Draft Submittal

(Pink Paper)

HARRIS 2008-301

OPERATING TEST ADMINISTERED 3/10 - 3/13/2008

1. ADMINISTRATIVE TOPICS OUTLINE (ES-301-1)
2. CONTROL ROOM SYSTEMS & FACILITY WALK-THROUGH TEST OUTLINE (ES-301-2)
3. ADMINISTRATIVE JPMS
4. IN-PLANT JPMS
5. CONTROL ROOM JPMS (SIMULATOR JPMS)

DRAFT

Facility:	HARRIS	Date of Examination:	March, 2008
Examination Level (circle one):	RO / SRO	Operating Test Number:	**NRC**

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M	Determine the cold, xenon free boron concentration requirement prior to commencing a natural circulation cooldown. (EPP-5/OST-1036) G2.1.25 (2.8/3.1) – Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.
Conduct of Operations	P, M	Perform the Train "A" Emergency Service Water System Essential Flow Path Valve Alignment Verification (Control Room Valves only). (OST-1015) 2.1.31 (4.2) – Ability to locate control room switches, controls and indications and to determine that they are correctly reflecting the desired plant lineup.
Equipment Control	M	Perform a Quadrant Power Tilt Ratio (QPTR) calculation with a control rod misaligned. (OST-1039) 2.2.12 (3.0) – Knowledge of surveillance procedures.
Radiation Control	M	Given an emergency situation, determine the applicable dose limit and the number of people that will be required to perform the task, with no one exceeding the limit. 2.3.4 (2.5/3.1) – Knowledge of radiation exposure limits and contamination control, including permissible limits in excess of those authorized.
Emergency Plan		**NOT SELECTED FOR RO**

NOTE: All items (5 total are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

*Type Codes & Criteria:
(C)ontrol room
(D)irect from bank (≤ 3 for ROs; ≤ for SROs & RO retakes)
(N)ew or (M)odified from bank (> 1)
(P)revious 2 exams (≤ 1; randomly selected)
(S)imulator

HARRIS 2008 NRC RO 301-1 SUMMARY

RO/SRO Common A1-1

Determine the cold, xenon free RCS boron concentration requirement in accordance with the SDM procedure (OST-1036) prior to commencing a natural circulation cooldown (EPP-5). Similar task used on 2006 AUDIT Examination but not presently in the facility bank. Modify by changing point-in-core life/core cycle and existing RCS boron concentration.

RO A1-2

Perform the Train "A" Emergency Service Water System Essential Flow Path Valve Alignment Verification (OST-1015). This is a randomly selected task from 2007 NRC Exam (A1-1) that is not in the facility bank. Modify by changing one or more of the misaligned positions.

RO A2

Perform a QPTR calculation as required by the abnormal procedure for a misaligned rod. Modify Bank JPM CR-036 by changing the PRNIS values and the initial power level.

RO/SRO Common A3

Given an accident and a personnel rescue or protection of valuable equipment scenario, determine stay time and the number of people required to complete the task without exceeding the facility limit. New JPM but marked as "M" because it is a variation on a common approach to meet the RADIATION CONTROL requirement.

DRAFT

Facility:	HARRIS	Date of Examination:	March, 2008
Examination Level (circle one):	RO / **SRO**	Operating Test Number:	**NRC**

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M	Determine the cold, xenon free RCS boron concentration requirement prior to commencing a natural circulation cooldown. (EPP-5/OST-1036) G2.1.25 (2.8/3.1) – Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.
Conduct of Operations	P, M	Perform a Control Room Supervisor review of the control board readings log. (OST-1021, Attachment 4) G2.1.18 (3.0) – Ability to make accurate, clear and concise logs, records, status boards, and reports.
Equipment Control	N	Review the completed surveillance for Motor Driven AFW Pump "A". (OST-1211) 2.2.12 (3.4) – Knowledge of surveillance procedures.
Radiation Control	M	Given an emergency situation, determine the applicable dose limit and the number of people that will be required to perform the task, with no one exceeding the limit. 2.3.4 (2.5/3.1) – Knowledge of radiation exposure limits and contamination control, including permissible limits in excess of those authorized.
Emergency Plan	M	Evaluate a change in conditions with an EAL in effect and take the required actions. 2.2.41(4.1) – Knowledge of the emergency action level thresholds and classifications.

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

*Type Codes & Criteria:
(C)ontrol room
(D)irect from bank (≤ 3 for ROs; ≤ for SROs & RO retakes)
(N)ew or (M)odified from bank (> 1)
(P)revious 2 exams (≤ 1; randomly selected)
(S)imulator

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HARRIS 2008 NRC SRO 301-1 SUMMARY

RO/SRO Common A1-1

Determine the cold, xenon free RCS boron concentration requirement in accordance with the SDM procedure (OST-1036) prior to commencing a natural circulation cooldown (EPP-5). Similar task used on 2006 AUDIT Examination but not presently in the facility bank. Modify by changing point-in-core life/core cycle and existing RCS boron concentration.

SRO A1-2

Perform the Unit SCO review of the control board readings log, identify all errors (3-4) and determine the TS application, as necessary. This is a randomly selected task from the 2006 NRC Exam (A1-2) that is not in the facility bank. Modify by changing two (or more) errors and ensuring one resultant TS application.

SRO A2

Perform the Unit SCO review of the completed surveillance procedure (containing two or more errors) for Motor Driven AFW Pump "A" (OST-1211). New JPM.

RO/SRO Common A3

Given an accident and a personnel rescue or protection of valuable equipment scenario, determine stay time and the number of people required to complete the task without exceeding the facility limit. New JPM but marked as "M" because it is a variation on a common approach to meet the RADIATION CONTROL requirement.

SRO A4

Given the plant in an SAE, evaluate the effect of a change in conditions on the Emergency Action Level (EAL). Complete the resulting Emergency Notification Form (ENF) and make a PAR within the required time. Marked as "M" because there are numerous EAL JPM's in the facility bank which may be used as a starting point.

Facility:	HARRIS	Date of Examination:	3/2008
Exam Level (circle one):	RO / SRO(I) / **SRO (U)**	Operating Test No.:	**NRC**

Control Room Systems@ (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. Initiate Emergency Boration following a reactor trip (AOP-002) System: 004/Bank JPM CR-037	D, A, S	1
b. **Align ECCS for long-term recirculation (EPP-010)** **System: EPE011/Bank JPM CR-031**	**M, A, S**	**3**
c. Initiate RCS Feed and Bleed (FRP-H.1) System: E05/2007 NRC Exam JPM d	P, D, A, S	4P
d. Respond to a loss of Normal Service Water (AOP-022) System: 076	N, A, S	4S
e. Place the Containment Hydrogen Purge System in operation (OP-125) ***RO Only*** System: 028/Bank JPM CR-021	D, C	5
f. **Transfer an Emergency Bus to an EDG due to a degraded grid condition (AOP-028, Attachment 2)** **System: 062**	**N, A, S**	**6**
g. Respond to a Fuel Handling Building RMS alarm (AOP-005, OP-170) System: 072	N, L, S	7
h. **Align CCW to support RHR Initiation (OP-145)** **System: 008/Bank JPM CR-085**	**D, L, S**	**8**
In-Plant Systems@ (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. **Perform the local actions for a dropped rod recovery (AOP-001)** **System: 001/Bank JPM IP-153**	**D, E**	**1**

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j.	Isolate the ECCS Accumulators after a control room evacuation (AOP-004, Step 38) System: APE068	N, E	8
k.	**Terminate a Waste Gas Release (OP-120.07)** **System: 071/2007 NRC JPM k**	**P, D, R**	**9**

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

HARRIS 2008 NRC 301-2 JPM SUMMARY STATEMENTS

a. Initiate Emergency Boration in accordance with AOP-002, EMERGENCY BORATION, following a reactor trip. The alternate path is to take corrective action for two or more stuck rods as determined in EPP-4, REACTOR TRIP. Bank JPM CR-037.

b. Transfer to Cold Leg Recirculation in accordance with EPP-10, TRANSFER TO COLD LEG RECIRCULATION, following a LBLOCA. The alternate paths are corrective actions for alignment failures in two different flowpaths. Modify Bank JPM CR-031 by changing the misaligned valve in one RNO step and the running pump combination.

c. Initiate RCS Feed and Bleed IAW FRP-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK. The alternate path is to establish an adequate vent path using RV Head Vents following failure of one PORV to open. Randomly selected repeat from 2007 NRC Exam (JPM d) not in the facility bank.

d. Respond to a loss of the only available Normal Service Water Pump in accordance with AOP-022, LOSS OF SERVICE WATER. The alternate path is to start one Essential Service Water Pump and to trip the Main Turbine with power less than P-10. New JPM.

e. Place the Containment Hydrogen Purge System in operation in accordance with OP-125, POST ACCIDENT HYDROGEN SYSTEM. Bank JPM CR-021. This JPM will be simulated in the Main Control Room (using cues) because some equipment important to the task is not simulated.

f. With a degraded grid condition, transfer an emergency bus to an EDG in accordance with AOP-028, GRID INSTABILITY – Attachment 2, ENERGIZING EMERGENCY BUSES FROM EDGS, by purposely de-energizing a bus. The alternate path is starting an EDG following evaluation of Voltage/Frequency on an emergency bus and manually resetting the Load Sequencer after the cycle is complete. New JPM.

g. Respond to a Fuel Handling Building RMS alarm in accordance with AOP-005, RADIATION MONITORING SYSTEM, and OP-170, FUEL HANDLING BUILDING HVAC. A FHB monitor alarms and FHB HVAC components fail to align properly. New JPM.

h. Align CCW to support RHR Initiation in accordance with OP-145, COMPONENT COOLING WATER. Bank JPM CR-085.

i. Perform the local actions for a dropped rod recovery in accordance with AOP-001, MALFUNCTION OF ROD CONTROL AND INDICATION SYSTEM. Bank JPM-IP-153.

j. Isolate the ECCS Accumulators after a control room evacuation in accordance with AOP-004, REMOTE SHUTDOWN, Step 38. New JPM.

k. Terminate a Waste Gas Release in accordance with OP-120.07, WASTE GAS PROCESSING. Randomly selected repeat from 2007 NRC Exam (JPM k).

Facility:	HARRIS	Task No.:	301144H601
Task Title:	Determine the cold, xenon free boron concentration requirement for a natural circulation cooldown.	JPM No.:	2008 NRC JPM RO/SRO A1-1
K/A Reference:	2.1.25 (2.8/3.1)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom X Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

- The unit tripped due to a loss of off-site power. All control rods have inserted.
- The operating crew is performing EPP-5, NATURAL CIRCULATION COOLDOWN.
- The unit will be taken to CSD.
- Current RCS Boron concentration is 1125 ppm.
- Core Burnup is 130 EFPD.

Task Standard: Calculations within specified range.

Required Materials: Calculator

General References:

- EPP-5, NATURAL CIRCULATION COOLDOWN
- OST-1036, SDM CALCULATION MODES 1-5
- Curve Book

Handouts:

- EPP-5, Step 7
- OST-1036
- Curve A-X-22 (**Ensure and/or revise core burnup or JPM values/tolerances such that they are in alignment with the current revision of this curve)**

Initiating Cue: Perform EPP-5, Step 7 – Determine the xenon free cold shutdown boron concentration. POWERTRAX is not available.

Time Critical Task: NO

Validation Time: 15 minutes

(Denote Critical Steps with a √)

Start Time: _____.

Performance Step: 1 Reviews EPP-5, Step 7.

Standard: Determines OST-1036 applies.

Evaluator Cue: **Provide EPP-5, Step 7.**

Comment:

Performance Step: 2 Locates/reviews OST-1036.

Standard: Determines OST-1036, Section 7.2 applies.

Evaluator Cue: **Provide OST-1036.**

Comment:

Performance Step: 3 Record the following:

- Core burn up from MCR Status board.
- Temperature for which this SDM calculation is taking credit.
- Latest available RCS boron sample.

Standard: From Initial Conditions, records:

- 130 EFPD
- 200 ˚F, or less
- 1125 ppm

Comment:

Performance Step: 4 Record the following:
- RCS B-10 ATOM percent from MCR Status Board **OR** RWST B-10 Atom percent, **IF** following Core Reload.

Standard: Records 19.36.

Evaluator Cue: **RCS B-10 ATOM percent from the MCR Status Board is 19.36.**

Comment:

Performance Step: 5 Check rod status as follows:
- If all rods are inserted, record CRODS = 0 in Step 7.2.2.a and N/A Step 7.2.2.b.

Standard: Records 0 in 7.2.2.a and N/A's 7.2.2.b.

Comment:

Performance Step: 6 Determine Xenon free SDM boron concentration, CSDM, as follows:
a. Record the following information:
- Boron addition to compensate for stuck rods from Attachment 1 or Step 7.2.2.a.

Standard: Enters 0.

Comment:

Performance Step: 7 Determine Xenon free SDM boron concentration, CSDM, as follows:
a. Record the following information:
- Uncorrected required SDM boron concentration from curve A-X-22 (Use action level line on curve.)

Standard: Reads ≥2020 ≤2040 ppm.

Evaluator Cue: **Provide Curve A-X-22.**

Comment:

Performance Step: 8 Determine required Xenon free SDM uncorrected boron concentration CREQ:
CREQ = CRODS + CCURVE
CREQ = _____

Standard: Records ≥2020 ≤2040 ppm.

Comment:

√ **Performance Step: 9** Determine Xenon free SDM corrected boron concentration, CSDM:
19.9/Arcs x CREQ

Standard: Divides 19.9 by 19.36 and multiplies by CREQ:
19.9/19.36 (≥2020 ≤2040 ppm) =
Records ≥2076 ≤2097 ppm.

Comment:

√ **Performance Step: 10**

Determine whether SDM requirements can be met by Xenon free SDM calculation:
Compare RCS boron concentration, CRCS, and Xenon free SDM corrected boron concentration, CSDM:

- CRCS _____ RCS boron sample from Step 7.2.01.
- CSDM _____ Xenon free SDM corrected boron concentration from Step 7.2.03.c.

If CRCS is less than or equal to CSDM, then continue with Step 7.2.5 to take credit for Xenon effects.

Standard:

Determines current RCS boron concentration is <CSDM boron concentration.

Comment:

Terminating Cue:

When the candidate proceeds to Step 7.2.5: This JPM is complete.

Stop Time: _____.

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2008 NRC JPM RO/SRO A1-1

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- The unit tripped due to a loss of off-site power. All control rods have inserted.
- The operating crew is performing EPP-5, NATURAL CIRCULATION COOLDOWN.
- The unit will be taken to CSD.
- Current RCS Boron concentration is 1125 ppm.
- Core Burnup is 130 EFPD.

INITIATING CUE:

Perform EPP-5, Step 7 – Determine the xenon free cold shutdown boron concentration. POWERTRAX is not available.

Facility:	HARRIS	Task No.:	341010H302
Task Title:	Perform Review of Daily Surveillance Requirements Log	JPM No.:	2008 NRC SRO A1-2
K/A Reference:	2.1.18 (3.0)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom X Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:
- The plant is in Mode 2, waiting for management approval to proceed to Mode 1.
- EDG "B" is synchronized to the grid for a post-maintenance test.
- The Daily Surveillance Logs (OST-1021, Attachment 4) for 2100 have been completed.

Task Standard: All errors and TS actions identified

Required Materials: Perform in a location with TS or electronic access to TS available.

General References:
- OST-1021, DAILY SURVEILLANCE REQUIREMENTS, DAILY INTERVAL, MODE 1 AND 2
- Technical Specifications

Handouts:

- Copy of a completed OST-1021, Attachment 4.
- Delete all notes.
- Substitute the following incorrect data:
  - Accumulator CLA "A" pressure (both channels) progressing throughout the day from 630 to 667 PSIG (TS).
  - Accumulator CLA "A" Previous Day Level @ 80%/83% with readings progressively rising throughout the day to 90%/92% (Sampling required).
  - Condensate Storage Tank Level (both channels) progressively lowering from 85% to 60% throughout the day (TS).
  - RCS Loop Flow Channel FI-424 progressively lowering from 100.21 to 98.13 throughout the day (TS).
  - EDG Room Temperature channel TDG6903B @ 121°F (should be circled)

Initiating Cue: You are the USCO and have just completed an emergency watch relief due to illness of the scheduled person. Review the OST-1021, Attachment 4 logs. At the conclusion of your review, discuss any findings with me.

Time Critical Task: No

Validation Time: 20 minutes

(Denote Critical Steps with a √)

Start Time: _____.

Performance Step: 1 Obtain completed log.

Standard: Reviews handout.

Evaluator Cue:

- **Provide handout for NRC SRO A1-2 after the Initial Conditions are reviewed and the Initiating Cue is provided.**
- **If necessary, after the applicant discusses each finding: What action, if any, is required relative to this reading?**

Evaluator Note: **Only the incorrect items in the logs are identified in the JPM Steps.**

Comment:

√ **Performance Step: 2** Review OST-1021, Attachment 4 for approval.

Standard:

- Identifies that Cold Leg Accumulator CLA A Pressure is above Acceptance Criteria (Sheet 1)
- Reading should be circled and entry into TS 3.5.1.d, Action a – restore to operable within 1 hour, is required

Comment:

√ **Performance Step: 3** Review OST-1021, Attachment 4 for approval.

Standard:

- Identifies that Cold Leg Accumulator CLA A level has increased more than 9%. (Sheet 1)
- Sampling is required.

Evaluator Cue: **If asked: The last sample of CLA B was 36 hours ago.**

Comment:

√ **Performance Step: 4** Review OST-1021, Attachment 4 for approval.

Standard:

- Identifies one RCS Loop "B" Flow Channel (Sheet 5) is below Acceptance Criteria.
- Reading should be circled. TS does not apply in Mode 2.

Comment:

√ **Performance Step: 5** Review OST-1021, Attachment 4 for approval.

Standard:

- Condensate Storage Tank Level (Sheet 7) is below Acceptance Criteria.
- Reading should be circled and entry into TS 3.7.1.3 Action a – restore to operable or be in HSB within 6 hours, is required.

Comment:

√ **Performance Step: 6** Review OST-1021, Attachment 4 for approval.

Standard:

- Identifies Diesel Generator Room 261 temperature TDG6903B (Sheet 10) exceeds Acceptance Criteria.
- Reading should be circled and investigative/corrective actions implemented.

Evaluator Cue: **If requested: EDG "B" has been running for 30 minutes.**

Evaluator Note: **Reading does not meet criteria for declaring equipment in the room inoperable.**

Comment:

Terminating Cue: **After all findings have been reviewed: Evaluation on this JPM is complete.**

Stop Time: _____.

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2008 NRC SRO A1-2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- The plant is in Mode 2, waiting for management approval to proceed to Mode 1.
- EDG "B" is synchronized to the grid for a post-maintenance test.
- The Daily Surveillance Logs (OST-1021, Attachment 4) for 2100 have been completed.

INITIATING CUE:

You are the USCO and have just completed an emergency watch relief due to illness of the scheduled person. Review the OST-1021, Attachment 4 logs. At the conclusion of your review, discuss any findings with me.

HANDOUT
NRC EXAM
SRO A1-2

Progress Energy

C
CONTINUOUS
USE

HARRIS NUCLEAR PLANT

PLANT OPERATING MANUAL

VOLUME 3

PART 9

PROCEDURE TYPE: OPERATIONS SURVEILLANCE TEST

NUMBER: **OST-1021**

TITLE: **DAILY SURVEILLANCE REQUIREMENTS**
DAILY INTERVAL
MODE 1, 2

NOTE: This procedure has been screened per PLP-100 Criteria and determined to be CASE III. No additional management involvement is required.

Attachment 4 - Daily Surveillance Requirements Log
Sheet 1 of 15

TECH SPEC	4.5.1.1.a.1, a.2								
PARAMETER	ECCS ACCUMULATORS								
	CLA A PRESSURE		CLA B PRESSURE		CLA C PRESSURE		ISOLATION VALVES		
INSTRUMENT	PI - 921	PI - 923	PI -925	PI - 927	PI - 929	PI - 931	CLA A 1SI-246	CLA B 1SI-247	CLA C 1SI-248
ACCEPTANCE CRITERIA	Between 585 and 665 psig						OPEN		
MODE	1, 2 AND 3 WITH RCS PRESSURE ABOVE 1000 PSIG								
0300	630	630	610	615	620	620	T	T	T
0900	635	636	611	615	620	621	M	M	M
1500	651	650	611	616	621	620	AB	AB	AB
2100	667	668	612	617	621	622	JCh	JCh	JCh

TECH SPEC	4.5.1.1.a.1, 4.5.1.1. b (partial)								
PARAMETER	ECCS ACCUMULATORS								
	CLA A LEVEL			CLA B LEVEL			CLA C LEVEL		
INSTRUMENT	LI - 920	LI - 922	Sampling Not Required per Att 6	LI - 924	LI - 926	Sampling Not Required per Att 6	LI - 928	LI - 930	Sampling Not Required per Att 6
ACCEPTANCE CRITERIA	between 66 and 96 % indicated level with less than 9% cumulative level increase (excluding makeup from operable RWST) since last satisfactory sample								
MODE	1, 2 AND 3 WITH RCS PRESSURE ABOVE 1000 PSIG								
Previous Days Level	80	83		83	79		83	80	
0300	83	85	T	83	79	T	83	80	T
0900	85	87	M	83	79	M	83	80	M
1500	87	90	AB	83	79	AB	83	80	AB
2100	90	92	JCh	83	79	JCh	83	80	JCh

TECH SPEC	4.4.6.2.1.b						4.3.2.1.1c, 2c, 3a3, 3b3, 3c3, 4c, 5c, 6d, 6g; 4.3.3.6.1a; 4.6.1.4				
PARAMETER	CNMT SUMP FLOW MONITORING		SUMP LEAK RATE		CNMT SUMP LEVEL		CONTAINMENT PRESSURE				
INSTRUMENT	ALB 1 6-1	ERFIS	URE 9001	URE 9002	LCT 7161A	LCT 7161B	PI 950	PI 952	PI 951	PI 953	N/A
ACCEPTANCE CRITERIA	NO ALARM	PROGRAM CHECKS PER OP-163	N/A		N/A		LESS THAN 1.6 PSIG				CHAN. CHECK
MODE	1, 2, 3 and 4						1, 2, 3 and 4				
0300	T	T	0.00	0.00	1.73	1.69	0	0	0	0	T
0900	M	M	0.00	0.00	1.73	1.69	0	0	0	0	M
1500	AB	AB	0.00	0.00	1.73	1.69	0	0	0	0	AB
2100	JCh	JCh	0.00	0.00	1.73	1.69	0	0	0	0	JCh

Attachment 4 - Daily Surveillance Requirements Log
Sheet 2 of 15

TECH SPEC	4.1.2.6.a.2; 4.5.4.a.1; 4.3.2.1.7b, 8b; 4.3.3.6.9					4.1.2.6.a.2, a.3		
PARAMETER	RWST LEVEL					BORIC ACID TANK		
INSTRUMENT	LI-990	LI-991	LI-992	LI-993	N/A	LI-106	LI-161.1 SB	TCS7240
ACCEPTANCE CRITERIA	GREATER THAN OR EQUAL TO 92%				CHANNEL CHECK	GREATER THAN OR EQUAL TO 74%		GREATER THAN OR EQUAL TO 65°F
MODE	1, 2, 3, and 4					1, 2, 3 and 4		
0300	95	95	94	94	OT	91	92	90
0900					MM			
1500					MM			
2100					OR			

TECH SPEC	4.5.2.a						4.4.9.3
PARAMETER	ECCS VALVE ALIGNMENT						PRZ SPRAY ΔT
INSTRUMENT	1SI-340	1SI-341	1SI-359	1SI-86	1SI-52	1SI-107	TI-123 TI-454.1
ACCEPTANCE CRITERIA	OPEN AND PULLED TO LOCK WITH CONTROL POWER OFF		SHUT AND PULLED TO LOCK WITH CONTROL POWER OFF				LESS THAN OR EQUAL TO 625°F
MODE	1, 2, and 3						DURING AUX SPRAY OPS
0300	OT	OT	OT	OT	OT	OT	N/A
0900	MM	MM	MM	MM	MM	MM	N/A
1500	MM	MM	MM	MM	MM	MM	N/A
2100	OR	OR	OR	OR	OR	OR	NA

TECH SPEC	4.4.3.1; 4.3.1.1.11; 4.3.3.6.5			
PARAMETER	PRESSURIZER LEVEL			
INSTRUMENT	LI-460	LI-461.1	LI-459A.1	N/A
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 90%			CHANNEL CHECK
MODE	1, 2, and 3			1
0300	62	60	60	OT
0900	62	60	60	MM
1500	62	60	60	MM
2100	62	60	60	OR

Attachment 4 - Daily Surveillance Requirements Log
Sheet 3 of 15

TECH SPEC	4.2.5.1; 4.3.1.1.9, 10; 4.3.2.1.1d, 3a3, 3c3, 5c, 6d						
PARAMETER	PRESSURIZER PRESSURE						
INSTRUMENT (MCB OR ERFIS)	PRC0457 PI-457	PRC0456 PI-456	PRC0455 PI-455	CALCULATION COMPLETED	INDEPENDENT VERIFICATION COMPLETED	ACCEPTANCE CRITERIA MET	N/A
ACCEPTANCE CRITERIA	SEE BELOW			N/A	N/A	N/A	CHANNEL CHECK
MODE	1						1, 2, 3
0300	2248.6	2244.8	2248.6	N/A	N/A	OT	OT
0900	2250.7	2247.0	2250.7	N/A	N/A	MM	MM
1500	2248.1	2244.2	2248.1	N/A	N/A	MM	MM
2100	2247.9	2244.0	2247.9	NA	NA	OR	OR

INSTRUCTIONS

NOTE: Calculations must be done with either the MCB Indicators OR ERFIS indications, NOT a combination. OR MM OT

NOTE: If all operable channels are greater than or equal to the acceptance criteria, calculations are not required. OR MM OT

CALCULATIONS FOR PRESSURIZER PRESSURE

0300: N/A + ____ + ____ = ____ ÷ (# Operable Channels used Normally 3) = ____ → PRESSURIZER PRESSURE
(PRC0457 PI-457 / PRC0456 PI-456 / PRC0455 PI-455)

0900: N/A + ____ + ____ = ____ ÷ (# Operable Channels used Normally 3) = ____ → PRESSURIZER PRESSURE
(PRC0457 PI-457 / PRC0456 PI-456 / PRC0455 PI-455)

1500: N/A + ____ + ____ = ____ ÷ (# Operable Channels used Normally 3) = ____ → PRESSURIZER PRESSURE
(PRC0457 PI-457 / PRC0456 PI-456 / PRC0455 PI-455)

2100: NA + ____ + ____ = ____ ÷ (# Operable Channels used Normally 3) = ____ → PRESSURIZER PRESSURE
(PRC0457 PI-457 / PRC0456 PI-456 / PRC0455 PI-455)

ACCEPTANCE CRITERIA FOR PRESSURIZER PRESSURE (must meet one of the following):

1. Average of operable MCB indicator channels greater than or equal to 2205 psig.
2. Average of operable ERFIS points greater than or equal to 2202 psig.
3. If three MCB indicators are not available, then the lowest channel should be greater than or equal to 2220 psig.
4. If three ERFIS points are not available, then the lowest channel should be greater than or equal to 2211 psig.

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TECH SPEC	4.2.5.1					
PARAMETER	RCS LOOP TAVG					
INSTRUMENT (MCB OR ERFIS)	TRC0412D TI-412D	TRC0422D TI-422D	TRC0432D TI-432D	CALCULATION COMPLETED	INDEPENDENT VERIFICATION COMPLETED	ACCEPTANCE CRITERIA MET
ACCEPTANCE CRITERIA	SEE BELOW			N/A	N/A	N/A
MODE	1					
0300	588.45	589.46	588.59	N/A	N/A	JT
0900	588.35	589.49	588.86	N/A	N/A	JM
1500	588.39	589.29	588.66	N/A	N/A	JM
2100	588.53	589.35	588.84	NA	NA	OR

INSTRUCTIONS

NOTE: Calculations must be done with either the MCB Indicators OR ERFIS indications, NOT a combination. OR JM JT

NOTE: If all operable channels are less than or equal to the acceptance criteria, calculations are not required. OR JT

CALCULATIONS FOR RCS LOOP TAVG

0300: N/A (TRC0412D TI-412D) + ____ (TRC0422D TI-422D) + ____ (TRC0432D TI-432D) = ____ ÷ (# Operable Channels used Normally 3) = ____ RCS LOOP TAVG

0900: N/A (TRC0412D TI-412D) + ____ (TRC0422D TI-422D) + ____ (TRC0432D TI-432D) = ____ ÷ (# Operable Channels used Normally 3) = ____ RCS LOOP TAVG

1500: N/A (TRC0412D TI-412D) + ____ (TRC0422D TI-422D) + ____ (TRC0432D TI-432D) = ____ ÷ (# Operable Channels used Normally 3) = ____ RCS LOOP TAVG

2100: NA (TRC0412D TI-412D) + ____ (TRC0422D TI-422D) + ____ (TRC0432D TI-432D) = ____ ÷ (# Operable Channels used Normally 3) = ____ RCS LOOP TAVG

ACCEPTANCE CRITERIA FOR RCS LOOP TAVG (must meet one of the following):

1. Average of operable MCB indicator channels must be less than or equal to 592.5°F.
2. Average of operable ERFIS points less than or equal to 593.1°F.
3. If three MCB indicators are not available, then the highest channel should be less than or equal to 591.3°F.
4. If three ERFIS points are not available, then the highest channel should be less than or equal to 592.3°F.

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TECH SPEC	4.3.2.1		4.4.6.2.1.e	4.3.1.1.7, 8		
PARAMETER	RCS PRESSURE		FLANGE LEAKOFF TEMP	OTΔT	OPΔT	PROTECTION ΔT
INSTRUMENT	PI-403.1	PI-402.1	TI-401	TI-412C, TI-422C, TI-432C	TI-412B, TI-422B, TI-432B	TI-412A, TI-422A, TI-432A
ACCEPTANCE CRITERIA	CHANNEL CHECK		N/A	CHANNEL CHECK		
MODE	1, 2, 3 and 4		1, 2, 3 and 4	1, 2		
0300	T	T	100	T	T	T
0900	M	M		M	M	M
1500	AB	AB	100	AB	AB	AB
2100	gch	gch		gch	gch	gch

INSTRUCTION

If RCS flow acceptance criteria is not met, perform EST-708, RCS Flow Determination.

TECH SPEC	4.2.5.1								
PARAMETER	RCS LOOP FLOWS								
INSTRUMENT	FRC0414 FI-414	FRC0415 FI-415	FRC0416 FI-416	FRC0424 FI-424	FRC0425 FI-425	FRC0426 FI-426	FRC0434 FI-434	FRC0435 FI-435	FRC0436 FI-436
ACCEPTANCE CRITERIA	≥ 98.3%			≥ 98.3%			≥ 98.3%		
MODE	1			1			1		
0300	99.95	100.30	99.86	100.21	100.51	100.66	100.62	100.45	100.29
0900	99.82	100.17	99.68	99.71	100.17	100.26	100.23	100.13	100.27
1500	99.84	99.90	99.62	98.72	100.03	100.15	101.32	100.04	99.92
2100	100.08	100.18	99.88	98.13	100.05	100.25	100.19	100.04	99.96

TECH SPEC	4.3.1.1.2.a	4.4.6.2.1.d
PARAMETER INSTRUMENT	OST-1000 or OST-1004 or OST-1204	OST-1026 or OST-1226
ACCEPTANCE CRITERIA	COMPLETED	COMPLETED (Typically on Night Shift)
MODE	1 above 15% Power	1, 2, 3, and 4
0300	RS	Date/Time TODAY, 2130

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TECH SPEC	4.4.1.1; 4.3.1.1.12									
PARAMETER	RCS LOOP FLOWS									
INSTRUMENT	FRC0414 FI-414	FRC0415 FI-415	FRC0416 FI-416	RCP A	N/A	FRC0424 FI-424	FRC0425 FI-425	FRC0426 FI-426	RCP B	N/A
ACCEPTANCE CRITERIA	POSITIVE INDICATION OF FLOW WITH RCP RUNNING INDICATION				CHANNEL CHECK	POSITIVE INDICATION OF FLOW WITH RCP RUNNING INDICATION				CHANNEL CHECK
MODE	1, 2				1	1, 2				1
0300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TECH SPEC	4.4.1.1; 4.3.1.1.12					4.3.1.1.2a, 2b, 5, 6		
PARAMETER	RCS LOOP FLOWS					POWER RANGE	INTERMEDIATE RANGE	SOURCE RANGE
INSTRUMENT	FRC0434 FI-434	FRC0435 FI-435	FRC0436 FI-436	RCP C	N/A	NI-41, NI-42 NI-43, NI-44	NI-35 NI-36	NI-31 NI-32
ACCEPTANCE CRITERIA	POSITIVE INDICATION OF FLOW WITH RCP RUNNING INDICATION				CHANNEL CHECK	CHANNEL CHECK		
MODE	1, 2				1	1, 2	1 (<P-10), 2	2 (<P-6), 3, 4, 5
0300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N/A	N/A
0900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N/A	N/A
1500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N/A	N/A
2100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	NA

TECH SPEC	4.3.2.1.1e, 3a3, 3c3, 4d, 5c, 6d, 6g 4.3.3.6.6			4.3.1.1.14					
PARAMETER	STEAM LINE PRESSURE			SG FEED FLOW			SG STEAM FLOW		
INSTRUMENT	PI-474.1, PI-475, PI-476	PI-484.1 PI-485, PI-486	PI-494 PI-495, PI-496.1	FI-476 FI-477	FI-486 FI-487	FI-496 FI-497	FI-474 FI-475	FI-484 FI-485	FI-494 FI-495
ACCEPTANCE CRITERIA	CHANNEL CHECK			CHANNEL CHECK					
MODE	1, 2, 3 and 4			1, 2					
0300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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TECH SPEC	4.3.1.1.13; 4.3.1.1.14; 4.3.2.1.5b, 6c, 10d; 4.3.3.6.7			4.7.1.3.1	
PARAMETER	SG LEVEL			CST LEVEL	
INSTRUMENT	LI-473, LI-474 LI-475, LI-476	LI-483, LI-484 LI-485, LI-486	LI-493, LI-494 LI-495, LI-496	LI-9010A1 SA	LI-9010B1 SB
ACCEPTANCE CRITERIA	CHANNEL CHECK			GREATER THAN OR EQUAL TO 62%	
MODE	1, 2, and 3			1, 2, and 3	
0300	T	T	T	85	86
0900	M	M	M	77	78
1500	AB	AB	AB	69	69
2100	JLh	JLh	JLh	60	61

TECH SPEC	4.7.1.3.2			
PARAMETER	ESW TO AFW			
INSTRUMENT	1SW-121 1SW-123	1SW-124 1SW-126	1SW-127 1SW-129	1SW-130 1SW-132
ACCEPTANCE CRITERIA	OPEN (only when supplying AFW pumps)			
MODE	1, 2, and 3			
0300	N/A →			
0900	N/A →			
1500	N/A →			
2100	N/A →			

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INSTRUCTIONS

1. ERFIS is the preferred source for verifying CNTMT AVG TEMP.

2. Verify TCV97540 computer point quality code is acceptable. If acceptable, record the ERFIS value for CNTMT AVG TEMP and verify less than or equal to 120°F.

3. If computer point TCV97540 is not available, verify both MCB indicators for CNTMT AVG TEMP less than or equal to 120°F.

TECH SPEC	PLP-114		4.6.1.5	N/A		4.6.1.4		PLP-114	
PARAMETER	A EDG ELEC ROOM 261	B EDG ELEC ROOM 261	CNMT AVG TEMP			CONTAINMENT PRESSURE		CONTROL ROOM ENVELOPE 305	
INSTRUMENT	ALB 27/1-3		TCV97540	TI-7542 SA	TI-7541 SB	PDI-7680 A SA	PDI-7680 B SB	TI-7837 A1SA	TI-7837 B1SB
ACCEPTANCE CRITERIA	NO ALARM (≤ 116°F) LOCAL TEMP IS NEEDED IF ALARM IS PRESENT		LESS THAN OR EQUAL TO 120°F			GREATER THAN -1.0 INWG		LESS THAN OR EQUAL TO 85°F	
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE		1, 2, 3, and 4			1, 2, 3, and 4		WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE	
0300	OT	OT	97.68	95	100	-0.4	-0.4	70	72
0900	MM	MM		95	100	-0.4	-0.4	70	72
1500	MM	MM	98.19	95	100	-0.4	-0.4	70	72
2100	OR	OR		98	101	-.4	-.4	70	72

TECH SPEC	PLP-114						
PARAMETER	FHB EMER EXH AREA		ROD CNTRL CAB AREA 305	STEAM TUNNEL	SA ELECT PENET AREA 261	SB ELECT PENET AREA 261	1A35SA, 1B35SB 261
INSTRUMENT	TI-6537A1SA	TI-6537B1SB	ALB 23/3-5	ALB 23/2-11	ALB 23/2-8		ALB 23/2-5
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 104°F		NO ALARM (≤ 104°F)	NO ALARM (≤ 122°F)	NO ALARM (LESS THAN OR EQUAL TO 104°F)		
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE		WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE (LOCAL TEMP MUST BE TAKEN IF ALARM IS PRESENT)				
0300	63	64	OT	OT	OT	OT	OT
0900	63	64	MM	MM	MM	MM	MM
1500	65	65	MM	MM	MM	MM	MM
2100	64	66	OR	OR	OR	OR	OR

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TECH SPEC	PLP-114						
PARAMETER	CHILLER, AFW PIPE & VALVE AREA 261	CCW PUMPS & HX AFW PUMPS 236	A-SA CSIP ROOM 236	B-SB CSIP ROOM 236	1C-SAB CSIP ROOM 236	SW BSTR B-SB PUMP 236	MECH & ELEC PENET AREA 236
INSTRUMENT	ALB 23/2-6 ALB 23/2-7	ALB 23/1-6 ALB 23/1-7	ALB 23/1-5		ALB 23/1-4	ALB 23/1-11	ALB 23/2-9 ALB 23/2-10
ACCEPTANCE CRITERIA	NO ALARM (LESS THAN OR EQUAL TO 104°F)						
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE (LOCAL TEMP MUST BE TAKEN IF ALARM IS PRESENT)						
0300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2100	OR	OR	OR	OR	OR	OR	OR

TECH SPEC / COMMITMENT	PLP-114				4.9.11			
PARAMETER	CSAT & HVAC EQUIP RM 216	WPB HVAC EQUIP RM 236	A-SA CS, RHR, HVAC 190	B-SB CS, RHR, HVAC 190	FUEL POOLS			
					SPENT FP	NEW FP	SFP C	SFP D
INSTRUMENT	ALB 23/1-8	ALB 23/1-9	ALB 23/1-10		ALB 23/4-17	ALB 23/5-17	ALB 23/4-18	ALB 23/5-18
ACCEPTANCE CRITERIA	NO ALARM (LESS THAN OR EQUAL TO 104°F)				NO ALARM (GREATER THAN 23 FT)			
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE (LOCAL TEMP MUST BE TAKEN IF ALARM IS PRESENT)				WHEN IRRADIATED FUEL IS IN THE POOL (LOCAL LEVEL MUST BE TAKEN IF ALARM IS PRESENT)			
0300	[illegible]	[illegible]	[illegible]	[illegible]				
0900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N/A
1500	[illegible]	[illegible]	[illegible]	[illegible]				
2100	OR	OR	OR	OR				

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TECH SPEC / COMMITMENT	ESR 97-00272	ESR 95-00425		ESR 97-00272
PARAMETER	SPENT FUEL POOL HIGH TEMPERATURE ALARM	SPENT FUEL POOL HIGH TEMPERATURE ALARM		NEW FUEL POOL HIGH TEMPERATURE ALARM
INSTRUMENT	ALB 23/4-16	ALB 23/4-15	ALB 23/5-15	ALB 23/5-16
ACCEPTANCE CRITERIA	NO ALARM	NO ALARM		NO ALARM
MODE	1,2,3,4,5 and 6	1, 2, 3, 4, 5 and 6		1,2,3,4,5 and 6
0300	T	96.2/96.0 (3)	T	T
0900	M	93.9/93.5 (3)	M	M
1500	AB	90.4/89.7 (3)	AB	AB
2100	JLh	92.3/91.5 (3)	JLh	JLh

TECH SPEC	PLP-114					
PARAMETER	ESW ELEC EQUIP ROOM 261		ESW PUMP ROOM 261		EDG ROOM 261	
	A-SA	B-SB	A-SA	B-SB	A-SA	B-SB
INSTRUMENT	TEV6588A	TEV6588B	TEV6592A	TEV6592B	TDG6903A	TDG6903B
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 116°F		LESS THAN OR EQUAL TO 122°F		LESS THAN OR EQUAL TO 120°F	
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE					
0300	61	61	75	70	63.70	68.56
0900	60	59	75	69	62.85	68.07
1500	60	61	68	70	71.57	72.06
2100	61	61	75	70	68.42	121.13

NOTE 1: If a reservoir level computer point is bad, manual reservoir level determination can be performed per OP-163.

NOTE 2: If a reservoir temperature computer point is bad, manual reservoir temperature readings can be performed per OP-163.

INSTRUCTION

1. Due to a 3°F instrument inaccuracy associated with the permanently installed reservoir TSWs, if TSW9114/TSW9115 indicate ≥91°F, obtain local temperature readings per OP-163.

TECH SPEC	4.1.2.6b 4.5.4.b	4.7.5					
PARAMETER	RWST TEMP	AUX RSVR LEVEL		AUX RSVR TEMP	MAIN RSVR LEVEL		MAIN RSVR TEMP
INSTRUMENT	TCT7110	LSC8752A	LSC8752B	TSW9114	LSC8750A	LSC8750B	TSW9115
ACCEPTANCE CRITERIA	≥ 40°F AND ≤ 125°F	GREATER THAN OR EQUAL TO 250 FT NOTE 1		≤ 94°F NOTE 2	GREATER THAN OR EQUAL TO 215 FT NOTE 1		≤ 94°F NOTE 2
MODE	1, 2, 3 and 4						
0300	79.5	251.7	251.67	57.83	218.02	218.18	58.8
0900							
1500	79.1	251.6	251.67	58.23	218.02	218.18	58.3
2100							

INSTRUCTION

1. ~~The~~ ECCS leakage outside RABEES reading is only required every 72 hours. Perform on Sunday, Wednesday, and Friday (mark as N/A on other days).

2. If any ECCS leakage outside RABEES is measured, record the cumulative leakrate on Attachment 7, along with the locations leaking.

TECH SPEC	PLP-114
PARAMETER	ECCS leakage outside RABEES
INSTRUMENT	N/A
ACCEPTANCE CRITERIA	LESS THAN 2 GPH (125 cc/min) cumulative
MODE	1, 2, 3 and 4
0300	
0900	
1500	Ø
2100	

NOTE 1: Meteorological Channel check includes: (1) Initialing for a acceptable quality code if using ERFIS or verifying data quality is consistent with actual weather conditions if using a Personal Computer(PC) to access the meteorological tower, and (2) Recording present values and verifying trend appears normal. PT

NOTE 1: During calm wind conditions (approximately 2 mph or less) it is normal to see disagreement between the upper and lower wind direction indicators. At times the vanes may actually rotate in opposite directions. PT

NOTE 1: The following shall be used for performing the daily channel check of the meteorological instrumentation channels:

- On ERFIS observe the points for wind speed, wind direction, and differential temperature.

OR

- Using a PC , access the meteorological tower and observe upper and lower wind speed, upper and lower wind direction, and differential temperature (or stability class).

The meteorological instrumentation should only be considered inoperable if both of the above methods are unavailable. PT

NOTE 2: MIMS Channel check should include, as a minimum, both a Self Test an Audio Monitoring Test of all operable channels. (Reference 2.6.4) PT

TECH SPEC	PLP-114												PLP-114
PARAMETER	METEOROLOGICAL												MIMS
	LOWER WIND SPEED		UPPER WIND SPEED		LOWER WIND DIRECTION		UPPER WIND DIRECTION		AIR ΔT				
INSTRUMENT	MMT1008		MMT1010		MMT1014		MMT1013		MMT1004		MMT1005		ALL CHANNELS
ACCEPTANCE CRITERIA	CHANNEL CHECK NOTE 1												CHANNEL CHECK NOTE 2
	Value	Init	Value	Init	Value	Init	Value	Init	Value	Init	Value	Init	
MODE	AT ALL TIMES												1, 2
0300	1.21	PT	2.14	PT	154.53	PT	18.75	PT	10.49	PT	10.35	PT	PT (4)
0900													
1500	2.12	MM	2.39	MM	120.13	MM	298.44	MM	-1.52	MM	-1.25	MM	MM (4)
2100													

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LOCAL TEMPERATURES

TECH SPEC	PLP-114				
PARAMETER	SFP PUMP & HX ROOM	TANK AREA 236	E-6 ROOMS 261		
			A-SA	B-SB	
INSTRUMENT	LOCAL THERMOMETER				
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 115.5 °F	LESS THAN OR EQUAL TO 104 °F			VERIFIED
MODE	AT ALL TIMES	WHENEVER THE EQUIPMENT IN AN AFECTED AREA IS REQUIRED TO BE OPERABLE			
0100-0400	59.2	66.2	68.6	68.2	[illegible]
1300-1600	63.3	68.1	68.0	68.0	[illegible]

TECH SPEC	PLP-114					
PARAMETER	EDG HVAC ROOM 280		EDG HVAC ROOM 292		DFOST BLDG 242	
	A-SA	B-SB	A-SA	B-SB		
INSTRUMENT	LOCAL THERMOMETER					
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 118°F		LESS THAN OR EQUAL TO 122°F		LESS THAN OR EQUAL TO 122°F	VERIFIED
MODE	WHEN THE EQUIPMENT IN THE AFFECTED AREA IS REQUIRED TO BE OPERABLE					
0100-0400	82.4	84.2	83.0	84.1	67.1	[illegible]
1300-1600	82.2	84.0	82.9	83.3	66.0	[illegible]

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LOCAL TEMPERATURES

INSTRUCTION

1. If battery room temperature is less than 71°F, perform Step 7.0.5.

TECH SPEC	PLP-114							
PARAMETER	ELECT PENETRATION AREA 286		SWITCHGEAR ROOM 286		BATTERY ROOM 286		ACP 286	
	A-SA	B-SB	A-SA	B-SB	A-SA	B-SB		
INSTRUMENT	LOCAL THERMOMETER							
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 104°F		LESS THAN OR EQUAL TO 90°F		≥ 71°F AND ≤ 85°F		LESS THAN OR EQUAL TO 90°F	VERIFIED
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE							
0900-1200	66.7	77.3	81.7	78.2	77.3	77.5	77.4	[illegible]
2100-2400	67.1	77.4	81.5	78.1	77.3	77.5	77.4	[illegible]

TECH SPEC	PLP-114				
PARAMETER	AUX TRANSFER PANEL ROOM 286		PIC ROOMS 286		
	A-SA	B-SB	17, 19	18	
INSTRUMENT	LOCAL THERMOMETER				
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 104°F		LESS THAN OR EQUAL TO 85°F		
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE				VERIFIED
0900-1200	72.1	71.6	73.0	75.5	[illegible]
2100-2400	72.0	71.6	72.9	75.7	[illegible]

TECH SPEC	PLP-114			
PARAMETER	PIC ROOM 305	ARP ROOM 305	AH-15 VENTILATION ROOM	
INSTRUMENT	LOCAL THERMOMETER			
ACCEPTANCE CRITERIA	LESS THAN OR EQUAL TO 85°F		LESS THAN OR EQUAL TO 104°F	VERIFIED
MODE	WHENEVER THE EQUIPMENT IN AN AFFECTED AREA IS REQUIRED TO BE OPERABLE			
0900-1200	70.2	65.8	61.9	[illegible]
2100-2400	70.9	68.9	62.3	[illegible]

Attachment 4 - Daily Surveillance Requirements Log
Sheet 15 of 15

NOTE 1: These readings are only required on Sundays. These readings may be marked N/A on other days.

TECH SPEC	4.1.2.2.a				
PARAMETER	VCT VALVE GALLERY	BAT ROOM	BORIC ACID XFER PUMP VALVE GALLERY	EMER BORATION VALVE RM	BORIC ACID XFER PUMP ROOM
INSTRUMENT	LOCAL THERMOMETER				
ACCEPTANCE CRITERIA	GREATER THAN OR EQUAL TO 65°F				
MODE	1, 2 and 3				
1300-1600 (NOTE 1)	75.1	80.7	84.2	81.7	80.2

TECH SPEC	4.1.2.2.a					
PARAMETER	BAT TO CSIP SUCTION HEADER PIPE TEMPERATURE (IF ANY OF THESE INSTRUMENTS FAIL, INITIATE CORRECTIVE ACTION AND NOTE IN COMMENTS SECTION. USE SECONDARY INSTRUMENTS TO SATISFY THE SURVEILLANCE REQUIREMENT)					
INSTRUMENT	HT-18753C C2-1	HT-18753C C2-2	HT-18753B C1-9	HT-18753B C1-13	HT-18753B C2-3	HT-18753B C2-5
ACCEPTANCE CRITERIA	GREATER THAN OR EQUAL TO 65°F					
MODE	1, 2 and 3 11/20/07					
1300-1600 (NOTE 1)	89	89	82	N/A (5)	→	→

TECH SPEC	4.1.2.2.a					
PARAMETER	BAT TO CSIP SUCTION HEADER PIPE TEMPERATURE (THESE ARE SECONDARY INSTRUMENTS. THESE SHOULD BE USED WHEN PRIMARY INSTRUMENTS FAIL. (N/A IF NOT BEING USED.)					
INSTRUMENT	HT-18753CC C2-1	HT-18753CC C2-2	HT-18753BB C1-9	HT-18753BB C1-13	HT-18753BB C2-3	HT-18753BB C2-5
ACCEPTANCE CRITERIA	GREATER THAN OR EQUAL TO 65°F					
MODE	1, 2 and 3					
1300-1600 (NOTE 1)	N/A →	→	→	79	79	83

Facility:	HARRIS	Task No.:	005016H101
Task Title:	Perform the Train "A" Emergency Service Water System Essential Flow Path Valve Alignment Verification (AEP-1 and MCB Valves only)	JPM No.:	2008 NRC RO ADM JPM A1-2
K/A Reference:	2.1.31 (4.2)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing: **This JPM should be performed on a running or frozen simulator.**

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:
- The plant is in Mode 3, with a heatup in progress.
- OST-1015, EMERGENCY SERVICE WATER SYSTEM OPERABILITY MONTHLY INTERVAL MODES 1-2-3-4, is in progress.

Task Standard: All misaligned valves identified and documented on Attachment 1.

Required Materials: None

General References: OST-1015, EMERGENCY SERVICE WATER SYSTEM OPERABILITY MONTHLY INTERVAL MODES 1-2-3-4, Revision 20

Handouts: OST-1015

Initiating Cue: You have been assigned to perform Attachment 1, Train "A" Emergency Service Water System Essential Flow Path Valve Alignment Verification, for AEP-1 and MCB valves. An AO is checking the local equipment. Review your section of Attachment 1 with me when you are done.

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR SETUP

IC-16: Mode 3 with AFW in service.

- MDAFW Pump "B" in service
- MDAFW Pump "A" stopped
- SWS05A 0.00%
- XB1I160 OPEN
- XB1I142 OPEN
- XA1I105 SHUT
- XA1I104 SHUT
- XA1I088 SHUT
- XA1I087 SHUT

MALF SUMMARY:

- On AEP-1: 1SW-1055, SW FROM WC-2 A-SA CONDENSER, in OPEN.
- ON MCB: OPEN/Fail OPEN SW-121 and SW-123, SW for MDAFW Pump "A"
- On MCB: Train "B" Fan Coolers in service and verify SW-91, 92, 97, 109 CLOSED
- On MCB: Ensure Booster Pump stopped and fail SHUT SW-116, AH-2 & 3 SW Return Orifice Bypass Isol
- FREEZE and SNAP
- Perform on frozen simulator.

(Denote Critical Steps with a √)

Start Time: _____.

Performance Step: 1 Obtain procedure.

Standard: Locates and reviews procedure.

Evaluator Cue: **Provide OST-1015 after the procedure is located.**

Evaluator Note:

- **The Attachment can be performed in any order. The valves/controls listed in this JPM are not in the position according to Attachment 1. All others are in the position described.**

Precaution and Limitation 4.0.1 states:

- **No valve operations are to be performed under this OST. Report any valves found out of position during the performance of this OST to the Unit SCO and take appropriate action per applicable plant procedures.**
- **The applicant can complete Attachment 4, Certifications and Reviews, at the conclusion of the lineup verification.**

Comment:

√ **Performance Step: 2** Locates, determines actual position, and logs on Attachment 1:

- 1SW-1055, SW FROM WC-2 A-SA CONDENSER

Standard: Crosses out AUTO and initials or otherwise logs 1SW-1055 as OPEN.

Evaluator Cue: **As USCO: Throughout the JPM, acknowledge any verbal communications and specify that discrepancies will be addressed when the lineup is complete.**

Comment: **The normal condition for 1SW-1055 is AUTO.**

√ **Performance Step: 3** Locates, determines actual position, and logs on Attachment 1:

- 1SW-116, AH-2 & 3 SW Return Orifice Bypass Isol

Standard: Circles SHUT for 1SW-116.

Comment: **Per Note 5: 1SW-116 should be OPEN because the Booster Pump is NOT operating.**

√ **Performance Step: 4** Locates, determines actual position, and logs on Attachment 1:

- 1SW-121, SW Header A to Aux FW Motor Pump A-SA
- 1SW-123, SW Header A to Aux FW Motor Pump A-SA

Standard:

- Circles OPEN for 1SW-121.
- Circles OPEN for 1SW-123.

Comment: **1SW-121 and 123 should be closed with MDAFW Pump "A" not running.**

√ **Performance Step: 5** Locates, determines actual position, and logs on Attachment 1:

- 1SW-91, CNMT FAN COOLER AH-2 INLET
- 1SW-109, CNMT FAN COOLER AH-2 OUTLET
- 1SW-92, CNMT FAN COOLER AH-3 INLET
- 1SW-97, CNMT FAN COOLER AH-3 OUTLET

Standard: Crosses out OPEN, initials or otherwise logs each of the following as SHUT:

- 1SW-91
- 1SW-109
- 1SW-92
- 1SW-97

Comment:

√ **Performance Step: 6** Provide section of Attachment to USCO.

Standard: Reviews Attachment with USCO

- SW-1055 OPEN
- 1SW-116 SHUT (No Booster Pump running)
- 1SW-121 and 1SW-123 OPEN (MDAFW Pump "A" not running)
- 1SW-91, 109, 92, 97 SHUT ("B" Train running)

Evaluator Cue: **Acknowledge verbal report.**

Comment:

Terminating Cue: **When the partially completed OST-1015 is returned to the USCO: Evaluation on this JPM is complete.**

Stop Time: _____.

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2008 NRC RO ADM JPM A1-2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- The plant is in Mode 3, with a heatup in progress.
- OST-1015, EMERGENCY SERVICE WATER SYSTEM OPERABILITY MONTHLY INTERVAL MODES 1-2-3-4, is in progress.

INITIATING CUE:

You have been assigned to perform Attachment 1, Train "A" Emergency Service Water System Essential Flow Path Valve Alignment Verification, for AEP-1 and MCB valves. An AO is checking the local equipment. Review your section of Attachment 1 with me when you are done.

Facility:	HARRIS	Task No.:	015004H201
Task Title:	Perform the Quadrant Power Tilt Ratio surveillance.	JPM No.:	2008 NRC RO A2
K/A Reference:	2.2.12 (3.4)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom X Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

- The plant has been stabilized at 100% power following a dropped rod in Control Bank "B" (M-6).
- The crew is performing AOP-001, MALFUNCTION OF ROD CONTROL AND INDICATION SYSTEM.

Task Standard: Calculations within required band.

Required Materials: Calculator

General References: OST-1039, CALCULATION OF QPTR, Revision 13

Handouts:

- OST-1039
- F-X-8 Substitute Table (Attached to JPM as next to last page)

Initiating Cue: The USCO has directed you to perform a Manual QPTR IAW OST-1039, CALCULATION OF QPTR. The Power Range NIS readings are provided in the table below.

For the purposes of the examination, there will be no independent verification of your work.

Time Critical Task: NO

Validation Time: 12 minutes

(Denote Critical Steps with a √)

Start Time: _____.

Performance Step: 1 Obtain procedure.

Standard: Reviews procedure.

Evaluator Cue: **Provide OST-1039.**

Evaluator Note: **A KEY is provided for your use on JPM Page 7.**

Comment:

Performance Step: 2 Completes Prerequisites section:

- Instrumentation needed for the performance of this test is free of deficiency tags that affect instrument indication.
- Verify the most recent Curve F-x-8 is used in the performance of this procedure.
- Verify all prerequisites are met, then obtain Unit SCO permission to perform this OST.

Standard:

- Logs F-x-8 revision number (NRC Exam)
- Initials/signs all blocks

Evaluator Cue:

- **No deficiency tags are on the PRNIS.**
- **The USCO has granted permission to perform the OST.**

Comment:

Performance Step: 3

- If Quadrant Power Tilt Ratio Calculation Computer Program is used, perform Section 7.1, and N/A section 7.2.
- If manual calculation of the Quadrant Power Tilt Ratio is used, perform Section 7.2, and N/A section 7.1.

Standard:

- Marks Section 7.1 N/A
- Proceeds to Section 7.2

Comment:

Performance Step: 4

Prior to reading the value of detector current, ensure the meter range/rate switch is in the 400 μA/SLOW position.

Standard:

Verifies meter range/rate switches were in the 400 μA/SLOW position when the readings were taken.

Evaluator Cue:

All meter range/rate switches were in the 400 μA/SLOW position when the readings were taken.

Comment:

Performance Step: 5

Record on Attachment 2, in Column A, the upper and lower detector currents from all operable power range channels as read on the Nuclear Instrumentation Cabinet.

Standard:

Transposes readings from PRNIS Readings Table onto Attachment 2.

Comment:

Performance Step: 6 Record on Attachment 2, in Column B, the 100% power normalized current for each channel. (Refer to Curve F-x-8)

Standard: Transposes TOP and BOTTOM 100% current values from the NIS Current Setpoint Table provided.

Evaluator Cue: **Provide NIS Current Setpoint Table (JPM Pg. 8)**

Comment:

Performance Step: 7 Divide values in Column A by the respective normalized current in Column B and record the result in Column C as the Normalized Fraction.

Standard: Divides each Upper and Lower reading by the respective 100% normalized current value and records in Column C.

Comment:

Performance Step: 8 Calculate the average value for the upper and the lower Normalized Fractions by adding the Normalized Fraction in each section of Column C and divide by the number of operable NI channels. Record in Column D of Attachment 2.

Standard: Adds all Normalized Fractions for the same plane, divides by four and records result in Column D.

Evaluator Note: **On the KEY, this value is shown at the bottom of Column C.**

Comment:

√ **Performance Step: 9** Using the formula and values from Attachment 2 calculate the Upper and Lower Ratios.

Standard:
- Divides the Maximum Normalized Fraction by the Average Normalized Fraction on each plane.
- Determines both UPPER and LOWER ≥ 1.029.

Evaluator Note: **The applicant may inform the USCO as soon as any calculation is > 1.02.**

Comment:

Performance Step: 10 Perform independent verification of all calculations made on Attachment 2.

Standard: Requests Independent Verifier.

Evaluator Cue: **If necessary, repeat Initiating Cue: For the purpose of this examination, there will be no independent verification of your work.**

Comment: **Candidate may choose to check calculations.**

√ **Performance Step: 11** The upper ratio or the lower ratio, whichever is greater, is the quadrant power tilt ratio (QPTR). Record QPTR and verify QPTR is less than or equal to 1.02.

Standard: Records Maximum QPTR value ≥ 1.026 ≤ 1.036 (N44 UPPER).

Comment: **Acceptable band is +/- 5% (rounded to .005) around 1.031.**

√ **Performance Step: 12** Complete applicable sections of Attachment 3, Certifications and Reviews and inform the Unit SCO when this test is completed.

Standard:

- Check marks Periodic Surveillance or notes AOP-001 in Comments section
- Plant Condition: 100% Power (may note dropped rod)
- Mode 1
- Today's Date
- Current Time
- OST Completed By: Applicant's name
- Initials/Name
- Indicate in General Comments Section and/or informs USCO that the limit is exceeded (√)

Evaluator Cue: **Acknowledge any report.**

Comment:

Terminating Cue: **After the USCO has been notified: Evaluation on this JPM is complete.**

KEY

UPPER DETECTOR	A UPPER DETECTOR CURRENT	B UPPER 100% POWER NORMALIZED CURRENT	C UPPER NORMALIZED FRACTION (NOTE 1)
N-41	149.7	155.2	.965
N-42	177.9	175.6	1.013
N-43	202.0	200.0	1.010
N-44	165.5	159.5	1.038
		SUM	4.026/4 = 1.0065

LOWER DETECTOR	A LOWER DETECTOR CURRENT	B LOWER 100% POWER NORMALIZED CURRENT	C LOWER NORMALIZED FRACTION (NOTE 1)
N-41	169.2	176.1	.961
N-42	202.6	202.2	1.002
N-43	221.1	221.2	.9995
N-44	197.5	192.3	1.027
		SUM	3.99/4 = .9975

Highest Upper (N-44) 1.038/1.0065 = 1.031
Highest Lower (N-44) 1.027/.9975 = 1.0296 (1.03)

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2008 NRC RO A2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- The plant has been stabilized at 100% power following a dropped rod in Control Bank "B" (M-6).
- The crew is performing AOP-001, MALFUNCTION OF ROD CONTROL AND INDICATION SYSTEM.

INITIATING CUE:

The USCO has directed you to perform a Manual QPTR IAW OST-1039, CALCULATION OF QPTR. The Power Range NIS readings are provided in the table below.

For the purposes of the examination, there will be no independent verification of your work.

PRNIS Readings

PRNIS Channel	UPPER READING	LOWER READING
N41	149.7	169.2
N42	177.9	202.6
N43	202.0	221.1
N44	165.5	197.5

Facility: HARRIS

Task No.:

Task Title: Review the completed OST for Auxiliary Feedwater Pump 1A-SA

JPM No.: 2008 NRC SRO A2

K/A Reference: 2.2.12 (3.4)

Examinee:

NRC Examiner:

Facility Evaluator:

Date:

Method of testing:

Simulated Performance: _____

Actual Performance: X

Classroom X Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

- The unit is in Mode 1 at 100% power
- All major controllers are in AUTO
- No TS Action Statements are in effect
- OST-1211, AUXILIARY FEEDWATER PUMP 1A-SA OPERABILITY TEST QUARTERLY INTERVAL MODES 1-4, has just been completed

Task Standard: All errors (4) identified

Required Materials: None

General References: OST-1211, AUXILIARY FEEDWATER PUMP 1A-SA OPERABILITY TEST QUARTERLY INTERVAL MODES 1-4

Handout: Completed OST-1211 with the errors incorporated. ***Prior to the examination, verify the handout revision of the procedure matches the one in the facility master database.***

Initiating Cue: You are the USCO. Review the completed OST-1211 for approval.

Time Critical Task: No

Validation Time: 12 minutes

SIMULATOR SETUP

N/A

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Review procedure

Standard: Ensures proper conditions, signatures/initials, and may verify the current revision of the procedure

Evaluator Cue:

- **Provide the completed OST-1211.**
- **Completely review the procedure and note any problems in the GENERAL COMMENTS section of Attachment 6 – Certification and Review. Discuss your review with ~~me~~ the Examiner at the conclusion.**

Comment:

√ **Performance Step: 2** Review the completed OST

Standard: Attachment 1 (Page 16) – Identifies stopwatch is past calibration date

Evaluator Note: **This makes the OST invalid and/or any timed elements would have to be repeated.**

Comment:

√ **Performance Step: 3** Review the completed OST

Standard:

- Attachment 2, Sheet 1 (Page 17) – wrong Specific Volume used to determine ΔPcorr.

Evaluator Note: **ΔPcorr still exceeds minimum requirement but is incorrect.**

Comment:

√ **Performance Step: 4** Review the completed OST

Standard:

- Attachment 3 (Page 20) – Outboard Horizontal Vibration reading is in the ALERT range but there is no documentation in accordance with Instructions 1.a and 1.b.

Evaluator Note: **The pump would still be operable but this could prevent corrective action or the required increase in surveillance frequency.**

Comment:

√ **Performance Step: 5** Review the completed OST

Standard: Attachment 4 (Page 21) – 1AF-74 SHUT time exceeds CODE CRITERIA and, in accordance with Step 7.0.1, should have been retested immediately.

Comment:

Performance Step: 6 Review the completed OST

Standard: Returns the procedure unsigned or, if signed, with EXCEPTIONS circled and all errors identified in the GENERAL COMMENTS section.

Comment:

Terminating Cue: **When the procedure is returned: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2008 NRC SRO A2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- The unit is in Mode 1 at 100% power
- All major controllers are in AUTO
- No TS Action Statements are in effect
- OST-1211, AUXILIARY FEEDWATER PUMP 1A-SA OPERABILITY TEST QUARTERLY INTERVAL MODES 1-4, has just been completed

INITIATING CUE: You are the USCO. Review the completed OST-1211 for approval.

NRC Exam
SRO A2 HANDOUT

Progress Energy

C
CONTINUOUS
USE

HARRIS NUCLEAR PLANT

PLANT OPERATING MANUAL

VOLUME 3

PART 9

PROCEDURE TYPE: OPERATIONS SURVEILLANCE TEST

NUMBER: **OST-1211**

TITLE: **AUXILIARY FEEDWATER PUMP 1A-SA OPERABILITY TEST QUARTERLY INTERVAL MODES 1 - 4**

NOTE: This procedure has been screened per PLP-100 Criteria and determined to be CASE III. No additional management involvement is required.

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1.0 PURPOSE

1. This test demonstrates the operability of Auxiliary Feedwater Pump 1A-SA at least once every 92 days on a Staggered Test Basis by satisfying the following Technical Specification Surveillance Requirements:

   - 4.7.1.2.1.a.1.a
   - 4.3.2.1 Table 4.3-2 Item 6a

2. Tech Spec 4.0.5 and IST requirements for the following components:

   - 1AF-4, AFWP 1A Recirc to CST Ck Valve
   - 1AF-23, AFWP 1B Recirc to CST Ck Valve
   - 1AF-110, Aux Feed Pump 1X Recirc to CST Ck Valve
   - 1CE-36, CST Suction Check Valve to 1A-SA AFW Pump
   - 1AF-55, Aux FW A Isolation
   - 1AF-74, Aux FW C Isolation
   - 1AF-201, Aux Feed Pump 1A Line to A S/G Ck Valve 1AF-54
   - 1AF-54, Aux Feed Pump 1A Line to A S/G Ck Valve
   - 1AF-202, Aux Feed Pump 1B-SB Line to B S/G Ck Vlv 1AF-92
   - 1AF-92, Aux Feed Pump 1B-SB Line to B S/G Ck Vlv
   - 1AF-203, AFWP 1A & 1B Common Line to C S/G Ck Valve 1AF-73
   - 1AF-73, AFWP 1A & 1B Common Line to C S/G Ck Valve

3. This test satisfies Tech Spec Surveillance Requirement 4.6.3.1 for Containment Isolation Valve operability following maintenance.

2.0 REFERENCES

2.1. Plant Operating Manual Procedures

1. OP-137
2. ISI-111
3. ISI-800
4. ISI-801

2.2. Technical Specifications

1. 3.7.1.2
2. 4.0.5
3. 4.6.3.1
4. 4.7.1.2.1.a.1
5. 4.3.2.1 Table 4.3-2 Item 6a

2.3. Final Safety Analysis Report

1. 6.3.2
2. 7.3.2
3. 10.4.9
4. 10.4.9a

2.4. Drawings

1. 5-S-0544
2. 5-S-0545
3. 6-B-401 1941

2.5. Technical Manuals

1. VM-BJH-V01, Pumps, Mtr Drvn Aux Feedwater

2.6. Corrective Action Program (CAP) Items

1. 93H0166

2.7. Other

1. PCR-6502
2. ESR 95-01041
3. ESR 97-00475
4. HNP-IST-003, HNP IST Program Plan – 3rd Interval
5. SD-137
6. HNP Mechanical Calculation AF-0047

3.0 PREREQUISITES

1. **VERIFY** that the Auxiliary Feedwater System is aligned in a manner that will support the performance of this test. _____

2. **COORDINATE** the performance of this OST with other plant evolutions such that the minimum equipment operating requirements of Tech Specs are met. _____

3. **OBTAIN** any tools and equipment required per Section 5.0. _____

4. **VERIFY** instrumentation needed for the performance of this test is free of deficiencies that may affect instrument indication. _____

5. **VERIFY AND RECORD** calibration due dates for all instrumentation listed on the Calibration Data Sheet, including the identification number. _____

6. **VERIFY** Maintenance support is available to have the following installed:

   a. 1A-SA AFW Pump suction pressure test gauge (0 to 50 psig) at 1CE-42-V2, PI-2251A Instrument Valve. _____

   b. 1A-SA AFW Pump discharge pressure test gauge (0 to 3000 psig) at 1AF-11-HV2, PI-2151A Instrument Valve. _____

   c. 0 to 100 inwc differential pressure test gauge, with an accuracy of plus or minus 1.0 inch water, installed and vented at 1AF-7-HV1, FI-1AF-2172S Instrument Valve, and 1AF-7-LV1, FI-1AF-2172S Instrument Valve, to measure AFW Pump Local Recirculation Flow. _____

7. **VERIFY** personnel taking vibration measurements are qualified per Reference 2.1.2. _____

8. **INFORM** the Unit SCO that the performance of this OST during MODE 1, 2, and 3 initiates an LCO per Technical Specification 3.7.1.2. _____

9. **OBTAIN** Unit SCO permission to perform this OST.

_____ Signature _____ Date

4.0 PRECAUTIONS AND LIMITATIONS

1. This test should not be performed when a Motor Driven AFW Pump is being used for SG level control, due to stroking the MDAFW FCVs.

2. Only one Auxiliary Feedwater Pump shall be tested at a time.

3. Auxiliary Feedwater Pump 1A-SA should not be operated at less than 50 gpm and should not be operated at 50 gpm for more than 300 hours. (This is normally provided by the recirc line)

4. If an accident initiation signal is received during the performance of this test, stop the test.

5. If any valve stroke time falls outside its Code Criteria, the valve will be retested per the retest instructions as soon as possible or declared inoperable.

5.0 TOOLS AND EQUIPMENT

1. Two way radios or sound powered phones

2. Handheld pyrometer, if ERFIS is not to be used for temperature monitoring

3. Fluke Model 8022B Digital Multimeter (DMM) or Equivalent, if ERFIS is not to be used for discharge pressure monitoring

4. Calibrated Vibrometer per ISI-111 with an accuracy of ± 5%

5. Calibrated Stopwatch

6. Pressure Test Gauge, 0 to 50 psig, with an accuracy of 0.5% of span or better

7. Pressure Test Gauge, 0 to 3000 psig, with an accuracy of 0.5% of span or better

8. 0 to 100 inwc test gauge, with an accuracy of ± 1.0 inch water, ITT Barton or equivalent

6.0 ACCEPTANCE CRITERIA

1. This OST will be completed satisfactorily if the following conditions are verified:

   a. 1AF-4, AFWP 1A Recirc to CST Ck Valve, full strokes open as demonstrated on Attachment 2.

   b. 1CE-36, CST Suction Check Valve to 1A-SA AFW Pump, strokes open as demonstrated on Attachment 2.

   c. The following valves backseat as demonstrated on Attachment 2:

      - 1AF-201, Aux Feed Pump 1A Line to A S/G Ck Valve 1AF-54, and 1AF-54, Aux Feed Pump 1A Line to A S/G Ck Valve

      - 1AF-202, Aux Feed Pump 1B-SB Line to B S/G Ck Vlv 1AF-92, and 1AF-92, Aux Feed Pump 1B-SB Line to B S/G Ck Vlv

      - 1AF-203, AFWP 1A & 1B Common Line to C S/G Ck Valve 1AF-73, and 1AF-73, AFWP 1A & 1B Common Line to C S/G Ck Valve

      - 1AF-23, AFWP 1B Recirc to CST Ck Valve

      - 1AF-110, Aux Feed Pump 1X Recirc to CST Ck Valve

   d. The following valves are full stroked with the stroke times within the Acceptance Criteria listed on Attachment 4:

      - 1AF-55, Aux FW A Isolation

      - 1AF-74, Aux FW C Isolation

   e. Auxiliary Feedwater Pump 1A-SA:

      (1) Starts from the MCB and develops a differential pressure greater than or equal to 1528 psid (TS 4.7.1.2.1.a.1 of 1514 psid plus 14 psid per Calc AF-0047) at a recirculation flow of greater than or equal to 50 gpm as demonstrated by pump differential pressure calculation from Attachment 2.

      (2) Performance Data is within the Acceptance Criteria listed on Attachment 2.

      (3) Vibration Data is within the Acceptance Criteria listed on Attachment 3.

7.0 PROCEDURE

NOTE: The following Steps should be initialed after this test is completed. 9

1. **IF** during the performance of this test, a valve stroke time exceeds its Code Criteria,
   THEN IMMEDIATELY RETEST the valve per Attachment 5. NA

2. **IF** during the performance of this test, a valve exhibits abnormal or erratic action,
   THEN DOCUMENT the condition in the comments section of Attachment 6.

7.1. Auxiliary Feedwater Pump 1A-SA

1. **DIRECT** Maintenance to **INSTALL** and valve in 1A-SA AFW Pump suction pressure test gauge (0 to 50 psig) at 1CE-42-V2, PI-2251A Instrument Valve. 9

2. **DIRECT** Maintenance to **INSTALL** 1A-SA AFW Pump discharge pressure test gauge test gauge (0 to 3000 psig) at 1AF-11-HV2, PI-2151A Instrument Valve. 9

3. **RECORD** 1A-SA Pump idle suction pressure from test gauge installed in Step 7.1.1 on Attachment 2. 9

4. **SHUT** 1CE-42-V2, PI-2251A Instrument Valve. 9

NOTE: The following Step will verify proper Stroke Close of the indicated check valves. 9

5. **CHECK** the following computer points are less than 135°F and document proper Stroke Close testing for indicated check valves on Attachment ~~2~~ 9. 9
   - TAF2007A, Motor Driven AFW to SG A (1AF-201 and 1AF-54) 9
   - TAF2007C, Motor Driven AFW to SG B (1AF-202 and 1AF-92) 9
   - TAF2007E, Motor Driven AFW to SG C (1AF-203 and 1AF-73) 9

7.1 Auxiliary Feedwater Pump 1A-SA (continued)

6. **VERIFY** the 0 to 100 inwc test gauge is installed at 1AF-7-HV1, FI-1AF-2172S Instrument Valve, and 1AF-7-LV1, FI-1AF-2172S Instrument Valve.

7. **VERIFY** Maintenance has valved in the recirculation flow test gauge installed at 1AF-7-HV1, FI-1AF-2172S Instrument Valve, and 1AF-7-LV1, FI-1AF-2172S Instrument Valve.

8. **PERFORM** prestart checks per OP-137 on Auxiliary Feedwater Pump 1A-SA.

9. **ESTABLISH** communications between the Main Control Room and Auxiliary Feedwater Pump 1A-SA.

> **NOTE:** Performance of Step 7.1.12 will initiate an LCO for Auxiliary Feedwater Pump 1A-SA if in MODE 1, 2, or 3 per Technical Specification 3.7.1.2.

10. **INFORM** the Control Operator and Unit SCO that Auxiliary Feedwater Pump 1A-SA will be made inoperable.

11. **RECORD** the time and date that Auxiliary Feedwater Pump 1A-SA was made inoperable on Attachment 6.

> **NOTE:** Performance of Step 7.1.12 will isolate Auxiliary Feedwater Pump 1A-SA from the Steam Generators.

12. **SHUT** 1AF-207, AFWP 1A Discharge Isolation.

R 13. At the MCB, **START** Auxiliary Feedwater Pump 1A-SA. (Reference 2.3.2)

Time started: 0925

> **CAUTION**
>
> Auxiliary Feedwater Pump 1A-SA should not be operated at less than 50 gpm and should not be operated at 50 gpm for more than 300 hours.

14. **VERIFY** that the recirculation flow on local indicator FI-2172S is greater than or equal to 50 gpm.

NOTE: Performance of the following Step will also initiate an LCO for Auxiliary Feedwater Pump 1A-SA if in MODE 1, 2, or 3 per Technical Specification 3.7.1.2.

15. To obtain a recirculation flow of 50 to 52 gpm, locally **UNLOCK AND THROTTLE** 1AF-3, AFWP 1A Recirc to CST Isolation, until 50 to 54 inches water column is indicated on the local test gauge. ____

16. **ALLOW** pump to run for at least 2 minutes after conditions are as stable as the system permits before recording data. ____

17. **OPEN** 1CE-42-V2, PI-2251A Instrument Valve. ____

18. **RECORD** 1A-SA Pump operating suction pressure from test gauge installed in Step 7.1.1 on Attachment 2. ____

19. **SHUT** 1CE-42-V2, PI-2251A Instrument Valve. ____

20. **OPEN** 1AF-11-HV2, PI-2151A Instrument Valve. ____

21. **RECORD** 1A-SA Pump operating discharge pressure from test gauge installed in Step 7.1.2 on Attachment 2. ____

NOTE: For repeatability of data, if a handheld pyrometer is used in the following Step, the reading should be obtained immediately downstream of where the SW and CST suction lines meet

22. **RECORD** suction temperature from ERFIS point TCE9010 or hand held pyrometer on Attachment 2. ____

23. **RECORD** Recirculation Flow differential pressure (inwc) from the local test gauge, on Attachment 2. ____

24. **CHECK** the following Recirculation Flow differential pressure (inwc) is within the acceptance criteria and document valve testing on Attachment 2.

    - 1CE-36, CST Suction Check Valve to 1A-SA AFW Pump ____
    - 1AF-4, AFWP 1A Recirc to CST Ck Valve ____
    - 1AF-23, AFWP 1B Recirc to CST Ck Valve ____
    - 1AF-110, Aux Feed Pump 1X Recirc to CST Ck Valve ____

7.1 **Auxiliary Feedwater Pump 1A-SA** (continued)

25. **CALCULATE AND RECORD** Differential Pressure per NOTE 1 on Attachment 2.

Verified

26. **CALCULATE AND RECORD** Corrected Differential Pressure per NOTE 2 on Attachment 2.

Verified

> **NOTE:** The IST Program requires all readings to be taken in units of velocity (inches/second).
>
> **NOTE:** To ensure consistent readings are being recorded, the vibration data recorded on Attachment 3 should be the values which the qualified operator stored for each point in the Vibrometer.

27. **MEASURE** vibration **AND COMPLETE** Attachment 3 using the values that were stored in the vibrometer.

28. **LOCK OPEN** 1AF-3, AFWP 1A Recirc to CST Isolation.

Verified

29. At the MCB, **STOP** Auxiliary Feedwater Pump 1A-SA.

Time Stopped: 1005

> **NOTE:** The following Step will restore the 1A-SA AFW Pump to operable status.

30. **LOCK OPEN** 1AF-207, AFWP 1A Discharge Isolation.

Verified

31. **INFORM** the Control Operator and Unit SCO that Auxiliary Feedwater Pump 1A-SA is operable.

7.1 Auxiliary Feedwater Pump 1A-SA (continued)

32. **RECORD** the time and date that Auxiliary Feedwater Pump 1A-SA is operable on Attachment 6. _____

33. **ISOLATE** the suction pressure test gauge by shutting 1CE-42-V2, PI-2251A Instrument Valve. _____

34. **DIRECT** Maintenance to remove the suction pressure test gauge at 1CE-42-V2, PI-2251A Instrument Valve and install pipe plug. _____

35. **VERIFY** 1CE-42-V2 is shut and plugged. _____

    _____ Verified

36. **ISOLATE** the discharge pressure test gauge by shutting 1CE-11-HV2, PI-2151A Instrument Valve. _____

37. **DIRECT** Maintenance to remove the discharge pressure test gauge at 1CE-11-HV2, PI-2151A Instrument Valve and install pipe plug. _____

38. **VERIFY** 1CE-11-HV2 shut and plugged. _____

    _____ Verified

39. **DIRECT** Maintenance to isolate the recirculation flow test gauge by shutting 1AF-7-HV1, FI-1AF-2172S Instrument Valve, and 1AF-7-LV1, FI-1AF-2172S Instrument Valve. _____

40. **DIRECT** Maintenance to remove the recirculation flow test gauge at 1AF-7-HV1, FI-1AF-2172S Instrument Valve, and 1AF-7-LV1, FI-1AF-2172S Instrument Valve and install pipe plugs. _____

41. **VERIFY** the following are shut and plugged.

    a. 1AF-7-HV1, FI-1AF-2172S Instrument Valve. _____

    _____ Verified

    b. 1AF-7-LV1, FI-1AF-2172S Instrument Valve. _____

    _____ Verified

7.2. Valve Testing

1. **REFER** to Attachment 4 and test 1AF-55 and 1AF-74 per the following instructions:

   a. **OBTAIN** a calibrated stopwatch. _____

> **NOTE:** Performance of Step 7.2.1.e will initiate an LCO for Auxiliary Feedwater Pumps 1A-SA and 1B-SB if in MODE 1, 2, or 3 per Tech Spec 3.7.1.2.

   b. **INFORM** the Control Operator and Unit SCO that Auxiliary Feedwater Pumps 1A-SA and 1B-SB will be made inoperable. _____

   c. **RECORD** the time and date that Auxiliary Feedwater Pumps 1A-SA and 1B-SB were made inoperable on Attachment 6. _____

> **NOTE:** Steps 7.2.1.d through 7.2.1.m are to be signed off when testing of both 1AF-55 and 1AF-74 is completed.

   d. **VERIFY** the valve to be tested is aligned to the Pretest Position and initial on Attachment 4. _____

   e. **SIMULTANEOUSLY START** the stopwatch **AND PLACE** the control switch for the valve in test to the SHUT position. _____

   f. **WHEN** the valve has completed travel as indicated by a singular position indicating light for the SHUT position (no dual indication), **THEN STOP** the stopwatch. _____

   g. **RECORD** the valve Stroke Time on Attachment 4. _____

   h. **SIMULTANEOUSLY START** the stopwatch **AND PLACE** the control switch for the valve in test to the pretest position shown on Attachment 4. _____

   i. **VERIFY** that the valve has traveled to the Pretest Position as indicated by a singular position indicating light for the demanded position (no dual indication). _____

   j. **RECORD** the valve Stroke Time on Attachment 4. _____

7.2 **Valve Testing** (continued)

k. **INITIAL** for the FULL STROKE TEST on Attachment 4 as verification of satisfactory valve operation (as performed in Substeps 7.2.1.e through 7.2.1.i). _____

l. **VERIFY** the valve is in the Posttest Position listed on Attachment 4 and initial in the space provided. _____

m. **REPEAT** Steps 7.2.1.d through 7.2.1.l for the other valve to be tested on Attachment 4. _____

n. **PERFORM** independent verification of the valves, as required on Attachment 4. _____

o. **INFORM** the Control Operator and Unit SCO that Auxiliary Feedwater Pumps 1A-SA and 1B-SB are operable. _____

p. **RECORD** the time and date that Auxiliary Feedwater Pumps 1A-SA and 1B-SB are operable on Attachment 6. _____

7.3. **Test Completion**

1. **REVIEW** the data on Attachments 2, 3 and 4 for applicable Acceptance Criteria being met. **INFORM** the Unit SCO of any Acceptance Criteria not being met. _____

2. **COMPLETE** applicable portions of Attachment 6, Certifications and Reviews, **AND INFORM** the Unit SCO that this OST is completed. _____

8.0 **DIAGRAMS/ATTACHMENTS**

Attachment 1 - Calibration Data Sheet

Attachment 2 - Performance Data

Attachment 3 - Vibration Data

Attachment 4 - Valve Test Data

Attachment 5 - Valve Retest Data Sheet

Attachment 6 - Certification and Review

Attachment 1 - Calibration Data Sheet
Sheet 1 of 1

Inst/Model Description	Inst ID Number	Cal Due Date
Vibrometer	UTC 1250077 ~~CT 1986~~	8.27.08
0 to 50 PSIG Test Gauge	CT 320	10/30/08
0 to 3000 PSIG Test Gauge	CT 489	9/15/08
Stopwatch	CT923	1.29.08
Hand held Pyrometer	N/A	N/A
Differential Pressure Gauge, 0 to 100 inwc accuracy of ± 1.0 inch	CT 2308	12/13/08

Attachment 2 - Performance Data
Sheet 1 of 3

Auxiliary Feedwater Pump 1A-SA

NOTE 1: Calculate Differential Pressure as follows:

1625	-	24.80	=	1600.2 psid
Step 7.1.21		Step 7.1.18		Step 7.1.23

NOTE 2: Satisfactory Acceptance Criteria is determined by using the following equation and verifying the corrected differential pressure is within the acceptance criteria.

$$\frac{1605.3}{\Delta P_{corr}} = 62.31 \times \frac{1600.2}{\Delta P_{ind}} \times \frac{.01610}{u_f}$$

ΔP_{corr} = Corrected Differential Pressure

ΔP_{ind} = Indicated Discharge Pressure minus Indicated Suction Pressure

u_f = Specific Volume (ft^3/lbm) for saturated liquid water (u_f) for suction temperature recorded in Step7.1.22. This number can be determined from Sheet 3 of this Attachment or Standard Steam Tables.

Step	Component Tested	Acceptance Criteria	Sat/Unsat (circle one)
7.1.5	1AF-201 and 1AF-54 stroke close.	TAF2007A < 135°F	SAT / UNSAT
7.1.5	1AF-202 and 1AF-92 stroke close.	TAF2007C < 135°F	SAT / UNSAT
7.1.5	1AF-203 and 1AF-73 stroke close.	TAF2007E < 135°F	SAT / UNSAT
7.1.24	1CE-36 Stroke Open	50 to 54 inwc	SAT / UNSAT
7.1.24	1AF-4 Full Stroke Open	≥ 50 inwc	SAT / UNSAT
7.1.24	1AF-110 Stroke Closed	≥ 50 inwc	SAT / UNSAT
7.1.24	1AF-23 Stroke Closed	≥ 50 inwc	SAT / UNSAT

INSTRUCTIONS
1. If pump hydraulic data does not meet acceptance criteria:
   a. Declare the pump INOPERABLE.
   b. Initiate a CR.

STEP NO.	PARAMETER	INSTRUMENT	READING	ACCEPTANCE CRITERIA
7.1.3	Idle Suction Pressure	Test Gauge at 1CE-42-V2	25.15 psig	≥ 15 psig
7.1.18	Operating Suction Pressure	Test Gauge at 1CE-42-V2	24.80 psig	≥ 15 psig
7.1.20	Discharge Pressure	Test Gauge at 1AF-11-HV2	1625 psig	N/A
7.1.22	Suction Temperature	ERFIS Point TCE9010 or Handheld Pyrometer*	99 °F	N/A
7.1.23	Recirculation Flow (Local Flow Gauge)	Test Gauge at 1AF-7	52 inwc	50 to 54 inwc ***
7.1.25	Differential Pressure	Calculated per NOTE 1	1600.2 PSID	N/A
7.1.25	Differential Pressure	Calculated per NOTE 2 (Corrected (ΔP_{corr})	1605.3 PSID	≥ 1528 psid and ≤ 1763.96 psid

* Circle instrument used.
** 50 to 54 inches water column is equivalent to 50 to 52 gpm

Attachment 2 - Performance Data
Sheet 3 of 3

Specific Volume (ft^3/lbm) For Saturated Liquid Water (u_f)

Temperature	Specific Volume	Temperature	Specific Volume	Temperature	Specific Volume
59	0.016034	80	0.016074	101	0.016135
60	0.016035	81	0.016076	102	0.016138
61	0.016036	82	0.016079	103	0.016141
62	0.016038	83	0.016081	104	0.016145
63	0.016039	84	0.016084	105	0.016148
64	0.016041	85	0.016086	106	0.016152
65	0.016043	86	0.016089	107	0.016155
66	0.016044	87	0.016092	108	0.016159
67	0.016046	88	0.016095	109	0.016163
68	0.016048	89	0.016097	110	0.016166
69	0.016050	90	0.016100	111	0.016170
70	0.016052	91	0.016103	112	0.016174
71	0.016054	92	0.016106	113	0.016177
72	0.016056	93	0.016109	114	0.016181
73	0.016058	94	0.016112	115	0.016185
74	0.016060	95	0.016115	116	0.016189
75	0.016062	96	0.016118	117	0.016193
76	0.016064	97	0.016122	118	0.016197
77	0.016067	98	0.016125	119	0.016201
78	0.016069	99	0.016128	120	0.016205
79	0.016071	100	0.016131	121	0.016209

Attachment 3 - Vibration Data
Sheet 1 of 1

INSTRUCTIONS:

1. If pump vibration data is outside the Acceptable Range but within the Alert Range:

   a. Prepare an E-mail or Memo to the Surveillance Testing Scheduling Coordinator directing the test frequency of the pump to be doubled.
   b. Attach a copy of the E-mail or Memo to the test package.

2. If pump vibration data meets the Required Action Criteria:

   a. Declare the pump INOPERABLE.
   b. Initiate a Condition Report (CR).

Auxiliary Feedwater Pump 1A-SA

Vibration Location	IN/SEC	ACCEPTANCE CRITERIA		
		Acceptable Range	Alert Range	Required Action
Axial	0,152	≤ 0.285	> 0.285 to ≤ 0.684	> 0.684
Outboard Horizontal	0,280	≤ 0.2325	> 0.2325 to ≤ 0.558	> 0.558
Outboard Vertical	0.163	≤ 0.2775	> 0.2775 to ≤ 0.666	> 0.666
Inboard Horizontal	0,095	≤ 0.265	> 0.265 to ≤ 0.636	> 0.636
Inboard Vertical	0,178	≤ 0.315	> 0.315 to ≤ 0.70	> 0.70

Attachment 4 - Valve Test Data

Sheet 1 of 1

PRETEST ALIGNMENT			FULL STROKE TEST			FAIL SAFE TEST		POSTTEST ALIGNMENT			ACCEPTANCE CRITERIA (SEC)					
											CODE CRITERIA				LIMITING VALUE	
											OPEN		SHUT			
Valve Number	Pretest Position	Init	Verification of Travel by Ind Lights (INIT)	Stroke Time (SEC) OPEN	Stroke Time (SEC) SHUT	Fail Safe Position	Position Verified	Posttest Position	Pos Init	Verf Init	Low	High	Low	High	OPEN	SHUT
1AF-55	Open	4	4	16.77	16.95	N/A	N/A	Open	4	[illegible]	14.25	19.28	14.34	19.40	25.15	23.00
1AF-74	Open	4	4	17.93	20.57	N/A	N/A	Open	4	[illegible]	15.48	20.94	14.84	20.07	27.31	23.00

Comments: _____

Attachment 5 - Valve Retest Data Sheet
Sheet 1 of 2

NOTE: This entire Attachment is N/A if no valve is retested due to exceeding the Code Criteria.

Determine if the stroke time exceeds the Limiting Value.

1. If the stroke time exceeds the Limiting Value, declare the valve inoperable and initiate a CR. (N/A if stroke time is less than the Limiting Value)

2. If the stroke time is less than the Limiting Value, but outside the Code Criteria limits, perform the following Steps:

   a. If the cause is known to be mechanical failure, or if a retest cannot be performed expeditiously, declare the valve inoperable and initiate a CR(Except PMTRs).

   b. If retesting the valve is desired, perform the following:

NOTE: If necessary, separate marked up sheets of this OST may be used to document necessary manipulations. These sheets would be attached to this procedure and noted in the comments Section of Attachment 7.

(1) Determine which Steps need to be performed to set up conditions for testing the valve. Unit SCO concurrence must be obtained and documented in the Comments section of Attachment 7.

(2) Perform the Steps determined in the previous Step and document stroke times/valve positioning on Sheet 2.

(3) If retest results are still outside the Code Criteria, declare the valve inoperable and initiate a CR (except PMT).

(4) If retest results are within the Code Criteria, perform the following:

   (a) Declare the valve operable.

   (b) Initiate a CR identifying test findings for the first and second tests.

   (c) Send test results to Responsible Engineer (IST) for evaluation and documentation on the CR.

Attachment 5 - Valve Retest Data Sheet
Sheet 2 of 2

(1) Fill out PRETEST ALIGNMENT, POSTTEST ALIGNMENT, and ACCEPTANCE CRITERIA values for the valve(s) being tested using the values in the initial test Attachment.

PRETEST ALIGNMENT (1)			FULL STROKE TEST		POSTTEST ALIGNMENT (1)			ACCEPTANCE CRITERIA (SEC) (1)					
			Stroke Time (SEC)					CODE CRITERIA				LIMITING VALUE	
								OPEN		SHUT			
Valve Number	Pretest Position	Init	OPEN	SHUT	Posttest Position	Pos Init	Verf Init	Low	High	Low	High	OPEN	SHUT

Attachment 6 - Certification and Review
Sheet 1 of 2

This OST was performed as a:

Periodic Surveillance Requirement: ✓

Postmaintenance Operability Test: _____

Redundant Subsystem Test: _____

Plant Conditions: 100% NOT/NOP

Mode: 1

OST Completed By: F. Jackson

Date: TODAY

Time: 1041

OST Performed By:

Initials	Name (Print)	Initials	Name (Print)
F	F Jackson	DM	DON MACDOUGALL
		RK	R. Teschey
		JKL	J K Lloyd
		RS	Robert Stephenson

General Comments/Recommendation/Corrective Actions/Exceptions:

Attachment 6 - Certifications and Reviews
Sheet 2 of 2

Step 7.1.11	1A-SA AFW Pump Inoperable	Time: 0920	Date: TODAY
Step 7.1.32	1A-SA AFW Pump Operable	Time: 1009	Date: TODAY
Step 7.2.1.c	1A-SA and 1B-SB AFW Pump Inoperable	Time: 1028	Date: TODAY
Step 7.2.1.p	1A-SA and 1B-SB AFW Pump Operable	Time: 1039	Date: TODAY

Pages Used: _____

OST Completed with NO EXCEPTIONS/EXCEPTIONS:

Reviewed By: _____ Date: _____
Unit SCO

Reviewed By: _____ Date: _____
Responsible Engineer (IST)

Reviewed By: _____ Date: _____
ANII

After receiving the final review signature, this OST becomes a QA RECORD and should be submitted to Document Services.

Revision Summary

General (Revision 19)

This revision changes "data is greater than the acceptable range" to "data is outside the acceptable range" for the pump vibration and pump hydraulic attachments.

Description of Changes

Page	Section	Change Description
All		Increased revision level.
20	Attachment 3	Changed data is greater than the acceptable range to data is outside the acceptable range in Step 1.

General

Revision 18 corrects a typographical error per in the field EC.

Description of Changes

Page	Section	Change Description
All	All	Updated revision level.
10	7.1.13	Changed 1B-SB to 1A-SA. This entire test is for the A train AFW Pump, so this is an obvious typo. (Editorial Correction)

Facility: HARRIS Task No.:

Task Title: Given a declared emergency, determine the dose rate, dose limit, and the number of people to perform a task. JPM No.: 2008 NRC RO-SRO A3

K/A Reference: 2.3.4 (2.5/3.1)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom X Simulator _____ Plant _____

Perform in a location with the general references available or with electronic access to the references.

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

- A large break LOCA has occurred
- The ECCS is in cold leg recirculation
- RHR Pump "B" is running. RHR Pump "A" showed evidence of gas binding and was stopped.
- A Site Area Emergency (SAE) is in effect
- The Emergency Engineering Organization has determined that the RHR Pump "A" should be vented to ensure that a backup is available
- The general radiation level in the area is 16 R/hour
- The OSC estimates that the total task could take .75 man-hours
- The Site Emergency Coordinator has specified that he/she will not authorize an extension to the emergency workers dose limit for performance of this task.

Task Standard: Number of people and stay times calculated within specified limits.

Required Materials: Calculator

General References:

- PEP-330, RADIOLOGICAL CONSEQUENCES
- NGGM-PM-0002, RADIATION CONTROL AND PROTECTION MANUAL

Initiating Cue: The Progress Energy emergency workers listed in the table below are available. They will be utilized from lowest to highest accumulated TEDE dose. Determine the total number of workers required to perform the task and the maximum stay time for each individual who will be utilized. Assume no dose in transit and round off to the nearest minute below the limit.

Time Critical Task: NO

Validation Time:

SIMULATOR SETUP

N/A

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Determine total estimated dose for the task.

Standard: 16 R/hour x .75 hours = 12 Rem

Comment:

Performance Step: 2 Determine the dose limit for Progress Energy emergency workers

Standard: Per PEP-330 – Attachment 1: 5 Rem

Comment:

√ **Performance Step: 3** Determine the number of people required

Standard: Workers A, B, and C would have to be used **(√)** to reach the 12 Rem total estimated dose (4700 + 4450 + 4300 = 13.45)

Comment:

√ **Performance Step: 4** Stay Time for Workers

Standard: A: 4.7/16 x 60 minutes = 17 minutes
B: 4.45/16 x 60 minutes = 16 minutes
C: 4.30/16 x 60 minutes = 16 minutes

Comment:

Terminating Cue: **After the maximum stay time for the workers to be used is calculated: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2008 NRC RO-SRO A3

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- A large break LOCA has occurred
- The ECCS is in cold leg recirculation
- RHR Pump "B" is running. RHR Pump "A" showed evidence of gas binding and was stopped.
- A Site Area Emergency (SAE) is in effect
- The Emergency Engineering Organization has determined that the RHR Pump "A" should be vented to ensure that a backup is available
- The general radiation level in the area is 16 R/hour
- The OSC estimates that the total task could take .75 man-hours
- The Site Emergency Coordinator has specified that he/she will not authorize an extension to the emergency workers dose limit for performance of this task.

INITIATING CUE:

The Progress Energy emergency workers listed in the table below are available. They will be utilized from lowest to highest accumulated TEDE dose. Determine the total number of workers required to perform the task and the maximum stay time for each individual who will be utilized. Assume no dose in transit and round off to the nearest minute below the limit.

Progress Emergency Worker	Accumulated TEDE Dose This Year
A	300 mr
B	450 mr
C	700 mr
D	800 mr
E	850 mr
F	1000 mr
G	1050 mr
H	1150 mr
I	1200 mr
J	1300 mr
K	1500 mr
L	1650 mr

Facility:	HARRIS	Task No.:	345001H602
Task Title:	Evaluate a change in conditions on an existing EAL	JPM No.:	2008 NRC JPM SRO A4
K/A Reference:	2.4.41 (4.1)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing: **This JPM can be performed in any setting with the required references available.**

Simulated Performance: _____ Actual Performance: X

Classroom X Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: See Plant Conditions handout.

Task Standard: Upgrade EAL to GE and correct PAR within required time.

Required Materials: None

General References:
- PEP-110, EMERGENCY CLASSIFICATION AND PROTECTIVE ACTION RECOMMENDATIONS, Rev. 16
- PEP-230, CONTROL ROOM OPERATIONS, Rev.14
- PEP-310, NOTIFICATIONS AND COMMUNICATIONS, Rev. 21

Handouts:
- Attached Initial Conditions
- EAL Flowcharts
- PEP-110
- PEP-310
- EP/EAL Guidelines
- PEP-230, Attachment 1 – SITE EMERGENCY COORDINATOR

Initiating Cue: You are the Site Emergency Coordinator. Review the plant conditions handout sheet and determine the current Emergency Action Level (EAL). This is a time critical JPM. The clock starts after you have reviewed the Plant Conditions sheet.

Time Critical Task: YES – 15 minutes to classify then 15 more minutes to make the PAR.

Validation Time: 10 minutes to classify, 12 minutes for PAR/Emergency Notification Form.

(Denote Critical Steps with a √)

Start Time: _____.

Performance Step: 1 Evaluate changing conditions.

Standard: Compares conditions against EAL Flowchart criteria.

Evaluator Cue:

- **Provide Initial Conditions sheet (last page of JPM).**
- **Provide reference materials if not available in the JPM performance location.**

Comment: **Classification Start Time _____.**

√ **Performance Step: 2** Determine EAL.

Standard: Upgrade to GE (2-1-4) required:

- RCS Breached
- Fuel Breached – DEI sample > 300 uCi/cc
- CNMT Jeopardized – Pressure > 3 PSIG

Evaluator Note:

- **It may be necessary to cue the PAR performance. The facility normally splits the EAL and the PAR into two JPM's.**
- **If the applicant incorrectly classifies then skip to the Evaluator Cue in Performance Step 3.**

Comment: **Classification End Time/PAR Start Time _____.**

√ **Performance Step: 3** Determine PAR (PEP-230, Attachment 1, Step 10).

Standard: Refers to PEP-110, Attachment 3:

PROTECTIVE ACTION RECOMMENDATION:

- EVACUATE: 2 mile radius
- EVACUATE: Subzones A, B, L
- SHELTER: Subzones C, D, E, F, G, H, I, J, K, M, N

Evaluator Cue: **The computer program is not available. Hand write a paper copy of the Manual Notification Form in accordance with PEP-230, Attachment 1, Step 11.b.**

Comment:

√ **Performance Step: 4** Complete the ENF.

Standard: Critical Elements:

- Block 4: GE
- Block 4 EAL: 2-1-4
- Block 5 PAR: Evacuate 2 mile radius and Subzones A, B, L; Shelter Subzones C, D, E, F, G, H, I, J, K, M, N
- Block 6 Emergency Release: Is Occurring
- Block 9 Wind Direction from: 126°
- Block 10: DECLARATION; Current TIME; Current DATE
- Block 17: Applicant signature/Title/Current Time/ Current Date
- Provide form to Communicator

Evaluator Note: **An ENF KEY is attached.**

Comment: **PAR Notification End Time _____.**

Terminating Cue: **After the ENF is handed to the communicator: Evaluation on this JPM is complete.**

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2008 NRC JPM SRO A4

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS: See Plant Conditions handout.

INITIATING CUE: You are the Site Emergency Coordinator. Review the plant conditions handout sheet and determine the current Emergency Action Level (EAL). This is a time critical JPM. The clock starts after you have reviewed the Plant Conditions sheet.

2008 NRC JPM SRO A4 Plant Conditions

- Increasing RCS leakage required a MANUAL Reactor Trip and Safety Injection
- The TDAFW Pump is cleared and tagged
- The RCS leak escalated to a large-break LOCA while the crew was performing PATH-1
- Containment Spray actuated
- There is a RED CSF on INTEGRITY
- The EAL Network was entered at Point X
- A Site Area Emergency (SAE) is in effect with the RCS breached (EAL 2-1-3) and Containment jeopardized
- Outside temperature is 62 ˚F
- Thunderstorms are moving into the area
- The wind is blowing at 12 MPH from 126 degrees
- Since the SAE declaration, the following has occurred:
    - Off-site power was lost and EDG 1B failed while starting
    - ECCS cold leg recirculation alignment on Train "A" was just completed
    - Containment Pressure is 3.8 PSIG, lowering slowly
    - Containment Area Radiation Monitors are in HIGH alarm, rising slowly
    - Containment High Range Monitors are rising but not in alarm
    - Plant Vent Stack #1 Monitor is rising slowly but not in alarm
    - Charging Pump "A" Room Monitor went into HIGH alarm after cold leg recirculation was initiated
    - Chemistry has analyzed a sample and reports an Iodine Dose Equivalent RCS concentration of 410 uCi/cc