

JOB PERFORMANCE MEASURE

UNIT: 1 REV #: 8 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-EFW01

SYSTEM: Emergency Feedwater and EFIC

TASK: Reset the Steam Driven Emergency Feedwater pump after an overspeed trip.

JTA: (10615100401)

KA VALUE RO: 3.4 SRO: 3.8 KA REFERENCE: 061 A2.04

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: _____ OUTSIDE CR: X BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: Perform/Simulate SIMULATOR: _____ LAB: _____

POSITION EVALUATED: RO: SRO:

ACTUAL TESTING ENVIRONMENT: SIMULATOR: PLANT SITE: LAB:

TESTING METHOD: SIMULATE: PERFORM:

APPROXIMATE COMPLETION TIME IN MINUTES: 10 Minutes

REFERENCE(S): 1106.006 Rev. 060-00-0

EXAMINEE'S NAME: _____ SSN: - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY:

UNSATISFACTORY:

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____

JOB PERFORMANCE MEASURE

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SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JOB PERFORMANCE MEASURE

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JPM INITIAL TASK CONDITIONS:

P7A tripped on overspeed during an EFIC actuation.

INITIATING CUE:

The SM/CRS directs you to manually reset P7A turbine per 1106.006 Exhibit "A".

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: ~~—P7A tripped on overspeed during an EFIC actuation.—~~

TASK STANDARD: P7A turbine has been reset.

TASK PERFORMANCE AIDS: 1106.006, Exhibit A or section 12.0

JOB PERFORMANCE MEASURE

INITIATING CUE:

The SM/CRS directs you to manually reset P7A turbine per 1106.006 Exhibit "A".

CRITICAL ELEMENTS (C): 2, 3, 8

	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
	<p>1. Verify steam supply valves(SV-2613, SV-2663 AND CV-2613, CV-2663) closed.</p> <p><u>POSITIVE CUE:</u> Control Room confirms SV-2613, SV-2663, CV-2613 and CV-2663 are closed.</p>	Called control room to verify SV-2613, SV-2663, CV-2613, CV-2663 are closed.	_____	_____	_____
(C)	<p>2. Position the trip/throttle valve to allow reset.</p> <p><u>POSITIVE CUE:</u> The latch lever will engage the trip hook.</p>	Turned K3 Trip/ Throttle valve handwheel clockwise until sliding nut is in a position to allow engagement with trip hook	_____	_____	_____
(C)	<p>3. Pull spring-loaded connecting rod against spring force to move head lever away from tappet and tappet nut.</p> <p><u>POSITIVE CUE:</u> Head lever is away from tappet/tappet nut.</p>	Pulled connecting rod to move head lever away from tappet and tappet nut.	_____	_____	_____
	<p>4. Lift and release tappet assembly.</p> <p><u>POSITIVE CUE:</u> Tappet lifted and released.</p>	Lifted and released tappet assembly.	_____	_____	_____
	<p>5. Verify tappet nut locates in the trip-reset position on head bracket.</p> <p><u>POSITIVE CUE:</u> Tappet nut located in the trip-reset position.</p>	Verified tapped nut located in the trip-reset position on the head bracket.	_____	_____	_____

JOB PERFORMANCE MEASURE

	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
	<p>6. Verify tappet nut in the proper position.</p> <p><u>POSITIVE CUE:</u> Flat sides aligned.</p>	Observed Tappet nut to verify flat side aligned with long axis of pump (parallel to shaft).	_____	_____	_____
	<p>7. Verify spring tension holds spring-loaded connecting rod in position.</p> <p><u>POSITIVE CUE:</u> Spring tension is holding connecting rod in position.</p>	Verified spring tension holding connecting rod in position (holding head lever against tappet nut).	_____	_____	_____
(C)	<p>8. Fully open the trip/throttle valve</p> <p><u>POSITIVE CUE:</u> Handwheel in full open position.</p> <p><u>NEGATIVE CUE:</u> Handwheel will not open the trip/throttle valve.</p>	Turned the trip/throttle handwheel until valve CV-6601A is fully open.	_____	_____	_____
	<p>9. Close trip throttle/valve (CV6601A) handwheel 3/4 turn in close direction.</p> <p><u>POSITIVE CUE:</u> Handwheel 3/4 turn from open.</p>	Rotated CV6601A handwheel 3/4 turn in close direction.	_____	_____	_____
	<p>10. Verify P7A trip alarm clear.</p> <p><u>POSITIVE CUE:</u> K12-B5 is clear.</p> <p><u>NEGATIVE CUE:</u> K12-B5 is in Alarm.</p>	Verified K12-B5 clear by calling control room.	_____	_____	_____
	<p>11. Notify Control Room P-7A is ready for restart.</p>	Notified CR. (May have been performed in the previous step)	_____	_____	_____

END

JOB PERFORMANCE MEASURE

UNIT: 1 REV #: 1 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-MUP05

SYSTEM: Makeup and Purification System

TASK: Restoring Seal Injection Flow

JTA: 13035030601

KA VALUE RO: 3.3 SRO: 3.2 KA REFERENCE: 003 A4.01

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: _____ OUTSIDE CR: X BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: Simulate SIMULATOR: _____ LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 minutes

REFERENCE(S): 1202.007 Rev. 005-01-0

EXAMINEE'S NAME: _____ SSN: - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____

JOB PERFORMANCE MEASURE

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SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JOB PERFORMANCE MEASURE

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JPM INITIAL TASK CONDITIONS:

- Plant has been in a Degraded Power condition for ~5 minutes.
- Examinee is extra Control Room Operator.
- EOP 1202.007 completed through step 12.

INITIATING CUE:

The Control Room Supervisor dispatches you to restore total Seal Injection flow to 8 to 12 GPM per 1202.007 step 13.

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Plant has been in a Degraded Power condition for ~5 minutes. Examinee is extra Control Room Operator. EOP 1202.007 completed through step 12.

TASK STANDARD: Seal Injection Flow of 8 to 12 GPM established.

TASK PERFORMANCE AIDS: Hand held radio (actual performance only)

Copy of 1202.007 Degraded Power (applicable steps)

JOB PERFORMANCE MEASURE

INITIATING CUE:

The Control Room Supervisor dispatches you to restore total Seal Injection flow to 8 to 12 GPM per 1202.007 step 13.

CRITICAL ELEMENTS (C): 1, 2, 3

(C)	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
(C)	1. Close MU-1207-1. <u>POSITIVE CUE:</u> MU-1207-1 will not turn any further in the clockwise direction.	Turned valve handwheel in the clockwise direction until MU-1207-1 was closed.			
(C)	2. Contact Control Room by Telephone or Radio. <u>POSITIVE CUE:</u> The Control Room directs that MU-1207-3 be opened 1 full turn.	Control Room was Contacted by Telephone or Radio			
(C)	3. Operator opens MU-1207-3 one turn. <u>POSITIVE CUE:</u> Control Room reports total Seal Injection flow is 10 GPM. <u>NEGATIVE CUE:</u> Control Room reports total Seal Injection flow is zero.	Turned handwheel for MU-1207-3 counter-clockwise one turn.			

END

JOB PERFORMANCE MEASURE

UNIT: 1 REV # 0 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-MFW03

SYSTEM/DUTY AREA: Main Feedwater System

TASK: Shutdown of last MFWP and place Auxiliary Feedwater Pump in Service.

JTA#: 100

KA VALUE RO: 2.9 SRO: 2.9 KA REFERENCE: 059 A4.04

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: PERFORM LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 MINUTES

REFERENCE(S): 1106.016 REV. 039-00-0

EXAMINEE'S NAME: _____ SSN - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____
SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JPM INITIAL TASK CONDITIONS:

- Plant Shutdown in progress.
- Reactor Power ~1%.
- "A" Main Feed Pump (P-1A) in service providing flow to both OTSG's.
- No planned maintenance activities.

INITIATING CUE:

The SM/CRS directs you to start P-75 Auxiliary Feedwater Pump and shutdown P-1A "A" Main Feedwater Pump per 1106.016 Section 21 "Shutting Down Last MFWP and Placing Aux Feedwater Pump (P-75) into Service".

TUOI NUMBER: ANO-1-JPM-RO-MFW03

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Plant shutdown in progress. Reactor Power ~1%.

"A" Main Feed Pump (P-1A) in service providing flow to both OTSG's.

No planned maintenance activities.

TASK STANDARD: "A" Main Feedwater pump is shutdown and the Auxiliary Feedwater Pump
is supplying feedwater to the OTSGs.

TASK PERFORMANCE AIDS: 1106.016 Section 21.0

TUOI NUMBER: ANO-1-JPM-RO-MFW03

INITIATING CUE:

The SM/CRS directs you to start P-75 Auxiliary Feedwater Pump and shutdown P-1A "A" Main Feedwater Pump per 1106.016 Section 21 "Shutting Down Last MFWP and Placing Aux Feedwater Pump (P-75) into Service".

CRITICAL ELEMENTS (C): 1, 2, 3, 7, 9

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
(C)	<p>1. Verify TRIP ON LOSS OF MFP BYPASSED (K08-F4) alarm.</p> <p><u>POSITIVE CUE:</u> TRIP ON LOSS OF MFP BYPASSED is in alarm.</p>	Verified K08-F4 TRIP ON LOSS OF MFP BYPASSED alarm in solid or fast flashing.	_____	_____	_____
(C)	<p>2. Verify Aux FW Pump Recirc to E-11A (FW-1) open.</p> <p><u>POSITIVE CUE:</u> The auxiliary operator reports that the Aux FW Pump Recirc is open.</p>	Called and requested the auxiliary operator to verify the Aux FW Pump Recirc to E-11A (FW-1) open.	_____	_____	_____
(C)	<p>3. Start the Aux Feedwater Pump (P-75).</p> <p><u>POSITIVE CUE:</u> P-75 breaker red light is on, green light is off</p>	Placed the control switch, located on C-11, to the start position.	_____	_____	_____
	<p>4. Verify MFW Pump H/A station in Hand.</p> <p><u>POSITIVE CUE:</u> Manual white light ON.</p>	Verified "A" MFW Pump H/A station in Hand by verifying white manual light on.	_____	_____	_____
	<p>5. Open FW Pump Recirc Condenser Sprays (CV-2856 and CV-2857).</p> <p><u>POSITIVE CUE:</u> Auxiliary Operator reports that CV-2856 and CV-2857 open.</p>	Contacted the Auxiliary Operator and directed the Auxiliary Operator to open CV-2856 and CV-2857.	_____	_____	_____
	<p>6. Slowly decelerate "A" MFWP while monitoring feed valve ΔP.</p> <p><u>POSITIVE CUE:</u> "A" MFWP speed is going down.</p>	Decelerated "A" MFWP using toggle switch on A MFW Pump H/A station.	_____	_____	_____

TUOI NUMBER: ANO-1-JPM-RO-MFW03

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
(C)	7. Verify P-75 maintains ≥ 70 psid. <u>POSITIVE CUE:</u> "A" feed valve ΔP is 80 psid, "B" feed valve ΔP is 75 psid.	Selected Measured Variable on MFW Pump H/A stations and monitored feed valve ΔP .	_____	_____	_____
	8. Verify Startup Valves (CV2623 and CV-2673) maintain low level limits on both SGs. <u>POSITIVE CUE:</u> "A" and "B" Startup levels are at 31 inches.	Monitored "A" and "B" Startup level indicators and verified level maintained at ~31 inches.	_____	_____	_____
(C)	9. Trip "A" MFWP. <u>POSITIVE CUE:</u> Green pump tripped light on, red latched light out	Placed "A" MFWP Trip/Reset switch in the trip position.	_____	_____	_____
	10. Close MFWP P-1A Feedpump Recirc (CV2874). <u>POSITIVE CUE:</u> MFWP P-1A Feedpump Recirc valve is closed.	Placed MFWP P-1A Feedpump Recirc Controller in manual and lowered demand to zero.	_____	_____	_____
	11 Close FW Pump Recirc Condenser Sprays (CV-2856 and CV-2857). <u>POSITIVE CUE:</u> Auxiliary Operator reports that CV-2856 and CV-2857 closed.	Contacted the Auxiliary Operator and directed the Auxiliary Operator to close CV-2856 and CV-2857.	_____	_____	_____
	12 When pump coasts down verify turning gear engages. <u>POSITIVE CUE:</u> Turning gear amber and red lights are on.	When pump coasted down, observed red and amber lights for turning gear on to verify turning gear engaged.	_____	_____	_____
	13 Open "A" MFWP steam leakoff and Seat drain valves: MS-85 RS-92 RS-93 <u>POSITIVE CUE:</u> Auxiliary Operator reports MS-85, RS-92, and RS-93 are open.	Directed the Auxiliary Operator to open MS-85, RS-92, and RS-93.	_____	_____	_____

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END

JOB PERFORMANCE MEASURE

UNIT: 1 REV # 3 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-HYD01

SYSTEM/DUTY AREA: HYDROGEN RECOMBINER AND PURGE CONTROL SYSTEM

TASK: PLACE HYDROGEN RECOMBINER M55A IN OPERATION

JTA#: 10285120101

KA VALUE RO: 4.0 SRO: 4.0 KA REFERENCE: 028 A4.01

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: PERFORM LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 MINUTES

REFERENCE(S): 1104.031 REV. 012-01-0

EXAMINEE'S NAME: _____ SSN - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____
SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JPM INITIAL TASK CONDITIONS:

- A Loss of Coolant Accident (LOCA) has occurred.
- Containment hydrogen concentration is 2.0%.
- Both hydrogen recombiners are shutdown.
- Containment pressure is 20.4 psia.
- Pre-LOCA containment temperature was 120°F.

INITIATING CUE:

The SM/CRS directs you to place both Hydrogen Recombiners (M55A/B) in standby and then place M55A in operation at the power required for containment pressure and pre-loca containment temperature per 1104.031 Section 8.0 Placing Hydrogen Recombiner (M55A or M55B) in Operation.

TUOI NUMBER: ANO-1-JPM-RO-HYD01

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: A Loss of Coolant Accident (LOCA) has occurred.

Containment hydrogen Concentration is 2.0%. Both hydrogen recombiners are shutdown.

Containment pressure is 20.4 psia. Pre-LOCA containment temperature was 120°F.

TASK STANDARD: Hydrogen recombiner M55A in operation at power setting of 52.5 KW to 54 KW on JI-1000.

TASK PERFORMANCE AIDS: 1104.031 Section 8.0

TUOI NUMBER: ANO-1-JPM-RO-HYD01

INITIATING CUE:

The SM/CRS directs you to place both Hydrogen Recombiners (M55A/B) in standby and then place M55A in operation at the power required for containment pressure and pre-loc containment temperature per 1104.031 Section 8.0 Placing Hydrogen Recombiner (M55A or M55B) in Operation.

CRITICAL ELEMENTS (C): 2, 9, 10

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	<p>1. Verify power adjust potentiometers are set at zero.</p> <p><u>POSITIVE CUE:</u> Power adjust potentiometers for M55A/B are set at zero on C26.</p>	<p>Verified power adjust potentiometers set to zero on C26 (if not already at zero used knurled knob on power adjust potentiometers on C26 and turned to the left and set at zero using HS-7472 and HS-7473).</p>	_____	_____	_____
(C)	<p>2. Turn hydrogen recombiners M55A and M55B on.</p> <p><u>POSITIVE CUE:</u> M55A/B red lights ON.</p> <p><u>NEGATIVE CUE:</u> M55A/B green lights ON.</p>	<p>Turned on hydrogen recombiners M55A and M55B using HS-7470 and HS-7471 on C26.</p>	_____	_____	_____
	<p>3. Select thermocouple #1, 2 or 3 to input to recombiner temperature indicators TI-2300 and TI-2301.</p> <p><u>POSITIVE CUE:</u> thermocouple #1, 2 or 3 selected as desired to input to TI-2300 and TI-2301.</p>	<p>Thermocouple #1, 2 or 3 selected to input to TI-2300 and TI-2301 using handswitches HS-7474 and HS-7475 on C26.</p>	_____	_____	_____
	<p>4. Increase power to ~5 KW and then hold for ten minutes.</p> <p><u>POSITIVE CUE:</u> Power on JI-1000 and JI-1001 indicates 5KW.</p> <p><u>NOTE:</u> evaluator inform examinee that ten minutes have elapsed after one minute at 5 KW.</p>	<p>Slowly adjusted potentiometers clockwise until power on JI-1000 and JI-1001 on C26 indicated ~5 KW.</p>	_____	_____	_____

TUOI NUMBER: ANO-1-JPM-RO-HYD01

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	5. Slowly increase power to 10 KW. <u>POSITIVE CUE:</u> Power is at 10 KW on JI-1000 and JI-1001.	Increased power to ~10 KW using power adjust potentiometers on C26.	_____	_____	_____
	7. Hold power at 10 KW for 10 minutes. <u>POSITIVE CUE:</u> Inform examinee that ten minutes have elapsed after one minute at 10 KW.	Waited 10 minutes with power constant at 10 KW.			
NOTE: Evaluator inform examinee to disregard taking data every 30 minutes on Attachment D.					
	8. Slowly increase power to 20 KW on M55A and hold for 5 minutes. <u>POSITIVE CUE:</u> Power at 20 KW on JI-1000. NOTE: inform examinee that five minutes have elapsed after 1 minute at 20 KW.	Increased power on M55A to ~20 KW using power adjust potentiometer on C26.	_____	_____	_____
(C)	9. Determine power required from Attachment B based on containment pressure.	Determined recombiner power using Attachment B to be between 52.5 and 54.0 KW.	_____	_____	_____
(C)	10. Slowly increase power to 52.5 - 54.0 KW range. <u>POSITIVE CUE:</u> Hydrogen concentration decreasing on QI-7457 and M55A maintaining power at determined value. <u>NEGATIVE CUE:</u> Hydrogen concentration increasing on QI-7457.	Power increased to 52.5 to 54 range using power adjust potentiometer on C26.	_____	_____	_____

END

JOB PERFORMANCE MEASURE

UNIT: 1 REV # 1 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-PZR02

SYSTEM/DUTY AREA: PRESSURIZER SYSTEM

TASK: EQUALIZE BORON CONCENTRATIONS BETWEEN RCS AND PRESSURIZER

JTA#: 10105150101

KA VALUE RO: 3.6 SRO: 3.4 KA REFERENCE: 010 A4.02

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: PERFORM LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 MINUTES

REFERENCE(S): 1103.005 REV 029-03-0

 1203.015 REV 010-01-0

EXAMINEE'S NAME: _____ SSN - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____
SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JPM INITIAL TASK CONDITIONS:

- The plant is at 100% power, steady state conditions.
- Chemistry reports Pressurizer Boron sample 70 ppm higher than RCS Boron.

INITIATING CUE:

The SM/CRS directs you to equalize pressurizer and RCS boron concentrations per 1103.005 Method 1 - Spray and heaters in manual.

TUOI NUMBER: ANO-1-JPM-RO-PZR02

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: The plant is at 100% power, steady state conditions.

Chemistry reports a Pressurizer Boron sample 70 ppm higher than RCS Boron.

State to examinee: You are responsible for panel C04 and related alarms.

TASK STANDARD: *Note: this is an Alternate Success Path JPM.* Pressurizer boron

equalization started, then must close CV-1009 (Pressurizer Spray Isolation Valve)

due to CV-1008 failure.

TASK PERFORMANCE AIDS: 1103.005 Section 8.0 and 1203.015 Section 6

Instructor Note:

Close RCRC4 Pressurizer spray minimum flow prior to start of JPM.

Note: This JPM is an Alternate Success Path JPM intended to be performed on the simulator, not simulated. Therefore, no cues are provided.

Note to IA Operator and Examiner:

When CV-1008 is cracked open, insert Component Malfunction to fail Pressurizer Spray Valve CV-1008 full open.

TUOI NUMBER: ANO-1-JPM-RO-PZR02

INITIATING CUE:

The SM/CRS directs you to equalize pressurizer and RCS boron concentrations per 1103.005 Method 1 - Spray and heaters in manual.

CRITICAL ELEMENTS (C): 1, 2, 6

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
(C)	1. Place Pressurizer Spray Valve (CV-1008) in manual (HAND). <u>POSITIVE CUE:</u> CV-1008 is in hand.	Placed HS-1003 in Manual position.	_____	_____	_____
(C)	2. Partially open Pressurizer Spray Valve (CV-1008) as required. <u>POSITIVE CUE:</u> CV-1008 is throttled open.	Placed CV-1008 in throttled open position.	_____	_____	_____
	3. Place some (as per 1103.005) of the PZR heaters in manual. <u>POSITIVE CUE:</u> Pzr heater banks are in manual	Placed some PZR heaters in manual (SAT if examinee places any of the heaters in manual).	_____	_____	_____
IA Operator: Fail CV-1008 100% open (wait until steps 1-3 above have been done.)					
	4. Monitor RCS pressure closely. <u>ALTERNATE PATH CUE:</u> RCS pressure is dropping and CV-1008 is full open.	Monitored RCS pressure, noticed RCS pressure dropping and/or Pressurizer Spray Valve CV-1008 full open.	_____	_____	_____
	5. Attempt to close CV-1008 by taking Pressurizer Control switch to HAND and taking CV-1008 handswitch to close. <u>POSITIVE CUE:</u> CV-1008 will not close (red light on).	Attempted to close Pressurizer Spray Valve CV-1008.	_____	_____	_____
(C)	6. Close Pressurizer Spray Isolation Valve CV-1009. <u>POSITIVE CUE:</u> CV-1009 is closed (green light indication on). <u>NEGATIVE CUE:</u>	Closed Pressurizer Spray Isolation Valve CV-1009.	_____	_____	_____

	RCS pressure is 2000 psig and going down.				
--	---	--	--	--	--

TUOI NUMBER: ANO-1-JPM-RO-PZR02

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	7. Return pressurizer heaters to auto. <u>POSITIVE CUE:</u> Pressurizer heaters are in automatic.	Returned pressurizer heaters to automatic.	_____	_____	_____

END

JOB PERFORMANCE MEASURE

UNIT: 1 REV # 1 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-RCP04

SYSTEM/DUTY AREA: REACTOR COOLANT PUMP SYSTEM

TASK: SHUTDOWN RCP P-32A AT POWER

JTA#: 10035260101

KA VALUE RO: 3.7 SRO: 3.9 KA REFERENCE: 003 A2.02

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: PERFORM LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 5 MINUTES

REFERENCE(S): 1103.006 REV. 023-02-0

EXAMINEE'S NAME: _____ SSN - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JPM INITIAL TASK CONDITIONS:

- Reactor power is $\leq 60\%$ steady state with 4 RCPs on.
- System Engineering monitoring abnormal vibration on Reactor Coolant Pump P-32A.
- Backup indication of zero speed is not installed.

System and Maintenance Engineering along with the approval of Operations have requested that RCP P-32A be secured due to abnormal vibrations on the pump.

INITIATING CUE:

The SM/CRS directs you to stop RCP P-32A per 1103.006 section 9 RCP Stop.

TUOI NUMBER: ANO-1-JPM-RO-RCP04

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Reactor power is $\leq 60\%$ steady state with 4 RCPs on.

System Engineering monitoring abnormal vibration on Reactor Coolant Pump P-32A.

Backup indication of zero speed is not installed. System and Maintenance

Engineering along with the approval of Operations have requested that RCP P-32A be

secured due to abnormal vibrations on the pump.

TASK STANDARD: Reactor Coolant Pump "A" secured , all RCPs tripped, reactor tripped.

This is an alternate success path JPM.

TASK PERFORMANCE AIDS: 1103.006 Section 9.0

Simulator Instructor

The following overrides are necessary for the performance of the JPM:

1. Override DO HS1022_B;false (prevents zero speed lamp for P-32A from coming on).

As soon as P-32A is stopped:

Insert IMF RC466, Wait 15 seconds and input:

1. IOR-DO K08B6 True RCP VIB HI alarm
2. IOR-DORCPA_R01 True RCP VIB Hi red light

TUOI NUMBER: ANO-1-JPM-RO-RCP04

INITIATING CUE:

The SM/CRS directs you to stop RCP P-32A per 1103.006.

CRITICAL ELEMENTS (C): 2, 5, 6

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	<p>1. Start HP Oil Lift Pump (P-63A), Emergency HP Lift Oil Pump (P-80A) and Backup Lube oil Pump (P-82A) for RCP P-32A.</p> <p><u>POSITIVE CUE:</u> Red light ON, green light OFF for each oil pump.</p>	Started P-63A, P-80A and P-82A Lube oil pumps.	_____	_____	_____
(C)	<p>2. Stop RCP P-32A.</p> <p><u>POSITIVE CUE:</u> Green light ON, red light OFF for P-32A, RCS flow lowering in the "B" RCS loop.</p> <p><u>NEGATIVE CUE:</u> Red light ON, green light OFF for P-32A, RCS loop flows are matched.</p>	On panel C13, stopped RCP P-32A.	_____	_____	_____
	<p>3. Verify HP Oil Lift Pump and Backstop Lube Oil Pumps remain on during RCP coastdown.</p> <p><u>POSITIVE CUE:</u> Red lights ON for oil pumps.</p>	Verified HP Oil Lift Pump and Backstop Lube Oil Pumps remain on during RCP coastdown.	_____	_____	_____

Note to IA operator:

1. Override DO HS1022_B;false (prevents zero speed lamp for P-32A from coming on).

As soon as P-32A is stopped:

Insert IMF RC466, Wait 15 seconds and input:

1. IOR-DO K08B6 True RCP VIB HI alarm

2. IOR-DORCPA_R01 True RCP VIB Hi red light

TUOI NUMBER: ANO-1-JPM-RO-RCP04

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	<p>4. Verify shaft stops, without reverse rotation.</p> <p><u>NEGATIVE (FAULTED) CUES:</u></p> <p>A. Blue zero speed light OFF for P-32A.</p> <p>B. Plant computer alarm "RCP P32-A REVERSE ROTATION" (P3188) is in alarm.</p> <p>C. P-32A has high vibration.</p> <p>C. P-32A motor bearing temperature is high.</p>	<p>Verified shaft stops by observing blue zero speed indicator on , RCS flow indication stabilizes, and plant computer reverse rotation alarm clear. Determined that P-32A is rotating in the reverse direction.</p>	_____	_____	_____
(C)	<p>5. Trip reactor.</p> <p><u>POSITIVE CUE:</u> Rod bottom lights all ON for groups 1-7, reactor power dropping in the intermediate range.</p>	<p>Depressed the reactor trip pushbutton on panel C03.</p>	_____	_____	_____
(C)	<p>6. Trip running RCPs.</p> <p><u>POSITIVE CUE:</u> Green lights ON, red lights OFF for tripped RCPs.</p> <p><u>NEGATIVE CUE:</u> P-32A vibration is high</p>	<p>On panel C13, tripped RCP's P-32B/P-32C/P-32D.</p>	_____	_____	_____
<p>Reactor Coolant Pump Operation procedure now has the operator to "Refer to Reactor Trip (1202.001). Tell examinee that his crew will perform the remainder of the Reactor Trip immediate actions.</p>					

END

UNIT: 1 REV # 0 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-RAD1

SYSTEM/DUTY AREA: ADMINISTRATIVE TOPIC-RADIATION CONTROL

TASK: ABILITY TO CONTROL RADIATION RELEASES.

JTA#: 106854901W4

KA VALUE RO: 2.7 SRO: 3.2 KA REFERENCE: 2.3.11

APPROVED FOR ADMINISTRATION TO: RO: X SRO: _____

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: PERFORM LAB: _____

POSITION EVALUATED: RO: X SRO: N/A

ACTUAL TESTING ENVIRONMENT: SIMULATOR: X PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: X PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 MINUTES

REFERENCE(S): 1104.020 039-04-0 ATT "B2", Offsite Dose Calculation Manual

 (ODCM) and P-47B Pump Differential Pressure versus Flow Rate graph

EXAMINEE'S NAME: _____ SSN - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JPM INITIAL TASK CONDITIONS:

- Plant is shutdown for a Refueling Outage.
- Circulating Water Pump P-3A in service. ALL other Circ Water Pumps are OOS for maintenance.
- Discharge flow to flume indicator (FI-4642) is INOPERABLE and OOS.
- T-16B TWMT release is in progress.
- Maximum allowable flow rate for the release from Preliminary Report is 90 gpm.
- WCO reports CV-4642, CZ Discharge to Flume Flow Control Valve, is throttled open.
- WCO reports that P-47B, Treated Waste Monitoring Pump, parameters after establishing flow through CV-4642:
 - Suction Pressure = 10 psig
 - Discharge Pressure = 38 psig

INITIATING CUE:

The CRS directs you to perform step 4.15.1 of 1104.020 ATT "B2" Treated Waste Monitor Tank (TWMT) T-16B Liquid Release Permit and report if the release flow rate is within the allowable limit.

TUOI NUMBER: ANO-1-JPM-RO-RAD1

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Plant is shutdown for a Refueling Outage. Circulating Water Pump P-3A in service. ALL other Circ Water Pumps are OOS for maintenance. Discharge flow to flume indicator (FI-4642) is INOPERABLE and OOS. T-16B TWMT release is in progress. Maximum allowable flow rate for the release from Preliminary Report is 90 gpm. WCO reports CV-4642, CZ Discharge to Flume Flow Control Valve, is throttled open. WCO reports that P-47B, Treated Waste Monitoring Pump, parameters after establishing flow through CV-4642: Suction Pressure = 10 psig, Discharge Pressure = 38 psig.

TASK STANDARD: Candidate estimates release flow rate between 75 to 85 gpm and is within the allowable flow rate specified in the Preliminary Report.

TASK PERFORMANCE AIDS: 1104.020 039-04-0 ATT "B2", Offsite Dose Calculation Manual (ODCM) and P-47B Pump Differential Pressure versus Flow Rate graph.

TUOI NUMBER: ANO-1-JPM-RO-RAD1

INITIATING CUE:

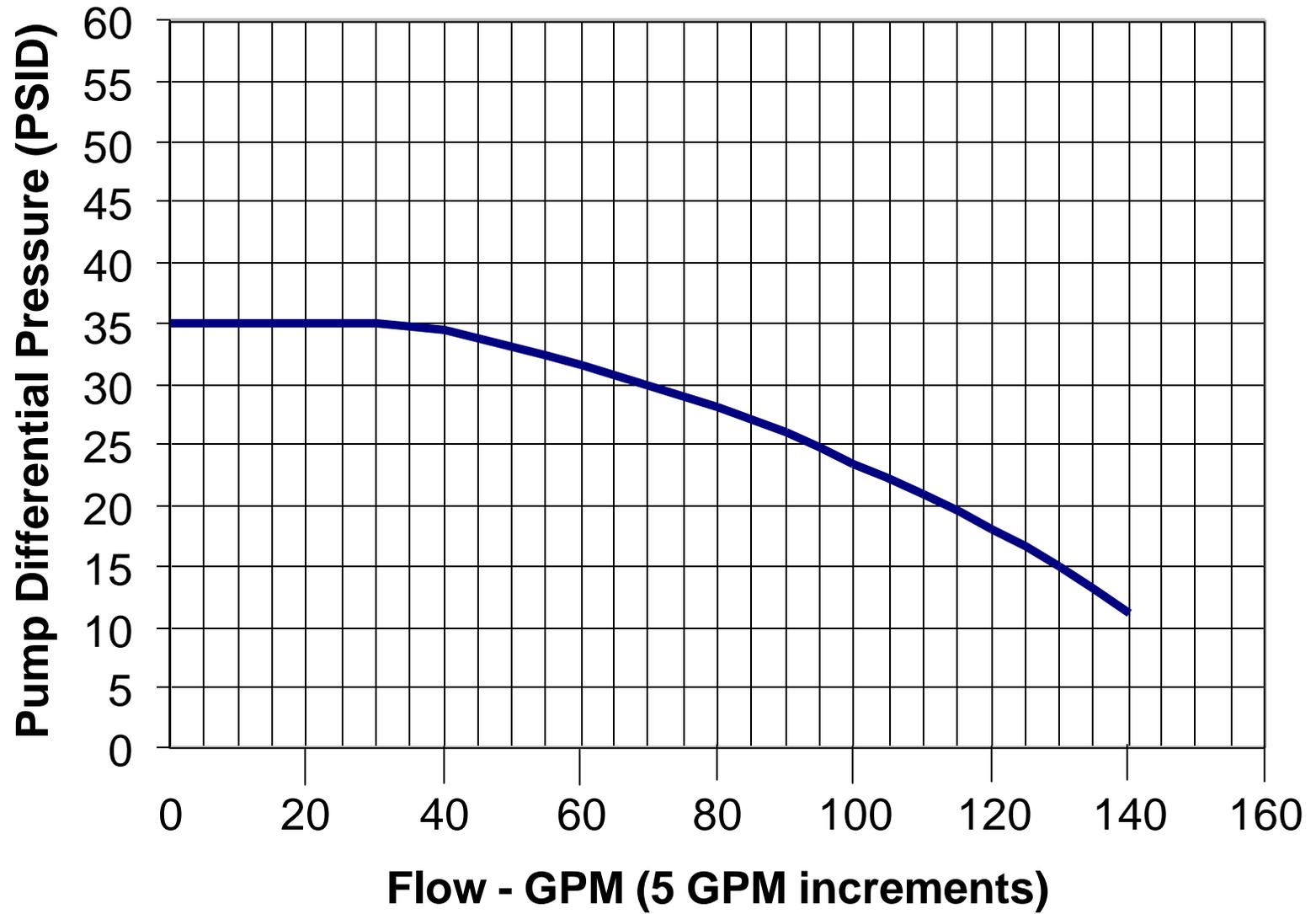
The CRS directs you to perform step 4.15.1 of 1104.020 ATT "B2" Treated Waste Monitor Tank (TWMT) T-16B Liquid Release Permit and report if the release flow rate is within the allowable limit.

CRITICAL ELEMENTS (C): 3, 5

(c)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
Examiner Cue: Provide Candidate with copy of partially completed 1104.020, ATT "B2".					
	1. Candidate performs a review of ATT "B" TWMT Release Permit.	Performed review of T-16B Liquid Release Permit.	_____	_____	_____
	2. Perform step 4.15.1.A FI-4642 inoperable actions.	Recognize actions for inoperable flow indicator contained in ODCM App. 1 Table 2.1-1.	_____	_____	_____
C	3. Determine required actions for conducting release with FI-4642 inoperable.	Utilizing ODCM App. 1 Table 2.1-1 Action 2. Determines release flow rate required to be estimated at least once every four hours utilizing pump curves.	_____	_____	_____
Note: Candidate should discuss options available to obtain pump curve data which may include any of the following: 1) Contacting System Engineer 2) Reference Pump Technical Manual.					
Examiner Cue: Provide Candidate with copy of P-47B Pump Curve upon request.					
	4. Obtain pump curve data. To estimate release flow rate.	Candidate obtains pump curve data.	_____	_____	_____
Note: Pump Suction and Discharge pressure are given in Initial Task Conditions.					
C	5. Determine pump flow rate based on pump differential pressure.	Candidate calculates pump differential pressure and estimates flow rate of 75 to 85 gpm using pump curve.	_____	_____	_____
	6. Report that flow is within allowable limit.	Candidate reports to CRS that flow is within allowable limit.	_____	_____	_____

END

Treated Waste Monitor Pump P-47B



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ATTACHMENT B2

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TREATED WASTE MONITOR TANK (TWMT)
T-16B LIQUID RELEASE PERMIT

PERMIT # 1-LR-2001-0100 (Assigned by Nuclear Chemistry)

02/13/2001
Date

INITIALS

1.0 REQUEST (Operations)

1.1 T-16B taken out of service and placed on recirc for sampling and release:

Date 02/12/2001 Time 0010 SRP

NOTE
Tag contains information to remind personnel that tank is isolated for chemistry sample.

1.2 Verify Treated Waste Monitor T-16B Inlet (CZ-47B) is closed and tag is installed on handwheel or chain operator. SRP

1.3 Initial T-16B level 92%. Record local or remote level indication. (Circle one) SRP

1.4 Check Liquid Radwaste Process Monitor (RI-4642) available by one of the following methods: SRP

1.4.1 If monitor count rate is ≤ 1000 cpm perform the following:

- A. Verify no Liquid Release in progress using FI-4642.
- B. Select "Check Source" on RI-4642 and verify that the monitor responds to check source with a count rate rise >100 cpm.

1.4.2 If monitor count rate >1000 cpm, then verify that count rate is $<4.22E6$.

1.5 Verify that RI-4642 is not inoperable for any other reason. SRP

1.6 If RI-4642 is operable, Then record Rad Monitor RI-4642 background counts. 1.0 E4 SRP

1.7 Record the following: SRP

1.7.1 # of CW pumps running 1
and CW pump Disch Press 1.1 PSIG

1.8 If adjustments are made to CW flow, terminate release.

1.9 Submitted to Nuclear Chemistry for Analysis, Section 2.0. SRP

Date 02/12/2001 Time 0120

Section 1.0 Performed By Steve R. Pullin

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2.0 Analysis (Nuclear Chemistry)

- 2.1 Tank T-16B sample obtained for release analysis. JB
Date/Time 02/12/2001 / 0200
Performed by John Brown.
- 2.2 If required for weekly sample for oil and grease, N/A
Tank T-16B sample obtained. Otherwise N/A.
Performed by N/A
- 2.3 T-16B pH analysis performed by John Brown JB
- 2.3.1 T-16B pH 7.0
- 2.4 If pH is not between 6.0 and 9.0, adjust per Sampling the N/A
Treated Waste Monitor Tanks (T-16A/B) (1607.009).
Otherwise N/A.
- 2.4.1 Tank T-16B post neutralization pH sample, N/A
Obtained by N/A
- 2.4.2 T-16B post neutralization pH sample, N/A
Analysis performed by N/A
- 2.4.3 T-16B post neutralization pH N/A
- 2.4.4 If pH is not between 6.0 and 9.0, re-perform N/A
adjustment and analysis sequence until pH is
between 6.0 and 9.0. Otherwise N/A.
- 2.5 Gamma spectroscopy performed by John Brown
- 2.6 Gamma spectroscopy report reviewed by Jim Smith
- 2.7 Tritium analysis performed by John Brown

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- 2.8 If Liquid Radwaste Process Monitor (RI-4642) is inoperable or unavailable as identified in "Request" or "Verification of Pre-Release Requirements" sections of this permit, the following ODCM App. 1, Table 2.1-1 requirements shall be met. Otherwise N/A. N/A
- 2.8.1 An independent sample of the tank contents shall be obtained and analyzed.

Performed by N/A
- 2.8.2 Computer input data shall be independently verified correct.

Performed by N/A
- 2.9 Sample results indicate release of total tank contents will not violate ANO radioactive effluent discharge limit. JB
- 2.10 Preliminary release report prepared by John Brown
If not radioactive N/A.
- 2.11 Preliminary release report and/or permit returned to Control Room.
By John Brown Date 02/13/2001 Time 0900
- 3.0 Verification of Pre-Release Requirements (Operations)
- 3.1 Verify CW flow/configuration recorded in initial release submittal data is still valid. JG
- 3.2 Verify appropriate signatures on preliminary report. JG
- 3.3 CRS/SM approval to proceed with release.

CRS/SM Abel Leader
- 3.4 Provide copy of Setpoints section from Preliminary Report to Control Room Operators. JG
- 3.5 Verify F560 in service by performing the following:
- 3.5.1 Verify open:
- CZ-74 (LRW Disch Filter F-560 Inlet) JG
 - CZ-77 (LRW Disch Filter F-560 Outlet) JG
- 3.5.2 Verify closed CZ-83 (LRW Disch Filter F-560 Bypass) JG

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ATTACHMENT B2

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- 3.6 If Liquid Radwaste Process Monitor (RI-4642) is operable and available, verify proper operation of radiation monitor and interlocks as follows. Otherwise N/A.
- 3.6.1 Check Liquid Radwaste Process Monitor (RI-4642) available by one of the following methods: JG
- If monitor count rate is ≤ 1000 cpm, select CHECK SOURCE on RI-4642 and verify that the monitor responds to check source with a count rate rise >100 cpm.
 - If monitor count rate >1000 cpm, then verify that count rate is $<4.22E6$.
- 3.6.2 Verify the following valves closed: JG
- FWMT Disch to CW Flumes (DZ-25) JG
 - LZ Drain Pump P-45 Discharge to Flume (LZ-5) JG
 - Treated Waste Discharge to Circ Water Flume (CZ-58) JG
- 3.6.3 Place CZ Disch to Flume Flow Control Valve (CV-4642) hand switch to OPEN. JG
- A. Verify FIC-4642 in Manual and fully open CV-4642 using the Manual Adjustment Knob. JG
- 3.6.4 Lower RI-4642 alarm setpoint until HIGH RAD alarm actuates. JG
- 3.6.5 Verify from CV-4642 indicating lights that CV-4642 trips closed. JG
- 3.6.6 Place CV-4642 HS to CLOSED position. JG
- A. Turn Man. Adj. Knob to fully Closed Position (fully counterclockwise). JG
- 3.6.7 Adjust RI-4642 setpoint to the value listed in the Preliminary Report for total Circ Water flow. JG
- 3.6.8 Verify a Licensed Operator, other than individual who initially set RI-4642 setpoint, has independently verified that RI-4642 setpoint is correct for total circ water flow. JG
- 3.6.9 Reset RI-4642 HIGH RAD alarm. JG
- 3.7 If RI-4642 is inoperable or unavailable, verify requirements specified in "Analysis" section of this permit for RI-4642 inoperable or unavailable have been performed. Otherwise N/A. N/A

Section 3.0 Performed By Joe Gogetter

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ATTACHMENT B2

4.0 Release (Operations)

CAUTION
Unauthorized discharge to Lake Dardanelle via the flume shall be avoided.

- | | | |
|-------|---|-----------|
| 4.1 | Verify CZ Disch to Flume Flow (CV-4642) closed. | <u>JG</u> |
| 4.2 | Verify T-16B X-FER PP (P-47B) stopped. | <u>JG</u> |
| 4.2.1 | <u>If</u> T-16B neutralization was required, verify VCT-9 is isolated per Sampling TWMT (T-16A or T-16B) Section of this procedure. | <u>JG</u> |

NOTE
Tag contains information to remind personnel that tank is isolated for chemistry sample.

- | | | |
|-------|--|------------|
| 4.3 | Verify Treated Waste Monitor Tank T-16B Inlet (CZ-47B) closed <u>and</u> tagged. | <u>JG</u> |
| 4.3.1 | <u>If</u> tag is missing <u>or</u> has been removed since tank was last sampled, perform the following. Otherwise N/A. | |
| | A. Terminate this release. | <u>N/A</u> |
| | B. Install tag on CZ-47B. | <u>N/A</u> |
| | C. Submit new release permit to Nuclear Chemistry. | <u>N/A</u> |
| 4.4 | Verify Treated Waste Monitor Tank T-16B Outlet (CZ-48B) open. | <u>JG</u> |
| 4.5 | Verify Treated Waste Discharge Valve to Header from P-47A (CZ-55A) closed. | <u>JG</u> |
| 4.6 | Verify Treated Waste Monitor Tank T-16B Recirc Inlet (CZ-54B) closed. | <u>JG</u> |
| 4.7 | Open Treated Waste Discharge Valve to Header from P-47B (CZ-55B). | <u>JG</u> |
| 4.8 | Open Treated Waste Discharge to Circ. Water Flume (CZ-58). | <u>JG</u> |
| 4.9 | Verify Treated Waste Monitor Pump Discharge to Clean Waste Tanks (CZ-57) closed. | <u>JG</u> |

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- 4.10 Verify Unit 1/Unit 2 Liquid Radwaste Manifold Isol (CZ-87) closed. JG
- .11 Verify Suction Crossover on Treated Waste Monitor Pumps (CZ-50) closed. JG
- 4.12 If Liquid Radwaste Process Monitor (RI-4642) is inoperable or unavailable, perform the following. Otherwise N/A (ODCM App.1, L2.1.1).
 - 4.12.1 Verify FWMT Disch to CW Flumes (DZ-25) closed. JG
 - 4.12.2 Verify LZ Drain Pump P-45 Discharge to Flume (LZ-5) closed. JG
 - 4.12.3 Person qualified as Waste Control Operator, independently verify release path valve alignment prior to release (ODCM App.1, Table 2.1-1). JG
- 4.13 Notify control room of intent to begin release. JG
- 4.14 Commence T-16B release as follows:
 - 4.14.1 Start P-47B. JG
 - 4.14.2 Place CZ Disch to Flume Flow (CV-4642) hand switch to OPEN. JG

NOTE

Allowable Release Flow Rate is Listed in the "Max Waste (GPM)" Column of the Preliminary Report.

{4.3.1}

CAUTION

Use of flow rate greater than allowable by the release permit may violate ODCM limits for release and may be NRC reportable.

{4.3.1}

- 4.14.3 Use CZ Disch to Flume (FIC-4642) to obtain flow rate \leq allowable release flow rate for total circ water flow. JG
Max Flow Rate from Preliminary Report (90 gpm)

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4.15 When release has started, perform the following:
{4.3.1}

4.15.1 **Control Room Personnel shall observe Discharge Flow to Flume (FI-4642). Verify release flow rate is \leq allowable release flow rate for total circ water flow.** _____

- A. If FI-4642 is inoperable, estimate flow rate at least once every four hours during release (ODCM App.1, Table 2.1-1). Otherwise N/A.

NOTE

If a Plant Computer tabular Log (DUMP) is used instead of Process Radiation Monitoring Effluent Recorder (RR-4830), the tabular log shall contain at least points R4642, R3618 and be set at \leq 5 minute intervals and cover the duration of the release.

4.15.2 Record the following data on RR-4830. If RR-4830 not available, verify Plant Computer tabular log is activated and record data on it. _____

- A. Release start time _____ Date _____
- B. Release permit number _____
- C. Name and number of tank being released:
 "TWMT (T-16B)"

4.15.3 Notify HP that T-16B release has started and LRW disch filter F-560 should be periodically monitored for Rad levels. _____

4.15.4 Notify Chemistry that T-16B release has started. _____

CAUTION

Pumping radioactive liquid tanks empty can cause sediment in bottom of tank to be deposited in discharge piping. This can produce higher radiation areas in the vicinity of the discharge piping that previously existed.

4.16 Verify by tank level observation that only T-16B is being released. _____

NOTE

Liquid Radwaste Disch Filter (F-560) inlet press should not exceed 25 psig.

4.16.1 Monitor F-560 during release for a rise in d/p. ←

4.16.2 If LRW Disch Filter (F-560) inlet press on PI-4606 exceeds 25 psig, then stop release, and perform "Backflushing Liquid Radwaste Discharge Filter (F-560)" section of this procedure. _____

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- 4.17 When release is complete, perform the following.
 - 4.17.1 Verify P-47B is off and hand switch is "Green Flagged". _____
 - 4.17.2 Verify discharge flow ~zero gpm. _____
 - 4.17.3 Notify HP that T-16B release is complete and that F-560 should be surveyed for Rad levels to determine the need to back flush F-560. _____
 - 4.17.4 Back flush F-560 as necessary per HP survey.  _____
- 4.18 Notify control room that release is complete. _____
- 4.19 Record the following data on RR-4830. If RR-4830 was not available, record on Plant Computer tabular logsheets. _____
 - A. Release stop time _____ Date _____
 - B. Release permit number _____
- 4.20 Flush clean waste to discharge flume piping as follows:
 - 4.20.1 Close Treated Waste Discharge Valve to Header from P-47B (CZ-55B) _____
 - 4.20.2 Close CZ-58. _____
 - 4.20.3 Align demineralized water to discharge piping by opening Condensate Flush Disch Hdr (CS-256). _____
 - 4.20.4 After flushing piping for ~ 5 minutes, Close CS-256. _____
- 4.21 Place CV-4642 hand switch to CLOSE and verify indicating lights show valve closed. _____
 - 4.21.1 Verify FIC-4642 in manual and turn Man. Adj. Knob to CLOSED position (fully counterclockwise) _____
- 4.22 Record final T-16B level _____%
- 4.23 Remove tag from Treated Waste Monitor T-16B Inlet (CZ-47B). _____
- 4.24 Return release permit with all attachments to CRS/SM. _____

Performed by Joe Gogetter / _____ Date _____

Approved by CRS/SM _____ Date _____

- 4.25 Return the following to Nuclear Chemistry:
 - This attachment
 - Release permit
 - Tabular logsheets, if used.

Reactor Building Spray Pump P-35A OP-1104.005 Supp 3

Date	Pump	Pump Diff	Pump Diff	Pump Diff	Pump Diff	O.B. Motor	I.B. Motor	I.B. Pump	I.B. Pump	I.B. Pump	I.B. Pump	I.B. Pump
	Differential	Pressure	Pressure	Pressure	Pressure	Bearing	Bearing	Vertical	Vertical	Vertical	Horizontal	Horizontal
P-35A		Lo	Hi	Lo	Hi	Vibration	Vibration	Brg	ANR	LCO	Brg	ANR
RBS	Pressure	ANR	ANR	LCO	LCO			Vibration	Vibration	Vibration	Vibration	Vibration
Pump	PSID	PSID	PSID	PSID	PSID	IN/SEC	IN/SEC	IN/SEC	IN/SEC	IN/SEC	IN/SEC	IN/SEC
05/04/95	194.9	185	199	181	201	0.057	0.104	0.155	0.325	0.7	0.250	0.325
06/14/95	194.8	185	199	181	201	0.050	0.111	0.178	0.325	0.7	0.279	0.325
07/27/95	196.4	185	199	181	201	0.058	0.102	0.139	0.325	0.7	0.238	0.325
08/09/95	196.6	185	199	181	201	0.060	0.115	0.134	0.325	0.7	0.256	0.325
10/19/95	195.4	185	199	181	201	0.073	0.112	0.149	0.325	0.7	0.289	0.325
11/30/95	195	185	199	181	201	0.059	0.113	0.135	0.325	0.7	0.260	0.325
01/11/96	195.7	185	199	181	201	0.065	0.111	0.139	0.325	0.7	0.263	0.325
04/04/96	196.4	185	199	181	201	0.060	0.113	0.128	0.325	0.7	0.241	0.325
05/16/96	197.7	185	199	181	201	0.069	0.105	0.140	0.325	0.7	0.247	0.325
06/28/96	197	185	199	181	201	0.057	0.105	0.138	0.325	0.7	0.234	0.325
09/20/96	196.3	185	199	181	201	0.061	0.113	0.141	0.325	0.7	0.266	0.325
12/12/96	195.9	185	199	181	201	0.057	0.095	0.147	0.325	0.7	0.215	0.325
03/06/97	196.6	185	199	181	201	0.056	0.095	0.137	0.325	0.7	0.217	0.325
05/29/97	196.1	185	199	181	201	0.063	0.092	0.125	0.325	0.7	0.197	0.325
06/19/97	197	185	199	181	201	0.046	0.097	0.112	0.325	0.7	0.216	0.325
08/21/97	195	185	199	181	201	0.075	0.097	0.126	0.325	0.7	0.247	0.325
11/13/97	196.7	185	199	181	201	0.049	0.100	0.130	0.325	0.7	0.215	0.325
02/06/98	195.5	185	199	181	201	0.067	0.114	0.132	0.325	0.7	0.218	0.325
05/01/98	196.9	185	199	181	201	0.067	0.102	0.122	0.325	0.7	0.177	0.325
07/23/98	196.6	185	199	181	214.5	0.064	0.127	0.142	0.325	0.7	0.221	0.325
09/30/98	195.9	185	199	181	214.5	0.049	0.099	0.120	0.325	0.7	0.212	0.325
10/15/98	195.5	185	199	181	214.5	0.056	0.115	0.124	0.325	0.7	0.239	0.325
12/03/98	196.1	185	199	181	214.5	0.052	0.082	0.113	0.325	0.7	0.225	0.325
01/07/99	194.5	185	199	181	214.5	0.085	0.109	0.125	0.325	0.7	0.268	0.325
04/01/99	193	185	199	181	214.5	0.045	0.097	0.116	0.325	0.7	0.241	0.325
06/25/99	192	185	199	181	214.5	0.045	0.104	0.127	0.325	0.7	0.233	0.325
09/06/99	191	185	199	181	214.5	0.061	0.098	0.120	0.325	0.7	0.215	0.325
12/05/99	190	185	199	181	214.5	0.089	0.110	0.119	0.325	0.7	0.203	0.325

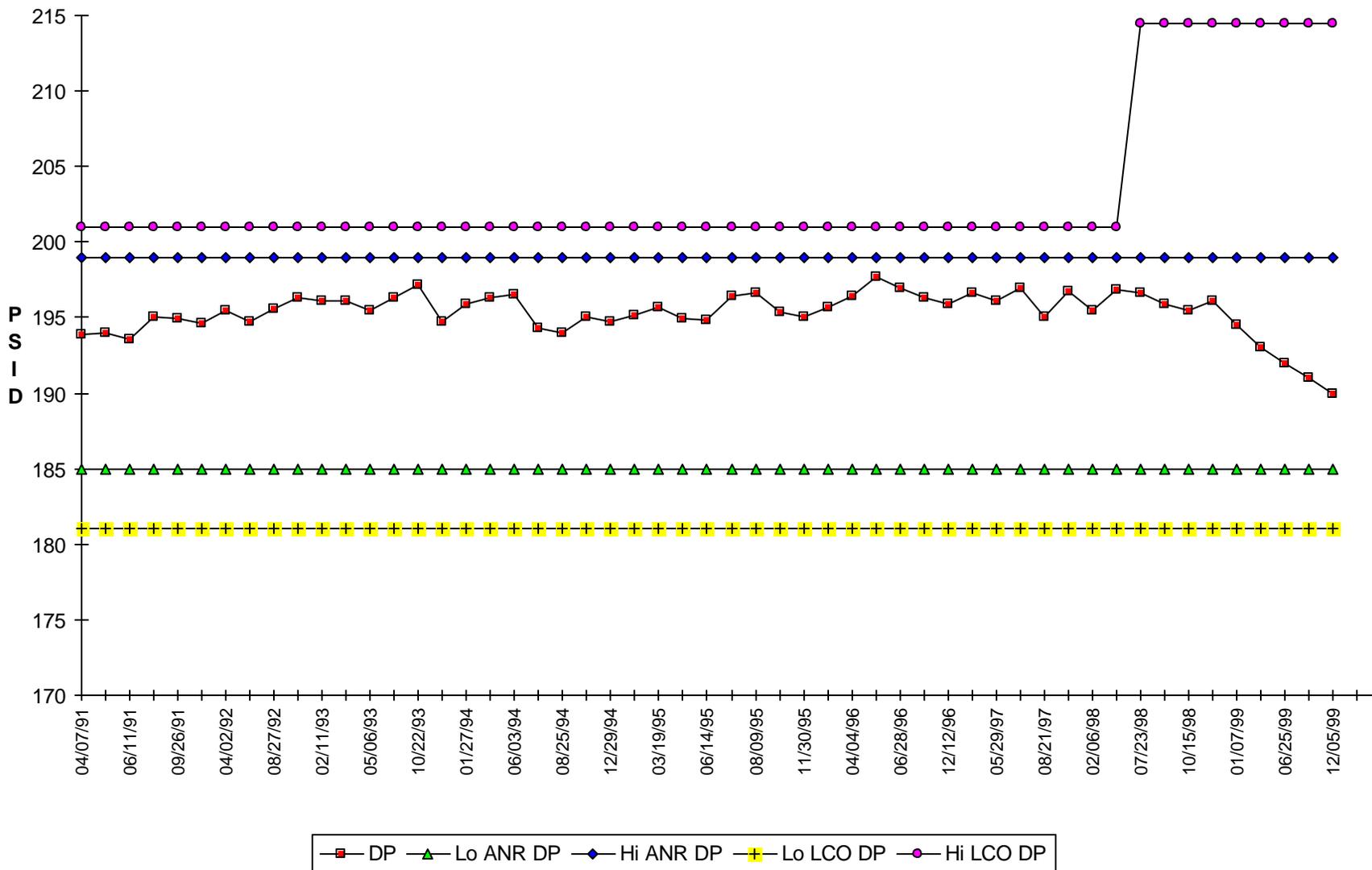
Reactor Building Spray Pump P-35A OP-1104.005 Supp 3

Date	I.B. Pump	O.B. Pump	O.B. Pump	O.B. Pump
	Horizontal	Vertical	Vertical	Vertical
P-35A	LCO	Brg	ANR	LCO
RBS	Vibration	Vibration	Vibration	Vibration
Pump	IN/SEC	IN/SEC	IN/SEC	IN/SEC
05/04/95	0.7	0.114	0.293	0.7
06/14/95	0.7	0.129	0.293	0.7
07/27/95	0.7	0.118	0.293	0.7
08/09/95	0.7	0.114	0.293	0.7
10/19/95	0.7	0.117	0.293	0.7
11/30/95	0.7	0.073	0.293	0.7
01/11/96	0.7	0.107	0.293	0.7
04/04/96	0.7	0.115	0.293	0.7
05/16/96	0.7	0.118	0.293	0.7
06/28/96	0.7	0.105	0.293	0.7
09/20/96	0.7	0.113	0.293	0.7
12/12/96	0.7	0.123	0.293	0.7
03/06/97	0.7	0.118	0.293	0.7
05/29/97	0.7	0.133	0.293	0.7
06/19/97	0.7	0.094	0.293	0.7
08/21/97	0.7	0.092	0.293	0.7
11/13/97	0.7	0.095	0.293	0.7
02/06/98	0.7	0.101	0.293	0.7
05/01/98	0.7	0.111	0.293	0.7
07/23/98	0.7	0.105	0.293	0.7
09/30/98	0.7	0.090	0.293	0.7
10/15/98	0.7	0.104	0.293	0.7
12/03/98	0.7	0.111	0.293	0.7
01/07/99	0.7	0.101	0.293	0.7
04/01/99	0.7	0.102	0.293	0.7
06/25/99	0.7	0.085	0.293	0.7
09/06/99	0.7	0.090	0.293	0.7
12/05/99	0.7	0.093	0.293	0.7

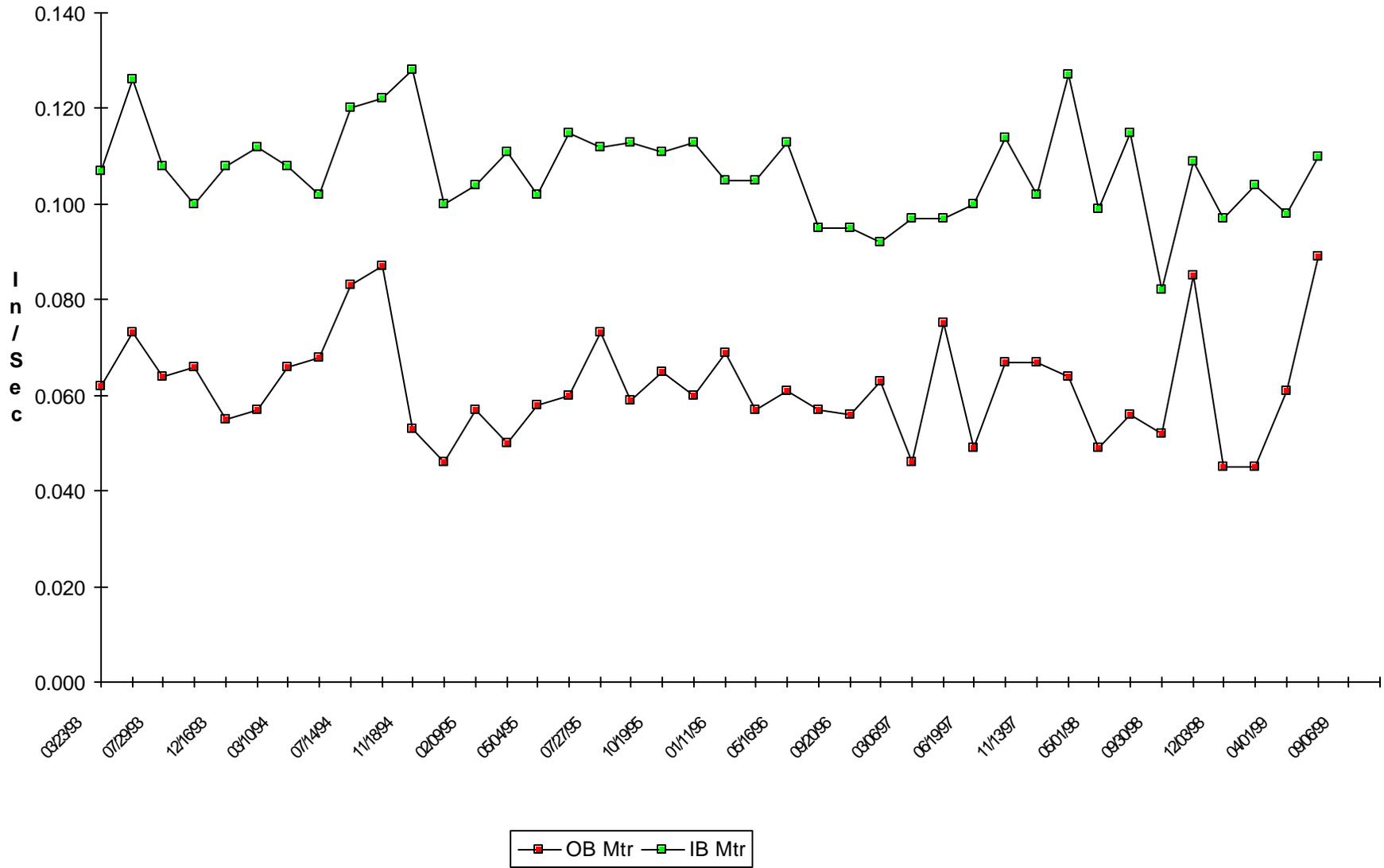
Reactor Building Spray Pump P-35A OP-1104.005 Supp 3

Date	O.B. Pump	O.B. Pump	O.B. Pump	O.B. Pump	O.B. Pump	O.B. Pump	Comments
	Horizontal	Horizontal	Horizontal	Axial	Axial	Axial	
P-35A	Brg	ANR	LCO	Brg	ANR	LCO	
RBS	Vibration	Vibration	Vibration	Vibration	Vibration	Vibration	
Pump	IN/SEC	IN/SEC	IN/SEC	IN/SEC	IN/SEC	IN/SEC	
05/04/95	0.194	0.325	0.7	0.124	0.295	0.7	
06/14/95	0.201	0.325	0.7	0.150	0.295	0.7	1R12 OPERABILITY TEST
07/27/95	0.183	0.325	0.7	0.120	0.295	0.7	
08/09/95	0.199	0.325	0.7	0.119	0.295	0.7	
10/19/95	0.195	0.325	0.7	0.127	0.295	0.7	Contacted PDM about I.B. Horz. Vibes
11/30/95	0.141	0.325	0.7	0.118	0.295	0.7	P35A run for P35B mntc
01/11/96	0.181	0.325	0.7	0.127	0.295	0.7	Quarterly/Annual
04/04/96	0.173	0.325	0.7	0.114	0.295	0.7	
05/16/96	0.187	0.325	0.7	0.132	0.295	0.7	Quarterly
06/28/96	0.177	0.325	0.7	0.115	0.295	0.7	
09/20/96	0.184	0.325	0.7	0.119	0.295	0.7	
12/12/96	0.173	0.325	0.7	0.125	0.295	0.7	Quarterly
03/06/97	0.181	0.325	0.7	0.149	0.295	0.7	Quarterly
05/29/97	0.154	0.325	0.7	0.114	0.295	0.7	quarterly
06/19/97	0.164	0.325	0.7	0.117	0.295	0.7	
08/21/97	0.176	0.325	0.7	0.105	0.295	0.7	
11/13/97	0.189	0.325	0.7	0.116	0.295	0.7	
02/06/98	0.177	0.325	0.7	0.133	0.295	0.7	Quarterly/Annual/Oper following Maint.
05/01/98	0.179	0.325	0.7	0.117	0.295	0.7	Quarterly
07/23/98	0.155	0.325	0.7	0.133	0.295	0.7	Quarterly
09/30/98	0.176	0.325	0.7	0.129	0.295	0.7	Quarterly
10/15/98	0.202	0.325	0.7	0.110	0.295	0.7	Quarterly
12/03/98	0.199	0.325	0.7	0.111	0.295	0.7	P-35A run for P-35B Maintenance
01/07/99	0.187	0.325	0.7	0.112	0.295	0.7	Quarterly
04/01/99	0.190	0.325	0.7	0.112	0.295	0.7	Normal Scheduled PMs
06/25/99	0.194	0.325	0.7	0.115	0.295	0.7	Quarterly and 18 Month
09/06/99	0.171	0.325	0.7	0.104	0.295	0.7	Quarterly
12/05/99	0.162	0.325	0.7	0.115	0.295	0.7	Quarterly

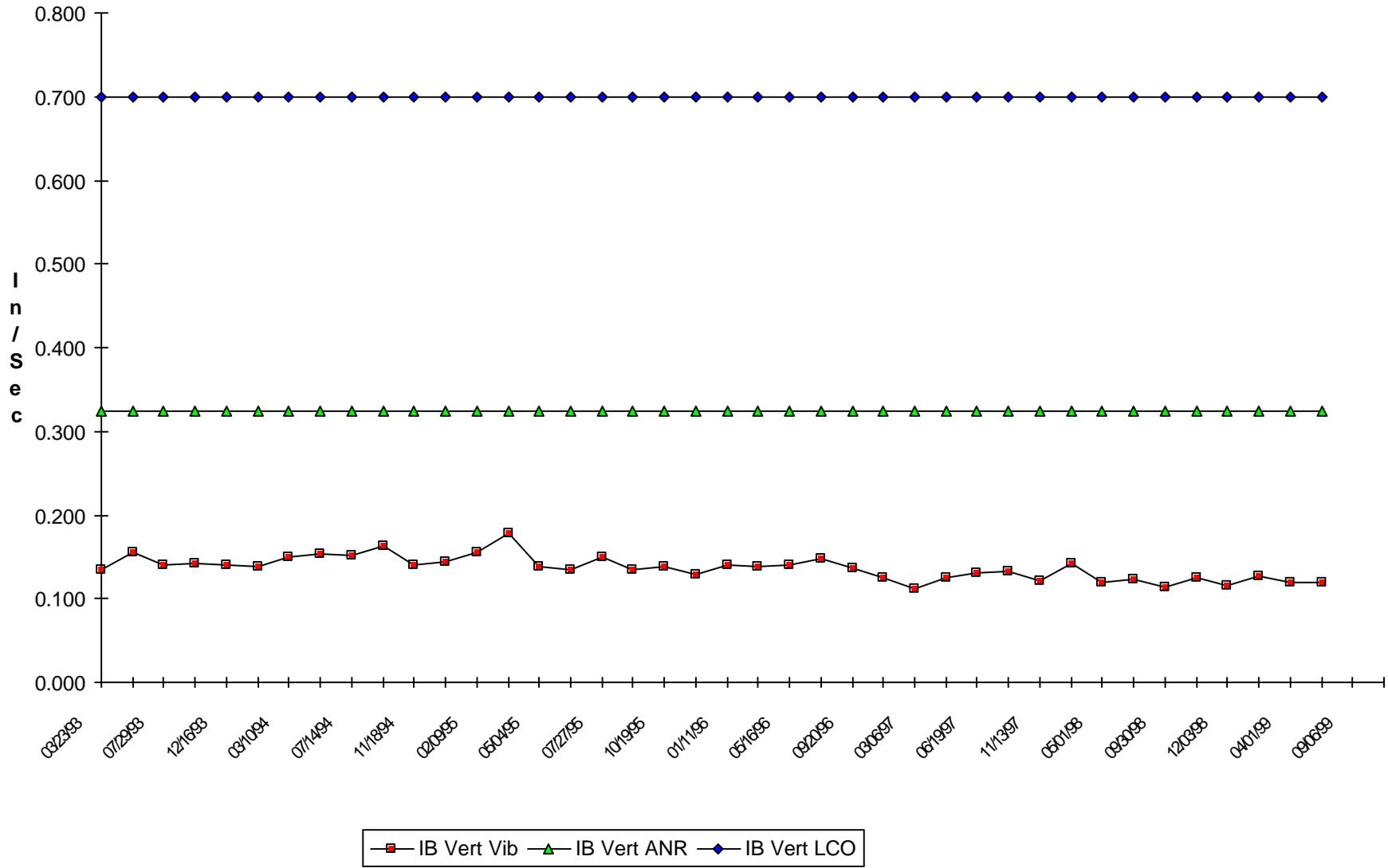
Reactor Building Spray Pump P-35A Differential Pressure



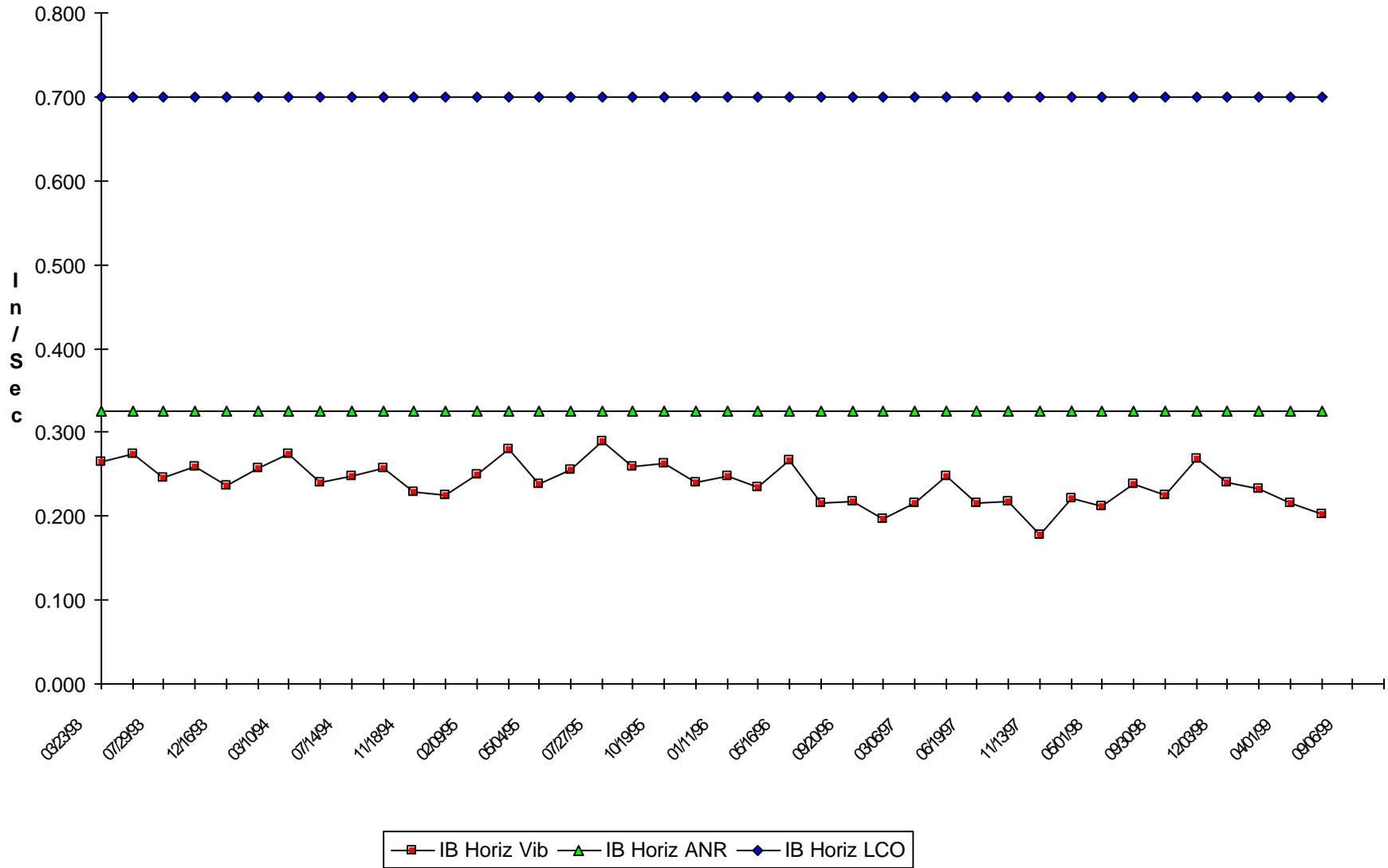
Reactor Building Spray Pump P-35A Motor Brg Vibration



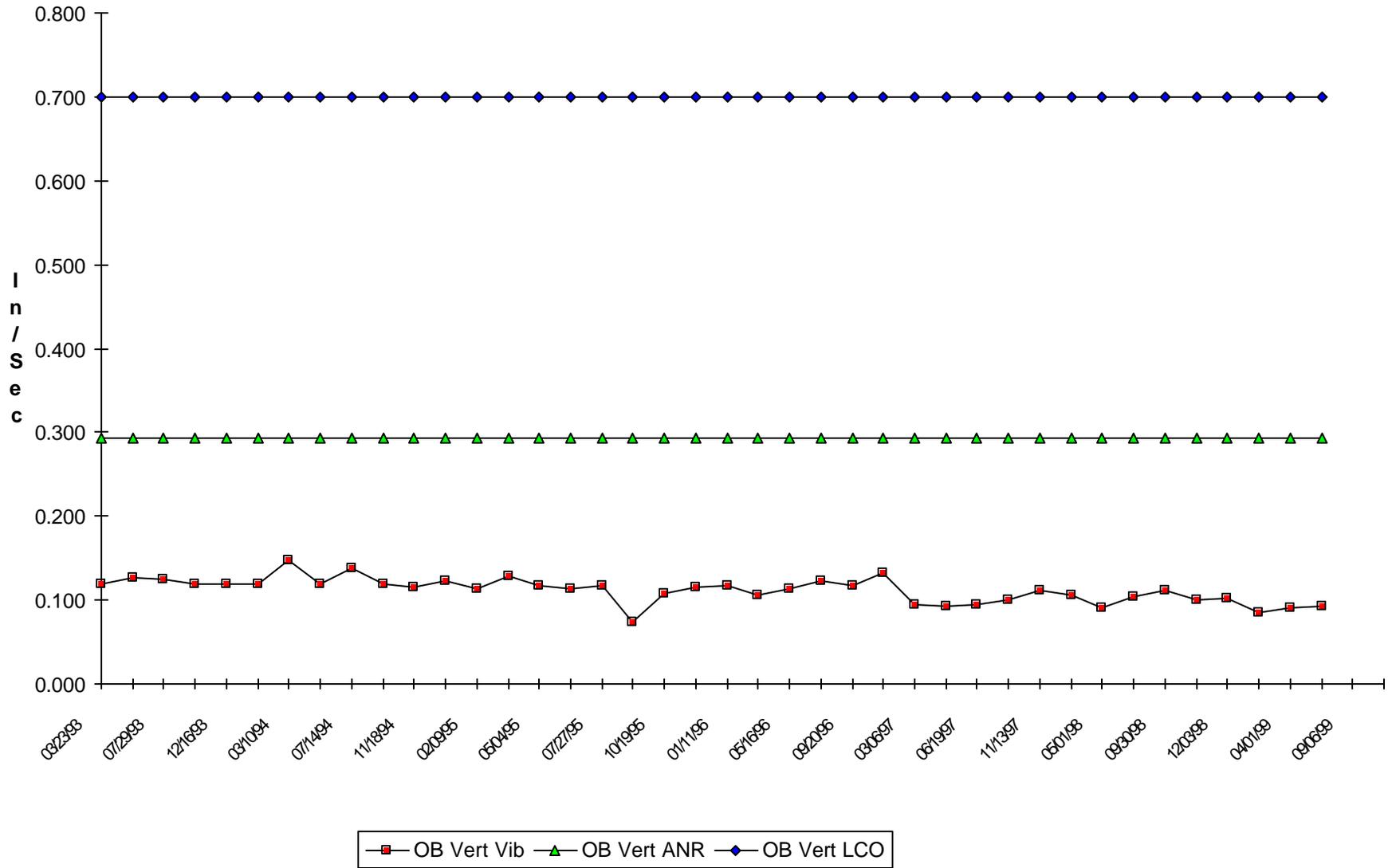
Reactor Building Spray Pump P-35A I.B. Brg Vib Vertical



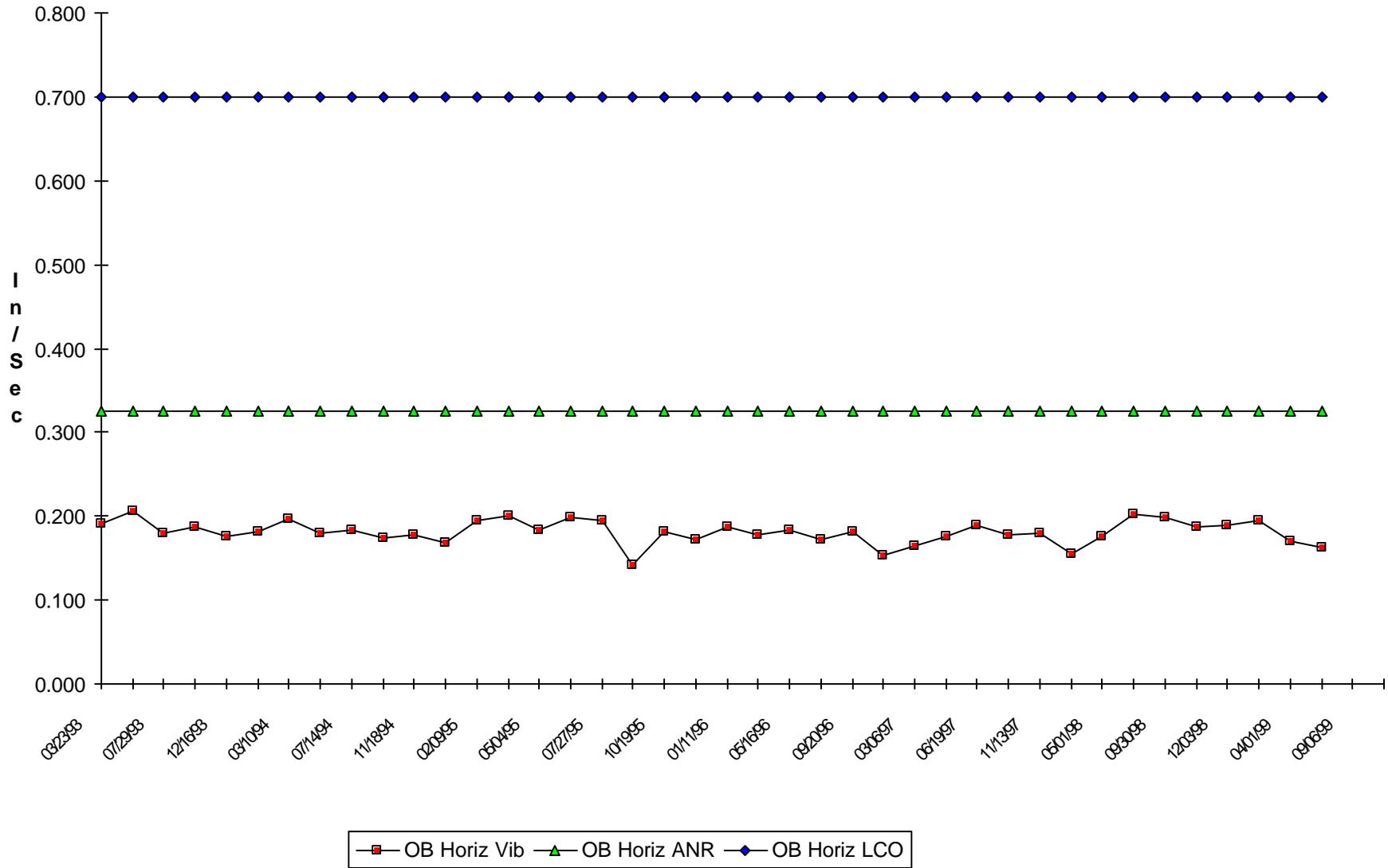
Reactor Building Spray Pump P-35A I.B. Brg Vib Horizontal



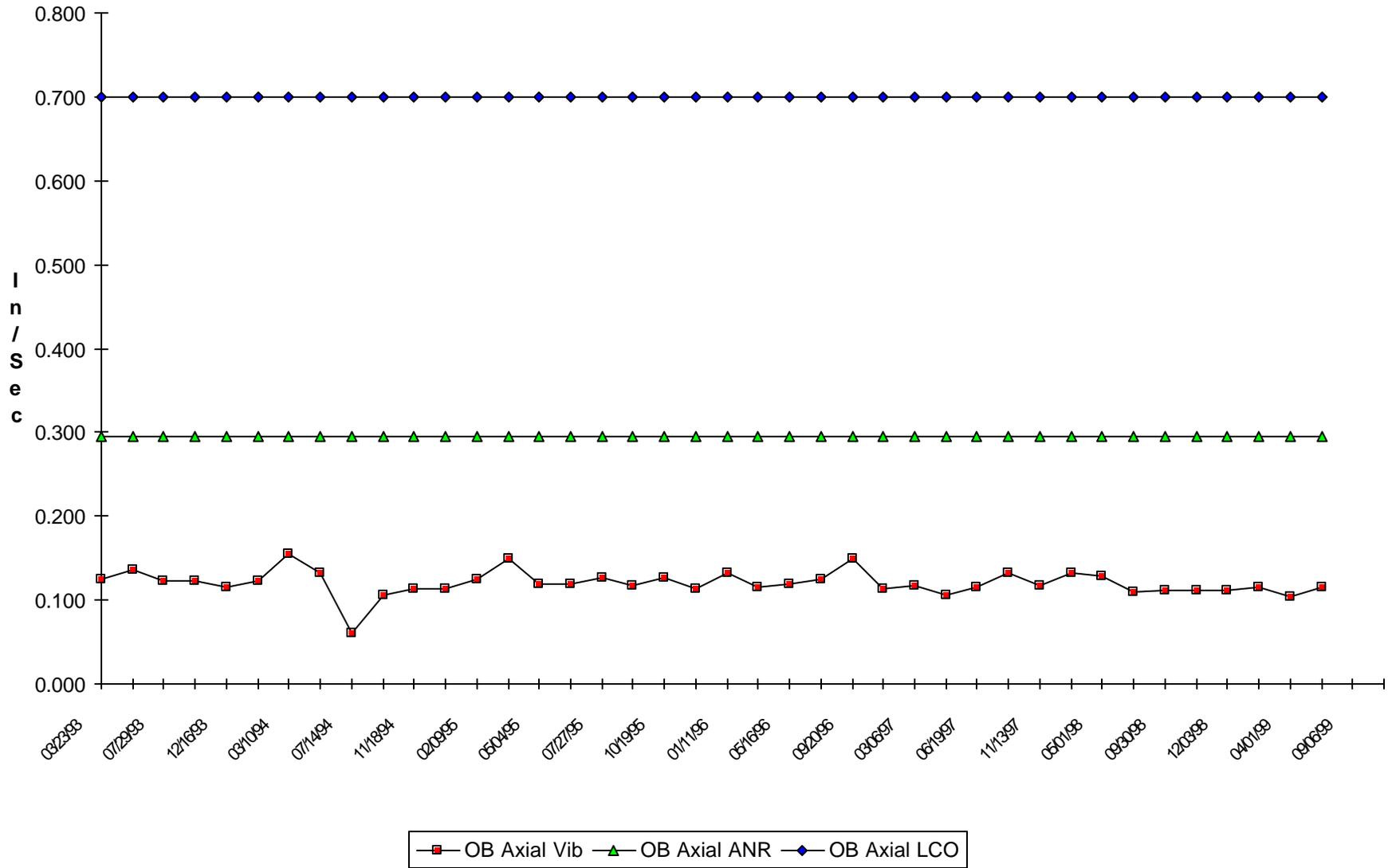
Reactor Building Spray Pump P-35A O.B. Brg Vib Vertical



Reactor Building Spray Pump P-35A O.B. Brg Vib Horizontal

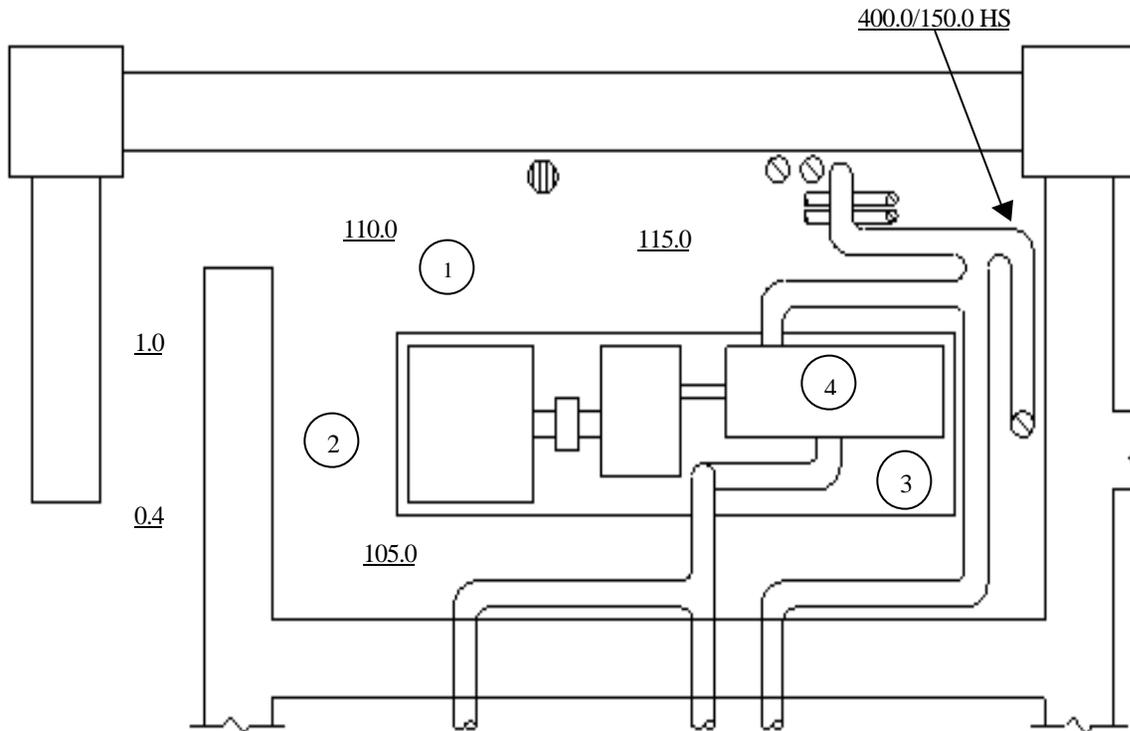
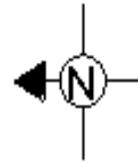


Reactor Building Spray Pump P-35A O.B. Brg Vib Axial



**Aux building
posted: RM,RWPR**

335 posted RA



All Radiation values are in mrem/hour unless otherwise noted.

12.5 denotes gamma general area dose rates.

Smear contamination values are in DPM/100 Sqcm unless otherwise noted.

*12/13 Denotes Gamma Contact/Far reading (30 cm)

* 12 Denotes contact dose rate (gamma)

*12 B Denotes Beta Contact Dose Rate

Form to be retained for records

H. S. Denotes Hot Spot Readings

O Denotes smear location (100 sqcm.)

Denotes large area smear location

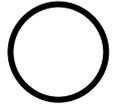
DPM/	100cm ²
No.	Activity
1	20,000
2	
30,000	
3	
60,000	
4	
10,000	

Rx. % 100
 Date 02/10/2001
 Time 0000:00
 Dose Rate Inst. HP-DR-170
 Cal Due Date 12/31/2001
 Dose Rate Inst. #2 RM-065
 Cal Due Date 12/31/2001
 Count Inst. RO-705
 Cal Due Date 12/31/2001
 Bkg. 80 cpm D/C 10
 Count Inst. #2 _____
 Cal Due Date 12/31/2001
 Bkg. 90 cpm D/C 10
 Survey Frequency:
 _____ Daily
 _____ Bi-Weekly
 Monthly
 _____ Quarterly
 _____ Job Coverage
 _____ Other
 RWP # 4005/1
 Surveyor:
John Public 1234
 Badge
 RP Supervisor Review:
Imma N. Charge
 DANI # 011256
 Page 1 of 1

Arkansas Nuclear One - Unit One
2001 License Examination Administrative Topics
OPERATING TEST ONE

Candidate: _____

Examination Level (Circle One): RO / SRO



Examiner: _____

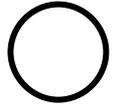
Topic Area (Circle One)	Question A1-JPM-1	Expected Response and Reference source
A.1 A.2 A.3 A.4	SEE ATTACHED JPM ANO-1-JPM-SRO-TURN	

Candidate Response:

Arkansas Nuclear One - Unit One
2001 License Examination Administrative Topics
OPERATING TEST ONE

Candidate: _____

Examination Level (Circle One): RO / SRO



Examiner: _____

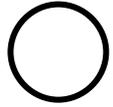
Topic Area (Circle One)	Question A1-JPM-2	Expected Response and Reference source
A.1 A.2 A.3 A.4	SEE ATTACHED JPM ANO-1-JPM-SRO-TREND	

Candidate Response:

Arkansas Nuclear One - Unit One
2001 License Examination Administrative Topics
OPERATING TEST ONE

Candidate: _____

Examination Level (Circle One): RO / SRO



Examiner: _____

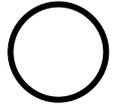
Topic Area (Circle One)	Question A2-JPM-1	Expected Response and Reference source
A.1 A.2 A.3 A.4	SEE ATTACHED JPM ANO-1-JPM-SRO-HCRD3	

Candidate Response:

Arkansas Nuclear One - Unit One
2001 License Examination Administrative Topics
OPERATING TEST ONE

Candidate: _____

Examination Level (Circle One): RO / SRO



Examiner: _____

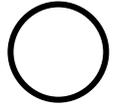
Topic Area (Circle One)	Question A3-Q1	Expected Response and Reference source
<p>A.1 A.2</p> <p>A.3 A.4</p>	<p>The following radiological postings are present in the P-36C HPI pump room:</p> <ul style="list-style-type: none"> The access boundary to the room has a single posting as a RADIATION AREA. There is one HOT SPOT posted on the piping in the southeast corner of the room. <p>You are preparing to conduct a pre-job briefing with your WCO. His job is to perform a special test on P-36C, HPI pump, with the System Engineer following completion of pump maintenance.</p> <p>Based on your review of the given survey map, state what changes to the room postings you would recommend to Radiation Protection and why.</p>	<p>Answer:</p> <p><i>Candidate should identify at least two of the following three errors for successful completion:</i></p> <ul style="list-style-type: none"> The room access boundary should be posted as a HIGH RADIATION AREA since the general area readings (<u>115.0</u>, <u>110.0</u> and <u>105.0</u> mr/hr) are greater than the 100 mR/hr threshold for a High Radiation area. In addition, the access should also be posted as a CONTAMINATION AREA, since smear data indicates loose surface contamination of greater than 1000 dpm/cm² but less than 100,000 dpm/cm². The hot spot posting is not valid since the contact reading is not greater than or equal to four times the 30 cm reading. <p>Reference:</p> <p>1012.017 Rev. 006-02-0</p> <p>K/A:</p> <p>2.3.1 RO 2.6 / SRO 3.0</p>

Candidate Response:

Arkansas Nuclear One - Unit One
2001 License Examination Administrative Topics
OPERATING TEST ONE

Candidate: _____

Examination Level (Circle One): RO / SRO



Examiner: _____

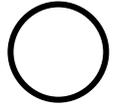
Topic Area (Circle One)	Question A3-Q2	Expected Response and Reference source
<p>A.1 A.2</p> <p>A.3 A.4</p>	<p>Given:</p> <ul style="list-style-type: none"> • The plant is in a refueling outage. • An ALARA planning meeting between maintenance personnel and radiation protection personnel is being conducted prior to emergent work on CV-1050, Decay Heat Suction valve. • The maintenance job is expected to take one person 15 minutes to complete. • The dose rate at CV-1050 is 150 mR/hr. <p>During the briefing the Radiation Protection Technician states that dose rates around CV-1050 could be reduced by using shielding. It will take two (2) workers, 10 minutes to install and 10 minutes to remove the shielding. The shielding will reduce the dose rate at CV-1050 to 15 mR/hr.</p> <p>Apply the principles of ANO's ALARA program to this situation and determine whether this job should be done with or without shielding.</p>	<p>Answer:</p> <p>One person performing the job without shielding will receive a dose of 37.5 mR.</p> <p>Two technicians installing the shielding and subsequent removal of the shielding will receive a total man-Rem dose of 100 mRem.</p> <p>The person performing the job with shielding will receive a dose of 3.75 mRem.</p> <p>Using shielding, will produce a total man-Rem dose of 103.75 mRem.</p> <p>Using ALARA principles, the job should be performed without the shielding for a lower total dose.</p> <p>Reference:</p> <p>1012.027 Rev. 003-01-0</p> <p>K/A:</p> <p>2.3.2</p> <p>RO 2.5 / SRO 2.9</p>

Candidate Response:

Arkansas Nuclear One - Unit One
2001 License Examination Administrative Topics
OPERATING TEST ONE

Candidate: _____

Examination Level (Circle One): RO / SRO



Examiner: _____

Topic Area (Circle One)	Question A4-JPM-1	Expected Response and Reference source
A.1 A.2 A.3 A.4	SEE ATTACHED JPM ANO-1-JPM-SRO-EAL4, EAL5, and EAL6	

Candidate Response:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL4

UNIT: 1 REV # 0 DATE:

TUOI NUMBER: ANO-1-JPM-SRO-EAL4

SYSTEM/DUTY AREA: ADMINISTRATIVE TOPIC - EMERGENCY PROCEDURES/PLAN

TASK: CLASSIFY AN EMERGENCY EVENT

JTA#: 13445110303

KA VALUE RO: 2.3 SRO: 4.1 KA REFERENCE: 2.4.41

APPROVED FOR ADMINISTRATION TO: RO: SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: BOTH:

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: SIMULATOR: PERFORM LAB:

POSITION EVALUATED: RO: N/A SRO: X

ACTUAL TESTING ENVIRONMENT: SIMULATOR: X PLANT SITE: LAB:

TESTING METHOD: SIMULATE: PERFORM:

APPROXIMATE COMPLETION TIME IN MINUTES: 5 MINUTES

REFERENCE(S): 1903.010 REV. 036-02-0, 1903.011 REV. 025-04-0

EXAMINEE'S NAME: SSN - -

EVALUATOR'S NAME:

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: UNSATISFACTORY:

PERFORMANCE CHECKLIST COMMENTS:

Three horizontal lines for performance checklist comments.

Start Time Stop Time Total Time

SIGNED DATE:

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL4

Page 2 of 4

QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL4

Page 3 of 4

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

- Unit One has experienced a Loss of Coolant Accident.
- Reactor has tripped.
- ESAS Channels 1-6 have actuated, RT-10 successfully performed.
- RCS pressure and PZR level continue to drop.
- No radiological release is in progress.

INITIATING CUE:

For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL4

Page 4 of 4

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: The following conditions existed at the end of
Operating test 1 Scenario 1. Unit One has experienced a Loss of Coolant Accident.
Reactor has tripped. ESAS Channels 1-6 have actuated, RT-10 successfully performed.
RCS pressure and PZR level continue to drop. No radiological release is in progress.

TASK STANDARD: Examinee correctly classifies this event as a SAE per EAL 2.4
and makes notifications to plant personnel per 1903.011P.

TASK PERFORMANCE AIDS: 1903.010 Attachments 1 and 3, 1903.011 Attachment 3,
and 1903.011P

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL4

INITIATING CUE:

For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

CRITICAL ELEMENTS (C) 3, 6

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	1. Compare event conditions with the Index of EALs, Attachment 1 of 1903.010, Emergency Action Level Classification.	Turned to Attachment 1 of 1903.010, Index of EALs.	_____	_____	_____
	2. Turn to appropriate EAL and compare EAL criteria with event conditions.	Turned to a specific EAL in Safety System Function, Attachment 3 of 1903.010.	_____	_____	_____
(C)	3. Declare the emergency classification.	Declared or stated the event is a Site Area Emergency (based on LOCA greater than HPI capacity) in accordance with EAL 2.4.	_____	_____	_____
	4. Initiate immediate notifications.	Referred to 1903.011 and turned to Attachment 3.	_____	_____	_____
NOTE: Cue the examinee that the Unit 2 Shift Engineer is performing the initial notifications per 1903.011 after the examinee has stated that Unit 2 Shift Engineer (or control room communicator) has been requested.					
	5. Begin completion of form 1903.011P, SAE Emergency Direction and Control Checklist for Shift Manager.	Began completion of form 1903.011P SAE Emergency Direction and Control Checklist for Shift Manager. Examinee should fill in the data on items 1 and 2. Examinee should simulate (or state) direction of the SE to complete the initial notification.	_____	_____	_____
(C)	6. (Simulate) Announce emergency on plant paging system.	Used plant-paging system to (simulate) make announcement per step 9 of form 1903.011P.	_____	_____	_____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL4

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END

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL5

UNIT: 1 REV # 0 DATE:

TUOI NUMBER: ANO-1-JPM-SRO-EAL5

SYSTEM/DUTY AREA: ADMINISTRATIVE TOPIC - EMERGENCY PROCEDURES/PLAN

TASK: CLASSIFY AN EMERGENCY EVENT

JTA#: 13445110303

KA VALUE RO: 2.3 SRO: 4.1 KA REFERENCE: 2.4.41

APPROVED FOR ADMINISTRATION TO: RO: SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: BOTH:

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: SIMULATOR: PERFORM LAB:

POSITION EVALUATED: RO: N/A SRO: X

ACTUAL TESTING ENVIRONMENT: SIMULATOR: X PLANT SITE: LAB:

TESTING METHOD: SIMULATE: PERFORM:

APPROXIMATE COMPLETION TIME IN MINUTES: 5 MINUTES

REFERENCE(S): 1903.010 REV. 036-02-0, 1903.011 REV. 025-04-0

EXAMINEE'S NAME: SSN - -

EVALUATOR'S NAME:

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: UNSATISFACTORY:

PERFORMANCE CHECKLIST COMMENTS:

Three horizontal lines for performance checklist comments.

Start Time Stop Time Total Time

SIGNED DATE:

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL5

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QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL5

Page 3 of 4

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

- Unit One has experienced a Main Turbine trip above 43% power.
- Reactor Protection System failed to actuate an automatic reactor trip. The reactor was successfully tripped from the Control Room.
- A Degraded Power condition subsequently occurred.

INITIATING CUE:

For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL5

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THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: The following conditions existed at the end of
Operating test 1 Scenario 2. Unit One has experienced a Main Turbine trip above 43%
power. Reactor Protection System failed to actuate an automatic reactor trip. The
reactor was successfully tripped from the Control Room. A Degraded Power condition
subsequently occurred.

TASK STANDARD: Examinee correctly classifies this event as an Alert per EAL 6.2
and makes notifications to plant personnel per 1903.011M.

TASK PERFORMANCE AIDS: 1903.010 Attachments 1 and 3, 1903.011 Attachment 2,
and 1903.011M

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL5

INITIATING CUE:

For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

CRITICAL ELEMENTS (C) 3, 6

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	1. Compare event conditions with the Index of EALs, Attachment 1 of 1903.010, Emergency Action Level Classification.	Turned to Attachment 1 of 1903.010, Index of EALs.	_____	_____	_____
	2. Turn to appropriate EAL and compare EAL criteria with event conditions.	Turned to a specific EAL in Safety System Function, Attachment 3 of 1903.010.	_____	_____	_____
(C)	3. Declare the emergency classification.	Declared or stated the event is an Alert (based on failure of RPS to complete an automatic trip and subsequent efforts to trip reactor from the Control Room were successful - not required to be stated) in accordance with EAL 6.2.	_____	_____	_____
	4. Initiate immediate notifications.	Referred to 1903.011 and turned to Attachment 2.	_____	_____	_____
NOTE: Cue the examinee that the Unit 2 Shift Engineer is performing the initial notifications per 1903.011 after the examinee has stated that Unit 2 Shift Engineer (or control room communicator) has been requested.					
	5. Begin completion of form 1903.011M, Alert Emergency Direction and Control Checklist for Shift Manager.	Began completion of form 1903.011M Alert Emergency Direction and Control Checklist for Shift Manager. Examinee should fill in the data on items 1 and 2. Examinee should simulate (or state) direction of the SE to complete the initial notification.	_____	_____	_____
(C)	6. (Simulate) Announce emergency on plant paging	Used plant-paging system to (simulate) make announcement			

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL5

Page 6 of 4

	system.	per step 4 of form 1903.011M.	_____	_____	_____
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END

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL6

UNIT: 1 REV # 0 DATE:

TUOI NUMBER: ANO-1-JPM-SRO-EAL6

SYSTEM/DUTY AREA: ADMINISTRATIVE TOPIC - EMERGENCY PROCEDURES/PLAN

TASK: CLASSIFY AN EMERGENCY EVENT

JTA#: 13445110303

KA VALUE RO: 2.3 SRO: 4.1 KA REFERENCE: 2.4.41

APPROVED FOR ADMINISTRATION TO: RO: SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: BOTH:

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: SIMULATOR: PERFORM LAB:

POSITION EVALUATED: RO: N/A SRO: X

ACTUAL TESTING ENVIRONMENT: SIMULATOR: X PLANT SITE: LAB:

TESTING METHOD: SIMULATE: PERFORM:

APPROXIMATE COMPLETION TIME IN MINUTES: 5 MINUTES

REFERENCE(S): 1903.010 REV. 036-02-0, 1903.011 REV. 025-04-0

EXAMINEE'S NAME: SSN - -

EVALUATOR'S NAME:

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: UNSATISFACTORY:

PERFORMANCE CHECKLIST COMMENTS:

Three horizontal lines for performance checklist comments.

Start Time Stop Time Total Time

SIGNED DATE:

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL6

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QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL6

Page 3 of 4

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

- While shutting down due to a tube leak in "B" OTSG, the Unit One reactor was manually tripped due to two dropped rods.
- Post trip, the RCS leak rate to "B" OTSG has been estimated at approximately 100 gpm.
- SPDS indicates that NO Main Steam Safety Valves (MSSVs) lifted following the trip.

INITIATING CUE:

For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL6

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THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: The following conditions existed at the end of
Operating test 1 Scenario 3. While shutting down due to a tube leak in "B" OTSG, the
Unit One reactor was manually tripped due to two dropped rods. Post trip, the RCS
leak rate to "B" OTSG has been estimated at approximately 100 gpm. SPDS indicates
that NO Main Steam Safety Valves (MSSVs) lifted following the trip.

TASK STANDARD: Examinee correctly classifies this event as an Alert per EAL 2.2
and makes notifications to plant personnel per 1903.011M.

TASK PERFORMANCE AIDS: 1903.010 Attachments 1 and 3, 1903.011 Attachment 2,
and 1903.011M

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL6

INITIATING CUE:

For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

CRITICAL ELEMENTS (C) 3, 6

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	1. Compare event conditions with the Index of EALs, Attachment 1 of 1903.010, Emergency Action Level Classification.	Turned to Attachment 1 of 1903.010, Index of EALs.	_____	_____	_____
	2. Turn to appropriate EAL and compare EAL criteria with event conditions.	Turned to a specific EAL in Safety System Function, Attachment 3 of 1903.010.	_____	_____	_____
(C)	3. Declare the emergency classification.	Declared or stated the event is an Alert (based on RCS leakage greater than normal makeup capacity [50 gpm] - not required to be stated) in accordance with EAL 2.2.	_____	_____	_____
	4. Initiate immediate notifications.	Referred to 1903.011 and turned to Attachment 2.	_____	_____	_____
NOTE: Cue the examinee that the Unit 2 Shift Engineer is performing the initial notifications per 1903.011 after the examinee has stated that Unit 2 Shift Engineer (or control room communicator) has been requested.					
	5. Begin completion of form 1903.011M, Alert Emergency Direction and Control Checklist for Shift Manager.	Began completion of form 1903.011M Alert Emergency Direction and Control Checklist for Shift Manager. Examinee should fill in the data on items 1 and 2. Examinee should simulate (or state) direction of the SE to complete the initial notification.	_____	_____	_____
(C)	6. (Simulate) Announce emergency on plant paging system.	Used plant-paging system to (simulate) make announcement per step 4 of form 1903.011M.	_____	_____	_____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: ANO-1-JPM-SRO-EAL6

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END

JOB PERFORMANCE MEASURE

UNIT: 1 REV # 3 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-EOP07

SYSTEM/DUTY AREA: ABNORMAL AND EMERGENCY OPERATIONS

TASK: PERFORM REACTOR TRIP IMMEDIATE ACTION

JTA#: 13035010601

KA VALUE RO: 4.0 SRO: 4.6 KA REFERENCE: 007 EK3.01

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: PERFORM LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 5 MINUTES

REFERENCE(S): 1202.001 REV. 27, 1202.012 REV. 004-01-0

EXAMINEE'S NAME: _____ SSN - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____
SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JPM INITIAL TASK CONDITIONS:

- Plant is operating at 100% power.
- CBOT is out of the control room.
- Generator hydrogen pressure is dropping rapidly.

INITIATING CUE:

The CRS directs you to manually trip the reactor and perform reactor trip actions through step 6 per 1202.001 Reactor Trip.

TUOI NUMBER: ANO-1-JPM-RO-EOP07

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Plant is operating at 100% power. CBOT is out of the Control room. Generator hydrogen pressure is dropping rapidly.

TASK STANDARD: Immediate action for Reactor Trip completed and Emergency Boration in progress. Actions for failure of all control rods to insert have been completed.
(Alternate success path JPM).

TASK PERFORMANCE AIDS: Rx Trip 1202.001, RT 1202.012, Emergency Boration.

NOTE: This is an alternate success path JPM and is intended to be performed on the simulator, not simulated. Therefore, no positive or negative cues are provided.

Notes to IA Operator and Examiner:

1. Prior to starting this JPM, insert the following malfunctions to stick 2 rods out:
RD363, RD370
2. **RT-12 is allowed for performance for emergency boration.**
3. The only immediate action is tripping the Reactor. Trainee may perform follow up steps but are not required.

TUOI NUMBER: ANO-1-JPM-RO-EOP07

INITIATING CUE:

The CRS directs you to manually trip the reactor and perform reactor trip actions through step 6 per 1202.001 Reactor Trip.

NOTE TO EXAMINER: THIS IS AN ALTERNATE SUCCESS PATH JPM THAT INCLUDES A FAULT WHEN THE REACTOR IS TRIPPED.

CRITICAL ELEMENTS (C): 1, 5, 6, 7, 8, 9

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
(C)	1. Depress the reactor trip pushbutton. <u>POSITIVE CUE:</u> Reactor trip pushbutton depressed.	On C03, depressed the reactor trip pushbutton.	_____	_____	_____
	2. Identify that 2 rods have failed to insert.	On C13, observed 2 rods have failed to trip.	_____	_____	_____
INSTRUCTOR NOTE: The following step is optional at the trainees discretion.					
	3. Depress CRD Power Supply Breaker Trip Push buttons on C03 (A501 and B631). <u>POSITIVE CUE:</u> Breakers A501 and B631 open (Green light on)	On C03 depressed CRD Power Supply Push buttons. (A501 and B631).	_____	_____	_____
	4. Verify all rods inserted and power dropping.	On C13, observed rod bottom lights for all control rods except 2 have come on.	_____	_____	_____
NOTE TO EXAMINER: Give examinee a copy of RT12, Emergency Boration, if examinee requests it.					
(C)	5. Open BWST outlet to OP HPI Pump (CV-1407 or CV-1408). <u>POSITIVE CUE:</u> CV-1408 red light on green light off	On C16 or C18, CV-1407 or CV-1408 opened (associated valve for the running HPI pump).	_____	_____	_____
(C)	6. Set Batch Controller for maximum batch size. <u>POSITIVE CUE:</u> Batch size indicates 999999 on upper display. <u>NEGATIVE CUE:</u> Batch size indicates 500 (or whatever is on upper display).	Batch set key depressed, 999999 gallons batch size set by depressing appropriate keys. Depressed enter and lower display keys in sequence (red LED next to display key should be on).	_____	_____	_____

TUOI NUMBER: ANO-1-JPM-RO-EOP07

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
(C)	7. Open CV-1250. <u>POSITIVE CUE:</u> CV-1250 is open (red light on green light off)	On C04, handswitch for CV-1250 is placed in the open position and CV-1250 opened.	_____	_____	_____
(C)	8. P39A, P39B or both started. <u>POSITIVE CUE:</u> P39A and /or P39B red lights on green lights off.	Started 1 or 2 boric acid pumps on C04.	_____	_____	_____
(C)	9. Start the Batch Controller. <u>POSITIVE CUE:</u> Lower display digital reading is increasing. <u>NEGATIVE CUE:</u> Lower display digital reading is staying at 0.	Batch controller started by depressing run pushbutton.	_____	_____	_____
	10. Set pressurizer level control setpoint to 220 inches. <u>POSITIVE CUE:</u> Pressurizer level control setpoint at 220".	Verified pressurizer level setpoint on CV-1235 controller is set to 220 inches. (If not at 220", set it to 220").	_____	_____	_____
NOTE TO EXAMINER: Inform examinee "consider that emergency boration started and an additional operator has taken over the duties for finishing RT12." The following actions are follow-up actions and are not required to satisfy JPM Task.					
	11. Depress the turbine trip pushbutton. <u>POSITIVE CUE:</u> Turbine trip pushbutton depressed.	On C01, depressed the turbine trip pushbutton.	_____	_____	_____
	12. Verify turbine throttle and governor valves are closed. <u>POSITIVE CUE:</u> Turbine governor and throttle valves indicate zero.	On C01, verified by observation that all throttle and governor valves are closed.	_____	_____	_____
	13. Check SCM adequate. <u>POSITIVE CUE:</u> SCM indicates 59 °F. NOTE: Adequate SCM is $\geq 30^{\circ}\text{F}$.	On ICC display on C19 or panel C04, verified by observation that SCM is adequate.	_____	_____	_____
	14 Reduce letdown by closing CV-1223.	On C04, rotated the pot on CV-1223 controller to zero and verified letdown flow on	_____	_____	_____

	<u>POSITIVE CUE</u> : Letdown flow indicator decreased to ~40 gpm.	C04 lowers.			

END

JOB PERFORMANCE MEASURE

UNIT: 1 REV # 2 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-ED008

SYSTEM/DUTY AREA: ELECTRICAL DISTRIBUTION

TASK: SHIFT BUSES (A1, A2, H1, H2) FROM STARTUP ONE TO UNIT AUX TRANSFORMER

JTA#: 10625110101

KA VALUE RO: 3.1 SRO: 3.1 KA REFERENCE: 062 000 A4.07

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: PERFORM LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 MINUTES

REFERENCE(S): 1107.001 REV. 057-02-0

EXAMINEE'S NAME: _____ SSN - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____
SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JPM INITIAL TASK CONDITIONS:

- Plant Startup in progress.
- Reactor Power at 20-40% and ready to transfer plant auxiliaries to the Unit Aux Transformer.
- The Unit Auxiliary Transformer is available and all breaker controls are in "Remote."

INITIATING CUE:

The SM/CRS directs you to transfer plant auxiliaries from Startup One Transformer to the Unit Auxiliary Transformer per 1107.001 Step 8.2 Transferring Buses from SU 1 to Unit Aux.

TUOI NUMBER: ANO-1-JPM-RO-ED008

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Plant is at 20-40% power and ready to transfer plant
auxiliaries to the Unit Aux Transformer. The Unit Auxiliary Transformer is avail-
able and all breaker controls in "Remote." **SEE SETUP BELOW.**

TASK STANDARD: Plant auxiliaries (A1, A2, H1, H2) are being powered from the Unit
Auxiliary Transformer. ***This is a faulted JPM, the operator must manually trip one***
of the power supplies to A1 bus.

TASK PERFORMANCE AIDS: Synch-switch handle, 1107.001 Step 8.2

Simulator setup:

The faulted breaker for this JPM will be implemented by use of an override. Prior to providing the initial conditions for this JPM insert the following:

Override DI 152-112/CS-G01;F

This will cause the SU1 feeder breaker to bus A1 to fail to open when the Unit Aux feeder handswitch is released after being closed (the override defeats the return-to-normal for breaker A-112, Unit Aux to A1).

TUOI NUMBER: ANO-1-JPM-RO-ED008

INITIATING CUE:

The SM/CRS directs you to transfer plant auxiliaries from Startup One Transformer to the Unit Auxiliary Transformer per 1107.001 Step 8.2 Transferring Buses from SU 1 to Unit Aux.

CRITICAL ELEMENTS (C): 1, 3, 4, 6

Note: Steps 1 through 7 should be repeated until all buses are shifted.

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
<p><i>This is a faulted JPM, the Startup One to A1 breaker will not automatically open after the Unit Aux to A1 breaker is closed, the operator must manually trip <u>one</u> of the feeder breakers to A1.</i></p>					
(C)	<p>1. On C10, place Synchronize switch to ON for the Unit Aux Feeder Breaker that is to be closed.</p> <p>POSITIVE CUE: Synchronize switch ON.</p>	<p>Turned ON Synchronize switch for correct breaker.</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>
	<p>2. Verify synchroscope between 11 and 1 o'clock.</p>	<p>Verified synchroscope between 11 and 1 o'clock position.</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>
(C)	<p>3. On C10, close Unit Aux Feeder breaker. Allow control switch to return to normal-after-close position.</p> <p>POSITIVE CUE: Unit Aux Feeder Breaker closed.</p>	<p>Closed Unit Aux Feeder Breaker and allowed control switch to return to normal-after-close position.</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>
(C)	<p>4. On C10, turn Synchronize switch OFF.</p> <p>POSITIVE CUE: Synchronize switch OFF.</p>	<p>Turned Synchronize switch OFF.</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>	<p>A1___ A2___ H1___ H2___</p>

TUOI NUMBER: ANO-1-JPM-RO-ED008

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	<p>5. On C10, verify that the SU1 Feeder Breaker opens.</p> <p>POSITIVE CUE (for A2, H1, H2) SU1 feeder breaker opened.</p> <p>NEGATIVE CUE (for A1): SU1 breaker did not open, Unit Aux and SU1 feeder breakers to A1 are closed.</p>	Verified that the SU1 Feeder Breaker Opened.	A2____ H1____ H2____	A2____ H1____ H2____	A2____ H1____ H2____
(C)	<p>6. If the SU1 breaker does not immediately open, trip it.</p> <p>POSITIVE CUE: SU1 to A1 breaker is open.</p>	Tripped (to open) the SU1 feeder breaker to A1 bus (A-113). Also acceptable if operator tripped Unit Aux Feeder to A1 instead of the SU1 to A1 breaker, the limit and precaution states: when transferring auxiliaries, high circulating currents may cause bus lockout relay trip if both feeder breakers remain closed.	A1____	A1____	A1____
	<p>7. Place the open breaker's control switch in normal-after-open.</p>	Placed the open breaker's control switch in the normal-after-open position.	A1____ A2____ H1____ H2____	A1____ A2____ H1____ H2____	A1____ A2____ H1____ H2____
	<p>8. Verify Startup XFMRs Pref Transfer selector switch is in the desired position.</p>	Verified Startup XFMRs Pref Transfer selector switch is in the desired position (to SU1).	_____	_____	_____
	<p>9. Verify 4160V buses remain above 3640V and 6900V buses remain above 6010V.</p> <p>POSITIVE CUE: Voltages at 4160V and 6900V.</p>	Verified proper voltages on A1, A2, H1 and H2.	_____	_____	_____

END

JOB PERFORMANCE MEASURE

UNIT: 1 REV #: 8 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-ED010

SYSTEM: DC Electrical Distribution System

TASK: Place battery charger DO3A in service.

JTA: 10635070101

KA VALUE RO: 2.9 SRO: 3.5 KA REFERENCE: 063 K1.03

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: _____ OUTSIDE CR: X BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: Simulate SIMULATOR: _____ LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 Minutes

REFERENCE (S): OP 1107.004, Rev.011-04-0

EXAMINEE'S NAME: _____ SSN: - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____ Start Time _____ Stop Time _____ Total Time

SIGNED _____ DATE: _____

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JOB PERFORMANCE MEASURE

JPM INITIAL TASK CONDITIONS:

- Bus D01 is being supplied by battery charger D03B.

INITIATING CUE:

The SM/CRS directs placing battery charger D03A on bus D01 and securing battery charger D03B per 1107.004 Attachment "A" Placing Battery Charger D-03A In Service.

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Bus D01 is being supplied by battery charger D03B.

TASK STANDARD: Battery charger D03A supplying power to bus D01.

TASK PERFORMANCE AIDS: 1107.004, Attachment A "Placing Battery Charger D03A in
Service".

JUSTIFICATION FOR RO:

Correct operation of the battery chargers is vital to maintain the DC batteries charged. DC power provides the control power for ES associated equipment.

JOB PERFORMANCE MEASURE

INITIATING CUE:

The SM/CRS directs placing battery charger D03A on bus D01 and securing battery charger D03B per 1107.004 Attachment "A" Placing Battery Charger D-03A In Service.

CRITICAL ELEMENTS (C): 4, 5, 7, 8, 10, 11, 12

C	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
	1. Open or verify open the following breakers on charger D03A.				
	A. AC Input Bkr open.	D03A AC input bkr on charger cabinet verified open by indicator on switch.	_____	_____	_____
	B. DC Output Bkr open. <u>POSITIVE CUE:</u> Both breakers are open.	D03B DC Output bkr on charger cabinet verified open by indicator on the switch.	_____	_____	_____
NOTE: Inform examinee that Breaker B-5145 is closed to prevent trip to & from B51 Switchgear.					
	2. Close or verify close the following breakers				
	A. AC Feed bkr 5145 closed	Bkr 5145 verified in closed position.	N/A	N/A	N/A
	B. Supply from Battery Charger D01-41 <u>POSITIVE CUE:</u> Both breakers are closed.	Opened Bkr D01-41 cabinet door and verified Bkr D01-41A closed.	_____	_____	_____
	3. Verify manual disconnect D-13 closed. <u>POSITIVE CUE:</u> Manual disconnect closed. <u>NEGATIVE CUE:</u> Manual disconnect open.	D-07 manual disconnect D-13 verified closed.	_____	_____	_____
(C)	4. Close charger D03A AC input bkr. <u>POSITIVE CUE:</u> Bkr is closed.	D03A AC input bkr located on the front of the cabinet placed in a closed position.	_____	_____	_____
(C)	5. Close charger D03A DC output bkr. <u>POSITIVE CUE:</u> Bkr is closed.	D03A DC output bkr located on the front of the cabinet placed in a closed position.	_____	_____	_____

JOB PERFORMANCE MEASURE

C	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
	6. Verify automatic load sharing between D-03A and D-03B. <u>POSITIVE CUE:</u> Load indicated on both D-03A and D-03B and stable.	Waited ~ 1 minute and observed load on D-03B dropped and load on D-03A raised and became stable.	_____	_____	_____
(C)	7. Open charger D-03B DC output bkr. <u>POSITIVE CUE:</u> Bkr is open.	Charger D-03B DC output bkr placed in open position as shown by the switch indicator.	_____	_____	_____
(C)	8. Open charger D-03B AC input breaker <u>POSITIVE CUE:</u> Bkr is open	Charger D-03B input bkr placed in open position as shown by bkr switch indicator.	_____	_____	_____
	9. Verify charger D-03A maintains proper DC bus voltage. <u>POSITIVE CUE:</u> D01 bus voltage at ~ 130 VDC. <u>NEGATIVE CUE:</u> D01 voltage is LOW.	Charger verified to be maintaining ~ 130V by reading voltmeter indication.	_____	_____	_____
(C)	10. Reset local alarm panel for D-03A. <u>POSITIVE CUE:</u> Alarm panel reset. <u>NEGATIVE CUE:</u> D01 low voltage alarm will not reset.	Reset local alarm panel for D-03A by depressing the reset button.	_____	_____	_____
(C)	11. Place D-03A alarm to control room toggle switch ON.	Placed the alarm toggle switch for D-03A to the ON position.	_____	_____	_____
(C)	12. Place D-03B alarm to control room toggle switch OFF.	Placed the alarm toggle switch for D-03B to the OFF position.	_____	_____	_____
	13. Verify Annunciator K01-E7 clear. <u>POSITIVE CUE:</u> K01-E7 cleared. <u>NEGATIVE CUE:</u> K01-E7 is in alarm.	Called the control room and verified alarm K01-E7 clear.	_____	_____	_____

END

JOB PERFORMANCE MEASURE

UNIT: 1 REV #: 1 DATE: _____

TUOI NUMBER: ANO-1-JPM-RO-AOP28

SYSTEM: Emergency and Abnormal Operations

TASK: Respond to Lo-Lo Instrument Air Pressure.

JTA 140150101A4

KA VALUE RO: 3.7 SRO: 3.9 KA REFERENCE: 065 AK3.08

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: _____ BOTH: _____

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: X LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 minutes

REFERENCE(S): 1203.024, Rev. 010-02-0

EXAMINEE'S NAME: _____ SSN: - -

EVALUATOR'S NAME: _____

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

Start Time _____ Stop Time _____ Total Time _____

SIGNED _____ DATE: _____

JOB PERFORMANCE MEASURE

Page 2 of 5

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JOB PERFORMANCE MEASURE

JPM INITIAL TASK CONDITIONS:

- Instrument Air pressure dropping due to unisolable leak on IA main line.
- ICW RB isolation valves inadvertently closed and will not reopen.
- Plant Shutdown commenced at >10% per minute per Rapid Plant Shutdown 1203.045.
- PZR Level 290" and trending up.

INITATING CUE:

The SM/CRS directs you to perform 1203.024 Section 2 Lo-Lo Instrument Air Pressure step 3.6 through step 3.6.6.

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: Instrument Air pressure dropping due to unisolable leak on IA main line. ICW RB isolation valves inadvertently closed and will not reopen. Plant Shutdown commenced at >10% per minute per Rapid Plant Shutdown 1203.045. PZR Level 290" and trending up.

TASK STANDARD: Rx Tripped, EFW in service, Seal Injection isolated, and RCP's secured with normal and alternate seal bleedoff flowpaths isolated.

TASK PERFORMANCE AIDS: 1203.024 Section 2.

JOB PERFORMANCE MEASURE

INITIATING CUE:

The SM/CRS directs you to perform 1203.024 Section 2 Lo-Lo Instrument Air Pressure step 3.6 through step 3.6.6.

CRITICAL ELEMENTS (C): 1, 3, 4, 5, 6, 7

(C)	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
(C)	1. Perform Reactor Trip Immediate Action. * Depress Rx Trip pushbutton.	On C03, depressed the Rx Trip pushbutton.	_____	_____	_____
	2. Verify All rods inserted and power dropping.	On C13, observed all rod bottom lights have come on. On C03 observed power dropping.	_____	_____	_____
(C)	3. Actuate EFW for both OTSG's.	On C09, All 4 EFW push buttons pushed on EFIC remote matrix.	_____	_____	_____
(C)	4. Isolate Seal Injection.	On C04, placed HS-1206 in close position.	_____	_____	_____
(C)	5. Trip All running RCP's.	On C13 tripped All running RCP's. P-32A/P-32B/P-32C/P-32D.	_____	_____	_____
(C)	6. Isolate Alternate Seal Bleedoff flowpath to the Quench Tank.	On C13, placed SV-1270 thru SV-1273 handswitch in close position.	_____	_____	_____
(C)	7. Isolate Normal Seal Bleedoff flowpath.	On C16, close CV-1274 or on C18 close CV-1270 thru CV-1273.	_____	_____	_____
END					