OPERATOR: _____

RO ____ DATE:_____

JPM NUMBER: RO A1a

TASK NUMBER: Conduct of Operations

TASK TITLE: 2-SR-2, Mode 3 Operator Rounds, Table 1.13 through 1.22

K/A NUMBER: 2.1.7 K/A RATING: RO 4.4

TASK STANDARD: Perform Operator logs in accordance with SR-2 Instrument Checks and Observations for log tables 1.13 through 1.22. Verify acceptance criteria are satisfied in accordance with notes and if not notification to Unit Supervisor is completed.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-SR-2, Instrument Checks and Observations

VALIDATION TIME: 30 minutes

PERFORMANCE TIME:

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

SIGNATURE: _____ DATE: _____
EXAMINER

INITIAL CONDITIONS: You are a Unit Operator assigned to Unit 2, and it is Friday morning at 0800. 2-SR-2, Instrument Checks and Observations, is being performed.

The plant is in MODE 3.

INITIATING CUE: The Unit Supervisor directs you as the Unit Operator to complete a portion of 2-SR-2 day shift checks and observations Attachment 2 Surveillance Procedure Data Package Modes 1, 2, and 3 (pages 18 of 90 to 27 of 90) for Friday at 0800.

All readings that are already completed are correct and need not be checked by you.

****

Simulator

****

INITIAL CONDITIONS: You are a Unit Operator assigned to Unit 2, and it is Friday morning at 0800. 2-SR-2, Instrument Checks and Observations, is being performed.

The plant is in MODE 3.

INITIATING CUE: The Unit Supervisor directs you as the Unit Operator to complete a portion of 2-SR-2 day shift checks and observations Attachment 2 Surveillance Procedure Data Package Modes 1, 2, and 3 (pages 18 of 90 to 27 of 90) for Friday at 0800.

All readings that are already completed are correct and need not be checked by you.

START TIME_____

****

Performance Step 1: Critical X Not Critical

Attachment 2
(Page 18 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.13	REACTOR COOLANT CONDUCTIVITY	DAY SHIFT	WEEK: _____ to _____	
APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.			
Criteria Source:	Technical Requirements Manual TSR-3.4.1.1			
LOCATION:	Panel 2-9-4		Review Initials	
	2-CR-43-11A/12A Ch 1 (µmho) (Note 1)	MAX (AC)	UO	Unit Supvr
Friday		1.0 µmho		
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Whenever there is fuel in the reactor vessel and the continuous conductivity monitor is inoperable, periodic analysis of reactor coolant samples are required by the Technical Requirements Manual. If the reactor coolant continuous conductivity monitor becomes inoperable, notify the Chemistry to sample according to 2-SI-4.6.B.1-4.

Standard:

Records a Reactor Coolant Conductivity reading of .057 or .058 µmho. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

****

Performance Step 2: Critical X Not Critical

Attachment 2
(Page 19 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.14 SUPPRESSION POOL WATER LEVEL **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.				
Surveillance Requirements:	3.6.2.2.1				
LOCATION:	Panel 2-9-3			Review Initials	
	2-LI-64-54A (inches) (Note 1)	2-LI-64-66 (inches) (Note 1)	LIMITS (AC)	UO	Unit Supvr
Friday			≥-5.5 inches and ≤ -2.0 inches (Note 2)		
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) The difference between readings of 2-LI-64-54A and 2-LI-64-66 should not exceed 2 inches. Deviations greater than 2 inches should be investigated.

(2) The Technical Specification requirements for Suppression Pool Water Level are ≥-6.25" and ≤ -1.0" with DW to Torus DP established AND ≥ -7.25" and ≤ -1.0" without DW to Torus DP established.

Standard:

Records a Suppression Pool Level of (-) 1 to (-) 2 inches in both columns. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 3: Critical X Not Critical

Attachment 2
(Page 20 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.15 BULK VOLUMETRIC AVERAGE DRYWELL AIR TEMPERATURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.					
Surveillance Requirements:	3.6.1.4.1					
LOCATION:	ICS Computer or 2-TI-82				Review Initials	
	ICS Pt TEST2500 (°F) (Note 1)	2-TI-82 Value (°F) (Note 1)	2-TR-80-1 (PT A08) (°F) (Note 1, 2)	LIMITS (AC)	UO	Unit Supvr
Friday				≤ 150°F		
Saturday						
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						

(1) The required observation of Bulk Volumetric Average Drywell Air Temperature may be obtained from ICS Pt TEST2500 or 2-TR-80 or 2-TI-82 Value. Only one of the three methods is required to be logged and the other method may be N/A'd.

(2) It may be necessary to have Instrument Maintenance turn on the "BULK VOLUMETRIC AVERAGE DRYWELL AIR TEMPERATURE" on 2-TR-80-1 to allow the point to be displayed.

Standard:

Records a Drywell Air Temperature from ICS of 102.4 °F or 102.5 °F in the column under ICS Pt TEST2500. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 4: Critical Not Critical X

Attachment 2
(Page 21 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.17 DRYWELL - SUPPRESSION CHAMBER DIFFERENTIAL PRESSURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Mode 1 Readings are required at all times.						
Surveillance Requirements:	3.6.2.6.1		Technical Requirements Manual 3.3.5.1				
LOCATION:	Panel 2-9-3					Review Initials	
	TIME	2-PDI-64-137 (psid)	2-PDI-64-138 (psid)	LIMITS (AC)	MAX DEV (AC)	UO	Unit Supvr
Friday	0800			≥ 1.1 psid & ≤ 1.33 psid (Note 1, 2)	0.10 psid (Note 1)		
Saturday	0800						
Sunday	0800						
Monday	0800						
Tuesday	0800						
Wednesday	0800						
Thursday	0800						

(1) Acceptance Criteria is not required to be met until 24 hours after THERMAL POWER is > 15% RTP following startup, TO 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to the next scheduled reactor shutdown.)

(2) The Drywell-Suppression Chamber Differential Pressure should not exceed 1.33 psid.

Standard:

Records a Drywell – Suppression Chamber Differential pressure of 1.15 to 1.2 psid in both columns. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 5: Critical X Not Critical

Attachment 2
(Page 22 of 90)

Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.18 SUPPRESSION POOL BULK WATER TEMPERATURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.							
Surveillance Requirements:	3.6.2.1.1							
LOCATION:	Panel 2-9-3					Panel 2-25-32	Review Initials	
	2-TI-64-161 (°F) (Notes 1,3, & 4) (AC)	2-TR-64-161 2-TM-64-161L (°F) (Notes 1,3, & 4) (AC)	2-TI-64-162 (°F) (Notes 1,3, & 4) (AC)	2-TR-64-162 2-TM-64-162L (°F) (Notes 1,3, & 4) (AC)	MAX DELTA TEMP between instruments	2-TI-64-55B (Notes 1,3, & 4) < 95°F	UO	Unit Supvr
Friday					CR Instruments within 5°F of each other and < 95°F (Note 2)			
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

NOTES ARE ON THE FOLLOWING PAGE!

(1) Limits:

≤ 95°F when any OPERABLE intermediate range monitor (IRM) channel is > 70 on Range 7 and no testing that adds heat to the suppression pool is being performed;

≤ 105°F when any OPERABLE IRM channel is > 70 on Range 7 and testing that adds heat to the suppression pool is being performed; and

≤ 110°F when all OPERABLE IRM channels are ≤ 70 on Range 7

(2) This value is recorded to further validate the Suppression Pool Bulk Water Temperature indications when RHR Suppression Pool Cooling is not in service. If the Control Room Suppression Pool Bulk Water Temperature indications deviate more than 5°F from one another or the 2-TI-64-55B is greater than or equal to 95 deg F, RHR Suppression Pool Cooling may be required to be placed in service to obtain a valid Suppression Pool Bulk Water Temperature readings (may indicate a potential thermal stratification problem, **REFER TO** site response to GE SIL 106). Deviations in excess of 5°F for the MCR instruments is also an indication of a potential inoperable instrument; the Suppression Pool Bulk Water Temperature instruments affect LCO 3.3.3.1, "PAM Instruments" (CHANNEL CHECK surveillance requirement) and 2-TI-64-55B affects LCO 3.3.3.2, "Backup Control System. Failure of an Analog (Pen), channel to track due to sticking or servo failure, contributing to the channel exceeding the Max Delta Limits or not, results in the channel being Inoperable.

(3) Suppression pool average temperature must be verified within the applicable limits and logged every 5 minutes when performing testing that adds heat to the suppression pool, accomplished by 2-SR-3.6.2.1.1.

(4) If both the primary and secondary indication of any SRV tailpipe is inoperable, per Technical Requirements Manual 3.3.5, the Suppression Pool Water Temperature must be monitored at least once per shift to observe any unexplained temperature rise which might be indicative of an open SRV.

Standard:

Records Suppression Pool Water Temperature of 87.5 °F; plus or minus 2 °F in all 4 columns under Panel 9-3. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 6: *Critical X Not Critical

Attachment 2
(Page 24 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.19 RHR DISCHARGE FILL PRESSURE / CORE SPRAY DISCHARGE FILL PRESSURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times.							
Criteria Source:	Technical Requirements Manual TSR 3.3.3.1.1 & 3.5.4.1							
LOCATION:	Panel 2-9-3						Review Initials	
	CS Loop I 2-PI-75-20 (psig)	RHR Loop I 2-PI-74-51 (psig)	RHR Loop II 2-PI-74-65 (psig)	CS Loop II 2-PI-75-48 (psig)	MIN (AC)	MAX	UO	Unit Supvr
Friday					For each OPERABLE subsystem: (Note 2)	For each OPERABLE subsystem: 100 psig (Note 3)		
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Each pressure indicator provides indication of the discharge pressure for one RHR or Core Spray Loop. The instrument check will consist of observing that the instrument exhibits an expected reading for the given plant conditions.

(2) The Technical Requirements Manual requires a minimum discharge pressure for OPERABLE subsystems. Refer to TRM Section 3.5.4.

CS Loop I	PI-75-20	39 psig
CS Loop II	PI-75-48	39 psig
RHR Loop I	PI-74-51	48 psig
RHR Loop II	PI-74-65	35 psig

(3) MAX criteria are N/A for RHR/Core Spray subsystems in service or if keep fill aligned to CS & S. When a RHR/Core Spray subsystem is in a standby readiness condition the maximum discharge pressure is 100 psig. High discharge pressures with pumps secured may be indication of primary valve leakage.

Standard:

*Records a CS Loop I Fill Pressure of 50 psig (+) 5 psig and for *CS Loop II Discharge Fill Pressure of 45 psig (+) 5 psig. *Records a RHR Loop I Discharge Fill Pressure of 42.5 psig; plus 5 psig or minus 2.5 psig but less than 48 psig. Records NA or 270 psig for RHR Loop II because it is in Shutdown Cooling. Initials under UO. *Informs Unit Supervisor that RHR Loop I discharge pressure is less than the minimum required discharge pressure of 48 psig.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 7: Critical Not Critical X

Attachment 2
(Page 25 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.20 RHR SHUTDOWN COOLING SUBSYSTEM AND RECIRCULATION PUMP OPERATION **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Mode 3 with the reactor steam dome pressure less than the RHR low pressure permissive pressure. Readings are required at all times.										
Surveillance Requirements:	3.4.7.1										
LOCATION:	Panel 2-9-3 & Panel 2-9-4									Review Initials	
		Recirc Pump (Note 2)		RHR Shutdown Cooling Subsystem (Note 2 & 3)				LIMITS (AC)	All Data SAT/UNSAT		
	TIME	A I/S	B I/S	A I/S	B I/S	C I/S	D I/S			UO	Unit Supvr
Friday	0800							≥ One RHR Shutdown Cooling Subsystem OR ≥ One Recirc Pump In Service			
Saturday	0800										
Sunday	0800										
Monday	0800										
Tuesday	0800										
Wednesday	0800										
Thursday	0800										

(1) Technical Specification LCO 3.4.7 requires that two RHR Shutdown Cooling Subsystems be operable during this applicability. An operable Shutdown Cooling Subsystem consists of one RHR pump, associated heat exchanger, RHRSW pump capable of providing cooling water to its associated heat exchanger, associated piping and valves, all of which can be aligned in the Shutdown Cooling Mode for the removal of decay heat.

(2) An "X" shall be placed in the associated Column for the In Service Pump or Subsystem.

(3) To be considered as In Service, RHR System and its associated Shutdown Cooling Subsystems must be in the Shutdown Cooling Mode alignment with RHR SD CLG FLOW LOW annunciator (2-XA-55-3D, Window 11) is reset.

Standard:

Places an X under RR Pump B for being in service and an X under RHR Shutdown Cooling Subsystem D for being in service. Records SAT in all data Column. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 8: Critical Not Critical X

Attachment 2
(Page 26 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.21 REACTOR BUILDING VENTILATION RADIATION MONITORING **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times.						
Surveillance Requirements:	3.3.6.2.1(f3, 4) and 3.3.7.1.1(f3,4)						
LOCATION:	Panel 2-9-10					Review Initials	
	REACTOR ZONE EXHAUST RADIATION MONITOR				MAX DEV (AC)		
	2-RM-90-142		2-RM-90-143				
	Detector A (mr / hr)	Detector B (mr / hr)	Detector A (mr / hr)	Detector B (mr / hr)		UO	Unit Supvr
Friday					14 mr/hr		
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
	REFUEL ZONE EXHAUST RADIATION MONITOR						
	2-RM-90-140		2-RM-90-141				
	Detector A (mr / hr)	Detector B (mr / hr)	Detector A (mr / hr)	Detector B (mr / hr)		UO	Unit Supvr
Friday					20 mr/hr		
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

Standard:

Records Reactor Zone Exhaust Radiation Monitor readings of 1.0 mr/hr for both RM-90-142 and RM-90-143; plus or minus 0.5 mr/hr for Detector A and B. Records Refuel Zone Exhaust Radiation Monitor readings of 26.0 mr/hr for RM-90-140; plus or minus 1.0 mr/hr for Detector A and B. For RM-90-141 records reading of 50 mr/hr; plus or minus 1 mr/hr for Detector A and B. Initials under UO. Informs Unit Supervisor that Refuel Zone Exhaust Radiation Monitors are outside the MAX deviation of 20 mr/hr.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 9: *Critical X Not Critical

Attachment 2
(Page 27 of 90)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.22 RHRSW RADIATION MONITORS **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY: During RHRSW Loop Operation Readings are required at all times.
Criteria Source: ODCM Section 1/2.1.1, Surveillance 2.1.1
LOCATION: Panel 2-9-2

	2-RR-90-134				Review Initials	
	2-RM-90-133 (Channel 1) A & C HX (cpm)	2-RM-90-134 (Channel 2) B & D HX (cpm)	MAX (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday						
Saturday						
Sunday						
Monday			Note 1			
Tuesday						
Wednesday						
Thursday						

(1) The instrument check will consist of observing that the instruments exhibit an expected reading for the given plant conditions. MAX will be the alarm (RHRSW/RCW EFFLUENT RADIATION HIGH 2-RA-90-132 (Panel 2-9-3, 2-XA-55-3A, Window 3)) setpoint for the respective monitor. Instrument Shop should be contacted for most current setpoints as required.

Standard:

Records NA for RM-90-133 or a reading of 300 cpm. *Records a reading for RM-90-134 of 300 cpm; plus or minus 10 cpm. *Records SAT in all data Column. *Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

OPERATOR: _____

RO ____ DATE:_____

JPM NUMBER: RO A1a

TASK NUMBER: Conduct of Operations

TASK TITLE: 3-SR-2, Mode 3 Operator Rounds, Table 1.12 through 1.22

K/A NUMBER: 2.1.7 K/A RATING: RO 4.4

TASK STANDARD: Perform Operator logs in accordance with SR-2 Instrument Checks and Observations for log tables 1.13 through 1.22. Verify acceptance criteria are satisfied in accordance with notes and if not notification to Unit Supervisor is completed.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-SR-2, Instrument Checks and Observations

VALIDATION TIME: 30 minutes

PERFORMANCE TIME:

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

SIGNATURE: _____ DATE: _____
EXAMINER

INITIAL CONDITIONS: You are a Unit Operator assigned to Unit 3, and it is Friday morning at 0800. 3-SR-2, Instrument Checks and Observations, is being performed.

The plant is in MODE 3.

INITIATING CUE: The Unit Supervisor directs you as the Unit Operator to complete a portion of 3-SR-2 day shift checks and observations Attachment 2 Surveillance Procedure Data Package Modes 1, 2, and 3 (pages 17 of 88 to 26 of 88) for Friday at 0800.

All readings that are already completed are correct and need not be checked by you.

****

Simulator

****

INITIAL CONDITIONS: You are a Unit Operator assigned to Unit 3, and it is Friday morning at 0800. 3-SR-2, Instrument Checks and Observations, is being performed.

The plant is in MODE 3.

INITIATING CUE: The Unit Supervisor directs you as the Unit Operator to complete a portion of 3-SR-2 day shift checks and observations Attachment 2 Surveillance Procedure Data Package Modes 1, 2, and 3 (pages 17 of 88 to 26 of 88) for Friday at 0800.

All readings that are already completed are correct and need not be checked by you.

START TIME_____

****

Performance Step 1: Critical X Not Critical

Attachment 2
(Page 18 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.13 REACTOR COOLANT CONDUCTIVITY **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times. (Refer To P&L Step 3.6A)			
Criteria Source:	Technical Requirements Manual TSR-3.4.1.1			
LOCATION:	Panel 3-9-4		Review Initials	
	3-CR-43-11A/12A Ch 1 (µmho) Note 1	MAX (AC)	UO	Unit Supvr
Friday		1.0 µmho		
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				

(1) Whenever there is fuel in the reactor vessel and the continuous conductivity monitor is inoperable, periodic analysis of reactor coolant samples are required by the Technical Requirements Manual. If the reactor coolant continuous conductivity monitor becomes inoperable, notify Chemistry to sample according to 3-SI-4.6.B.1-4.

Standard:

Records a Reactor Coolant Conductivity reading of .057 or .058 µmho. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 2: Critical X Not Critical

Attachment 2
(Page 19 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.14 SUPPRESSION POOL WATER LEVEL **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times. (Refer To P&L Step 3.6A)				
Surveillance Requirements:	3.6.2.2.1				
LOCATION:	Panel 3-9-3			Review Initials	
	3-LI-64-54A (inches) Note 1	3-LI-64-66 (inches) Note 1	LIMITS (AC)	UO	Unit Supvr
Friday			≥-5.5 inches and ≤ -2.0 inches (Note 2)		
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					

(1) The difference between readings of 3-LI-64-54A and 3-LI-64-66 should not exceed 2 inches. Deviations greater than 2 inches should be investigated.

(2) The Technical Specification requirements for Suppression Pool Water Level are ≥-6.25" and ≤ -1.0" with DW to Torus DP established AND ≥ -7.25" and ≤ -1.0" without DW to Torus DP established.

Standard:

Records a Suppression Pool Level of (-) 2.75 inches; plus or minus 0.5 inches in both columns. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 3: Critical X Not Critical

Attachment 2
(Page 20 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.15 BULK VOLUMETRIC AVERAGE DRYWELL AIR TEMPERATURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times. (Refer to P&L Step 3.6A)						
Surveillance Requirements:	3.6.1.4.1						
LOCATION:	ICS Computer or 3-TI-82 or 3-TR-80-1					Review Initials	
	TIME	ICS Pt TEST2500 (°F) Note 1	3-TI-82 Value (°F) Note 1	3-TR-80-1(PT A08) (°F) (Note 1,2)	LIMITS (AC)	UO	Unit Supvr
Friday	0800						
Saturday	0800						
Sunday	0800						
Monday	0800				≤ 150°F		
Tuesday	0800						
Wednesday	0800						
Thursday	0800						

(1) The required observation of Bulk Volumetric Average Drywell Air Temperature may be obtained from ICS Pt TEST2500 OR 3-TI-82 OR 3-TR-80-1. Only one of the two methods is required to be logged and the other method may be N/A'd.

(2) It may be necessary to have Instrument Maintenance turn on the "BULK VOLUMETRIC AVERAGE DRYWELL AIR TEMPERATURE" on 3-TR-80-1 to allow the point to be displayed.

Standard:

Records a Drywell Air Temperature from ICS of 104.1 °F; plus or minus 0.1 °F in the column under ICS Pt TEST2500. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 4: Critical Not Critical X

Attachment 2
(Page 21 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.17 DRYWELL - SUPPRESSION CHAMBER DIFFERENTIAL PRESSURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Mode 1 (FROM 24 hours after THERMAL POWER is > 15% RTP following startup, TO 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to the next scheduled reactor shutdown.) Readings are required at all times. (Refer To P&L Step 3.6A)						
Surveillance Requirements:	3.6.2.6.1		Technical Requirements Manual TSRs:	3.3.5.1			
LOCATION:	Panel 3-9-3					Review Initials	
	TIME	3-PDI-64-137 (psid) ≤ 1.33 psid (Note 1)	3-PDI-64-138 (psid) ≤ 1.33 psid (Note 1)	LIMITS (AC)	MAX DEV (AC)	UO	Unit Supvr
Friday	0800			≥ 1.1 psid & ≤ 1.33 psid	0.10 psid		
Saturday	0800						
Sunday	0800						
Monday	0800						
Tuesday	0800						
Wednesday	0800						
Thursday	0800						

(1) The Drywell-Suppression Chamber Differential Pressure should not exceed 1.33 psid.

Standard:

Records a Drywell – Suppression Chamber Differential pressure of 1.1 to 1.2 psid in both columns. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 5: Critical X Not Critical

Attachment 2
(Page 22 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.18 SUPPRESSION POOL BULK WATER TEMPERATURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times. (Refer To P&L Step 3.6A)							
Surveillance Requirements:	3.6.2.1.1							
LOCATION:	Panel 3-9-3					Panel 3-25-32	Review Initials	
	3-TI-64-161 (°F) Notes 1,3, & 4 (AC)	3-TR-64-161 3-TM-64-161L (°F) Notes 1,3, & 4 (AC)	3-TI-64-162 (°F) Notes 1,3, & 4 (AC)	3-TR-64-162 3-TM-64-162L (°F) Notes 1,3, & 4 (AC)	MAX DELTA TEMP between instruments (Note 2)	3-TI-64-55B Notes 1,3, & 4 < 95°F	UO	Unit Supvr
Friday					CR Instruments within 5°F of each other and < 95°F			
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Limits:

A. ≤ 95°F when any OPERABLE intermediate range monitor (IRM) channel is > 70 on Range 7 and no testing that adds heat to the suppression pool is being performed.
B. ≤ 105°F when any OPERABLE IRM channel is > 70 on Range 7 and testing that adds heat to the suppression pool is being performed; and
C. ≤ 110°F when all OPERABLE IRM channels are ≤ 70 on Range 7

(2) This value is recorded to further validate the Suppression Pool Bulk Water Temperature indications when RHR Suppression Pool Cooling is not in service. If the Control Room Suppression Pool Bulk Water Temperature indications deviate more than 5°F from one another or if 3-TI-64-55B is greater than or equal to 95 deg F, RHR Suppression Pool Cooling may be required to be placed in service to obtain valid Suppression Pool Bulk Water Temperature readings (may indicate a potential thermal stratification problem, Refer To site response to GE SIL 106). Deviations in excess of 5°F for the MCR instruments is also an indication of a potential inoperable instrument; the Suppression Pool Bulk Water Temperature instruments affect LCO 3.3.3.1, "PAM Instruments" (CHANNEL CHECK surveillance requirement) and 3-TI-64-55B affects LCO 3.3.3.2, "Backup Control System.

(3) Suppression pool average temperature must be verified within the applicable limits and logged every 5 minutes when performing testing that adds heat to the suppression pool, accomplished by 3-SR-3.6.2.1.1.

(4) If both the primary and secondary indication of any SRV tailpipe is inoperable, per Technical Requirements Manual 3.3.5, the Suppression Pool Water Temperature must be monitored at least once per shift to observe any unexplained temperature rise which might be indicative of an open SRV.

Standard:

Records Suppression Pool Water Temperature of 87.5 °F; plus or minus 2.5 °F in all 4 columns under Panel 9-3. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 6: Critical X Not Critical

Attachment 2
(Page 23 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.19 RHR DISCHARGE FILL PRESSURE / CORE SPRAY DISCHARGE FILL PRESSURE **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2, & 3 Readings are required at all times. (Refer To P&L Step 3.6A)							
Criteria Source:	Technical Requirements Manual TSR 3.3.3.1.1 & 3.5.4.1							
LOCATION:	Panel 3-9-3						Review Initials	
	CS Loop I 3-PI-75-20 (psig)	RHR Loop I 3-PI-74-51 (psig)	RHR Loop II 3-PI-74-65 (psig)	CS Loop II 3-PI-75-48 (psig)	MIN (AC) Note 2	MAX Note 3	UO	Unit Supvr
Friday					For each OPERABLE subsystem:	For each OPERABLE subsystem: 100 psig		
Saturday								
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								

(1) Each pressure indicator provides indication of the discharge pressure for one RHR or Core Spray Loop. The instrument check will consist of observing that the instrument exhibits an expected reading for the given plant conditions.

(2) The Technical Requirements Manual requires a minimum discharge pressure for OPERABLE subsystems. Refer To TRM Section 3.5.4.

CS Loop I	PI-75-20	39 psig
CS Loop II	PI-75-48	39 psig
RHR Loop I	PI-74-51	48 psig
RHR Loop II	PI-74-65	35 psig

(3) MAX criteria is N/A for RHR/Core Spray subsystems in service or if keep fill aligned to CS & S. When a RHR/Core Spray subsystem is in a standby readiness condition the maximum discharge pressure is 100 psig. High discharge pressures with pumps secured may be indication of primary valve leakage.

Standard:

*Records a CS Loop I Fill Pressure of 50 psig (±) 5 psig and for *CS Loop II Discharge Fill Pressure of 50 psig (±) 5 psig. *Records a RHR Loop I Discharge Fill Pressure of 40 psig; (±) 5 psig. Records NA or 270 psig for RHR Loop II because it is in Shutdown Cooling. Initials under UO. *Informs Unit Supervisor that RHR Loop I discharge pressure is less than the minimum required discharge pressure of 48 psig.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 7: Critical Not Critical X

Attachment 2
(Page 24 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.20 RHR SHUTDOWN COOLING SUBSYSTEM AND RECIRCULATION PUMP OPERATION **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	MODE 3, with reactor steam dome pressure less than the RHR low pressure permissive pressure. (Refer To P&L Step 3.6A) (Note 1) Readings are required at all times.
Surveillance Requirements:	3.4.7.1
LOCATION:	Panel 3-9-3 & Panel 3-9-4

		Recirc Pump Note 2		RHR Shutdown Cooling Subsystem Note 2 & 3						Review Initials	
	TIME	A I/S	B I/S	A I/S	B I/S	C I/S	D I/S	LIMITS (AC)	AIII Data SAT/UNSAT	UO	Unit Supvr
Friday	0800							≥ One RHR Shutdown Cooling Subsystem OR ≥ One Recirc Pump In Service			
Saturday	0800										
Sunday	0800										
Monday	0800										
Tuesday	0800										
Wednesday	0800										
Thursday	0800										

(1) Technical Specification LCO 3.4.7 requires that two RHR Shutdown Cooling Subsystems be operable during this applicability. An operable Shutdown Cooling Subsystem consists of one RHR pump, associated heat exchanger, RHRSW pump capable of providing cooling water to its associated heat exchanger, associated piping and valves, all of which can be aligned in the Shutdown Cooling Mode for the removal of decay heat.

(2) An "X" shall be placed in the associated Column for the In Service Pump or Subsystem.

(3) To be considered as In Service, RHR System and its associated Shutdown Cooling Subsystems must be in the Shutdown Cooling Mode alignment with RHR SD CLG FLOW LOW annunciator (3-XA-55-3D, Window 11) RESET.

Standard:

Places an X under RR Pump B for being in service and an X under RHR Shutdown Cooling Subsystem D for being in service. Records SAT in all data Column. Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 8: Critical Not Critical X

Attachment 2
(Page 25 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.21 REACTOR BUILDING VENTILATION RADIATION MONITORING **DAY SHIFT** WEEK: _____ to _____

APPLICABILITY:	Modes 1, 2 & 3 Readings are required at all times. (Refer To P&L Step 3.6A)						
Surveillance Requirements:	3.3.6.2.1(f3, 4) and 3.3.7.1.1(f3,4)						
LOCATION:	Panel 3-9-10					Review Initials	
	REACTOR ZONE EXHAUST RADIATION MONITOR						
	3-RM-90-142		3-RM-90-143		MAX DEV (AC)		
	Detector A (mr / hr)	Detector B (mr / hr)	Detector A (mr / hr)	Detector B (mr / hr)		UO	Unit Supvr
Friday					14 mr/hr		
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
	REFUEL ZONE EXHAUST RADIATION MONITOR						
	3-RM-90-140		3-RM-90-141				
	Detector A (mr / hr)	Detector B (mr / hr)	Detector A (mr / hr)	Detector B (mr / hr)		UO	Unit Supvr
Friday					20 mr/hr		
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							

Standard:

Records Reactor Zone Exhaust Radiation Monitor readings of 1.0 mr/hr for both RM-90-142 and RM-90-143; plus or minus 0.5 mr/hr for Detector A and B. Records Refuel Zone Exhaust Radiation Monitor readings of 26.0 mr/hr for RM-90-140; plus or minus 1.0 mr/hr for Detector A and B. For RM-90-141 records reading of 50 mr/hr; plus or minus 1 mr/hr for Detector A and B. Initials under UO. Informs Unit Supervisor that Refuel Zone Exhaust Radiation Monitors are outside the MAX deviation of 20 mr/hr.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 9: *Critical X Not Critical

Attachment 2
(Page 26 of 88)
Surveillance Procedure Data Package - Modes 1, 2, & 3

TABLE 1.22	RHRSW RADIATION MONITORS		**DAY SHIFT**	WEEK: _____ to _____		
APPLICABILITY:	During RHRSW Loop Operation Readings are required at all times. (Refer To P&L Step 3.6A)					
Criteria Source:	ODCM Section 1/2.1.1, Surveillance 2.1.1					
LOCATION:	Panel 3-9-2				Review Initials	
	3-RR-90-134					
	3-RM-90-133 (channel 1) A & C HX (cpm)	3-RM-90-134 (channel 2) B & D HX (cpm)	MAX (AC)	All Data SAT/UNSAT	UO	Unit Supvr
Friday						
Saturday						
Sunday						
Monday			Note 1			
Tuesday						
Wednesday						
Thursday						

(1) The instrument check will consist of observing that the instruments exhibit an expected reading for the given plant conditions. MAX will be the alarm (RHRSW/RCW EFFLUENT RADIATION HIGH 3-RA-90-132 (Panel 3-9-3, 3-XA-55-3A, Window 3)) setpoint for the respective monitor. Instrument Shop should be contacted for most current setpoints as required.

Standard:

Records NA for RM-90-133 or a reading of 300 cpm. *Records a reading for RM-90-134 of 300 cpm; plus or minus 10 cpm. *Records SAT in all data Column. *Initials under UO.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

OPERATOR: _____

RO ____ DATE:_____

JPM NUMBER: RO A1b

TASK NUMBER: U-078-AB-01

TASK TITLE: Calculate Time to Reach Temperature Targets for Loss of Fuel Pool Cooling

K/A NUMBER: 2.1.25 K/A RATING: RO 3.9

TASK STANDARD: Complete of SRM Operability surveillance and determine if core alterations may commence.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-AOI-78-1, Fuel Pool Cleanup System Failure

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

SIGNATURE: _____ DATE: _____
EXAMINER

INITIAL CONDITIONS: You are a Reactor Operator on Unit 2. The RBCCW sectionalizing valve has failed closed. The Unit Supervisor has entered 2-AOI-70-1, Loss of Reactor Building Closed Cooling Water and 2-AOI-78-1, Fuel Pool Cleanup System Failure.

INITIATING CUES: The Unit Supervisor directs you to estimate the time for the fuel pool temperature to rise to 125 °F, 150 °F, and 200 °F in accordance with 2-AOI-78-1 step 3.7.

****

Simulator

****

INITIAL CONDITIONS: You are a Reactor Operator on Unit 2. The RBCCW sectionalizing valve has failed closed. The Unit Supervisor has entered 2-AOI-70-1, Loss of Reactor Building Closed Cooling Water and 2-AOI-78-1, Fuel Pool Cleanup System Failure.

INITIATING CUES: The Unit Supervisor directs you to estimate the time for the fuel pool temperature to rise to 125 °F, 150 °F, and 200 °F in accordance with 2-AOI-78-1 step 3.7.

START TIME_____

****

Performance Step 1: Critical Not Critical X

2-AOI-78-1 Fuel Pool Cleanup System Failure

[3.7] **ESTIMATE** the time for the fuel pool temperature to rise to 125°F, 150°F, and 200°F using the heat up rates as provided on Attachment 1, Table 1 at least once per shift UNTIL Fuel Pool cooling is restored:

Standard:

Proceeds to attachment 1 of 2-AOI-78-1

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 2: Critical X Not Critical

Attachment 1
(Page 2 of 2)
Spent Fuel Pool Heat-up Rate at Normal Fuel Pool Level

NOTE
Determine time to reach target temperatures of 125°F, 150°F and 200°F using the most conservative Heat-up Rate (the highest rate) for days that fall between the dates listed on Table 1.

Target Temperature 125 °F

Actual fuel pool temp(°F) – °F

Standard:

Records Actual Fuel Pool Temperature of 96.3 °F, can record 96 °F to 97 °F under each of the Target Temperatures (3 places).

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 3: Critical X Not Critical

Difference

Standard:

Calculates the difference 125 – actual temperature recorded; can record any of the following temperatures 28 °F to 29 °F.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 4: Critical X Not Critical

Heat up rate from Table 1 ÷ °F/hr

Standard:

Records the Heat up rate from Table 1 of 1.37 °F under each of the Target Temperatures (3 places)

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 5: Critical X Not Critical

TIME (in hours) For FUEL POOL TO
REACH Target Temperature = hrs

Standard:

Divides the difference by 0.99 and calculates a time to reach 125 °F of one of the following 20.4 hours to 21.2 hours.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 6: Critical X Not Critical

Difference

Standard:

Calculates the difference 150 – actual temperature recorded; can record any of the following temperatures 53 °F to 54 °F.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 7: Critical X Not Critical

TIME (in hours) For FUEL POOL TO
REACH Target Temperature = hrs

Standard:

Divides the difference by 1.37 and calculates a time to reach 150 °F of one of the following 38.7 hours to 39.4 hours.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 8: Critical X Not Critical

Difference

Standard:

Calculates the difference 200 – actual temperature recorded; can record any of the following temperatures 103 °F to 104 °F.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 9: Critical X Not Critical

TIME (in hours) For FUEL POOL TO
REACH Target Temperature = hrs

Standard:

Divides the difference by 1.37 and calculates a time to reach 200 °F of one of the following 75.2 hours to 75.9 hours.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

OPERATOR: _____

RO ____ DATE:_____

JPM NUMBER: RO A1b

TASK NUMBER: U-078-AB-01

TASK TITLE: Calculate Time to Reach Temperature Targets for Loss of Fuel Pool Cooling

K/A NUMBER: 2.1.25 K/A RATING: RO 3.9

TASK STANDARD: Complete of SRM Operability surveillance and determine if core alterations may commence.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-AOI-78-1, Fuel Pool Cleanup System Failure

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

SIGNATURE: _____ DATE: _____
EXAMINER

INITIAL CONDITIONS: You are a Reactor Operator on Unit 3. The RBCCW sectionalizing valve has failed closed. The Unit Supervisor has entered 3-AOI-70-1, Loss of Reactor Building Closed Cooling Water and 3-AOI-78-1, Fuel Pool Cleanup System Failure.

INITIATING CUES: The Unit Supervisor directs you to estimate the time for the fuel pool temperature to rise to 125 °F, 150 °F, and 200 °F in accordance with 3-AOI-78-1 step 3.7.

****

Simulator

****

INITIAL CONDITIONS: You are a Reactor Operator on Unit 3. The RBCCW sectionalizing valve has failed closed. The Unit Supervisor has entered 3-AOI-70-1, Loss of Reactor Building Closed Cooling Water and 3-AOI-78-1, Fuel Pool Cleanup System Failure.

INITIATING CUES: The Unit Supervisor directs you to estimate the time for the fuel pool temperature to rise to 125 °F, 150 °F, and 200 °F in accordance with 3-AOI-78-1 step 3.7.

START TIME_____

****

Performance Step 1: Critical Not Critical X

3-AOI-78-1 Fuel Pool Cleanup System Failure

[3.7] **ESTIMATE** the time for the fuel pool temperature to rise to 125°F, 150°F, and 200°F using the heat up rates as provided on Attachment 1, Table 1 at least once per shift UNTIL Fuel Pool cooling is restored:

Standard:

Proceeds to attachment 1 of 3-AOI-78-1

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 2: Critical X Not Critical

Attachment 1
(Page 2 of 2)
Spent Fuel Pool Heat-up Rate at Normal Fuel Pool Level

NOTES

1) To determine time to reach target temperatures of 125°F, 150°F, and 200°F **USE** the following formulas.
2) Use the most conservative heat up rate (the highest rate) for days that fall between the dates listed on Table 1.

Target Temperature 125 °F

Actual fuel pool temp(°F) – °F

Standard:

Records Actual Fuel Pool Temperature of 97.7 °F, can record 97 °F to 98 °F under each of the Target Temperatures (3 places).

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 3: Critical X Not Critical

Difference

Standard:

Calculates the difference 125 – actual temperature recorded; can record any of the following temperatures 28 °F to 29 °F.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 4: Critical X Not Critical

Heat up rate from Table 1 ÷ °F/hr

Standard:

Records the Heat up rate from Table 1 of 0.99 °F under each of the Target Temperatures (3 places).

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 5: Critical X Not Critical

TIME (in hours) For FUEL POOL TO
REACH Target Temperature = hrs

Standard:

Divides the difference by 0.99 and calculates a time to reach 125 °F of one of the following 27.2 hours to 28.3 hours.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 6: Critical X Not Critical

Difference

Standard:

Calculates the difference 150 – actual temperature recorded; can record any of the following temperatures 52 °F to 53 °F.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 7: Critical X Not Critical

TIME (in hours) For FUEL POOL TO
REACH Target Temperature = hrs

Standard:

Divides the difference by 0.99 and calculates a time to reach 150 °F of one of the following 52.5 hours to 53.5 hours.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 8: Critical X Not Critical

Difference

Standard:

Calculates the difference 200 – actual temperature recorded; can record any of the following temperatures 102 °F to 103 °F.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 9: Critical X Not Critical

TIME (in hours) For FUEL POOL TO
REACH Target Temperature = hrs

Standard:

Divides the difference by 0.99 and calculates a time to reach 200 °F of one of the following 103 hours to 104 hours.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

END OF TASK

STOP TIME ___

OPERATOR:_____

RO ____ DATE:_____

JPM NUMBER: RO A2

TASK NUMBER: U-000-AD-18

TASK TITLE: SRM Operability Surveillance

K/A NUMBER: 2.2.44 K/A RATING: RO 4.2

TASK STANDARD: Complete of SRM Operability surveillance and determine if core alterations may commence.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-SR-3.3.1.2.4, Source Range Monitor System Count Rate and Signal to Noise Ratio Check

VALIDATION TIME: 30 minutes

PERFORMANCE TIME:

COMMENTS:

_____

_____

_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

INITIAL CONDITIONS: You are a Reactor Operator on Unit 2. Unit 2 is in Mode 5, initial core alterations will commence within the next 6 hours.

INITIATING CUES: The Unit Supervisor directs you to complete 2-SR-3.3.1.2.4, Source Range Monitor System Count Rate and Signal to Noise Ratio Check.

****

Simulator

****

INITIAL CONDITIONS: You are a Reactor Operator on Unit 2. Unit 2 is in Mode 5, initial core alterations will commence within the next 6 hours.

INITIATING CUES: The Unit Supervisor directs you to complete 2-SR-3.3.1.2.4, Source Range Monitor System Count Rate and Signal to Noise Ratio Check.

START TIME_____

****

Performance Step 1: Critical Not Critical X

7.2 SRM Checks By Withdrawing SRM or FLC

NOTES	
1)	It is not necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.
2)	In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
3)	In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field Just prior to lowering it into its new location.

7.2.1 SRM A Count Rate and Signal to Noise Ratio Check Steps:

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) A. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) A as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the SRM A position.

Standard:

Obtain permission is NA. Core Alterations are not in progress, bypasses SRM A.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 2: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM A (or FLC A). (N/A if portable neutron source is not used.)

[4] ***RETRACT** SRM A (or withdraw FLC A).

Standard:

Step 3 is NA, *Retracts SRM A fully or to a count rate of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 3: Critical X Not Critical

[5] **RECORD** SRM (or FLC) A count rate from indicator (Panel 2-9-5): _____ cps

Standard:

Records SRM A count rate of .1 to .2 cps or a value of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 4: Critical X Not Critical

[6] **REINSERT** SRM A fully (or **MOVE** FLC A into desired location).

Standard:

Inserts SRM A fully

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 5: Critical X Not Critical

[7] **RECORD** SRM (or FLC) A count rate from indicator (Panel 2-9-5):
_____ cps

Standard:

Records SRM A count rate of 150 to 250 cps

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 6: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.1[7] - Reading from step 7.2.1[5]
Reading from step 7.2.1[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 7: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 8: Critical Not Critical X

[10] **IF** Step 7.2.1[3] was performed, **THEN REQUEST** the Refueling Floor SRO to perform the following: (Otherwise N/A)

[11] **UN-BYPASS** SRM A (or FLC A) as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the mid (Neutral) position.

Standard:

Step 10 is NA, removes SRM A from bypass

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 9: *Critical X Not Critical

[12] ***VERIFY** that SRM A (or FLC A) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM A (or FLC A) has been un-bypassed. (N/A in case core alterations have been suspended.)

[14] **VERIFY** SRM A is UNBYPASSED.

Standard:

Verifies SRM A has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

CUE:	Inform operator IV is complete

****

Performance Step 10: Critical Not Critical X

NOTES

1) It is not necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.
2) In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
3) In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field Just prior to lowering it into its new location.

7.2.2 SRM B Count Rate and Signal to Noise Ratio Check Steps:

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) B. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) B as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the SRM B position.

Standard:

Obtain permission is NA. Core Alterations are not in progress, bypasses SRM B.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 11: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM B (or FLC B). (N/A if portable neutron source is not used.)

[4] ***RETRACT** SRM B (or withdraw FLC B).

Standard:

Step 3 is NA, *Retracts SRM B fully or to a count rate of less than 25% of initial reading

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 12: Critical X Not Critical

[5] **RECORD** SRM (or FLC) B count rate from indicator (Panel 2-9-5):
_____ cps

Standard:

Records SRM B count rate of .1 to .2 cps or a value of less than 25% of initial reading

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 13: Critical X Not Critical

[6] **REINSERT** SRM B fully (or **MOVE** FLC B into desired location).

Standard:

Inserts SRM B fully.

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 14: Critical X Not Critical

[7] **RECORD** SRM (or FLC) B count rate from indicator (Panel 2-9-5):
_____ cps

Standard:

Records SRM B count rate of 100 to 200 cps

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 15: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.2[7] - Reading from step 7.2.2[5]
Reading from step 7.2.2[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 16: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 17: Critical Not Critical X

[10] **IF** Step 7.2.2[3] was performed, **THEN REQUEST** the Refueling Floor SRO to perform the following: (Otherwise N/A)

[11] **UN-BYPASS** SRM B (or FLC B) as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the mid (Neutral) position.

Standard:

Step 10 is NA, removes SRM B from bypass

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 18: *Critical X Not Critical

[12] ***VERIFY** that SRM B (or FLC B) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM B (or FLC B) has been un-bypassed. (N/A in case core alterations have been suspended.)

[14] **VERIFY** SRM B is UNBYPASSED.

Standard:

Verifies SRM B has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

CUE:	Inform operator IV is complete.

****

Performance Step 19: Critical Not Critical X

NOTES
1) It is not necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.
2) In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
3) In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field Just prior to lowering it into its new location.

7.2.3 SRM C Count Rate and Signal to Noise Ratio Check Steps:

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) C. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) C as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the SRM C position.

Standard:

Obtain permission is NA Core Alterations are not in progress, bypasses SRM C

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 20: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM C (or FLC C). (N/A if portable neutron source is not used.)

[4] ***RETRACT** SRM C (or withdraw FLC C).

Standard:

Step 3 is NA, *Retracts SRM C fully or to a count rate of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 21: Critical X Not Critical

[5] **RECORD** SRM (or FLC) C count rate from indicator (Panel 2-9-5):
_____ cps

Standard:

Records SRM C count rate of .1 to .2 cps or a value of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 22: Critical X Not Critical

[6] **REINSERT** SRM C fully (or **MOVE** FLC C into desired location).

Standard:

Inserts SRM C fully

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 23: Critical X Not Critical

[7] **RECORD** SRM (or FLC) C count rate from indicator (Panel 2-9-5):
_____ cps

Standard:

Records SRM C count rate of 200 to 300 cps

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 24: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.3[7] - Reading from step 7.2.3[5]
Reading from step 7.2.3[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 25: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 26: Critical Not Critical X

[10] **IF** Step 7.2.3[3] was performed, **THEN REQUEST** the Refueling Floor SRO to perform the following: (Otherwise N/A)

[11] **UN-BYPASS** SRM C (or FLC C) as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the mid (Neutral) position.

Standard:

Step 10 is NA, removes SRM C from bypass.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 27: *Critical X Not Critical

[12] ***VERIFY** that SRM C (or FLC C) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM C (or FLC C) has been un-bypassed. (N/A in case core alterations have been suspended.)

[14] **VERIFY** SRM C is UNBYPASSED.

Standard:

Verifies SRM C has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

CUE:	Inform operator IV is complete.

****

Performance Step 28: Critical Not Critical X

NOTES	
1)	It is not necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.
2)	In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
3)	In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field Just prior to lowering it into its new location.

7.2.4 SRM D Count Rate and Signal to Noise Ratio Check Steps:

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) D. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) D as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the SRM D position.

Standard:

Obtain permission is NA Core Alterations are not in progress, bypasses SRM D

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 29: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM D (or FLC B). (N/A if portable neutron source is not used.)

[4] ***RETRACT** SRM D (or withdraw FLC D).

Standard:

Step 3 is NA, *Retracts SRM D fully or to a count rate of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 30: Critical X Not Critical

[5] **RECORD** SRM (or FLC) D count rate from indicator (Panel 2-9-5):
_____ cps

Standard:

Records SRM D count rate of .1 to .2 cps or a value of less than 25% of initial reading

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 31: Critical X Not Critical

[6] **REINSERT** SRM D fully (or **MOVE** FLC D into desired location).

Standard:

Inserts SRM D fully

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 32: Critical X Not Critical

[7] **RECORD** SRM (or FLC) D count rate from indicator (Panel 2-9-5):
_____ cps

Standard:

Records SRM D count rate of 100 to 200 cps

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 33: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.4[7] - Reading from step 7.2.4[5]
Reading from step 7.2.4[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 34: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 35: Critical Not Critical X

[10] **IF** Step 7.2.2[3] was performed, **THEN REQUEST** the Refueling Floor SRO to perform the following: (Otherwise N/A)

[11] **UN-BYPASS** SRM D (or FLC D) as follows **PLACE** SRM BYPASS, 2-HS-92-7A/S3 in the mid (Neutral) position.

Standard:

Step 10 is NA, removes SRM D from bypass.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 36: *Critical X Not Critical

[12] ***VERIFY** that SRM D (or FLC D) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM D (or FLC D) has been un-bypassed. (N/A in case core alterations have been suspended.)

[14] **VERIFY** SRM D is UNBYPASSED.

Standard:

Verifies SRM D has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

CUE:	Inform operator IV is complete.

****

Performance Step 37: Critical X Not Critical

NOTES

1) The following section is required to be performed every 12 hours while core alterations are in progress and within 12 hours prior to the beginning of core alterations. One SRM may be used to satisfy more than one of the following conditions.

2) SRM Operability is established when the count rate ≥ 3 cps with a signal-to-noise ratio ≥ 3:1 (not required whenever ≤ 4 fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant) Step 7.4[2] may be N/A'ed for each core quad where no core alterations are being performed and none expected within the next 12 hours.

7.4 SRM Operability Verification

[1] **COMPLETE** the following table by answering yes or no for each question for each core quadrant (Reference the previous procedure steps just completed).

Quad A	Quad B	Quad C	Quad D	
				Was count rate ≥ 3 cps?
				Was signal-to-noise ratio ≥ 3:1?
				Is the quadrant a fueled region?
				Are core alterations being performed or expected within the next 12 hours?

_____

Standard:

Quad A	Quad B	Quad C	Quad D	
yes	yes	yes	yes	≥ 3 cps
yes	yes	yes	yes	≥ 3:1 signal to noise
yes	yes	yes	yes	quadrant fueled
yes	yes	yes	yes	

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 38: Critical X Not Critical

[2] **VERIFY** an operable SRM detector is located in each core quadrant in which core alterations are being performed (**OR** planned within 12 hours) **AND** an adjacent core quadrant. **CHECK MARK** the appropriate operable SRMs for each core Quad:

IF Quad A, **THEN** SRM A □ and either SRM B □ or SRM D □ _____(AC)

IF Quad B, **THEN** SRM B □ and either SRM A □ or SRM C □ _____(AC)

IF Quad C, **THEN** SRM C □ and either SRM B □ or SRM D □ _____(AC)

IF Quad D, **THEN** SRM D □ and either SRM A □ or SRM C □ _____(AC)

Standard:

Checks all blocks and initials in each acceptance criteria spot that acceptance criteria IS MET for all 4 quadrants.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

CUE: Another operator will complete.

END OF TASK

STOP TIME ___

OPERATOR:_____

RO ____ DATE:_____

JPM NUMBER: RO A2

TASK NUMBER: U-000-AD-18

TASK TITLE: SRM Operability Surveillance

K/A NUMBER: 2.2.44 K/A RATING: RO 4.2

TASK STANDARD: Complete of SRM Operability surveillance and determine if core alterations may commence.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-SR-3.3.1.2.4, Source Range Monitor System Count Rate and Signal to Noise Ratio Check

VALIDATION TIME: 30 minutes

PERFORMANCE TIME:

COMMENTS:

_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY _____ UNSATISFACTORY_____

SIGNATURE: _____ DATE: _____
EXAMINER

INITIAL CONDITIONS: You are a Reactor Operator on Unit 3. Unit 3 is in Mode 5, initial core alterations will commence within the next 6 hours.

INITIATING CUES: The Unit Supervisor directs you to complete 3-SR-3.3.1.2.4 Source Range Monitor System Count Rate and Signal to Noise Ratio Check.

****

Simulator

****

INITIAL CONDITIONS: You are a Reactor Operator on Unit 3. Unit 3 is in Mode 5, initial core alterations will commence within the next 6 hours.

INITIATING CUES: The Unit Supervisor directs you to complete 3-SR-3.3.1.2.4 Source Range Monitor System Count Rate and Signal to Noise Ratio Check.

START TIME_____

****

Performance Step 1: Critical Not Critical X

7.2 SRM Checks Utilizing Moving of the Detector or Neutron Source

7.2.1 SRM A Count Rate and Signal to Noise Ratio Check Determination

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) A. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) A.

Standard:

Obtain permission is NA Core Alterations are not in progress, bypasses SRM A

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 2: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM A (or FLC A). (Otherwise N/A)

NOTE

It is **NOT** necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.

[4] ***RETRACT** SRM A (or withdraw FLC A).

Standard:

Step 3 is NA, *Retracts SRM A fully or to a count rate of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 3: Critical X Not Critical

NOTES

1) In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
2) In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field just prior to lowering it into its new location.

[5] **RECORD** SRM (or FLC) A count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM A count rate of 0.1 cps or a value of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 4: Critical X Not Critical

[6] **REINSERT** SRM A fully (or **MOVE** FLC A into desired location).

Standard:

Inserts SRM A fully

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 5: Critical X Not Critical

[7] **RECORD** SRM (or FLC) A count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM A count rate of 100 to 200 cps

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 6: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.1[7] - Reading from step 7.2.1[5]
Reading from step 7.2.1[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 7: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 8: Critical Not Critical X

[10] **IF** applicable, **THEN REQUEST** the Refueling Floor SRO to REMOVE neutron source from Step 7.2.1[3] and **PLACE** it adjacent to SRM (or FLC) B or **PLACE** as directed by the Reactor Engineer.

[11] **UN-BYPASS** SRM A (or FLC A).

Standard:

Step 10 is NA, removes SRM A from bypass

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 9: *Critical X Not Critical

[12] ***VERIFY** that SRM A (or FLC A) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM A (or FLC A) has been un-bypassed. (N/A in case core alterations have been suspended.)

Standard:

Verifies SRM A has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 10: Critical Not Critical X

7.2.2 SRM B Count Rate and Signal to Noise Ratio Determination

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) B. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) B.

Standard:

Obtain permission is NA Core Alterations are not in progress, bypasses SRM B

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 11: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM B (or FLC B). (Otherwise N/A)

NOTE

It is **NOT** necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.

[4] ***RETRACT** SRM B (or withdraw FLC B).

Standard:

Step 3 is NA, *Retracts SRM B fully or to a count rate of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 12: Critical X Not Critical

NOTES

1) In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
2) In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field just prior to lowering it into its new location.

[5] **RECORD** SRM (or FLC) B count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM B count rate of .1 to .2 cps or a value of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 13: Critical X Not Critical

[6] **REINSERT** SRM B fully (or **MOVE** FLC B into desired location).

Standard:

Inserts SRM B fully

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 14: Critical X Not Critical

[7] **RECORD** SRM (or FLC) B count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM B count rate of 100 to 200 cps

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 15: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.2[7] - Reading from step 7.2.2[5]
Reading from step 7.2.2[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 16: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 17: Critical Not Critical X

[10] **IF** applicable, **THEN REQUEST** the Refueling Floor SRO to REMOVE neutron source from Step 7.2.3[3] and **PLACE** it adjacent to SRM (or FLC) D or **PLACE** as directed by the Reactor Engineer.

[11] **UN-BYPASS** SRM B (or FLC B).

Standard:

Step 10 is NA, removes SRM B from bypass

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 18: *Critical X Not Critical

[12] ***VERIFY** that SRM B (or FLC B) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM B (or FLC B) has been un-bypassed. (N/A in case core alterations have been suspended.)

Standard:

Verifies SRM B has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 19: Critical Not Critical X

7.2.3 SRM C Count Rate and Signal to Noise Ratio Determination

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) C. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) C.

Standard:

Obtain permission is NA Core Alterations are not in progress, bypasses SRM C

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 20: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM C (or FLC C). (Otherwise N/A)

NOTE

It is **NOT** necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.

[4] ***RETRACT** SRM C (or withdraw FLC C).

Standard:

Step 3 is NA, *Retracts SRM C fully or to a count rate of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 21: Critical X Not Critical

NOTES

1) In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
2) In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field just prior to lowering it into its new location.

[5] **RECORD** SRM (or FLC) C count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM C count rate of .1 to .2 cps or a value of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 22: Critical X Not Critical

[6] **REINSERT** SRM C fully (or **MOVE** FLC C into desired location).

Standard:

Inserts SRM C fully

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 23: Critical X Not Critical

[7] **RECORD** SRM (or FLC) C count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM C count rate of 100 to 200 cps

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 24: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.3[7] - Reading from step 7.2.3[5]
Reading from step 7.2.3[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 25: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 26: Critical Not Critical X

[10] **IF** applicable, **THEN REQUEST** the Refueling Floor SRO to REMOVE neutron source from Step 7.2.3[3] and **PLACE** it adjacent to SRM (or FLC) D or **PLACE** as directed by the Reactor Engineer.

[11] **UN-BYPASS** SRM C (or FLC C).

Standard:

Step 10 is NA, removes SRM C from bypass

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 27: *Critical X Not Critical

[12] ***VERIFY** that SRM C (or FLC C) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM C (or FLC C) has been un-bypassed. (N/A in case core alterations have been suspended.)

Standard:

Verifies SRM C has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 28: Critical Not Critical X

7.2.4 SRM D Count Rate and Signal to Noise Ratio Determination

[1] **OBTAIN** permission from the Refuel Floor SRO to bypass SRM (or FLC) D. (N/A in case core alterations have been suspended.)

[2] **BYPASS** SRM (or FLC) D.

Standard:

Obtain permission is NA Core Alterations are not in progress, bypasses SRM D

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 29: *Critical X Not Critical

[3] If applicable, request the Refueling Floor SRO to **PLACE** portable neutron source adjacent to SRM D (or FLC B). (Otherwise N/A)

NOTE

It is **NOT** necessary to fully retract the SRMs in the event that the required change in SRM count rate (< 25% of original count rate) is observed before the SRM is fully retracted.

[4] ***RETRACT** SRM D (or withdraw FLC D).

Standard:

Step 3 is NA, *Retracts SRM D fully or to a count rate of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 30: Critical X Not Critical

NOTES

1) In the event that the SRM indicator is downscale, record the lowest scale reading of 0.1 cps.
2) In the event that the response check is being performed during a change in FLC location, record initial count rate while FLC is out of the neutron field just prior to lowering it into its new location.

[5] **RECORD** SRM (or FLC) D count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM D count rate of .1 cps or a value of less than 25% of initial reading

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 31: Critical X Not Critical

[6] **REINSERT** SRM D fully (or **MOVE** FLC D into desired location).

Standard:

Inserts SRM D fully

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 32: Critical X Not Critical

[7] **RECORD** SRM (or FLC) D count rate from indicator (Panel 3-9-5):
_____ cps

Standard:

Records SRM D count rate of 100 to 200 cps

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 33: Critical X Not Critical

[8] **COMPUTE** the signal to noise ratio as follows and **RECORD** results below:

Reading from step 7.2.4[7] - Reading from step 7.2.4[5]
Reading from step 7.2.4[5]

The signal to noise ratio is

Standard:

Computes Signal to noise ratio of greater than 3

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 34: Critical Not Critical X

[9] **VERIFY** signal to noise ratio is > 3.

Standard:

Verifies signal to noise ratio greater than 3

SAT__ UNSAT__ N/A __COMMENTS:_____

_____

****

Performance Step 35: Critical Not Critical X

[10] **IF** applicable, **THEN REQUEST** the Refueling Floor SRO to REMOVE neutron source from Step 7.2.4[3] and **PLACE** as directed by the Reactor Engineer.

[11] **UN-BYPASS** SRM D (or FLC D).

Standard:

Step 10 is NA, removes SRM D from bypass

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 36: *Critical X Not Critical

[12] ***VERIFY** that SRM D (or FLC D) has ≥3 cps, or **VERIFY** that ≤ 4 fuel assemblies are adjacent to the SRM and no other fuel assemblies in the associated core quadrant.

[13] **NOTIFY** the Refuel Floor SRO that SRM D (or FLC D) has been un-bypassed. (N/A in case core alterations have been suspended.)

Standard:

Verifies SRM D has greater than 3 cps, step 13 is NA.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 37: Critical X Not Critical

NOTE

The following section is required to be performed every 12 hours while core alterations are in progress and within 12 hours prior to the beginning of core alterations. One SRM may be used to satisfy more than one of the following conditions.

7.4 SRM Operability Determination

[1] **COMPLETE** the following table by answering yes or no for each question for each core quadrant (**REFERENCE** data obtained in sections 7.2 or 7.3 as applicable).

Quad A	Quad B	Quad C	Quad D	
				Was count rate ≥ 3 cps?
				Was signal-to-noise ratio ≥ 3:1?
				Is the quadrant a fueled region?
				Are core alterations being performed or expected within the next 12 hours?

Standard:

Quad A	Quad B	Quad C	Quad D	
yes	yes	yes	yes	≥ 3 cps
yes	yes	yes	yes	≥ 3:1 signal to noise
yes	yes	yes	yes	quadrant fueled
yes	yes	yes	yes	

SAT__ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 38: Critical X Not Critical

NOTE

SRM Operability is established when the count rate is ≥ 3 cps with a signal-to-noise ratio ≥ 3:1 (**NOT** required whenever ≤ 4 fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant) Step 7.4[2] may be N/A'ed for each core quad where no core alterations are being performed and none expected within the next 12 hours.

[2] **VERIFY** an operable SRM detector is located in each core quadrant in which core alterations are being performed (**OR** planned within 12 hours) **AND** an adjacent core quadrant. **CHECK MARK** the appropriate operable SRMs for each core Quad:

IF Quad A, **THEN** SRM A □ and either SRM B □ or SRM D □ _____(AC)

IF Quad B, **THEN** SRM B □ and either SRM A □ or SRM C □ _____(AC)

IF Quad C, **THEN** SRM C □ and either SRM B □ or SRM D □ _____(AC)

IF Quad D, **THEN** SRM D □ and either SRM A □ or SRM C □ _____(AC)

Standard:

Checks all blocks and initials in each acceptance criteria spot that acceptance criteria IS MET for all 4 quadrants.

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

CUE: Another operator will complete

END OF TASK

STOP TIME ___

OPERATOR: _____

RO ____ SRO ____ DATE:_____

JPM NUMBER: 548

TASK NUMBER: Radiation Control

TASK TITLE: Locked High Radiation Entry

K/A NUMBER: 2.3.12 K/A RATING: RO 3.2

TASK STANDARD: Determine dress out requirements and estimate dose to verify within RWP and quarterly limits. Determines exceeds quarterly administrative dose limit of 1000 mRem and determines that the MG dose alarm will sound for a dose of greater than 200 mRem.

LOCATION OF PERFORMANCE: Class Room

REFERENCES/PROCEDURES NEEDED: Handout RWP and Survey Map, NPG-SPP 5.1

VALIDATION TIME: 15 minutes

PERFORMANCE TIME:

COMMENTS: _____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

SIGNATURE: _____ DATE: _____
EXAMINER

INITIAL CONDITIONS: You are a Browns Ferry employee who has obtained an accumulative yearly dose of 750 mrem.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 35 minutes for venting. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require 25 minutes to close the valve and another 25 minutes to install the mechanical restraining device. Assume the 30cm reading will be the whole body dose received at each location. Assume a total travel dose of 25 mrem will be received.

INITIATING CUES: Given the survey map and RWP, determine the following:

- Dress-out requirements for entry to perform your assigned task
- Whether you can complete the assigned task in the area without exceeding your TVA administrative dose limit
- Whether you can complete the assigned task in the area without exceeding the RWP dose entry limits both rate and total dose, i.e. will you receive an MG alarm (Electronic Dosimeter).

****

Class Room

****

INITIAL CONDITIONS: You are a Browns Ferry employee who has obtained an accumulative yearly dose of 750 mrem.

The job will require you to vent the RWCU Regenerative Hx and to manually close the 3-FCV-69-2 valve and place a mechanical restraining device on the valve. The RWCU Regenerative Hx will be vented from the scaffold at the south end of the Hx's (a scaffold has been erected to be used for venting - cannot leave scaffold while venting is in progress), and will require 35 minutes for venting. Then proceed to 3-FCV-69-2 valve to manually close and install the mechanical restraining device, it should require 25 minutes to close the valve and another 25 minutes to install the mechanical restraining device. Assume the 30cm reading will be the whole body dose received at each location. Assume a total travel dose of 25 mrem will be received.

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- Dress-out requirements for entry to perform your assigned task
- Whether you can complete the assigned task in the area without exceeding your TVA administrative dose limit
- Whether you can complete the assigned task in the area without exceeding the RWP dose entry limits both rate and total dose, i.e. will you receive an MG alarm (Electronic Dosimeter).

START TIME_____

****

Performance Step 1: Critical X Not Critical

Determines Dress Out requirements

Standard:

Shoe covers - one pair, Coveralls - one pair, Face Shield, Gloves – rubber - two pair, cloth inserts, Booties – plastic - 2 pair, Rain suit, and Hood

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 2: Critical X Not Critical

Calculates RWCU HX venting dose.

Standard:

35 minutes in a 250 mrem/hr area = 145 to 146 mrem

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 3: Critical X Not Critical

Calculates 69-2 valve work dose

Standard:

50 minutes in a 100 mrem/hr area = 83 to 84 mrem

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 4: Critical X Not Critical

Calculates total dose received

Standard:

25 mrem travel + 146 mrem venting + 83 mrem 69-2 = 254 mrem

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 5: Critical X Not Critical

Calculates total dose for quarter

Standard:

750 mrem + 254 mrem = 1004 mrem

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 6: * Critical X Not Critical

Verifies RWP MG Setpoints

Standard:

MG setpoints: for Dose Rate alarm of 500 mrem/hr will **not** be exceeded and ***Dose alarm of 200 mrem will be exceeded.**

SAT___ UNSAT___ N/A ___COMMENTS:_____

_____

****

Performance Step 7: Critical X Not Critical

Verifies dose limits for quarter and RWP

Standard:

Verifies will have a total dose of greater than 1000 mrem which is above the TVA administrative limit.

SAT___ UNSAT___ N/A ___COMMENTS:_____

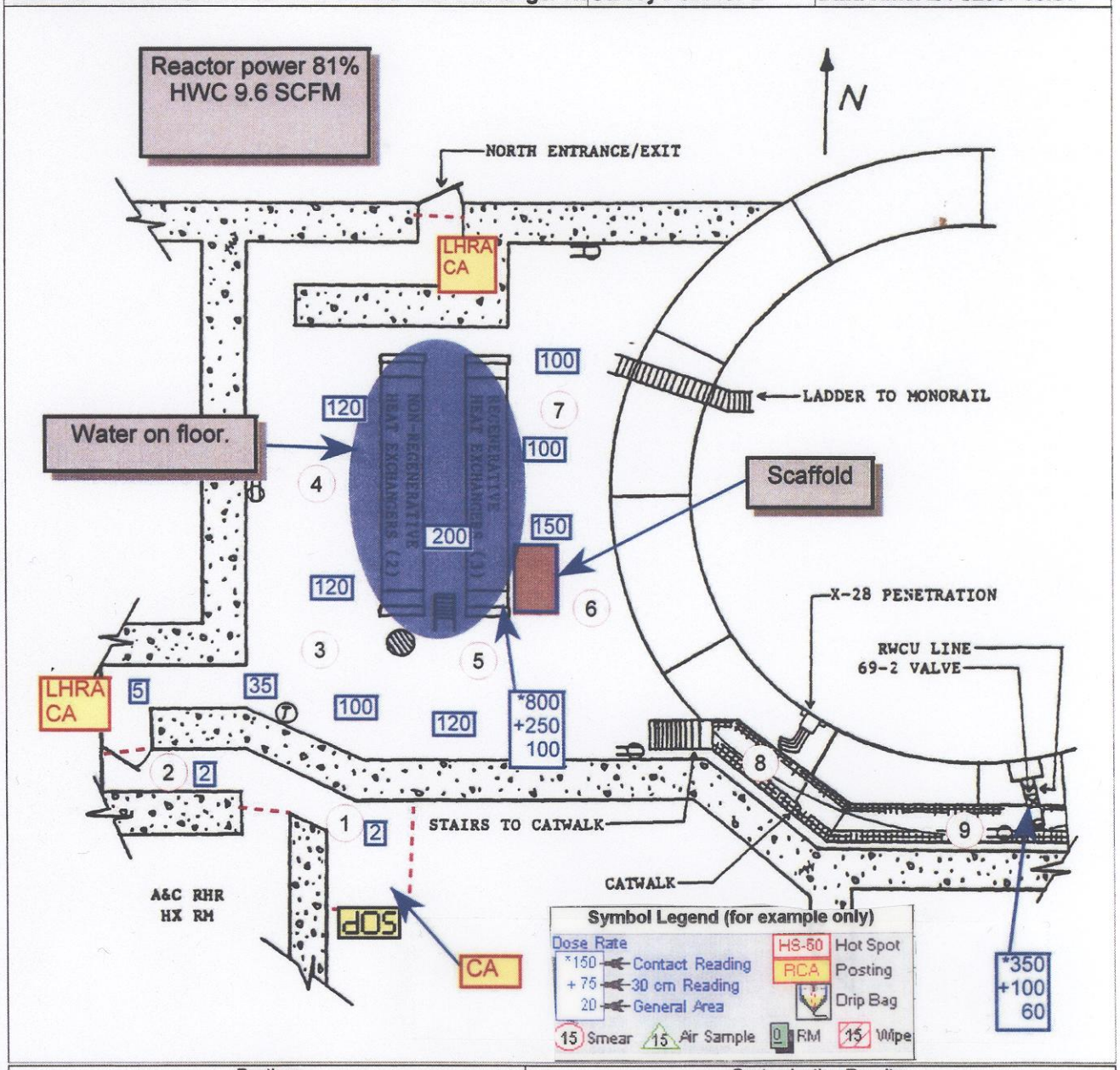
_____

END OF TASK

STOP TIME ___

Browns Ferry Radiological Survey

M0044.tif - M0044 Unit 3 RXB 593' RWCU Heat Exchanger Rc	Survey # 021407-2	Date/Time: 2/14/2007 03:01



Postings	Contamination Results:
M0044 RX-3 593 RWCU HTX Room OPS venting heat exchangers. ND Beta HWC 9.6 scfm power @81%	1) 20000 DPM/100 cm2 2) 40000 DPM/100 cm2 3) 300000 DPM/100 cm2 4) 1300000 mrad/hr/100 cm2 5) 200000 DPM/100 cm2 6) 250000 DPM/100 cm2 7) 400000 DPM/100 cm2 8) 80000 DPM/100 cm2 9) 200000 DPM/100 cm2
Surveyed by: Rose, Edward D. Instrument Nos.: 534105,448,562898	

Date	Survey #	Surveyed By:

Survey printed on: 6/15/2007 at: 08:54

RADIOLOGICAL WORK PERMIT
BRIEFING REQUIRED EVERY ENTRY

GENERAL DESCRIPTION

Status: Active Start Date: 01-Jan-This year End Date: 01-Jan-Next year
Type: SPECIFIC MAP ID: Outage: Y Name:
Task: ROUTINE PLANT MAINTENANCE PSE: N
HP CONTINUOUS Authorization Type: INDIVIDUAL
ALARA Review Number: 0A-0010 Primary Work Doc:
Person-mrem Estimate: 1904 Person-Hrs Estimate: 1082
Dose Alarm: 200 Dose Rate Alarm: 500
DAC-Hrs Tracked: N
Work Area Description: RWCU HX Room Unit 3

DESCRIPTION OF WORK TO BE PERFORMED

Unit 3 Maintenance on RWCU (69) Systems (LHRA VARIOUS DRESS) 200 / 500

ANTI-CONTAMINATION CLOTHING REQUIREMENTS

1	LAB COAT	1,2	BOOTIES, CLOTH, ONE PAIR
1,2	GLOVES, RUBBER, ONE PAIR	1,2,3	CLOTH INSERTS
1,2,3	SHOE COVERS, ONE PAIR	1,2,3	MODESTY CLOTHING
1,2,3	NO PERSONAL OUTER CLOTHING	1,2,3	SURGEON'S CAP
2,3	COVERALLS, ONE PAIR	3	BOOTIES, PLASTIC, TWO PAIR
3	FACE SHIELD	3	RAIN SUIT
3	GLOVES, RUBBER, TWO PAIR	3,4	HOOD

DOSIMETRY REQUIREMENTS

ELECTRONIC DOSIMETER	TLD

BRIEFING REQUIREMENTS

PRE-JOB BRIEFING	

WORK STEPS

1	MANAGEMENT / WO WALKDOWN
2	3-CI-412
3	OPS VALVE LINEUP - 3-OI-69 & HX VENTING
4	07-712928-000
5	06-722560-000
6	06-727133-000
7	06-722556-000
8	06-722559-000
9	06-718308-002
10	06-722558-000

RADIOLOGICAL WORK PERMIT

BRIEFING REQUIRED EVERY ENTRY

WORKER INSTRUCTIONS

1 DRESSOUT CODE APPLICATIONS 1) FLOOR LEVEL INSP, LOW TO MODERATE CONTAMINATION. 2) MINOR MAINTENANCE, NO PRIMARY SYSTEM BREACH. 3) PRIMARY SYSTEM BREACH, HEAT EXCHANGER VENTING. 4) ANY WORK ABOVE FLOOR LEVEL REQUIRES SAFETY BELT W/ LIFELINE. 5) REQUIRED TO WEAR HEADGEAR OTHER THAN PERSONAL HARDHAT.
2 MONITOR YOUR ED (DAD) FREQUENTLY, EXIT THE AREA PRIOR TO REACHING THE DOSE ALARM SET POINT OR UPON RECEIVING ANY UNEXPECTED ALARMS.
3 DO NOT EXCEED 200 mrem PER ENTRY OR DOSE MARGIN (RAD-REMAINING ALLOWABLE DOSE).
4 REMOTE MONITORING , PEA , OR SIMILAR DEVICE REQUIRED.
5 ED (DAD) TO BE BAGGED (WRAPPED) AND WORN OUTSIDE OF C-ZONE CLOTHING.
6 REVIEW PLANNED WORK OR INSPECTIONS WITH RAD PROTECTION PRIOR TO ENTRY.
7 UTILIZE TIME, DISTANCE, AND SHIELDING ALARA PRINCIPLES.
8 REVIEW APPROPRIATE SURVEY DATA PRIOR TO ENTRY. NOTE AND AVOID POSTED HOT SPOTS. LOCATE AND UTILIZE LOW DOSE WAITING AREAS.
9 RADWORKER SHALL ADHERE TO ANY SPECIAL INSTRUCTIONS (APR, ETC) ON WHICH HE/SHE HAS BEEN BRIEFED BY RAD PROTECTION.
10 NOTIFY RADCON PRIOR TO ANY SYSTEM BREACH.
11 RAD PROTECTION COVERAGE MAY BE PROVIDED FROM OUTSIDE THE C-ZONE.
12 SECURE ALL HOSES, ELECTRICAL CORDS, WELDING LEADS AND OTHER SERVICES ENTERING THE C-ZONE AT THE C-ZONE BOUNDRY AND NOTIFY RAD PROTECTION.
13 NOTIFY RAD PROTECTION OF ANY UNUSUAL RADIOLOGICAL CONDITIONS (FOR EXAMPLE: WATER, LEAKS, RADIATION MONITOR ALARMS).
14 RAD PROTECTION PERMISSION REQUIRED PRIOR TO WELDING, GRINDING, BUFFING OR OTHER SURFACE DISTURBING ACTIVITIES.

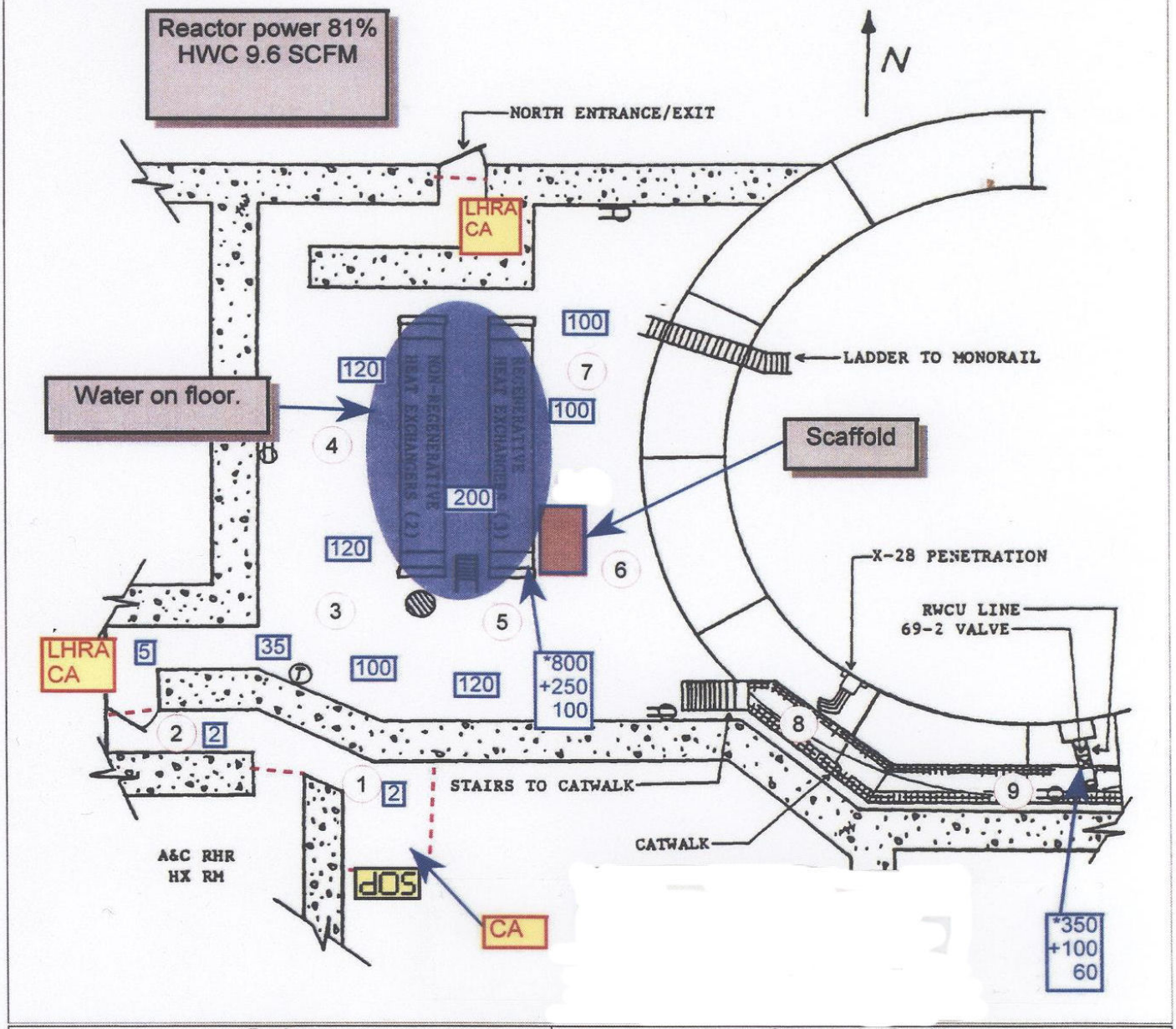
APPROVAL

Prepaired by: TJFRANK Approved by: MJHAZEL Final Approval: JWSMITH3

End of RWP

Browns Ferry Radiological Survey

M0044.tif - M0044 Unit 3 RXB 593' RWCU Heat Exchanger Rc	Survey # 021407-2	Date/Time: Today



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Surveyed by: Rose, Edward D. Instrument Nos.: 534105,448,562898	

Date	Survey #	Surveyed By:

Symbol Legend (for example only)

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

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

Survey printed on: Today