
5. Moving an RCCA from one fuel assembly in the spent fuel pool to another fuel assembly in the spent fuel pool.

ANSWER:

Candidate must answer 4 out of 5 correctly

1. No (Technical Clarification TS033 R1 states that lifting the reactor vessel head is not considered a core alteration. The TS 6.2.2.d requirement for an SRO to be present for core alterations does not apply.)
2. Yes (Technical Clarification TS033 R1 states that lifting the reactor vessel upper internals assembly is a core alteration. The TS 6.2.2.d requirement for an SRO to be present for core alterations does apply.)
3. Yes (Technical Clarification TS033 R1 states that since the process of latching the CRDS involves lifting the RCCA out of the fuel assembly, it is considered to be a core alteration.)
4. Yes (OS1015.07, Spent Fuel Bridge Assembly Operation, requires an SRO to be present for fuel handling operations.)
5. Yes (OS1015.12, RCCA Change Tool Operation, requires an SRO to be present to monitor RCCA operations.)

SYS:	KA:	DESCRIPTION:	VALUE:
NA	2.2.29	Knowledge of SRO fuel handling responsibilities (Topic A.2)	SRO 3.8

REFERENCE:

Included with each answer.
New

RESPONSE COMMENTS: **SAT (=70%) UNSAT**

ADMIN QUESTION 2

Answer without the aid of reference material.

You are the SRO in charge of fuel handling during core re-load. The initial 18 fuel assemblies, including both source bearing assemblies have been loaded into the core. The Source Range Operational Test procedures have been completed. The initial base count for the Source Range channels has been established.

What condition must you verify with the reactor engineer in the control room, prior to inserting each subsequent fuel assembly into the core?

QUESTION:2 **TIME:**

Answer without the aid of reference material.

You are the SRO in charge of fuel handling during core re-load. The initial 18 fuel assemblies, including both source bearing assemblies have been loaded into the core. The Source Range Operational Test procedures have been completed. The initial base count for the Source Range channels has been established.

What condition must you verify with the reactor engineer in the control room, prior to inserting each subsequent fuel assembly into the core?

ANSWER:

The SRO must verify with the Reactor Engineer that a 1/M confirms that the reactor will not reach criticality upon loading another fuel assembly.

SYS:	KA:	DESCRIPTION:	VALUE:
NA	2.2.31	Knowledge of procedures and limitations involved in initial core loading. (Topic A-2)	RO 2.9

REFERENCE:

RS0721, steps 4.1.5.10 and 4.2.2.4
New

RESPONSE COMMENTS: **SAT (=70%) UNSAT**

North Atlantic

JOB PERFORMANCE MEASURE ADMJPM06 Rev. 01

LIQUID EFFLUENT WASTE SAMPLE REQUEST

Student Name: _____ Badge #: _____

Evaluator Name: _____ Badge #: _____

Student Signature: _____ Date: _____
(optional)

Evaluator Signature: _____ Date: _____

Training Coordinator Signature: _____ Date: _____
(optional)

SAT UNSAT

This JPM was administered for qualification: NO

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PREPARED BY: _____ DATE: 02/22/00
INSTRUCTOR

REVIEWED BY: _____ DATE: _____
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: _____ DATE: 2/23/00
TRAINING SUPERVISOR

JOB PERFORMANCE WORKSHEET

1.0 Task Number and Description:

Position: US

0690301502 Authorize release of liquid waste.

2.0 Conditions:

A. The plant is in MODE 1 with two Service Water and two Circulating Water pumps running with no expected change in configuration.
B. WL-TK-63A `A' WTT has been filled to 18,000 gals.
C. The `A' WTT has to be sampled to prepare a LEWSR for a release to the Transition Structure.
D. The PSO has completed Section I of CP 4.1A, Liquid Effluent Waste Sample Request.

3.0 Standards:

Perform the verification of the completed form.
Time for completion 15 minutes.

4.0 Student Materials:

Copy of the Tear-Off Sheet
Copy of ON1018.07, WASTE TEST TANK RECIRCULATION
Copy of CP 4.1, Effluent Surveillance Program

5.0 Limitations on performance:

Perform all steps. Verbalize all actions to the evaluator.

6.0 References:

Procedures

SSCP, CP 4.1, Effluent Surveillance Program.
ON1018.07, WASTE TEST TANK RECIRCULATION

Sys-Mode	KA	Description	Value RO/SRO
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9 / 3.3

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

7.0 Setting:

In-plant MCR / Simulator / Classroom

8.0 Safety Considerations:

PPE, as appropriate for setting

9.0 Approximate Completion Time:

15 minutes

10.0 Directions to the Student:

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are going to perform the verification of a completed Liquid Effluent Waste Sample Request.

B. The following information is provided to you:

1. The plant is in MODE 1 with two Service Water and two Circulating Water pumps running with no expected change in configuration.
2. WL-TK-63A `A' WTT has been filled to 18,000 gals.
3. The `A' WTT has to be sampled to prepare a LEWSR for a release to the Transition Structure.
4. The PSO has completed Section I of CP 4.1A, Liquid Effluent Waste Sample Request.

C. **(NA for NRC Exam)**
The performance must meet the following standard:

1. Perform the verification of the completed form.
2. Time for completion 15 minutes.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

D. **(NA for NRC Exam)**
Perform the task utilizing OS1018.07, WASTE TEST TANK RECIRCULATION and CP 4.1 Effluent Surveillance Program.

E. **(NA for NRC Exam)**
To perform the task successfully, you must perform/simulate all critical steps correctly and verbalize all your actions to the evaluator. Practicing STAR techniques and using the station communication standard will safeguard successful completion of the task.

F. **(NA for NRC Exam)**
During the course of the walkthrough examination, there may be some tasks you will be asked to perform that may require you to implement an alternative method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on the facility's procedural guidance and the indications available.

G. **(NA for NRC Exam)**
Failure to perform or simulate a critical element within the prescribed standard will result in a failure of the task.

H. **(NA for NRC Exam)**
I will inform you when the JPM is complete

I. **(NA for NRC Exam)**
We will begin after the Initiating Cue is read.

J. The evaluator will act as the PSO and provides cues and communications for this JPM. Do you have any questions?

11.0 Initiating Cue:

PSO to US, **"Unit Supervisor (or student's name) I have completed Section One of Form CP 4.1A. Please perform the verification.**

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE CHECKLIST

D=Discuss Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	 UNSAT	INITIALS/DATE
1. P	Start time _____	Initiating cue read. LEWSR given to the candidate.			_____

NOTE: IF the setting is the Control Room or the Simulator, give the candidate a working copy of the procedures after he has located the required procedures, IF the setting is else where, give the candidate a working copy of the procedures after he has identified the procedures required.

NOTE: It is assumed that the candidate will use CP 4.1 to process through the verification and check ON1018.07 to verify the tank volume and recirculation flow rate. The candidate may choose to verify the tank volume and recirculation rate prior to referring to CP 4.1.

*2. P	Section I of the LEWSR is completed by Operations and provides the following information:				
	(1) Name of tank, sump, or SG Demineralizer Vessel to be sampled.	1. VERIFIES WTT A is entered.	____	____	_____

CUE: If the candidate wants to verify the amount of liquid in the WTT using the MPCS, tell him that the MPCS analog point A1283 indicates 25.71 feet and C6053 indicates 18,000 gallons.

	(2) total tank or sump volume to be discharged or transferred.	2. Notes 18,000 gallons is consistent with initial conditions and indications, if checked.	____	____	_____

NOTE: The recirculation rate for WTT A is actually 150 gpm. The Waste Holdup Sump (WHUS) is 400 gpm. The student must correct this mistake to ensure adequate tank recirculation prior to sampling.

CUE: IF the PSO is challenged on the recirculation rate, respond you must have been thinking about the WHUS recirc rate.

	(3) recirculation starting date, time, and rate.	*3 VERIFIES start time and date entered. CORRECTS the recirc to be 150 gpm and minimum recirc time to 240 minutes.	____	____	_____

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE SUMMARY

Provide comments on unsatisfactory performance of an element/step or for deviation from performance as stated. Record interruptions in performance such as retraining, shift change, and processing of procedure changes. Recommend remedial training, if necessary.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

TEAR-OFF SHEET FOR JPM ADMJPM06

WTT RECIRCULATION

Directions to the Student:

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are going to perform the verification of a completed Liquid Effluent Waste Sample Request.

B. The following information is provided to you:

1. The plant is in MODE 1 with two Service Water and two Circulating Water pumps running with no expected change in configuration.
2. WL-TK-63A `A' WTT has been filled to 18,000 gals.
3. The `A' WTT has to be sampled to prepare a LEWSR for a release to the Transition Structure.
4. The PSO has completed Section I of CP 4.1A, Liquid Effluent Waste Sample Request.

C. The evaluator will act as the PSO and provides cues and communications for this JPM. Do you have any questions?

11.0 Initiating Cue:

PSO to US, **"Unit Supervisor (or student's name) I have completed Section One of Form CP 4.1A. Please perform the verification.**

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

Liquid Effluent Waste Sample Request

Section I **Operational Data (Completed by Operations Department)**

Tank, Sump, or SG Demin. Vessel: WTT A

Disposition: (Discharge) Recycle

Tank or Sump Volume: 18,000 gallons

Recirculate Rate: 400 gpm

Minimum Recirc. Time = 2 x Tank Vol. / Recirc. Rate = 90 min.

Recirc. Start Date and Time: 03-10-00 / 0730

Sample Date and Time: 03-10-00 / 0900

NOTE

CW-V-40 position cannot change once this form is submitted to Chemistry.

Project CW and SW pump combination for discharge: CW 2 SW 2

Project Release Start Date and Time: 03-10-00 / 1700

Originator RWK Date 03-10-00 Time 0745

Verified By _____ Date _____ Time _____

Section II **Chemistry Data (Completed by Chemistry Department)**

_____ / _____ _____

Sample Date Sample Time Sample Collected by (Initials)

Sample Identification No. _____

LEW Permit Number: _____

Dilution Water Flow Rate: _____ gpm

Volume Discharged: _____ gallons

Composite Volume: _____ mls

Composite Updated by: _____ (Initials)

North Atlantic

JOB PERFORMANCE MEASURE ADMJPM03 Rev. 03

POST SCENARIO EAL DETERMINATION AND EVENT CLASSIFICATION

Student Name: _____ Badge #: _____

Evaluator Name: _____ Badge #: _____

Student Signature: _____ Date: _____
(optional)

Evaluator Signature: _____ Date: _____

Training Coordinator Signature: _____ Date: _____

SAT UNSAT

This JPM was administered for qualification: NO

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PREPARED BY: _____ DATE: 02/23/00
INSTRUCTOR

REVIEWED BY: _____ DATE: _____
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: _____ DATE: 2/23/00
TRAINING SUPERVISOR

JOB PERFORMANCE WORKSHEET

1.0 Task Number and Description:

Position: SRO
3450504203 Classify/reclassify an emergency condition.

2.0 Conditions:

This JPM is designed to be administered after the student has completed any simulator scenario. The intent is for the student to perform the JPM immediately after the scenario is ended while the simulator is in FREEZE. The evaluator will be required to determine the correct responses either prior to the scenario OR after the student has performed the JPM and has left the simulator room.

3.0 Standards:

Identify the applicable Emergency Action Level(s) and classify the event.

4.0 Student Materials:

Copy of the Tear-Off Sheet.

CSF status tree clipboard with the following:

- F-0.0, CSF STATUS TREE WORKSHEET, Rev. 15
- F-0.1, SUBCRITICALITY, Rev. 13
- F-0.2, CORE COOLING, Rev. 12
- F-0.3, HEAT SINK, Rev. 13
- F-0.4, INTEGRITY, Rev. 13
- F-0.5, CONTAINMENT, Rev. 13

ER-1.1, Classification of Emergencies, Rev. 28, chg. 1

5.0 Limitations on performance:

Perform all steps. Verbalize all actions to the evaluator.

6.0 References:

Procedures

- F-0.0, CSF STATUS TREE WORKSHEET
- F-0.1, SUBCRITICALITY
- F-0.2, CORE COOLING
- F-0.3, HEAT SINK
- F-0.4, INTEGRITY
- F-0.5, CONTAINMENT

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

ER-1.1, CLASSIFICATION OF EMERGENCIES, Rev. 28, chg. 01

Manuals

OPMM, OP 9.2, Control Room Usage of Status Trees.

Sys	KA	Description	Value SRO
	2.2.24	Knowledge of the emergency action level thresholds and classification.	4.1

7.0 Setting:

Simulator

After the completion of any simulator scenario.

8.0 Safety Considerations:

None

9.0 Approximate Completion Time:

20 minutes

10.0 Directions to the Student:

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)
Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are the WCS.

B. The following information is provided to you:

Using reference material available in the control room and based on present plant conditions, determine whether any Emergency Action Level is being exceeded and whether an Emergency Classification is warranted.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

C. **(NA for NRC Exam)**
The performance must meet the following standard:

1. Determine the status of the Critical Safety Function Status Trees then determine the Emergency Action Level and Event Classification.

D. **(NA for NRC Exam)**
Perform the task using the CSF clipboard and ER-1.1.

E. **(NA for NRC Exam)**
To perform the task successfully, you must perform/simulate all critical steps correctly and verbalize all your actions to the evaluator. Practicing STAR techniques and using the station communication standard will safeguard successful completion of the task.

F. **(NA for NRC Exam)**
During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternative method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on the facility's procedural guidance and the indications available.

G. **(NA for NRC Exam)**
Failure to perform or simulate a critical element within the prescribed standard will result in a failure of the task.

H. **(NA for NRC Exam)**
I will inform you when the JPM is complete

I. **(NA for NRC Exam)**
We will begin after the Initiating Cue is read.

J. The evaluator will act as the SM and provide the cues and communications for this JPM. Do you have any questions?

11.0 Initiating Cue:

Evaluator to student, **"SM to WCS (or student's name), based upon <u>present</u> plant conditions and using ER-1.1, Classification of Emergencies, determine whether an Emergency Classification is warranted. The critical safety functions have been verified and the MPCS is reading correctly. Evaluate EALS 12a, 12b, 12d, and 12e after you have completed your initial classification of events."**

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT UNSAT	INITIALS/DATE
NOTE: Because this JPM is performed without actions by an operating crew, keep the simulator in FREEZE.				
1. P	Start time _____	Initiating cue read.		_____
NOTE: RDMS can be used whether the simulator is in RUN or FREEZE.				
2. P	DETERMINE the status of the CSFSTs from the MPCS and circle the applicable status on ER-1.1A	DETERMINES CSFST status is:		_____
	a. Determine F-0.1 status	a. Determines F-0.1 status	____ ____	
	b. Determine F-0.2 status	b. Determines F-0.2 status	____ ____	
	c. Determine F-0.3 status	c. Determines F-0.3 status	____ ____	
	d. Determine F-0.4 status	d. Determines F-0.4 status	____ ____	
	e. Determine F-0.5 status	e. Determines F-0.5 status	____ ____	
3. P	Review and then circle the miscellaneous emergency conditions and combinations of miscellaneous conditions that correspond to actual station conditions:	Reviews and then circles the miscellaneous emergency conditions and combinations of miscellaneous conditions that correspond to actual station conditions:		_____
	6. Determine *electrical failure* status.	Determines *electrical failure* status.	____ ____	
	7. Determine *steam generator tube leakage or rupture* status	Determines *steam generator tube leakage or rupture* status	____ ____	
	8. Determine *fuel failure indication* status	Determines *fuel failure indication* status	____ ____	

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	 UNSAT	INITIALS/DATE
	9. Determine *loss of monitoring capability* status	Determines *loss of monitoring capability* status	____	____	
	10. Determine *loss of all communications capability* status	Determines *loss of all communications capability* status	____	____	
	11. Determine *shutdown Technical Specification surpassed* status	Determines *shutdown Technical Specification surpassed* status	____	____	
	12. Determine *high radiation alarm* status	Determines *high radiation alarm* status	____	____	
	13. Determine *fuel handling accident* status	Determines *fuel handling accident* status	____	____	
	14. Determine *abnormal reactor trip or safety injection* status	Determines *abnormal reactor trip or safety injection* status	____	____	
	15. Determine *loss of primary or secondary coolant inside or outside containment* status	Determines *loss of primary or secondary coolant inside or outside containment* status	____	____	
	16. Determine *fire* status	Determines *fire* status	____	____	
	17. Determine *control room evacuation* status	Determines *control room evacuation* status	____	____	
	18. Determine *natural or man-made hazards affecting plant operation* status	Determines *natural or man-made hazards affecting plant operation* status	____	____	

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate		ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION SAT	 UNSAT	INITIALS/DATE
		19. Determine *loss of shutdown cooling* status	Determine *loss of shutdown cooling* status	____	____	
4.	P	Circle any combinations of miscellaneous emergency conditions and critical safety functions that corresponds to actual station conditions.	Circles any combinations of miscellaneous emergency conditions and critical safety functions that corresponds to actual station conditions	____	____	_____
*5.	P	Identify the most severe emergency classification that corresponds to the events circled	* Identifies the most severe emergency classification that corresponds to the events circled	____	____	_____
6.		Stop time _____ Evaluator calculates the time to complete the task.	Start - Stop time is ≤ 20 minutes.	____	____	_____

CUE: "The JPM is complete."

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

PERFORMANCE SUMMARY

Provide comments on unsatisfactory performance of an element/step or for deviation from performance as stated. Record interruptions in performance such as retraining, shift change, and processing of procedure changes. Recommend remedial training, if necessary.

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).

TEAR-OFF SHEET FOR ADMJPM03

CSFST E-PLAN CLASSIFICATION

Directions to the Student:

Evaluator gives Tear-Off sheet to the student
Evaluator reads the following to the student (Optional for multiple JPMs)
Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are the WCS.

B. The following information is provided to you:

Using reference material available in the control room and based on present plant conditions, determine whether any Emergency Action Level is being exceeded and whether an Emergency Classification is warranted.

C. The evaluator will act as the SM and provide the cues and communications for this JPM. Do you have any questions?

Initiating Cue:

Evaluator to student, **"SM to WCS (or student's name), based upon present plant conditions and using ER-1.1, Classification of Emergencies, determine whether an Emergency Classification is warranted. The critical safety functions have been verified and the MPCS is reading correctly. Evaluate EALS 12a, 12b, 12d, and 12e after you have completed your initial classification of events."**

Note to Evaluator - Obtain Tear-Off Sheets from student following JPM completion (Ops only).