REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin-103

PERFORM MANUAL RCS LEAKAGE CALCULATION

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

PERFORM MANUAL RCS LEAKAGE CALCULATION

Alternate Path:

No

Facility JPM #:

ADM-103 (CRO-43)

K/A Rating(s):

System: G
K/A: 2.2.12
Rating: 3.0/3.4

Task Standard:

RCS Leakage is correctly calculated within .1 gpm of attached key.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator _____ In-Plant __X___ Perform __X___ Simulate ____

References:

PT/0/A/0600/001A, Loss Of Computer
PT/1/A/600/10, Reactor Coolant Leakage

Validation Time: 15 minutes **Time Critical:** NO

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____
_____/_____
NAME SIGNATURE DATE

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COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

Tools/Equipment/Procedures Needed:

Enclosure 13.3 of PT/1/A/600/10

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit 1 computer repairs are expected to be extended through turnover for hardware replacement. The Loss of Computer procedure PT/0/A/0600/001A, Loss Of Computer, is in progress, however an RCS Leakage Calculation has not been performed during this shift.

INITIATING CUES:

The Control Room SRO directs you to perform a manual RCS leakage per PT/1/A/600/10 (Reactor Coolant Leakage). The initial data given was collected one hour previously. Use the final set of leakage data and manually calculate the RCS leakage rate. Enclosure 13.3 of PT/1/A/600/10 (Reactor Coolant Leakage) is complete up to step 2.2.

START TIME: _____

Note: Data cues are only applicable if JPM is performed in the control room.

___ SAT

___ UNSAT

STEP 1: Step 2.2
After 1 hour, Record final set of data in "Table #1".

STANDARD: Student enters final set of data into "Table #1" of Enclosure 13.3 (Manual Leakage Calculation Data Sheet).

CUE: Present student with attachment of final data readings.

OR

Student locates Pzr level gauge on UB1 and enters value on data sheet.

CUE: Pzr Level 219.8 inches

Student locates Quench Tank level on AB1 and enters value on data sheet.

CUE: Quench Tank Level 84.9 inches

Student locates LDST level gauge on UB1 and enters value on data sheet.

CUE: LDST Level 73.4 inches

Student locates $T_{ave\ meter}$ on UB1 and enters value on data sheet.

CUE: T_{ave} Indication 579.3°F

Student locates Power meters on UB1 and enters value on data sheet.

CUE: Power Range NI indicates 100.1%

Student locates RCS NR Pressure chart on UB1 and enters value on data sheet.

CUE: RCS NR Pressure chart 2150 psig

Student locates Group 7 Control Rod Position on the Computer and enters value on data sheet.

CUE: Group 7 Control Rod Position is 93.6%

COMMENTS:

STEP 2: Step 2.3 Calculate and record Change values in “Table #1” of Enclosure 13.3 (Manual Leakage Calculation Data Sheet). STANDARD: Student performs calculation and records Change values in “Table #1” of Enclosure 13.3 (Manual Leakage Calculation Data Sheet). COMMENTS:	___ SAT ___ UNSAT
STEP 3: Step 2.4 Calculated Corrected PZR Level Change: STANDARD: (- 6.831 inches/° F X **0.4** ° F) + (-**0.2)** inches = **-2.9324 inch** COMMENTS:	___ SAT ___ UNSAT
STEP 4: Step 2.5 Convert Corrected PZR Level Change to gallons: STANDARD: **-2.9324** inches X 14.364 gallons/inch = **-42.121** gallons COMMENTS:	___ SAT ___ UNSAT
STEP 5: Step 2.6 Convert QT Level Change to gallons: STANDARD: **+0.1** inches X 34.94 gallons/inch = **3.494** gallons COMMENTS:	___ SAT ___ UNSAT

STEP 6: Step 2.7 Convert LDST Level Change to gallons: STANDARD: **- 1.4** inches X 30.956 gallons/inch = **- 43.3384** gallons COMMENTS:	___ SAT ___ UNSAT
STEP 7: Step 2.8 Calculated Total Volume Change: STANDARD: **-42.121** gallons + **3.494** gallons + **(- 43.3384)** gallons = **- 81.965** gallons COMMENTS:	___ SAT ___ UNSAT
STEP 8: Step 2.9 Calculate RCS Leakage Rate: STANDARD: **- 81.965** gallons ÷ **60** minutes = **- 1.37** gpm (± .1 gpm) COMMENTS: **END TASK**	**CRITICAL TASK** ___ SAT ___ UNSAT

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
8	Necessary data calculation to properly determine manual RCS leakage rate.

Note: If complamenery errors occur while performing calculations is steps 3 – 7 they will become critical. Credit will not be given for obtaining the correct answer for the wrong reason.

Manual RCS Leakage Final Data

Parameter	Final
Time	0230
Pzr level	219.8 inches
Quench Tank Level	84.9 inches
LDST Level	73.4 inches
Tave Indication	579.3°F
Power Range NI	100.1%
RCS NR Pressure	2150 psig
Group 7 Control Rod Position	93.6%

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Unit 1 computer repairs are expected to be extended through turnover for hardware replacement. The Loss of Computer procedure PT/O/A/0600/001A, Loss Of Computer, is in progress, however an RCS Leakage Calculation has not been performed during this shift.

INITIATING CUES:

The Control Room SRO directs you to perform a manual RCS leakage per PT/1/A/600/10 (Reactor Coolant Leakage). The initial data given was collected one hour previously. Use the final set of leakage data and manually calculate the RCS leakage rate. Enclosure 13.3 of PT/1/A/600/10 (Reactor Coolant Leakage) is complete up to step 2.2.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin-110

Determine Minimum Shift Staffing

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Determine MINIMUM staffing requirements for the shift for NEO's, RO's and SRO's

Alternate Path:

NO

Facility JPM #:

Admin-110

K/A Rating(s):

System: G
K/A: 2.1.4
Rating: 2.3/3.4

Task Standard:

SLC 16.13.1-1 (Minimum Station Staffing Requirements) is used to correctly determine MINIMUM staffing requirements for the shift.

Preferred Evaluation Location:

Simulator _____ In-Plant _____

Preferred Evaluation Method:

Perform __X__ Simulate ____

References:

SLC 16.13.1-1 (Minimum Station Staffing Requirements)

Validation Time: 15 min.

Time Critical: NO

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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Comments

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

Tools/Equipment/Procedures Needed:

SLC 16.13.1-1

READ TO OPERATOR

DIRECTIONS TO STUDENT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Plant conditions are as following:

- Unit 1 is in MODE 5 with fuel handling in the SFP in progress
- Unit 2 is in MODE 1 at 73% with 2A HPIP OOS for the last 85 hours
- Unit 3 is in MODE 1 at 100% power

- 2 on-shift NEO's are qualified as fire brigade leader
- 1 RP Tech is fire brigade qualified

INITIATING CUE:

What are the **MINIMUM** staffing requirements for the shift?

Position	Minimum Number
OSM	
STA	
SRO	
RO	
NLO	
SPOC	N/A
Chemistry Technician	N/A
RP Technician	N/A

START TIME: _____

STEP 1:	Reference SLC 16.13.1	
STANDARD:	Reference SLC 16.13.1-1 table	___ SAT
COMMENTS:		___ UNSAT
STEP 2:	Reference SLC 16.13.1-1 for plant conditions	___ SAT
STANDARD:	Determine correct table to be used: Column for 2 units in MODE 1-4 from two control rooms based on: • Unit 1 is in MODE 5 with fuel handling in the SFP in progress • Unit 2 is in MODE 1 at 73% with 2A HPIP OOS for the last 85 hours • Unit 3 is in MODE 1 at 100% power	___ UNSAT
COMMENTS:		
STEP 3:	Determine correct number from column for 2 units in MODE 1-4 from two control rooms	
STANDARD:	1 OSM, 1 STA, 5 SRO, 5 RO, and 8 NEO	___ SAT
COMMENTS:		___ UNSAT

STEP 4: Determine that available NEO is fire brigade leader qualified STANDARD: 2 on-shift NEO's are qualified as fire brigade leader 1 RP Tech is fire brigade qualified COMMENTS:	___ SAT ___ UNSAT
STEP 5: Adjust total staffing numbers per Step 4 STANDARD: Subtract 1 SRO based on NEO qualified as fire brigade leader: 1 OSM, 1 STA, **4** SRO, 5 RO, and 8 NEO Note: No requirement to add extra NEO since RP tech is Fire Brigade qualified. COMMENTS:	___ SAT ___ UNSAT
STEP 6: Reference TS 3.5.2.B STANDARD: Determine that TS 3.5.2.B is applicable: 2A HPIP OOS for > 72 hours COMMENTS:	___ SAT ___ UNSAT
STEP 7: Adjust total staffing numbers per Step 6 STANDARD: Add 1 RO based on TS 3.5.2.B applying 1 OSM, 1 STA, 4 SRO, **6** RO, and 8 NEO COMMENTS:	___ SAT ___ UNSAT

STEP 8: Adjust total staffing numbers per Step 7

STANDARD: Add 2 NEOs based on TS 3.5.2.B applying 1 OSM, 1 STA, 4 SRO, 6 RO, and **10** NEO

COMMENTS:

___ SAT

___ UNSAT

STEP 9: Determine total staffing requirements

CRITICAL STEP

STANDARD: **1** OSM, **1** STA, **4** SRO, **6** RO, and **10** NEO

Position	**Minimum Number**
OSM	**1**
STA	**1**
SRO	**4**
RO	**6**
NLO	**10**
SPOC	N/A
Chemistry Technician	N/A
RP Technician	N/A

___ SAT

___ UNSAT

COMMENTS:

END OF TASK

TIME STOP: _____

CRITICAL STEP EXPLANATIONS:

STEP #		Explanation
9	Determine staffing requirements	

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Plant conditions are as following:

- Unit 1 is in MODE 5 with fuel handling in the SFP in progress
- Unit 2 is in MODE 1 at 73% with 2A HPIP OOS for the last 85 hours
- Unit 3 is in MODE 1 at 100% power

- 2 on-shift NEO's are qualified as fire brigade leader
- 1 RP Tech is fire brigade qualified

INITIATING CUE:

What are the **MINIMUM** staffing requirements for the shift?

Position	Minimum Number
OSM	
STA	
SRO	
RO	
NLO	
SPOC	N/A
Chemistry Technician	N/A
RP Technician	N/A

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin-117

REACTOR POWER IMBALANCE VERIFICATION

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Power Imbalance verification

Alternate Path:

NO

Facility JPM #:

New

K/A Rating(s):

System: G
K/A: 2.1.25
Rating: 2.8/3.1

Task Standard:

Student determines Backup Incore Detector operability and actions required.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator ___X__ In-Plant _____ Perform __X__ Simulate _____

References:

PT/1/A/0600/001 (Periodic Instrument Surveillance) procedure and Enclosures 13.1
PT/0/A/1103/019 (Backup Incore Detector System)
Core Operating Limits Report

Validation Time: 20 min. **Time Critical:** NO

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. None

Tools/Equipment/Procedures Needed:

PT/1/A/0600/001, Periodic Instrument Surveillance Procedure and Enclosure 13.1
PT/0/A/1103/019 (Backup Incore Detectors)
Core Operating Limits Report

READ TO OPERATOR

DIRECTIONS TO STUDENT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 has been operating at 100% power for 2 weeks.
2. The Reactor calculation package is NOT running.
3. 1NI-7 is de-energized
4. All other equipment operable
5. PT/1/A/0600/001, Periodic Instrument Surveillance, Enclosures 13.1 has been completed up to page 8, Axial Power Imbalance Operating Limits.

INITIATING CUE:

The SRO directs you to perform the Axial Power Imbalance Operating Limits verification and determine if / what actions are required.

START TIME: _____

STEP 1:	PT/1/A/0600/001 Pg 8, SDF 3.2.2.1 Axial Power Imbalance Operating Limit: IF Reactor calculations package is NOT running on computer, refer to Section 12.3.	___ SAT
STANDARD:	Determine Reactor calculation package is NOT running per Initial Conditions and refer to Section 12.3.	___ UNSAT
COMMENTS:		

STEP 2:	Review step 12.3, (Reactor Power Axial Imbalance and Quadrant power Tilt.
	• Axial Imbalance shall **NOT** exceed appropriate limit curve in COLR.
	• Order of preference of measurement systems to determine axial imbalance and quadrant power tilt is as follows:
	  • Incore Detectors (Computer Reactor Calculation Package).
	  • Outcore Detectors (Power Range Outcore Detectors).
	  • Backup Incore Detectors. Refer to PT/0/A/1103/019 (Backup Incore Detector System).
	• **IF** at least one power range outcore detector is **NOT** operable in each quadrant, outcore detectors shall **NOT** be used to measure axial imbalance or quadrant power tilt.
	IF axial imbalance limit is exceeded, take immediate corrective action to achieve an acceptable imbalance.
	IF an acceptable imbalance is **NOT** achieved within 2 hours, reactor power shall be reduced until imbalance limits are met.
	Refer to TS 3.2.2.
		___ SAT
		___ UNSAT

STANDARD:	Candidate should deduce from initial conditions (NI-7 OOS) that the Backup Incore detectors should be used to attempt to calculate imbalance per PT/0/A/1103/019 (Backup Incore Detector System).	
COMMENTS:		

STEP 3 Students should perform PT/0/A/1103/019 (Backup Incore Detector System). Step 9.1 The backup recorder points will be checked to identify which points are a) inoperable as indicated by off-scale readings **OR** b) identified as inoperable **OR** out of calibration during the last functional verification. The remaining operable points will be checked to verify the minimum number of detectors are operable to measure axial imbalance **AND** quadrant power tilt as required. Step 9.2 Axial Imbalance **AND** quadrant power tilt calculations may be performed using the operable backup recorder points. Step 11.1 (Acceptance Criteria) 11.1.1 All three required points on at least three detector strings are operable per instructions on Enclosure 13.1, Required Backup Recorder Points for Calculating Axial Power Imbalance. 11.1.2 All four required points on at least four sets (two sets in each axial core half) are operable per instructions on Enclosure 13.2, Required Backup Recorder Points for Calculating Quadrant Power Tilt. Step 12.1 (Verification of Minimum Incore Detector Operability) Step 12.1.1 On Enclosure 13.1, Required Backup Recorder Points for Calculating Axial Power Imbalance **AND** 13.2, Required Backup Recorder Points for Calculating Quadrant Power Tilt, place an "X" next to the backup recorder points which are inoperable as indicated by off-scale readings **OR** notes attached to the recorders. Step 12.1.2 Verify that all three required points on at least three detector strings are operable per instructions on Enclosure 13.1, Required Backup Recorder Points for Calculating Axial Power Imbalance. (Acceptance Criteria 11.1.1) STANDARD: Perform Enclosure 13.1: Required Backup Recorder Points for Calculating Axial Power Imbalance. ***Candidate should determine that there are <u>not</u> sufficient recorder points to perform Axial Imbalance In Accordance with Encl 13.1.*** COMMENTS:	**CRITICAL TASK** ___ SAT ___ UNSAT

STEP 4 Continued Step 12.1.4 **IF** either step 12.1.2 **OR** 12.1.3 **CANNOT** be satisfied; A. Notify the Unit Supervisor. B. Take actions described in 6.2. Step 6.2 **IF** the incore system is **NOT** available on the unit computer **AND** the backup recorder points are **NOT** operable per this procedure, then the reactor power shall be reduced below 80% of the power allowable for the existing reactor coolant pump combination within eight hours unless: 6.2.1 The incore system is restored on the unit computer. **OR** 6.2.2 The backup recorder points are restored to meet the minimum requirements for operability. (ref. SLC 16.7.8) STANDARD: **Candidate recommends reducing power to below 80% power within 8 hours or restoring operability to Incores or Excores.** COMMENTS: **END OF TASK**	**CRITICAL STEP** ___ SAT ___ UNSAT

TIME STOP: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
3	Candidate determines that there are not sufficient incore detectors per Encl. 13.1.
4	Candidate determines the requirement to reduce power to < 80% within the next 8 hours.

BACKUP INCORE CHART "A"		
POINT #	**%**	**Location**
1	132.7	G09-L2
2	OOS	G09-L4
3	138.0	G09-L6
4	143.1	E09-L2
5	133.3	E09-L4
6	OOS	E09-L6
7	128.8	G05-L2
8	154.1	G05-L6
9	133.8	M07-L2
10	OOS	M07-L6
11	133.8	K11-L2
12	145.6	K11-L6
13	142.5	F13-L2
14	144.4	D05-L2
15	133.8	F13-L4
16	OOS	C06-L2
17	OOS	C06-L6
18	144.5	F13-L6
19	OOS	O10-L6
20	OOS	L03-L6
21	OOS	L03-L2
22	OOS	D05-L6
23	OOS	O10-L2
24	122.9	D05-L4

BACKUP INCORE CHART "B"		
POINT #	**%**	**Location**
1	OOS	E-07-L6
2	142.5	G11-L6
3	128.8	M09-L6
4	132.7	K05-L6
5	133.3	K05-L4
6	OOS	L06-L2
7	OOS	L06-L4
8	OOS	L06-L6
9	OOS	M09-L2
10	154.1	K05-L2
11	138.0	G11-L2
12	OOS	E07-L2
13	133.8	C10-L2
14	145.6	C10-L6
15	OOS	F03-L2
16	122.9	F03-L6
17	OOS	N04-L2
18	144.4	N04-L4
19	OOS	N04-L6
20	145.0	O06-L2
21	136.1	O06-L4
22	133.8	O06-L6
23	OOS	L13-L2
24	133.8	L13-L6

* Work Request written

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. Unit 1 has been operating at 100% power for 2 weeks.

2. The Reactor calculation package is NOT running.

3. 1NI-7 is de-energized

4. All other equipment operable

5. PT/1/A/0600/001, Periodic Instrument Surveillance, Enclosures 13.1 has been completed up to page 8, Axial Power Imbalance Operating Limits.

INITIATING CUE:

The SRO directs you to perform the Axial Power Imbalance Operating Limits verification and determine if / what actions are required.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADM-118
MANUAL SDM CALCULATION

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

MANUAL SDM CALCULATION

Alternate Path:

No

Facility JPM #:

ADM-118

K/A Rating(s):

System: G
K/A: 2.1.23
Rating: 3.9/4.0

Task Standard:

Shutdown Margin agrees with attached example ± 10 ppm.

Preferred Evaluation Location:

Simulator ____ In-Plant _____

Preferred Evaluation Method:

Perform __X___ Simulate ____

References:

PT/1/A/1103/15
PT/1/A/600/01

Validation Time: 20 minutes

Time Critical: NO

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time: _____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. None

Tools/Equipment/Procedures Needed:

PT/1/A/1103/015

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:
Unit 1 has been shutdown for 15 days for leak repair. The following conditions exist:

- Cycle burnup - 100 EFPD
- RCS temperature - 100°F
- Control Rod Group 1 at 0% withdrawn
- Control Rod Group 8 at 35% withdrawn
- Assume 0% for Xenon and Samarium worths
- RCS Boron 1315 ppm
- Present power level is 30 cpm on NI – 2
- The OAC is out of service for repair

INITIATING CUE:

Enclosure 13.4 of PT/1/A/600/01, Periodic Instrument Surveillance, requires verifying $\geq$ 1% Δk/k Shutdown Margin.

Control Room supervisor directs you to manually calculate the SDM per PT/1/A/1103/015.

START TIME: _____

STEP 1: Step 2.3 DETERMINE REFERENCE SHUTDOWN BORON CONCENTRATION. STANDARD: Reference Shutdown Boron Concentration is obtained from the point of intersection of the current cycle burnup and 100°F on Enclosure 13.10 and the value is recorded on Step 2.3 of Enclosure 13.1. **(1350 PPM)** COMMENTS:	___ SAT ___ UNSAT
STEP 2: Step 2.4 ADJUST FOR NON-REFERENCE CONDITIONS. STANDARD: Student should determine that no adjustments are required. COMMENTS:	___ SAT ___ UNSAT

STEP 3: Step 2.5 Step 2.5.2 Obtain minimum RCS Boron Concentration for SSF operability per Encl. 13.20 (Minimum RCS Boron Concentration to Maintain SSF Operability) using Minimum Xenon fro the effective time period. STANDARD: Candidate should determine Minimum RCS Boron Concentration for SSF operability from Encl 13.20 (~ 1090 ppm) COMMENTS:	___ SAT ___ UNSAT
STEP 4: Step 2.5 Step 2.5.3 Determine required Shutdown Boron Concentration STANDARD: Candidate should determine the minimum RCS Boron Concentration by recording the greater of Minimum RCS Boron Concentration for SSF operability from Encl 13.20 (~ 1090 ppm) and the Reference Shutdown Boron Concentration (1350 ppm). 1350 ppm COMMENTS:	___ SAT ___ UNSAT
CRITICAL TASK STEP 5: Step 2.6 Calculate actual shutdown margin STANDARD: Candidate should subtract the required boron concentration from 2.5 (1350 ppm) from the actual boron concentration (1315 ppm) **-35ppm. ± 10 PPM** COMMENTS: **END TASK**	___ SAT ___ UNSAT

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
4	Necessary because of the need to be able to calculate shutdown margin accurately to verify the requirements of Technical Specifications are met for shutdown margin.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:
Unit 1 has been shutdown for 15 days for leak repair. The following conditions exist:

- Cycle burnup - 100 EFPD
- RCS temperature - 100°F
- Control Rod Group 1 at 0% withdrawn
- Control Rod Group 8 at 35% withdrawn
- Assume 0% for Xenon and Samarium worths
- RCS Boron 1315 ppm
- Present power level is 30 cpm on NI – 2
- The OAC is out of service for repair

INITIATING CUE:

Enclosure 13.4 of PT/1/A/600/01, Periodic Instrument Surveillance, requires verifying $\geq$ 1% Δk/k Shutdown Margin.

Control Room supervisor directs you to manually calculate the SDM per PT/1/A/1103/015.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADM-119
MANUAL SDM CALCULATION

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

MANUAL SDM CALCULATION

Alternate Path:

No

Facility JPM #:

Admin-119

K/A Rating(s):

System: 001
K/A: G.2.1.23
Rating: 3.9/4.0

Task Standard:

1. Perform a manual SDM calculation per PT/1/A/1103/015 to within 10 ppm of key.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator ____ In-Plant _____ Perform __X___ Simulate ____

References:

PT/1/A/1103/15
PT/1/A/600/01

Validation Time: 20 minutes **Time Critical:** NO

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time: _____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. None

Tools/Equipment/Procedures Needed:

PT/1/A/1103/015
Calculator

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit 1 has been shutdown for 15 days for leak repair. The following conditions exist:

- Cycle burnup - 100 EFPD
- RCS temperature - 100°F
- Control Rod Group 1 at 0% withdrawn
- Control Rod Group 8 at 35% withdrawn
- Assume 0% for Xenon and Samarium worths
- RCS Boron 1315 ppm
- Present power level is 30 cpm on NI – 2
- The OAC is out of service for repair

INITIATING CUES:

Enclosure 13.4 of PT/1/A/600/01, Periodic Instrument Surveillance, requires verifying $\geq$ 1% Δk/k Shutdown Margin.

As the Control Room supervisor you are to manually calculate the SDM per PT/1/A/1103/015 and make recommendations (if required) based on results.

START TIME: _____

STEP 1: Step 2.3 DETERMINE REFERENCE SHUTDOWN BORON CONCENTRATION. STANDARD: Reference Shutdown Boron Concentration is obtained from the point of intersection of the current cycle burnup and 100°F on Enclosure 13.10 and the value is recorded on Step 2.3 of Enclosure 13.1. **(1350 PPM)** COMMENTS:	___ SAT ___ UNSAT
STEP 2: Step 2.4 ADJUST FOR NON-REFERENCE CONDITIONS. STANDARD: Student should determine that no adjustments are required. COMMENTS:	___ SAT ___ UNSAT

STEP 3: Step 2.5 Step 2.5.2 Obtain minimum RCS Boron Concentration for SSF operability per Encl. 13.20 (Minimum RCS Boron Concentration to Maintain SSF Operability) using Minimum Xenon from the effective time period. STANDARD: Candidate should determine Minimum RCS Boron Concentration for SSF operability from Encl 13.20 (~ 1090 ppm) COMMENTS:	___ SAT ___ UNSAT
STEP 4: Step 2.5 Step 2.5.3 Determine required Shutdown Boron Concentration STANDARD: Candidate should determine the minimum RCS Boron Concentration by recording the greater of Minimum RCS Boron Concentration for SSF operability from Encl 13.20 (~ 1090 ppm) and the Reference Shutdown Boron Concentration (1350 ppm). 1350 ppm COMMENTS:	___ SAT ___ UNSAT

STEP 5: Step 2.6 Step 2.6.2 Determine shutdown margin (ppm) STANDARD: Candidate should subtract the required boron concentration from 2.5 (1350 ppm) from the actual boron concentration (1315 ppm) **-35ppm. ± 10 PPM** COMMENTS:	___ SAT ___ UNSAT
STEP 6: Step 2.6 Step 2.6.3 Calculate actual shutdown margin by multiplying Step 2.6.2 (-35 ppm) by Differential Boron Worth (Encl 13.8), then subtract 1% Δk/k. STANDARD: Candidate should calculate the actual value of SDM as -.636% Δk/k. **-0.636% ± .2%** COMMENTS:	**CRITICAL TASK** ___ SAT ___ UNSAT
STEP 7: Step 2.7 Vefiry Separate Verification agrees within 10 ppmB of the original. **CUE: Inform the candidate that for the purpose of this JPM, a separate verification of Shutdown Boron will not be calculated.** STANDARD: Candidate asks to compare their calculation with the original. COMMENTS:	**CRITICAL TASK** ___ SAT ___ UNSAT

STEP 8: Step 2.8 **IF** this calculation is being used to verify shutdown margin for present reactor conditions, perform the following: 2.8.1 Verify that the shutdown margin (Step 2.6.3) is greater than 1%ΔK/K (i.e. more negative than -1.0%ΔK/K) **(R.M.)** **OR** 2.8.2 Perform the following: A. Notify Control Room SRO immediately. B. Verify Shutdown Margin for 3 hours following shutdown using COLR curve (verification method in step 9.2). **(R.M.)** C. Initiate boration to establish adequate Shutdown Margin. **(R.M.)** **AND** 2.8.3 Ensure the present boron concentration is greater than the boron concentration in 2.5.3. STANDARD: **Candidate should recommend boration to establish Shutdown Margin (< 15 min).** **Student should reference T.S. 3.1.1 (Shutdown Margin)** COMMENTS:	**CRITICAL TASK** ___ SAT ___ UNSAT

END TASK

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
6	Necessary to verify the requirements of Technical Specifications are met for shutdown margin.
7	Necessary required action to identify a 15 minute TS.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Unit 1 has been shutdown for 15 days for leak repair. The following conditions exist:

- Cycle burnup - 100 EFPD
- RCS temperature - 100°F
- Control Rod Group 1 at 0% withdrawn
- Control Rod Group 8 at 35% withdrawn
- Assume 0% for Xenon and Samarium worths
- RCS Boron 1315 ppm
- Present power level is 30 cpm on NI – 2
- The OAC is out of service for repair

INITIATING CUES:

Enclosure 13.4 of PT/1/A/600/01, Periodic Instrument Surveillance, requires verifying $\geq$ 1% Δk/k Shutdown Margin.

As the Control Room supervisor you are to manually calculate the SDM per PT/1/A/1103/015 and make recommendations (if required) based on results.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin-208

EVALUATE RCS LEAKAGE

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

PERFORM MANUAL RCS LEAKAGE CALCULATION

Alternate Path:

No

Facility JPM #:

ADM 208

K/A Rating(s):

System: G
K/A: 2.12.12
Rating: 3.0/3.4

Task Standard:

RCS Leakage is correctly calculated within .1 gpm of attached key.
Determine TS action required.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator _____ In-Plant __X___ Perform __X___ Simulate ____

References:

PT/O/A/0600/001A, Loss Of Computer
PT/1/A/600/10, Reactor Coolant Leakage

Validation Time: 22 minutes **Time Critical:** NO

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____
_____/_____
NAME SIGNATURE DATE

==========

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

Tools/Equipment/Procedures Needed:

Enclosure 13.3 of PT/1/A/600/10

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit 1 computer repairs are expected to be extended through turnover for hardware replacement. The Loss of Computer procedure PT/O/A/0600/001A, Loss Of Computer, is in progress, however an RCS Leakage Calculation has not been performed during this shift.

INITIATING CUES:

As the Control Room SRO you to perform a check of a manual RCS leakage per PT/1/A/600/10 (Reactor Coolant Leakage). The initial data given was collected one hour previously. Use the final set of leakage data and manually calculate the RCS leakage rate. Enclosure 13.3 of PT/1/A/600/10 (Reactor Coolant Leakage) is complete up to step 2.2. Determine any required actions based on your results.

START TIME: _____

Note: Data cues are only applicable if JPM is performed in the control room.

___ SAT

___ UNSAT

STEP 1: Step 2.2
After 1 hour, Record final set of data in "Table #1".

STANDARD: Student enters final set of data into "Table #1" of Enclosure 13.3 (Manual Leakage Calculation Data Sheet).

CUE: Present student with attachment of final data readings.

OR

Student locates Pzr level gauge on UB1 and enters value on data sheet.

CUE: Pzr Level 219.8 inches

Student locates Quench Tank level on AB1 and enters value on data sheet.

CUE: Quench Tank Level 84.9 inches

Student locates LDST level gauge on UB1 and enters value on data sheet.

CUE: LDST Level 73.4 inches

Student locates $T_{ave\ meter}$ on UB1 and enters value on data sheet.

CUE: T_{ave} Indication 579.3°F

Student locates Power meters on UB1 and enters value on data sheet.

CUE: Power Range NI indicates 100.1%

Student locates RCS NR Pressure chart on UB1 and enters value on data sheet.

CUE: RCS NR Pressure chart 2150 psig

Student locates Group 7 Control Rod Position on the Computer and enters value on data sheet.

CUE: Group 7 Control Rod Position is 93.6%

COMMENTS:

STEP 2:	Step 2.3 Calculate and record Change values in "Table #1" of Enclosure 13.3 (Manual Leakage Calculation Data Sheet).	___ SAT
STANDARD:	Student performs calculation and records Change values in "Table #1" of Enclosure 13.3 (Manual Leakage Calculation Data Sheet).	___ UNSAT
COMMENTS:		
STEP 3:	Step 2.4 Calculated Corrected PZR Level Change:	___ SAT
STANDARD:	(- 6.831 inches/° F X **0.4** ° F) + (-**0.2)** inches = **-2.9324 inch**	___ UNSAT
COMMENTS:		
STEP 4:	Step 2.5 Convert Corrected PZR Level Change to gallons:	___ SAT
STANDARD:	**-2.9324** inches X 14.364 gallons/inch = **-42.121** gallons	___ UNSAT
COMMENTS:		
STEP 5:	Step 2.6 Convert QT Level Change to gallons:	___ SAT
STANDARD:	**+0.1** inches X 34.94 gallons/inch = **3.494** gallons	___ UNSAT
COMMENTS:		

STEP 6: Step 2.7 Convert LDST Level Change to gallons: STANDARD: **- 1.4** inches X 30.956 gallons/inch = **- 43.3384** gallons COMMENTS:	___ SAT ___ UNSAT
STEP 7: Step 2.8 Calculated Total Volume Change: STANDARD: **-42.121** gallons + **3.494** gallons + **(- 43.3384)** gallons = **- 81.965** gallons COMMENTS:	___ SAT ___ UNSAT
STEP 8: Step 2.9 Calculate RCS Leakage Rate: STANDARD: **- 81.965** gallons ÷ **60** minutes = **- 1.37** gpm (± .1 gpm) COMMENTS:	**CRITICAL TASK** ___ SAT ___ UNSAT

	CRITICAL TASK
STEP 9: Refer to TS 3.4.13, RCS Operational LEAKAGE RCS operational LEAKAGE shall be limited to: a. No pressure boundary LEAKAGE; b. 1 gpm unidentified LEAKAGE; c. 10 gpm identified LEAKAGE; and d. 150 gallons per day primary to secondary LEAKAGE through any one steam generator (SG). A: Reduce LEAKAGE to within limits within 4 hours B: Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit. Be in MODE 3 in 12 hours AND be in MODE 5 in 36 hours. STANDARD: **SRO Determines TS entry criteria are applicable and states appropriate conditions/actions.** COMMENTS: **END TASK**	___ SAT ___ UNSAT

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
8	Necessary data calculation to properly determine manual RCS leakage rate.
9	Determine required TS actions

Note: If complementary errors occur while performing calculations is steps 3 – 7 they will become critical. Credit will not be given for obtaining the correct answer for the wrong reason.

Manual RCS Leakage Final Data

Parameter	Final
Time	0230
Pzr level	219.8 inches
Quench Tank Level	84.9 inches
LDST Level	73.4 inches
Tave Indication	579.3°F
Power Range NI	100.1%
RCS NR Pressure	2150 psig
Group 7 Control Rod Position	93.6%

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Unit 1 computer repairs are expected to be extended through turnover for hardware replacement. The Loss of Computer procedure PT/O/A/0600/001A, Loss Of Computer, is in progress, however an RCS Leakage Calculation has not been performed during this shift.

INITIATING CUES:

As the Control Room SRO you to perform a check of a manual RCS leakage per PT/1/A/600/10 (Reactor Coolant Leakage). The initial data given was collected one hour previously. Use the final set of leakage data and manually calculate the RCS leakage rate. Enclosure 13.3 of PT/1/A/600/10 (Reactor Coolant Leakage) is complete up to step 2.2. Determine any required actions based on your results.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN-304

DETERMINE PROJECTED DOSE AND POSTING REQUIREMENTS FOR AN ACTIVITY

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Determine radiation protection requirements for an activity

Alternate Path:

No

Facility JPM #:

New

K/A Rating(s):
System: G
K/A: 2.3.10
Rating: 2.9/3.3

Task Standard:
Correctly determine what dose would be received for a job, allowable annual dose allowed and how the area should be posted when placing H2 Analyzers in service following a LBLOCA.

Preferred Evaluation Location:

Simulator _____ In-Plant _____

Preferred Evaluation Method:

Perform __X___ Simulate ____

References:

GET Manual
NSD 507 (Radiation Protection)

Validation Time: 15 minutes **Time Critical:** No

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time: _____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

None

Tools/Equipment/Procedures Needed:

Radiation Work Permit # 23

Survey Map

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit 1 experienced a LBLOCA and you have just placed the Unit 1 Hydrogen Analyzer in service (Assume approximately 10 minutes at the Hydrogen Analyzer Cabinet).

Radiation Protection subsequently performed a detailed survey of the area and recorded the data on a Plan View.

You have received 1.2 R TEDE this year

INITIATING CUES:

Based on information provided and the Plan View:

1. Calculate the amount of dose that was received for the duration of this task assuming you spent approximately 10 minutes in front of the H2 analyzer cabinets.

2. Determine what amount of TEDE you would be allowed to receive for the rest of the year without exceeding your Duke Administrative limit.

3. Determine ALL radiological postings required for the area.

START TIME: _____

1. Calculate the amount of dose that was received for the duration of this task assuming you spent approximately 10 minutes in front of the H2 analyzer cabinets? Based on a 10 minutes in front of the H2 Analyzers at a Dose Rate at 30 cm (~ 12") of 1800 mr/hr: 0.3 DAC x 10/60 x 2.5 mr = .125 mr Total dose: **1/6 hr x 1800 mr/hr = 300 mr** STANDARD: Correctly determines above criteria. 300 ± 1 mr COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
2. Allowable TEDE for the rest of the year: Emergency dose limits do NOT count for yearly occupational exposure. Duke administrative limit = 2R/year Year to date: 1200 mr STANDARD: **Duke Limit (2000 mr) – 1200 mr = 800 mr of allowable exposure without exceeding Duke administrative limit**. COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

3. Posting for the area: Candidate reviews the Plan View and determines posting requirements. STANDARD: **Locked High Radiation Area (LHRA)** An area where major portions of the body may be exposed to **> 1000 mrem/hr** (@ 30 cm) **but< 500 rads in an hour** at 1 meter. **Airborne Radioactivity Area** The 10CFR20 definition of an Airborne Radioactivity Area is a room, enclosure, or area in which airborne radioactive material exists or has the potential to exist, in concentrations in excess of DAC's specified in App. B. At Duke Power it is a room where airborne radioactivity exists in concentrations: • 25% of the weighted Derived Air Concentration (DAC) listed in App. B of 10CFR20 for the specific radionuclide. A **Contaminated Area** is designated whenever removable contamination levels are: > 1000 dpm/100 cm² β-γ > 20 dpm/100 cm² α The area would be posted as: **Locked High Radiation Area** **Airborne Area** **Contaminated Area** COMMENTS: **END TASK**	**CRITICAL STEP** ___ SAT ___ UNSAT

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
1	Required to calculate the expected dose.
2	Required to determine that exposure does not effect annual dose limit.
3	Required to determine proper posting of area.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Unit 1 experienced a LBLOCA and you have just placed the Unit 1 Hydrogen Analyzer in service (Assume approximately 10 minutes at the Hydrogen Analyzer Cabinet).

Radiation Protection subsequently performed a detailed survey of the area and recorded the data on a Plan View.

You have received 1.2 R TEDE this year

INITIATING CUES:

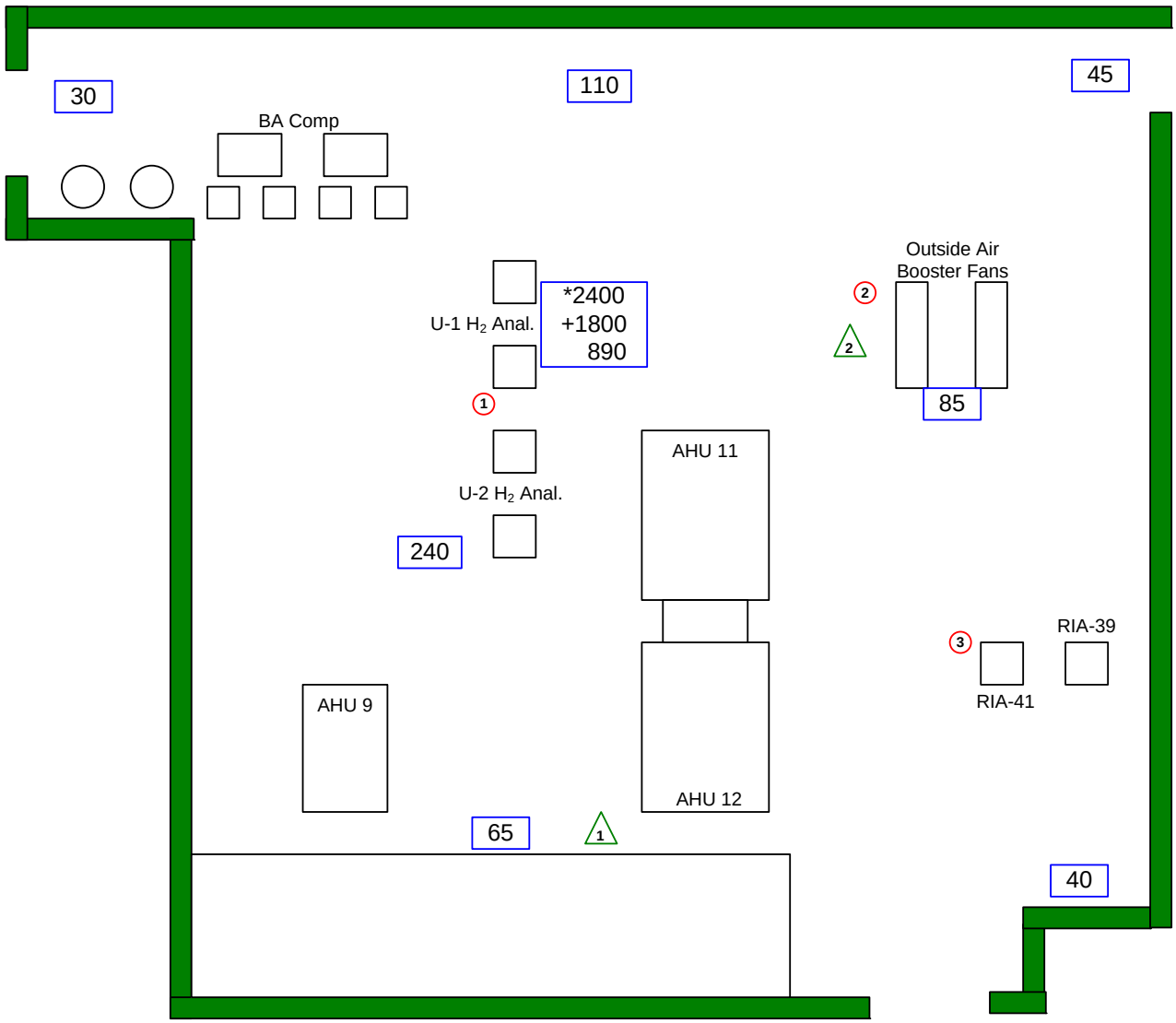
Based on information provided and the Plan View:

1. Calculate the amount of dose that was received for the duration of this task assuming you spent approximately 10 minutes in front of the H2 analyzer cabinets.

2. Determine what amount of TEDE you would be allowed to receive for the rest of the year without exceeding your Duke Administrative limit.

3. Determine ALL radiological postings required for the area.

Room 605 AHU Room	Survey # M-021506-17	Date/Time 08/15/2007 13:06



Comments: PLANVIEW UPDATED TO SHOW ENTIRE ROOM CONTAMINATED FOR RECOATING PROJECT. ALL DOSE RATE INFO. FROM PREVIOUS SURVEY M-020706-2

Summary of Highest Readings

Smears	Air Samples & Wipes
1) 1554 DPM/100 cm2 β/γ 2) 2150 DPM/100 cm2 β/γ 3) 554 DPM/100 cm2 β/γ	1) .3 DAC

Symbol Legend (for example only)

Dose Rate
*150 Contact Reading
+75 30 cm Reading
20 General Area

HS-50 Hot Spot
RCA Posting
Drip Bag
15 Smear
15 Air Sample
15 Wipe

Type: Job Coverage
RWP: 5036
Reactor Power = 0%

Unless otherwise noted, dose rates in mrem/hr.

Surveyor: W. Walters

Approved by: N. Wriston, 08/15/2007

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin-407

Determine Emergency Classification and Complete Emergency Notification Form

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Determine Emergency Classification and Protective Action Recommendations

Alternate Path:

NO

Facility JPM #:

New

K/A Rating(s):

System: G
K/A: 2.4.38
Rating: 2.2/4.0

Task Standard:

Appropriate classification is determined and associated Emergency Notification Form is completed.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator __X___ In-Plant ___X___ Perform _____ Simulate __X__

References:

RP/0/B/1000/01
RP/0/B/1000/02
BASIS Document (Volume "A", Section "D" of the Emergency Plan)

Validation Time: 20 min. **Time Critical:** Yes

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Candidate: _____ Time Start: _____
NAME Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time: _____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

Comments

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

Tools/Equipment/Procedures Needed:

RP/0/B/1000/01 / RP/0/B/1000/02

READ TO OPERATOR

DIRECTIONS TO STUDENT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

08:00:00 Unit 1 experiences a SG Tube Leak of 35 gpm in the "1A" SG.

08:05:00 ERO activated by the OSM due to the SG Tube Leak.

08:15:00 Message sheet 1 provided to offsite agencies.

While Unit 1 is shutting down the following event/time line occurs;

08:30:00 Unit 1 experiences a spurious Turbine/Generator trip and a CT-1 Lockout.

08:30:28 Unit 1 Procedure Director dispatches the Unit 1 BOP to activate the SSF using AP/0/A/1700/025, as per EOP Immediate Manual Actions step 4.1.3.

08:32:50 Control Room reports to the OSM that BOTH Keowee Units have experienced Emergency Lockouts, but that CT-5 is available. In addition they state that power will be restored, from CT-5, as soon as the Unit 2 BOP gets to that source of power in the EOP ENCL 5.38.

08:41:00 SSF operator reports that per AP/1/A/1700/025 flow has been established to Unit 1's RCP Seals and SGs.

INITIATING CUE:

You are to perform the required actions of the Emergency Coordinator by referring to RP/0/B/1000/01, Emergency Classification:

1. Determine Emergency classification at 0800
2. Determine Emergency Classification at 0915
3. Complete appropriate Emergency Notification Form at 0841.

Note: Do not use Emergency Coordinator's judgment while classifying the event. When required, an operator will maintain the Emergency Coordinator's Log and assume the duties of the Control Room Offsite Communicator.

START TIME: _____

STEP 1:	Classify the Event at 0800	**CRITICAL STEP**
STANDARD:	Refer to RP/0/B/1000/01 (Emergency Classification) Enclosure 4.2 (System Malfunctions). Classify the event as a "**Unusual Event**" due to following: **RCS Leakage** • Identified Leakage ≥ 25 gpm	___ SAT ___ UNSAT
COMMENTS:		
STEP 2:	Classify the Event at 0841	**CRITICAL STEP**
STANDARD:	Refer to RP/0/B/1000/01 (Emergency Classification) Enclosure 4.4 (Loss of Shutdown Functions). Classify the event as a "**Site Area Emergency**" due to following: **COMPLETE LOSS OF FUNCTION NEEDED TO ACHIEVE OR MAINTAIN HOT SHUITDOWN** • SSF feeding SG pr EOP	___ SAT ___ UNSAT
COMMENTS:		
STEP 3:	Determine appropriate enclosure for Control Room Emergency Coordinator Procedure.	___ SAT
STANDARD:	Refer to RP/0/B/1000/002 (Control Room Emergency Coordinator Procedure) and **GO TO** Enclosure 4.2 (Site Area Emergency)	
COMMENTS:		___ UNSAT

STEP 4:	Step 1.1 **IF** It has been determined that an Emergency Action Level for an Initiating Conditions has been met, **THEN** Declare a **Site Area Emergency** Time of Declaration: _____	___ SAT
STANDARD:	Determine Initiating Conditions have been met and Declare a Site Area Emergency due to: **"SSF feeding SG pr EOP"** Determine Time of Declaration is present time.	___ UNSAT
COMMENTS:		
STEP 5:	Step 1.3 Appoint a person to maintain the Emergency Coordinator Log OR maintain the log yourself.	___ SAT
STANDARD:	A person is appointed to maintain the Emergency Coordinator Log or indicate that you will maintain the log.	___ UNSAT
COMMENTS:		
STEP 6:	Step 1.4 Appoint Control Room Offsite Communicator(s). Provide Offsite Communicator with declaration time. Remind the Control Room Offsite Communicator that Follow Up notifications (updates) are required at least every **60 Minutes** for this classification.	___ SAT ___ UNSAT
STANDARD:	A Control Room Offsite Communicator is appointed. Remind the Control Room Offsite Communicator that Follow Up notifications (updates) are required at least every **60 Minutes** for this classification	
COMMENTS:		

STEP 7: Step 1.5
Use the following definitions and provide the Event Prognosis to the Offsite Communicator for completing #8 on the Emergency Notification Form.

___ SAT

___ UNSAT

Degrading: Plant conditions involve at least one of the following:

- Plant parameters (ex. temperature, pressure, level, voltage, frequency) are trending unfavorably away from expected or desired values **AND** plant conditions could result in a higher classification or Protective Action Recommendation (PAR) before the next followup notification.

- Site conditions (ex. wind, ice/snow, ground tremors, hazardous/ toxic/ radioactive material leak, fire, security event) impacting plant operations or personnel safety are worsening **AND** plant conditions could result in a higher classification or Protective Action Recommendation (PAR) before the next follow-up notification.

Improving: Plant conditions involve at least one of the following:

- Plant parameters (ex. temperature, pressure, level, voltage, frequency) are trending favorably toward expected or desired values **AND** plant conditions could result in a lower classification or emergency termination before the next follow-up notification.

- Site conditions (ex. wind, ice/snow, ground tremors hazardous/toxic/radioactive material leak, fire, security event) have become less of a threat to plant operations or personnel safety **AND** plant conditions could result in a lower classification or emergency termination before the next follow-up notification.

Stable: Plant conditions are neither degrading nor improving.

STANDARD: Determine from the definitions that plant conditions are Stable.

COMMENTS:

STEP 7:	Step 1.7 Review and approve completed Emergency Notification Form. • Sign Emergency Notification Form.	**CRITICAL STEP** ___ SAT
STANDARD:	Correctly fills out Emergency Notification Form for 0841 In Accordance With Key:	___ UNSAT
COMMENTS:		
	END OF TASK	

TIME STOP: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
1	The candidate needs to be able to utilize the procedure and determine that an Unusual Event has occurred.
2	The candidate needs to be able to utilize the procedure and determine that a Site Area Emergency has occurred.
7	The candidate must be able to complete the emergency notification form to provide accurate information.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

READ TO OPERATOR

DIRECTIONS TO STUDENT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

08:00:00 Unit 1 experiences a SG Tube Leak of 35 gpm in the "1A" SG.

08:05:00 ERO activated by the OSM due to the SG Tube Leak.

08:15:00 Message sheet 1 provided to offsite agencies.

While Unit 1 is shutting down the following event/time line occurs;

08:30:00 Unit 1 experiences a spurious Turbine/Generator trip and a CT-1 Lockout.

08:30:28 Unit 1 Procedure Director dispatches the Unit 1 BOP to activate the SSF using AP/0/A/1700/025, as per EOP Immediate Manual Actions step 4.1.3.

08:32:50 Control Room reports to the OSM that BOTH Keowee Units have experienced Emergency Lockouts, but that CT-5 is available. In addition they state that power will be restored, from CT-5, as soon as the Unit 2 BOP gets to that source of power in the EOP ENCL 5.38.

08:41:00 SSF operator reports that per AP/1/A/1700/025 flow has been established to Unit 1's RCP Seals and SGs.

INITIATING CUE:

You are to perform the required actions of the Emergency Coordinator by referring to RP/0/B/1000/01, Emergency Classification:

1. Determine Emergency classification at 0800
2. Determine Emergency Classification at 0915
3. Complete appropriate Emergency Notification Form at 0841.

Note: Do not use Emergency Coordinator's judgment while classifying the event. When required, an operator will maintain the Emergency Coordinator's Log and assume the duties of the Control Room Offsite Communicator.