Draft Submittal

***(Pink** Paper)*

MCGUIRE JULY/AUGUST 2002

RETAKE **EXAM** NO. 50-369/2002-302

1. Administrative Questions/JPMs
2. Administrative Topics Outline ES-301-1

Facility: McGuire Date of Examination: ____, 2002

Examination Level (circle one): RO / SRO Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evalcation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification K/A **2.1.7** 3.7/4.4	**JPM:** Calculate Shutdown Margin in Modes 3,4 and 5
	Shift Staffing Requirements K/A 2.1.4 2.3/3.4	**JPM:** Determine if hours worked exceed guidelines
A.2	Equipment Control K/A 2.2.23 2.6/3.8	**JPM:** manually Complete Tech Spec Evaluatior. and Logbook Entry
A.3	Control of Radiation Releases K/A **2.3.6** 2.1/3.1	**JPM:** Review and authorize a Gaseous Waste Release
A.4	Emergency Protective Action Recommendation K/A 2.4.44 2.1/4.0	**JPM:** Determine Protective Action Recommendations affected counties and perform the initial notification.

Reviewed By_____

Approved By_____

TASK: **Perform a Manuel Shutdown Margin Calculation (Unit Shutdown)**

POSITION: **ISRO**

_____ _____

Operator's Name_____

Location: **Control Room** Method: **Perform**

Estimated JPM Completion Time: ____25__ Minutes

Actual JPM Completion Time: _____ Minutes

The JPM Operator's performance was evaluated against the standards of this JPM and is determined to be:

SATISFACTORY/UNSATISFACTORY (circle one)

Evaluator's Signature_____ Bate ___/___/_____

_____

KA: 2.1.7 3.7/4.4

References: OP/0/A/6100/006 Reactivity Balance Calculation
OP/1/A/6100/22 Unit 1 Data Book

Attachments:

INITIAL CONDITIONS

You are the Unit 1 Operator at the Controls (OATC). The reactivity computer (REACT) is out of service. Preparations are being made to commence a plant couldown.

Based on the information provided to you on the Data Sheet, perform a Shutdown Margin Calculation per OP/0/A/6100/006 Enclosure 4.5 (Shutdown Margin - Unit Shutdown, Modes 5, 4, or 3 Without Xenon Credit).

JPM OVERALL STANDARD: Shutdown Margin is calculated and correctly evaluated against Technical Specification 3.1.1 requirements (1.3%ΔK/K COLR limit).

NOTES: The evaluator should supply the candidate with a copy of the procedure OP/0/A/6100/006 Enclosure 4.5 (Shutdown Margin - Unit Shutdown, Modes 5, 4, or 3 Without Xenon Credit). Also required is access to the Data Book Curves. The evaluator should either allow the Data Book to be utilized by the candidate or supply the candidate with the associated curves.

KA 2.1.7 3.7/4.4

	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
	Kecord requested data:	Operator records info according to data given on data sheet:		
3.1.1	Date/Time _____/_____	Date/Time x/x/xx I **xxxx**		
3.1.2	Unit____ Cycle _____	Unit **1** Cycle **15**		
3.1.3	Burnup _____ EFPD	Burnup **430** EFPD		
3.1.4	NCS Boron Concentration _____ ppm	NCS Boron Concentration **710** ppm		
3.1.5	Present NCS Temperature _____°F	Present NCS Temperature **557** °F		
3.1.6	Desired NCS Temp for this SDM calculation _____°F	Desired NCS Temp for this SDM calculation **310** °F		
3.1.7	Number of Known Inoperable Control Rods _____ (RCCAs)	Operator records number of known Inoper Control Rods **0** (RCCAs)		
3.1.8	Inoperable RCCA core location(s) _____	Operator records the core location of the inoperable control rod **N/A**		
3.2	Performs Section 3.3 and N/A's Section 3.2	Operator records **N/A** in the Automated calculation using REACT section.		
*3.3.1	Required SDM boron concentration > 200 °F	Same		

* **DENOTES CRITICAL**

	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
	(from 1.3% tabular data of Data *Book* Table 6.5 at cycle burnup of Step 3.1.3 and at desired NC system temperature of Step 3.1.6)) _____ ppm	Range of 920 to 960 ppm **____926_____ ppm**		
3.3.2	Required SDM boron concentration ≤ 200 °F (from tabular data of Data Book Table 6.5 for 1.0% SDM at the cycle burnup of 3.1.3 and at 33 °F, N/A if Step 3.1.6 is > 200 °F) _____ ppm	Same **_____N/A____ ppm**		
3.3.3	IF this SDM determination is performed after refueling and before ZPPT is complete, record 100 ppm additional boron conc penalty. OTHERWISE RECORD ZERQ. _____ ppm	Same **_____0_____ ppm**		
3.3.4	Stuck Rod Boron Conc Allowance (from Data Book Table 1.15) + _____ ppm	**Due to Note in procedure, N/As this step.** **_____N/A_____ ppm**		
3.3.5	Calculate the Stuck Rod Penalty	**Due to Note in procedure, enters**		

* **DENOTES CRITICAL**

	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
	_____ ppm	**ZERO for** this **step.** **_____0_____ ppm**		
3.3.6	Record all Rods In Differential Boron worth at Burnup **of** Step 3.1.3 and NC Temperature of Step 3.1.5.	**-9.7 pcm/ppm**		
3.3.7	Calculate Shutdown Margin Adjustment (Step 3.1.8/Step 3.3.6)	**-100 / - 9.69 = 10.3 ppm**		
*3.3.8	Calculate the Adjusted Shutdown Boron Conc (Step 3.3.1 or 3.3.2 + Step 3.3.3 + Step 3.3.5) (_____ + _____ + _____) = _____ ppm	Range of Values **(926 + 0 + 0 - 10.3)** **= __915.7__ ppm** **(960 + 0 + 0 – 10.3) =** **__ 949.7__ ppm**		
*3.4.1	NC Boron Concentration (Step 3.1.4) is greater than or equal to Adjusted Shutdown Boron Conc (Step 3.3.6 or REACT output) **and** adequate shutdown margin exists at temperature of Step 3.1.6. _____Yes _____No	Same **Operator determines answer is "NO" and designates** in **blank.** **_____ YES ___X__ NO**		

* **DENOTES CRITICAL**

	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
*3.4.2	NC Boron Concentration (Step 3.1.4) is less than to Adjusted Shutdown Boron Conc (Step 3.3.6 or REACT output) and it is desired to decrease temperature to or maintain temperature at that of Step 3.1.6 above. NC Boron Conc MUST be adjusted equal to or greater than Adjusted Shutdown Boron concentration.	Same Operator correctly determines that NC Boron Conc must be adjusted to calculated value. **__X__ YES ____ NO**		
	Calculations Performed By: _____ Date: _____ Separate Verification By: _____ Date: _____	By: ___xxxxxxxx____ Date: ____ x/x/xx ____ **Cue: For the purposes of this JPM, no Separate Verification of the calculation will be performed.**		

* **DENOTES CRITICAL**

INITIAL CONDITIONS

You are the Unit 1 Operator at the Controls (OATC). The reactivity computer (REACT) is out of service. Preparations are being made to commence a plant cooldown.

Based on the information provided to you on the Data Sheet, perform a Shutdown Margin Calculation per OP/0/A/6100/006 Enclosure 4.5 (Shutdown Margin - Unit Shutdown, Modes 5, 4, or 3 Without Xenon Credit).

DATA SHEET

Unit	1
Current Cycle	15
Inoperable Control Rod(s)	None
Current Power Level	0%
Present NC system temperature	557 degrees
Desired NC system temperature	310 degrees
Cycle Burnup	430 EFPD
Present NCS Boron Concentration (sample)	710 ppm
Samarium Difference	-100 pcm

Reviewed By_____

Approved By_____

TASK: **Determine if hours worked exceeds guidelines**

POSITION: **ISRO**

Operator's Name_____

Location: **Control Room** Method: **Perform**

Estimated JPM completion Time: 15 Minutes

Actual JPM Completion Time: _____ Minutes

The JPM Operator's performance **was** evaluated against the standards of this JPM and is determined to be:

SATISFACTORY/UNSATISFACTORY (circle one)

Evaluator's Signature_____ Date __/__/__

References: NSD 200 Overtime Control
Tech Spec 6.2.2

KA 2.1.4 2.3/3.4

Attachments: NSD 200 Appendix A

INITIAL CONDITIONS

Determine for the following three operators if the hours worked exceeded Tech Specs and NSD 200 guidelines. State all requirements that are violated, if applicable.

Operator	Friday	Saturday	Sunday
A	1900 Reports to shift 1915 Turnover complete assumes duties 1000 Relief arrives late 1015 Turnover complete stands relieved	----------HOME---------- 1800 Reports to shift for schedule Just In Time Training (JITT) 1830 Turnover complete assumes duties	0615 Relief arrives 0630 Turnover complete stands relieved
B	1900 Reports to shift 1915 Turnover complete assumes duties 0800 Relief arrives, but goes home sick 1100 Alternate relief arrives 1115 Turnover complete stands relieved	----------HOME---------- 1900 Reports to shift 1915 Turnover complete assumes duties	0745 Relief arrives 0800 Turnover complete stands relieved
C	1900 Reports to shift 1915 Turnover complete assumes duties 1000 Relief arrives, but goes home sick 1100 Alternate relief arrives 1115 Turnover complete stands relieved	----------HOME---------- 2000 Reports to shift 2015 Turnover complete assumes duties	0745 Relief arrives 0800 Turnover complete stands relieved

JPM OVERALL STANDARD: Determines that Operators A and B are not within guidelines. Determines that Operator C is within guidelines.

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
1	Compare hours worked by Operator A to Tech Spec guidelines	Determines that Operator A has violated Tech Spec. Guidelines by not having 8 hours off between Friday and Saturday.		
2	Compare hours worked by Operator B to Tech Spec guidelines	Determines that Operator B violated Tech Spec guidelines by not having an 8 hour break between work on Friday and arriving for work on Saturday. Plus has exceed 28 in 48 hours worked rule.		
3	Compare hours worked by Operator C to Tech Spec guidelines	Determines that Operator C has not violated the guidelines.		

INITIAL CONDITIONS

Determine for the following three operators if the hours worked exceeded Tech Specs and NSD 200 guidelines. State all requirements that are violated, if applicable.

Operator	Friday	Saturday	Sunday
A	1900 Reports to shift 1915 Turnover complete assumes duties 1000 Relief arrives late 1015 Turnover complete stands relieved	----------HOME---------- 1800 Reports to shift for scheduled Just In Time Training (JITT) 1830 Turnover complete assumes duties	0615 Relief arrives 0630 Turnover complete stands relieved
B	1900 Reports to shift 1915 Turnover complete assumes duties 0800 Relief arrives, but goes home sick 1100 Alternate relief arrives 1115 Turnover complete stands relieved	----------HOME---------- 1900 Reports to shift 1925 Turnover complete assumes duties	0745 Relief arrives 0800 Turnover complete stands relieved
C	1900 Reports to shift 1915 Turnover complete assumes duties 1000 Relief arrives, but goes home sick 1100 Alternate relief arrives 1115 Turnover complete stands relieved	----------HOME---------- 2000 Reports to shift 2015 Turnover complete assumes duties	0745 Relief arrives 0800 Turnover complete stands relieved

Reviewed By _____

Approved By _____

TASK: **Manually Complete Technical Specification Evaluation and Logbook Entry**

POSITION: **ISRO**

Operator's Name_____

Location: **Control Room** Method: **Perform**

Estimated JPM Completion Time: 20 Minutes

Actual JPM Completion Time: _____ Minutes

The JPM Operator's performance was evaluated against the standards of this JPM and *is* determined tu be:

SATISFACTORY/UNSATISFACTORY (circle one)

Evaluator's Signature_____ Date / /

References:

KA: 2.2.23 2.6/3.8

JPM verified current with references by _____

Date / /

INITIAL CONDITIONS

You are the Control Room **SRO.** Both Units are at 100% power. The Technical Specification Action Item (TSAIL) computer program is out of service on Unit 1.

Cold beg Accumulator 1C was declared inoperable yesterday, at 12:00 noon, due to low Boron concentration. Feed and Bleed *of* the I C accumulator was begun at 16:00, and has been in progress since. Chemistry reported the most recent Boron sample results, taken two hours ago, as 2460 PPM.

The Operation Test Group is in the process of performing the quarterly valve stroke timing surveillance for the B Train NI system.

During the performance of the surveillance procedure, the Unit 1 Balance of Plant Operator reports to you that valve 1NI-431B is in the intermediate position, and will not close.

Evaluate plant status in accordance with Technical Specifications, based upon the data provided. Complete any necessary Technical Specification Logbook entries as required.

JPM OVERALL STANDARD: Required Technical Specification Logbook entry (TS 3.0.3) completed in accordance with OMP-5-3.

NOTES: Entry into TS 3.0.3 is determined by referencing Test Acceptance Criteria (TAC) sheet, Drawing number MCTC-1562—NI.V031-01. And Tech Spec 3.5.1. TSAIL entry is completed on Attachment 1 of Operations Management Procedure (OMP) 5-3, Tech Spec Action items Log.

KA 2.2.23

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
1	Determine proper reference to be used for evaluation.	Determines the need to reference Test Acceptance Criteria for NI system. (Drawing number MCTC-1562—NI.V031-01)		
*2	Determine Tech Spec impact of 1NI-431B failed OPEN.	Associated Cold Leg Accumulator 1B is inoperable.		
3	Reference Tech Spec for Cold Leg Accumulator	TS 3.5.1 referenced.		
*4	Determine action required for two inoperable Coid Leg Accumulators	Enter TS 3.0.3 Immediately, per TS 3.5.1, action D.l		
5	Complete Attachment 1 of QMP 5-3.	Attachment 1 completed. **CUE:** item number 8. **CUE:** Use present Date and Time for inoperability. **Note:** See answer key for example of completed Attachment 1. Critical items are denoted with an asterisk.		

* **DENOTES CRITICAL**

INITIAL CONDITIONS

You are the Control Room **SWO.** Both Units are at 100% power. The Technical Specification Action Item (TSAIL) computer program is cut of service on Unit 1.

Cold Leg Accumulator 1C was declared inoperable yesterday, at 12:00 noon, due to **low** Boron concentration. Feed and Bleed of the I C accumulator was begun at 16:00, and has been in progress since. Chemistry reported the most recent Boron sample results, taken two hours ago, as 2460 PPM.

The Operation Test Group is in the process of performing the quarterly valve stroke timing surveillance for the B Train NI system.

During the performance of the surveillance procedure, the Unit 1 Balance of Plant Operator reports to you that valve 1NI-431B is in the intermediate position, and will not close.

Evaluate plant status in accordance with Technical Specifications, based upon the data provided. Complete any necessary Technical Specification Logbook entries as required.

Reviewed By _____

Approved By _____

TASK: **Determine Protective Action Recommendations and perform the initial notifications.**

POSITION: **ISRO**

Operator's Name_____

Location: **Simulator** Method: **Perform**

Estimated JPM completion time: 20 Minutes

Actual JPM Completion Time: _____ Minutes

The JPM Operator's performance was evaluated against the standards of this JPM and is determined to be:

SATISFACTORY/UNSATISFACTORY (circle one)

Evaluator's Signature_____ Date __/__/__

KA: 2.4.44 2.1/4.0

References: RP/0/A/5700/000 Classification of an Emergency
RP/0/A/5700/004 General Emergency

Attachments:

INITIAL CONDITIONS

Assume: Today is Monday. It is now _____ on **July _____**

- At _____, the Reactor on Unit #1 was tripped due decreasing inventory and pressure.
- A SGTR has occurred with an unisolable secondary line break on 1B S/G inside containment.
- Due to degrading conditions (Loss of 2 of 3 Fission Product Barriers and potential for loss *af* the third barrier), the OSM just now _____ decided to declare a General Emergency based on emergency classification of 4.1.C.4, 4.1.N.3 and 4.1.F.4.
- The event has been announced over the plant PA system.
- Due to instrument 1EEBCR9100 being out *of* service, the National Weather Service was called and reported wind speed to be 6-8 MPH.
- Wind direction is 229 degrees from North.
- Containment radiation levels are remaining normal (<5 R/hr)

You are the WCC SRO a General Emergency has just been declared. The OSM directs you to use RP/0/A/5700/004 (General Emergency) and complete the Initial Notification to the State and Counties with the appropriate Protective Action Recommendations.

NOTE: This is *a* **Time Critical** JPM.

JPM OVERALL STANDARD: The Initial Notification form is completed with the appropriate Protective Action Recommendations within 15 minutes.

NOTES: This JPM is intended to be used with a blank "Emergency Notification Form" provided to the candidate. Also provide the student with a complete copy of RP/0/A/5700/004 General Emergency.

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
*1	Candidate implements procedure for General Emergency.	Event was classified as a General Emergency by the OSM. When evaluator provides procedure/form to candidate, start the clock. **Start Time For Time Critical _____**		
2	The Operations Shift Manager or delegate **SHALL ANNOUNCE** the event over the plant P.A. system by performing the following:	Operator determines from initial conditions that this **has** already been performed		
3	Complete items 1 - 10, 15 and 16 on Enclosure **4.1** - Emergency Notification Form in accordance with Enclosure 4.3, section 1	Same		
4	**COMPLETION OF THE EMERGENCY NOTIFICATION FORM** Complete Enclosure 4.1- Emergency Notification Form as follows: Check A for Drill **OR** B for Emergency **AND**	Same Operator checks **B** for emergency		

* **DENOTES CRITICAL**

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
4	**Continued** Check INITIAL	Same		
	Write in message number.	Operator writes message number 1		
	Write in the unit(s)	Operator writes in Unit 1		
	AND			
	Communicator's name	Operator writes communicators name		
4	Write in the transmittal time **AND** date	Operator will **not** enter a time and date since he/she will not actually be making the transmission		
	Write in the appropriate number **AND** code word	Qperator will **not** enter a number and code word since helshe will not actually be making the transmission		

* **DENOTES CRITICAL**

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
4 *	**Continued** Checks **D** for GENERAL EMERGENCY Check **A** for Emergency Declaration At: **AND** Write the time **AND** dale the classification **is** declared: 2000, July 15th.	Same Same Same NOTE: The Declaration Time of __X __and Date of July 15th is entered in space provided.		
4 * *	**Continued** Write the reason for declaring the classification Check **C** for the appropriate plant condition	Same Degrading		

*** DENOTES CRITICAL**

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
4	**Continued**	Same		
*	Check **A** SHUTDOWN **AND** write the time and date of Reactor Shutdown **OR** Check B **AND** write in the Reactor Power level	Reactor Shutdown: Time: X Date: 07/15/02 N/A
*	Check **C** . a release is occurring due to the SG Tube Leak.	Operator checks that a release is occurring due to the SG Tube Leak.
	Step #14 is **not required** but can be filled in with appropriate data.	If Step #14 **is** completed, it should be filled in with: Wind Direction of 220 deg from North, and Wind Speed of 6-8 mph.
*	Check **B & C,** EVACUATE & SHELTER IN-PLACE.	Same
*	Also fills in appropriate zones.	Fills in zones for Evacuate: **L, B, M, C, A, N, D**

* **DENOTES CRITICAL**

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT
		Shelter: **E, F, G, H, I, J, K, O, P, Q, R, S**		
4	Continued Have the Emergency Coordinator approve the message **AND** Write in the time **AND** date the message was approved	Cue: The Emergency Coordinator, John Doe, just approved the message. Please enter time and date for the present. Same		
5	Make initial notification to State and County authorities using the Emergency Notification Form in accordance with Enclosure 4.3, section 2. Go to step 2.4 as soon as possible	NOTE: This step signifies the end of the Time Critical portion of this JPM. Enter the stop time below Cue: Another operator will make the transmission the State and Counties. Stop Time For Time Critical _____ Note: Start Time - Stop Time must be < 25 minutes.		

* **DENOTES** CRITICAL

STEPS	ELEMENTS	STANDARD	S/U	COMMENTS REQUIRED FOR UNSAT

* **DENOTES CRITICAL**

INITIAL CONDITIONS

Assume: Today is Monday. It is now _____ on **July** _____

- At _____, the Reactor was tripped due decreasing inventory and pressure.
- A SGTR has occurred with an unisolable secondary line break on 1B S/G inside containment.
- Due to degrading conditions (Loss of 2 of 3 Fission Product Barriers and potential *for* loss *of* the third barrier), the OSM just now _____ decided to declare a General Emergency based on emergency classification of 4.1.C.4, 4.1.N.3 and 4.1.F.4.
- The event has been announced over the plant PA system.
- **Due** to instrument 1EEBCR9100 being out of service, the National Weather Service was called and reported wind speed to be 6-8 MPH.
- Wind direction is 220 degrees from North.
- Containment radiation levels are remaining normal (<5 R/hr)

You are the WCC SRO *a* General Emergency has just been declared. The OSM directs you to use RP/0/A/5700/004 (General Emergency) and complete the Initial Notification to the State and Counties with the appropriate Protective Action Recommendations.

NOTE: Phis is a **Time Critical** JPM.