Job Performance Measure

PERFORM NSO DAILY LOGS TO CALCULATE SUMP FLOWRATES

JPM Number: A-N-1-R

Revision Number: 02

Date: 09/18

Developed By: _____ Exam Author _____ Date

Approved By: _____ Facility Representative _____ Date

SRRS: 3D.100; There are no retention requirements for this section

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

_____ 1. Task description and number, JPM description and number are identified.

_____ 2. Knowledge and Abilities (K/A) references are included.

_____ 3. Performance location specified. (in-plant, control room, simulator, or other)

_____ 4. Initial setup conditions are identified.

_____ 5. Initiating cue (and terminating cue if required) are properly identified.

_____ 6. Task standards identified and verified by SME review.

_____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

__N/A__ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure __Appendix A_____ Rev: __142__
Procedure _____ Rev: _____
Procedure _____ Rev: _____

_____ 10. Verify cues both verbal and visual are free of conflict.

_____ 11. Verify performance time is accurate

_____ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

Revision Record (Summary)

Revision 01 Bank JPM

Revision 02 Updated for 2019 ILT NRC Exam

SIMULATOR SETUP INSTRUCTIONS

This is an admin JPM that is performed in the Simulator

DOCUMENT PREPARATION

Completed copy of APPENDIX A, Drywell Floor/Equipment Drain Sump Pumps Flowrate Worksheet.

INITIAL CONDITIONS

1. You are the Unit 2 NSO.
2. Recorder replacements are in progress for the Drywell Floor Drain and Equipment Drain Sumps.
3. The Unit 2 Floor Drain and Equipment Drain Sumps were pumped by the Aux NSO at 0000, with the following data:

	STOPWATCH
	Elapsed Time
2A DWFDS	4 min 42 sec
2A DWEDS	9 min 31 sec

INITIATING CUE

1. The Unit Supervisor has directed you to complete the log for the pump data on Appendix A, Unit 2 NSO MODE 1, 2, and 3 REACTOR COOLANT LEAKAGE LOG, using the data provided above.
2. Another Operator will verify your calculations.
3. Provide the log to the Unit Supervisor when the task is complete.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
Note	Provide the examinee with the provided copy of Appendix A, DRYWELL FLOOR/EQUIPMENT DRAIN SUMP PUMPS FLOW RATE WORKSHEET and REACTOR COOLANT LEAKAGE LOG. Steps one (1) through four (4) may be performed in any order				
*1.	For 2A DWFDS pump calculates the gallons pumped of **1123** by taking **239** gpm pre-determined pump rate multiplied by pumping time of **282** seconds (4 min 42 sec) divided by **60** seconds.	(**239** gpm) × (**282 sec**) / (60 sec) = **1123 gal**	___	___	___
*2.	For 2A DWFDS calculates GPM (leak rate) of **2.33** gpm by taking **1123** gallons pumped divided by 8 hrs (**480** min), the difference in elapsed time between attempted pump starts	(**1123 gallons**) / (**480** min) = **2.34 gpm**	___	___	___
*3.	Logs 2.34 for GPM for 0000 entry on Reactor Coolant Leakage Log for DWFDS	Notifies Unit Supervisor that calculated leakage is greater than a 2 gpm increase within 24 hrs which does not meet Acceptance Criteria.	___	___	___
Cue	Acknowledge report of increased leakage and the failure to meet Acceptance Criteria				
Note	This does not meet the acceptance criteria for this sump.				
*4.	For 2A DWEDS pump calculates the gallons pumped of **514** by taking **54** gpm pre-determined pump rate multiplied by pumping time of **571** seconds (9 min 31 sec) divided by **60** seconds.	(**54** gpm) × (**571 sec**) / (60 sec) = **514 gal**	___	___	___
*5.	For 2A DWEDS calculates GPM (leak rate) of **2.14** gpm by taking **514** gallons divided 4 hrs (**240** min), the difference in elapsed time between attempted pump starts	(**514 gallons**) / (**240** min) = **2.14 gpm**	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
6.	Logs **2.14** for GPM for 0000 entry on Reactor Coolant Leakage Log for DWEDS	Notifies Unit Supervisor that calculated leakage is **2.14** gpm.	___	___	___
Cue	Acknowledge report.				
Note	This is within the acceptance criteria for this sump.				
7.	Notify Unit Supervisor task complete and/or the need for calculations verification.	Notifies Unit Supervisor.	___	___	___
Cue	Acknowledge report				
END					

JPM Stop Time: _____

CATEGORY 1

UNIT DAILY SURVEILLANCE LOG
ATTACHMENT A
EIGHT HOUR SHIFTS

UNIT 2(3)
APPENDIX A
REVISION (12) Today

UNIT 2 NSO
MODE 1, 2 AND 3 REACTOR COOLANT LEAKAGE LOG
DRYWELL FLOOR/EQUIPMENT DRAIN SUMP PUMPS FLOW RATE WORKSHEET

(1) Start stopwatch when starting DWFDS (DWEDS) pump.

(2) Stop stopwatch when DWFDS (DWEDS) pump trips on low level, or when DWFDS (DWEDS) flow drops to zero.

(3) Record gallons pumped (gal) and pump run time (sec) for the respective pump below. Divide gallons pumped by the pump run time (sec) and multiply by conversion factor to obtain flow rate in gpm for each pump:

2A DWFDS flow rate: $\frac{(159 \text{ gal})}{(40 \text{ sec})} \times \frac{(60 \text{ sec})}{(1 \text{ min})} = 239$ gpm

2B DWFDS flow rate: $\frac{(158 \text{ gal})}{(42 \text{ sec})} \times \frac{(60 \text{ sec})}{(1 \text{ min})} = 226$ gpm

2A DWEDS flow rate: $\frac{(461 \text{ gal})}{(515 \text{ sec})} \times \frac{(60 \text{ sec})}{(1 \text{ min})} = 54$ gpm

2B DWEDS flow rate: $\frac{(451 \text{ gal})}{(510 \text{ sec})} \times \frac{(60 \text{ sec})}{(1 \text{ min})} = 53$ gpm

Calculations verified by: John Smith / Today
Signature/Date

18 of 238

CATEGORY 1

UNIT DAILY SURVEILLANCE LOG
ATTACHMENT A
EIGHT HOUR SHIFTS

UNIT 2(3)
APPENDIX A
REVISION 142

UNIT 2 NSO
MODE 1, 2 AND 3 REACTOR COOLANT LEAKAGE LOG
DRYWELL FLOOR/EQUIPMENT DRAIN SUMP GALLONS PUMPED WORKSHEET

Ø. Obtain pump flow rate data for the respective DWFDS (DWEDS) pump from last performance of the Drywell Floor/Equipment Drain Sump Pumps Flow Rate Worksheet and record below.

Ø Start stopwatch when starting DWFDS (DWEDS) pump.

Ø Stop stopwatch when DWFDS (DWEDS) pump trips on low level, or when DWFDS (DWEDS) flow drops to zero.

4. Record pump flow rate (gpm) and pump run time (sec) for the respective pump below. Multiply by conversion factor to obtain gallons pumped for the respective pump:

For 2A DWFDS Pump: (239 gpm) (Step 1) × (282 sec) (stopwatch) × (1 min) (60 sec) = 1123 gallons pumped

For 2B DWFDS Pump: (226 gpm) (Step 1) × (sec) (stopwatch) × (1 min) (60 sec) = _____ gallons pumped

For 2A DWEDS Pump: (54 gpm) (Step 1) × (571 sec) (stopwatch) × (1 min) (60 sec) = 514 gallons pumped

For 2B DWEDS Pump: (53 gpm) (Step 1) × (sec) (stopwatch) × (1 min) (60 sec) = _____ gallons pumped

Calculations verified by: _____/_____
Signature/Date

5. Record calculated gallons pumped value in the Integrator Reading gallons Pumped column on the Mode 1, 2 and 3 Reactor Coolant Leakage Log.

CATEGORY 1

UNIT DAILY SURVEILLANCE LOG
ATTACHMENT A
EIGHT HOUR SHIFTS

UNIT 2(3)
APPENDIX A
REVISION 142

UNIT 2 NSO
MODE 1, 2 AND 3 REACTOR COOLANT LEAKAGE LOG
TECH SPEC SR 3.4.4.1 ASSOCIATED TECH SPEC 3.4.5

NOTES:

1. The Floor Drain Sump should be routinely pumped at least once per eight (8) hours. Pump the Floor Drain Sump no later than within 30 minutes of the time listed in this column, OR, if specified by Shift Supervision, at a frequency sufficient to satisfy Tech Spec SR 3.4.4.1.
2. Log actual time the floor drain sump pump was started. The integrated reading will be taken after pump trips on low sump level.
3. To maintain margin for Tech Spec surveillance requirements, the equipment drain sump should be routinely pumped at least twice per shift [every four (4) hours], as directed by Shift Supervision.
4. Divide FDL and EDL (gallons) by the difference in elapsed time (in minutes) between attempted pump starts. Use 240(480) minutes as the time interval following a four(eight) hour period where the pump did not start, as this is conservative and will give early indication of a problem.
5. For drywell leakage limitations refer to Tech Spec 3.4.4 and DOP 2000-24.
6. Copy the appropriate Sunday 0000 to 2000 readings from the previous week Unit NSO Daily Surveillance Log.
7. Calculate each of drywell floor/equipment drain sump pump flow rates as soon as practical (preferred on Monday) during the pumping of the drywell sumps utilizing stopwatches (refer to attached Drywell Floor/Equipment Drain Sump Pump Flow Rate Worksheet). Perform only once for each drywell sump pump every week preferably on Monday (check table when flow rate calculated, otherwise N/A). Pump flow rates can be calculated independent of each other (no specific pump order) and may not be able to be obtained on Monday due to low inputs.
8. IF a Drywell Drain Sump (Floor or Equipment) is out of service OR otherwise unavailable, THEN it is acceptable to allow the unavailable drain sump to overflow to the available drain sump. ALL leakage will be treated as UNIDENTIFIED LEAKAGE for the purpose of meeting LCO 3.4.4 and SR 3.4.4.1.
9. IF the drywell floor/equipment drain sump flow recorder is non-functional, THEN utilizing the Drywell Floor/Equipment Drain Sump Pump Gallons Pumped Worksheet, calculate drywell floor/equipment drain sump pump(s) gallons pumped. Utilize additional copies of the worksheet as necessary. Use of an alternative form of leakage monitoring for determining flow is acceptable.

CATEGORY 1

UNIT DAILY SURVEILLANCE LOG
ATTACHMENT A
EIGHT HOUR SHIFTS

UNIT 2(3)
APPENDIX A
REVISION 142

UNIT 2 NSO
MODE 1, 2 AND 3 REACTOR COOLANT LEAKAGE LOG
TECH SPEC SR 3.4.4.1 ASSOCIATED TECH SPEC 3.4.5

	Floor Drain Leakage (FDL) Note 4					Equipment Drain Leakage (EDL) Note 4			
Day	Note 1 Note 8 Note 9	Time Note 2	Integrator Reading Gallons Pumped Note 9	GPM Note 5, 8, 9 (AC: ≤ 5 gpm)	(AC: ≤ 2 gpm increase within 24 hr) Note 5, 8, 9 (✓)	Integrator Reading Gallons Pumped Note 9	GPM Note 5, 8, 9	Total FDL & EDL Note 5, 8, 9 (AC: ≤ 25 gpm)	US Initial
SUN	2000								
	1600								
	1200								
	0800								
	0400								
	0000								
SAT	2000								
	1600								
	1200								
	0800								
	0400								
	0000								
FRI	2000								
	1600								
	1200								
	0800								
	0400								
	0000								
THU	2000								
	1600								
	1200								
	0800								
	0400								
	0000								
WED	2000								
	1600								
	1200								
	0800								
	0400								
	0000								

21 of 238

CATEGORY 1

UNIT DAILY SURVEILLANCE LOG
ATTACHMENT A
EIGHT HOUR SHIFTS

UNIT 2 (3)
APPENDIX A
REVISION 142

UNIT 2 NSO
MODE 1, 2 AND 3 REACTOR COOLANT LEAKAGE LOG
Tech Spec SR 3.4.4.1 associated Tech Spec 3.4.5

			Floor Drain Leakage (FDL) Note 4					Equipment Drain Leakage (EDL) Note 4					
Day	Note 1 Note 8 Note 9	Time Note 2	Integrator Reading Gallons Pumped Note 9	GPM Note 5, 8, 9 (AC: ≤ 5 gpm)	NOTE 8, 9 (AC: ≤ 2 gpm increase within 24 hr) (✓)	Flow rate Calculated (✓) Note 7 A	Flow rate Calculated (✓) Note 7 B	Integrator Reading Gallons Pumped Note 9	GPM Note 5 8, 9	Total FDL & EDL NOTE 5, 8, 9 (AC: ≤ 25 gpm)	Flow rate Calculated (✓) Note 7 A	Flow rate Calculated (✓) Note 7 B	US Initials
TUE	2000												
	1600												
	1200												
	0800												
	0400												
	0000	0000	1123**	2.34				514**	2.14	4.48			
MON	2000	2000	—	—	—			458**	1.91	1.91			M
	1600	1600	148**	0.30	✓			456**	1.90	2.20			M
	1200	1200	—	—	—	N/A	N/A	461	1.92	1.92			M
	0800	0800	158	0.33	✓	—	✓	451	1.88	2.21	N/A	N/A	F
	0400	0400	—	—	—	—	—	451	1.88	1.88	—	✓	C
	0000	0000	159	0.33	✓	✓	—	461	1.92	2.25	✓	—	C
SUN*	2000	2000	—	—	—	X	X	455	1.90	X	X	X	X
	1600	1600	X	0.29	X	X	X	X	1.92	X	X	X	X
	1200	1200	X	—	X	X	X	X	1.89	X	X	X	X
	0800	0800	X	0.33	X	X	X	X	1.88	X	X	X	X
	0400	0400	X	—	X	X	X	X	1.82	X	X	X	X
	0000	0000	X	0.32	X	X	X	X	1.90	X	X	X	X

START *(Review all Notes on page 20)

** Recorder Replacement (See IR# 1234567)

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ RO ☐ SRO ☐ SRO Cert

JPM Title: Perform NSO Daily Logs to Calculate Sump Flowrates

JPM Number: A-N-1-R **Revision Number**: 02

Task Number and Title: 299L080 Perform the administrative duties for conduct of surveillance, special, or complex procedures

K/A Number and Importance: Generic 2.1.18 3.6 / 3.8

Suggested Testing Environment: Simulator

Alternate Path: ☐ Yes ☒ No **SRO Only**: ☐ Yes ☒ No **Time Critical**: ☐ Yes ☒ No

Reference(s): Appendix A, Rev. 141

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 12 minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

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

Comments: _____

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

1. You are the Unit 2 NSO.
2. Recorder replacements are in progress for the Drywell Floor Drain and Equipment Drain Sumps.
3. The Unit 2 Floor Drain and Equipment Drain Sumps were pumped by the Aux NSO at 0000, with the following data:

	STOPWATCH
	Elapsed Time
2A DWFDS	4 min 42 sec
2A DWEDS	9 min 31 sec

INITIATING CUE

1. The Unit Supervisor has directed you to complete the log for the pump data on Appendix A, Unit 2 NSO MODE 1, 2, and 3 REACTOR COOLANT LEAKAGE LOG, using the data provided above.
2. Another Operator will verify your calculations.
3. Provide the log to the Unit Supervisor when the task is complete.

Job Performance Measure

TORUS WATER LEVEL CORRECTION SURVEILLANCE

JPM Number: A-N-2-R

Revision Number: 00

Date: 09/18

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.100; There are no retention requirements for this section

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

_____ 14. Task description and number, JPM description and number are identified.

_____ 15. Knowledge and Abilities (K/A) references are included.

_____ 16. Performance location specified. (in-plant, control room, simulator, or other)

_____ 17. Initial setup conditions are identified.

_____ 18. Initiating cue (and terminating cue if required) are properly identified.

_____ 19. Task standards identified and verified by SME review.

_____ 20. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

__N/A__ 21. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 22. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure __DOS 1600-16_____ Rev: __08__
Procedure _____ Rev: _____
Procedure _____ Rev: _____

_____ 23. Verify cues both verbal and visual are free of conflict.

_____ 24. Verify performance time is accurate

_____ 25. If the JPM cannot be performed as written with proper responses, then revise the JPM.

_____ 26. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 00 New JPM developed for 2019 ILT NRC Exam

SIMULATOR SETUP INSTRUCTIONS

This is an admin JPM that may be performed in the Simulator or Classroom

DOCUMENT PREPARATION

Provide a clean copy of DOS 1600-16, Suppression Chamber Water Level Correction

INITIAL CONDITIONS

4. You are an extra NSO.
5. It is Monday Shift 1.
6. Maintenance is in progress on Unit 2 drywell cooler breakers.
7. Torus water level is -4.5 inches as indicated on LI 2-1602-3 on panel 902-3.
8. Drywell pressure is 1.44 psig.
9. Torus pressure is .02 psig.

INITIATING CUE

4. The Unit Supervisor has directed you to complete DOS 1600-16, Suppression Chamber Water Level Correction, and verify all requirements are within specifications.
5. Inform the Unit Supervisor when the task is complete.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
Note	Provide the examinee with the supplied copy of DOS 1600-16.				
1.	Complete Data Sheet 1.	Locates Data Sheet 1.	___	___	___
2.	Record indicated Suppression Chamber level using LI 2-1602-3 on 902-3 or local sight glass level per DOS 1600-02 (inches).	See attached KEY.	___	___	___
3.	Record drywell pressure. (psig)	See attached KEY.	___	___	___
4.	Record Suppression Chamber pressure. (psig)	See attached KEY.	___	___	___
*5.	Calculates Drywell to Suppression Chamber differential pressure (2-3). (psid)	See attached KEY.	___	___	___
*6.	Using figure 1, determines if Suppression Chamber water level is within the Tech Spec limits.	Examinee determines that corrected Suppression Chamber water level is outside Tech Spec limits.	___	___	___
7.	Informs Unit Supervisor of discrepancies and that the task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
Cue	Acknowledge report				
END					

JPM Stop Time: _____

CATEGORY 1

UNIT 2(3)
DOS 1600-16
REVISION 08

DATA SHEET 1

SUPPRESSION CHAMBER WATER LEVEL VERIFICATION

		MON	TUES	WED	THUR	FRI	SAT	SUN
1.	Record indicated Suppression Chamber level using LI 2(3)-1602-3 on 902(3)-3 or local sight glass level per DOS 1600-02 (inches)	-4.5						
2.	Record drywell pressure. (psig)	1.44						
3.	Record Suppression Chamber pressure. (psig)	.02						
4.	Drywell to Suppression Chamber differential pressure (2-3). (psid)	1.42						
5.	(AC) Using figure 1, determine if Suppression Chamber water level is within the Tech Spec limits. (Yes/No)	No						

Independent Verification Calculation (Sign/Date)

MON _____ TUES _____ WED _____

THUR _____ FRI _____ SAT _____

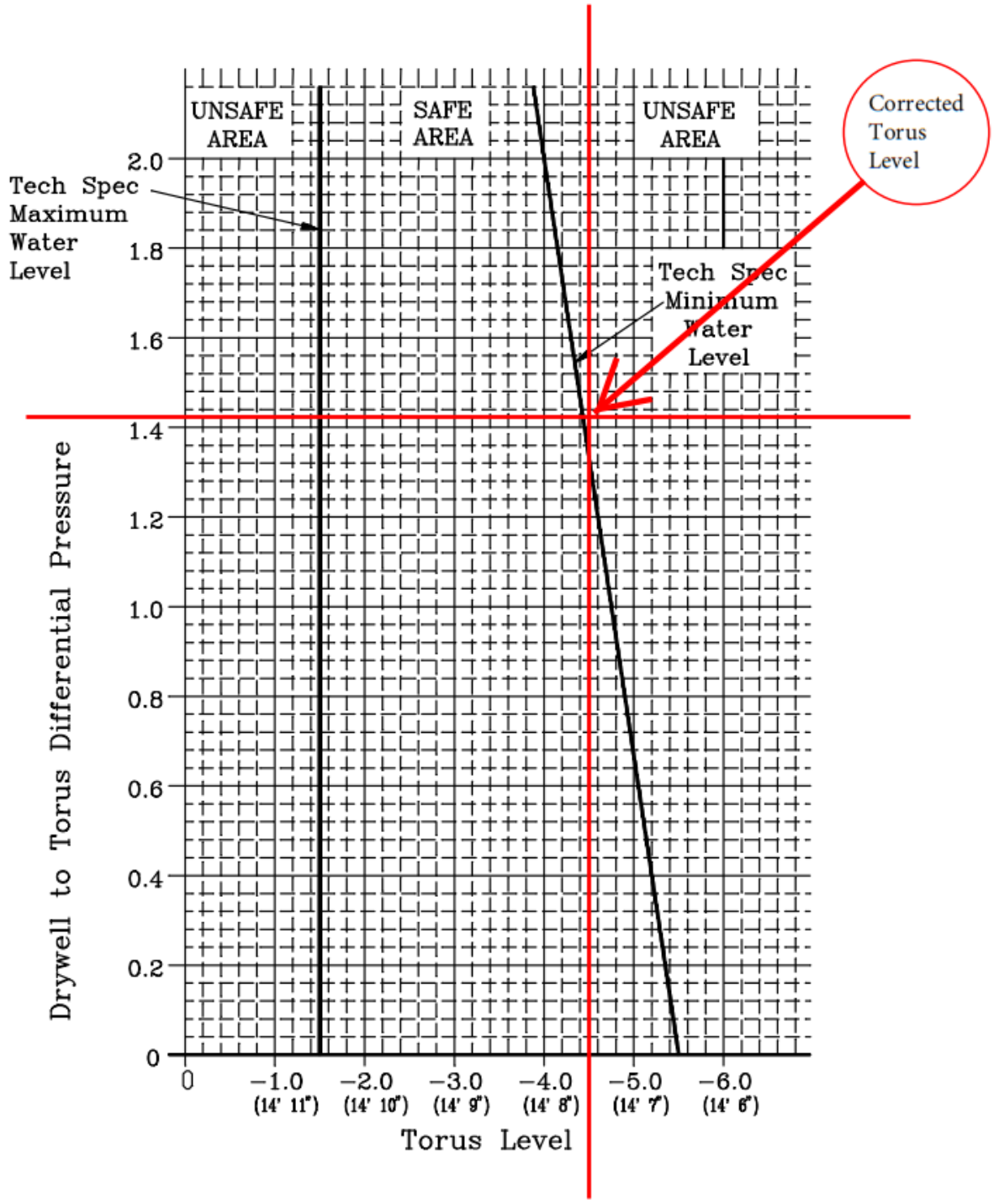
SUN _____

COMMENTS:

CATEGORY 1

UNIT 2(3)
DOS 1600-16
REVISION 08

FIGURE 1
PRESSURE TO LEVEL CORRELATION



5 of 5

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ RO ☐ SRO ☐ SRO Cert

JPM Title: TORUS WATER LEVEL CORRECTION SURVEILLANCE

JPM Number: A-N-2-R **Revision Number**: 00

Task Number and Title: 299L080 Perform the administrative duties for conduct of surveillance, special, or complex procedures

K/A Number and Importance: Generic 2.1.25 3.9 / 4.2

Suggested Testing Environment: Simulator

Alternate Path: ☐ Yes ☒ No **SRO Only**: ☐ Yes ☒ No **Time Critical**: ☐ Yes ☒ No

Reference(s): DOS 1600-16, Rev. 08

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 10 minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

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

Comments: _____

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

1. You are an extra NSO.
2. It is Monday Shift 1.
3. Maintenance is in progress on Unit 2 drywell cooler breakers.
4. Torus water level is -4.5 inches as indicated on LI 2-1602-3 on panel 902-3.
5. Drywell pressure is 1.44 psig.
6. Torus pressure is .02 psig.

INITIATING CUE

1. The Unit Supervisor has directed you to complete DOS 1600-16, Suppression Chamber Water Level Correction, and verify all requirements are within specifications.
2. Inform the Unit Supervisor when the task is complete.

Job Performance Measure

VERIFY STANDBY LIQUID CONTROL HEATER SURVEILLANCE

JPM Number: A-N-3-R

Revision Number: 02

Date: 09/18

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.100; There are no retention requirements for this section

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

_____ 27. Task description and number, JPM description and number are identified.

_____ 28. Knowledge and Abilities (K/A) references are included.

_____ 29. Performance location specified. (in-plant, control room, simulator, or other)

_____ 30. Initial setup conditions are identified.

_____ 31. Initiating cue (and terminating cue if required) are properly identified.

_____ 32. Task standards identified and verified by SME review.

_____ 33. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

__N/A__ 34. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 35. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure __DOS 1100-02_____ Rev: __17__
Procedure _____ Rev: _____
Procedure _____ Rev: _____

_____ 36. Verify cues both verbal and visual are free of conflict.

_____ 37. Verify performance time is accurate

_____ 38. If the JPM cannot be performed as written with proper responses, then revise the JPM.

_____ 39. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

Revision Record (Summary)

Revision 01 Bank JPM

Revision 02 Updated for 2019 ILT NRC Exam

SIMULATOR SETUP INSTRUCTIONS

This is an admin JPM that is performed in the Simulator

DOCUMENT PREPARATION

1. Markup a copy of DOS 1100-02.
2. Copy of Tech Spec Figure 3.1.7-2, Sodium Pentaborate Temperature Requirements

INITIAL CONDITIONS

10. You are the Unit 2 Aux NSO.
11. DOS 1100-02 was performed last shift.
12. The EO reported all surveillance requirements were within specifications.

INITIATING CUE

1. The Unit Supervisor has directed you to verify all requirements are within specifications, and paperwork is correct.
2. Inform the Unit Supervisor when the task is complete.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
Note	Provide the examinee with the provided copy of DOS 1100-02. When examinee goes to locate the Tech Spec 3.1.7-2 table, provide them with the included copy.				
*1.	Examinee should identify step I.4 should NOT have been initialed.	Identifies that step should NOT have been initialed.	___	___	___
*2.	Examinee should identify step I.9.g should NOT have been N/A'd.	Identifies that step should NOT have been N/A'd.	___	___	___
3.	Notify Unit Supervisor of discrepancies.	Notifies Unit Supervisor, to verify/correct issues.	___	___	___
Cue	Acknowledge report				
END					

JPM Stop Time: _____

CATEGORY 1

KEY

UNIT 2(3)
DOS 1100-02
REVISION 17

			INITIAL
I. 3.	Read and record SBLC line temperature(s):		
	SBLC A SUCTION TEMPERATURE, TIC 2(3)-1161	91 °F	
	SBLC B SUCTION TEMPERATURE, TIC 2(3)-1162	87 °F	
	SBLC RECIRC TEMPERATURE, TIC 2(3)-1163	82 °F	
4.	Verify all applicable SBLC line temperature ≥ 83°F (Desired temperature range is 87 to 110°F).		
5.	Record the As Found setpoint from the SP window of the indicator:	90	
6.	At TIC 2(3)-1154, U2(3) SBLC TANK HEATER CONTROL, momentarily depress SET/ENT (↵) to display the Output Value screen (small "o" appears on left side of SP window) AND determine heater output state (100 = ON, 0 = OFF).		
7.	Momentarily depress SET/ENT to display the Setpoint screen.		
8.	IF the heaters are OFF, THEN perform the following to raise the controller setpoint until TIC 2(3)-1154, U2(3) SBLC TANK HEATER CONTROL, heaters turn on.		
a.	Momentarily depress Δ key to raise setpoint 1°F (SP decimal point will flash).		
b.	Momentarily depress SET/ENT to program the new setpoint (SP decimal point steady).		
c.	Momentarily depress SET/ENT to display the Output Value screen (small "o" appears on left side of SP window) AND determine the heater state (100 = ON, 0 = OFF).		
d.	Momentarily depress SET/ENT to display the Setpoint screen.		
e.	Repeat Steps I.8.a through I.8.d UNTIL Output Value indicates "100" (heaters on).		

KEY

CATEGORY 1

KEY

UNIT 2(3)
DOS 1100-02
REVISION 17

			INITIAL
I	9.	Perform the following to determine the SBLC storage tank heater turn off setpoint:	
	a.	Momentarily depress ∇ key to lower setpoint 1°F (SP decimal point will flash).	
	b.	Momentarily depress SET/ENT to program the new setpoint (SP decimal point steady).	
	c.	Momentarily depress SET/ENT to display the Output Value screen (small "o" appears on left side of SP window) AND determine the heater output state (100 = ON, 0 = OFF).	
	d.	Momentarily depress SET/ENT to display Setpoint screen.	
	e.	Repeat Steps I.9.a through I.9.d UNTIL Output Value indicates "0" (heaters off).	
	f.	WHEN heaters indicate OFF, THEN record indicated setpoint: 79	
	g.	(AC) IF heater turn off temperature is ≥5°F below the existing fluid temperature, THEN notify the Operations Shift Supervisor. (Init. or N/A)	N/A
	10.	Perform the following to determine the SBLC storage tank heater turn on setpoint:	
	a.	Momentarily depress Δ key to raise setpoint 1°F (SP decimal point will flash).	
	b.	Momentarily depress SET/ENT to program the new setpoint (SP decimal point steady).	
	c.	Momentarily depress SET/ENT to display the Output Value screen (small "o" appears on left side of SP window) AND determine the heater state (100 = ON, 0 = OFF).	
	d.	Momentarily depress SET/ENT to display the Setpoint screen.	
	e.	Repeat Steps I.10.a through I.10.d UNTIL Output Value indicates "100" (heaters on).	
	f.	WHEN heaters indicate ON, THEN record indicated setpoint: 87	

KEY

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ RO ☐ SRO ☐ SRO Cert

JPM Title: Verify Standby Liquid Control Heater Surveillance

JPM Number: A-N-3-R **Revision Number**: 02

Task Number and Title: 299L080 Perform the administrative duties for conduct of surveillance, special, or complex procedures

K/A Number and Importance: Generic 2.2.12 3.7 / 4.1

Suggested Testing Environment: Simulator

Alternate Path: ☐ Yes ☒ No **SRO Only**: ☐ Yes ☒ No **Time Critical**: ☐ Yes ☒ No

Reference(s): DOS 1100-02, Rev. 17

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 10 minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

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

Comments: _____

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. DOS 1100-02 was performed last shift.
3. The EO reported all surveillance requirements were within specifications.

INITIATING CUE

1. The Unit Supervisor has directed you to verify all requirements are within specifications, and paperwork is correct.
3. Inform the Unit Supervisor when the task is complete.

Job Performance Measure

PERFORM CALCULATION FOR RADIOACTIVE DISCHARGE TO RIVER

JPM Number: A-N-4-R

Revision Number: 05

Date: 09/18

Developed By: _____ Exam Author _____ Date

Approved By: _____ Facility Representative _____ Date

SRRS: 3D.100; There are no retention requirements for this section

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

_____ 40. Task description and number, JPM description and number are identified.

_____ 41. Knowledge and Abilities (K/A) references are included.

_____ 42. Performance location specified. (in-plant, control room, simulator, or other)

_____ 43. Initial setup conditions are identified.

_____ 44. Initiating cue (and terminating cue if required) are properly identified.

_____ 45. Task standards identified and verified by SME review.

_____ 46. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

__N/A__ 47. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 48. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure __DCP 2000-28_____ Rev: __26__
Procedure __DOP 2000-110____ Rev: __42__
Procedure _____ Rev: _____

_____ 49. Verify cues both verbal and visual are free of conflict.

_____ 50. Verify performance time is accurate

_____ 51. If the JPM cannot be performed as written with proper responses, then revise the JPM.

_____ 52. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 04 Bank JPM

Revision 05 Updated for 2019 ILT NRC Exam

SIMULATOR SETUP INSTRUCTIONS

This is an admin JPM that is performed in the Simulator or Classroom

DOCUMENT PREPARATION

3. Markup a copy of DCP 2000-28.
4. Markup a copy of DOP 2000-110.

INITIAL CONDITIONS

13. You are the an extra NSO.
14. The WSGT has been on recirc in preparation for river discharge.
15. The river discharge card calculations need to be performed.
16. Chemistry has provided a copy of DCP 2000-28 Attachment 1. (**HAND TO EXAMINEE**)
17. The calibration constant to use is 4.72 E^{+8}.
18. Attachment 1 of DOP 2000-110 needs to be performed.
19. Another Operator will perform the remainder of the attachments of DOP 2000-110.

INITIATING CUE

4. The Unit Supervisor has directed you to complete Attachment 1 of DOP 2000-110, in accordance with step G.5. (**HAND TO EXAMINEE**)
5. Inform the Unit Supervisor when calculations are completed and require verification.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
Note	Provide the examinee with the supplied copy of DCP 2000-28 Attachment 1 and DOP 2000-110				
1.	Examinee reviews DOP 2000-110 and locates attachment 1.	Locates Attachment 1.	___	___	___
*2.	Examinee performs step 1 and Calculates Discharge Flow Rate of 9082 gpm.	See attached key.	___	___	___
*3.	Examinee performs step 3.a and calculates Expected CPM of 10.84.	See attached key.	___	___	___
*4.	Examinee performs step 3.b and calculates High Alarm of 4.70 E+4.	See attached key.	___	___	___
5.	IF calculated High Alarm Setpoint is > 4.5E+05, THEN use 4.5E+05 as the High Alarm Setpoint.	Determines the High Alarm Setpoint to be 4.70 E+4.	___	___	___
*6.	Examinee performs step 5 and calculates Alert Setpoint by multiplying the High Alarm Setpoint by 0.5.	See attached key.	___	___	___
7.	Informs Unit Supervisor verification is required and task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
Cue	Acknowledge report				
END					

JPM Stop Time: _____

Exelon Generation

CATEGORY 1

KEY

UNIT 2/3
DOP 2000-110
REVISION 42

ATTACHMENT 1
WASTE SURGE TANK RADIOACTIVE WASTE DISCHARGE TO RIVER CARD

BATCH NUMBER **19-005**
ROUTING:
1. RADWASTE COORDINATOR
2. HEALTH PHYSICIST
© River Discharge Secured Early Due to: _____

If required, verify Automatic Grab Sample Obtained AND Reset 45 Second Timer.
Date:_____ Time:_____
Initial:_____ ©(W-1)

BY OPERATOR		INITIAL
DATE OF DISCHARGE		
TANK LEVEL AT START	%	
DILUTION FLOW	GPM	
TIME OF PUMP START		
LEVEL CHECK TIME		
TANK LEVEL	%	
DISCHARGE RATE	GPM	
DATE DISCH COMPLETE		
TIME DISCH COMPLETE		
TANK LEVEL COMPLETION		

1. Calculate Discharge Rate below (Minimum Allowed Calculated Discharge Rate 250 gpm):

(Dilution Flow / Total DWC Fraction) x 0.2 = Calculated Allowable Discharge Rate

(40,000 gpm / **$8.809 E^{-1}$**) x 0.2 = **9082** gpm

2. This river discharge has an Authorized Calculated Discharge Rate of: **9082** gpm.

3. Calculate High Alarm Setpoint below:

a. Total Isotopic Activity x Calibration Constant = 09-01 Expected CPM

$2.296 E^{-8}$ x **$4.72 E^{+8}$** = **10.84**

b. [Expected CPM x Dilution Factor]/Total Gamma MPC Fraction = High Alarm

[**10.84** x 161] / **$3.710 E^{-2}$** = **$4.70 E^{+4}$**

4. IF calculated High Alarm Setpoint is > 4.5E+05, THEN use 4.5E+05 as the High Alarm Setpoint.

5. IF the calculated High Alarm Setpoint is < 4.5E+5, THEN calculate the Alert Setpoint by multiplying the High Alarm Setpoint by 0.5. Otherwise, use 2.25E+05.

Alert Setpoint: **$2.35 E^{+4}$**

Calculated By: **Candidate Signature**

Verified By: _____
Shift Manager, or designee

KEY

16 of 36

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ RO ☐ SRO ☐ SRO Cert

JPM Title: Perform Calculation For Radioactive Discharge To River

JPM Number: A-N-4-R **Revision Number**: 05

Task Number and Title: 29000LP051, Given, and in accordance with, appropriate procedures, perform calculations for a radioactive waste discharge to the river.

K/A Number and Importance: Generic 2.3.11 3.8 / 4.3

Suggested Testing Environment: Simulator

Alternate Path: ☐ Yes ☒ No **SRO Only**: ☐ Yes ☒ No **Time Critical**: ☐ Yes ☒ No

Reference(s): DCP 2000-28, Rev. 26
DOP 2000-110, Rev. 42

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

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

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

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

Comments: _____

_____

_____

_____

_____

_____

_____

_____

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

1. You are an extra NSO.
2. The WSGT has been on recirc in preparation for river discharge.
3. The river discharge card calculations need to be performed.
4. Chemistry has provided a copy of DCP 2000-28 Attachment 1.
5. The calibration constant to use is 4.72 E^{+8}.
6. Attachment 1 of DOP 2000-110 needs to be performed.
7. Another Operator will perform the remainder of the attachments of DOP 2000-110.

INITIATING CUE

1. The Unit Supervisor has directed you to complete Attachment 1 of DOP 2000-110, in accordance with step G.5.
2. Inform the Unit Supervisor when calculations are completed and require verification.