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Procedure Number IT 10 Unit PB 0 Revision Number 45

Procedure Title TEST OF ELECT-DRVN AFP & VALVES (QRTLY) Revision Date 9 9 2002

Procedure Revision Checked and Current; Tracking Checked for Temporary Changes:

By Robert Haggan Date 10/24/02

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NOTE 1: ANY TEMPORARY CHANGES MADE TO THIS PROCEDURE SHALL BE MADE TO THE RECORD COPY AND ALL OTHER FIELD COPIES THAT HAVE BEEN ISSUED.

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~~11/15~~ 11/20/05

IT 10

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS AND VALVES (QUARTERLY)

DOCUMENT TYPE: Technical

CLASSIFICATION: Safety Related

REVISION: 45

EFFECTIVE DATE: September 9, 2002

REVIEWER: Qualified Reviewer

APPROVAL AUTHORITY: Department Manager

PROCEDURE OWNER (title): Group Head

OWNER GROUP: Operations

Verified Current Copy: _____
Signature Date Time

List pages used for Partial Performance

Controlling Work Document Numbers

9947513

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

4.0 INITIAL CONDITIONS

4.1 This test is being done to satisfy:

☒ The normally scheduled callup. Task sheet No. 9947513 QUARTERLY

NOTE: If this test is being performed to satisfy PMT or off-normal frequency requirements, Shift Management may N/A those portions of the procedure that are NOT applicable for the performance of the PMT. The use of N/A is NOT acceptable for Initial Conditions, Precautions and Limitations, or procedure steps that pertain to the equipment requiring PMT, nor is it acceptable for restoration of equipment/components unless the component has been declared inoperable.

☒ Post maintenance operability test
Equipment ID P-38A
WO No(s). _____
Task Sheet No.(s) _____
☐ Special test - no numbers.
Explain: _____

RH

4.2 Auxiliary feed system lined up for critical operation per CL 13E, Part 2, Auxiliary Feedwater Valve Lineup Motor-Driven.

RH

4.3 Standby emergency power shall be available to the 4160 V safeguards buses 1A05, 1A06, 2A05, 2A06, or the component(s) to be tested is/are in the same train that is out of service.

RH

4.4 Chemistry notified about auxiliary feed injection.

RH

4.5 Reactor power on both Units is reduced a minimum of 2% OR to a power level directed by DSS. (Mark step N/A if in TS Modes 3, 4, 5, 6, & defueled).

RH

4.6 The IST Coordinator is available for PMT data review if the MDAFW pumps have been replaced, disassembled, realigned to the motor (motor replacement included) or the coupling has been disassembled. This review will establish new reference values and is performed prior to declaring the pump operable. (Mark N/A for oil changes and other minor maintenance which does NOT affect pump vibration or hydraulic performance).

N/A ^{RA}

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

- 4.7 The IST Coordinator is available for power operated valve reference value data review prior to declaring the valve operable. This step is not applicable if PBF-2114, "Return to Service Testing Reviews" does NOT specify performance of a reference value test.

N/A ^{RT}

4.8 Permission to Perform Test

The conditions required by this test are consistent with required plant conditions, including equipment operability. Permission is granted to perform this test.

DSS RT for PJM TIME 2235 DATE 10/24/02

NOTE: Attachment L shall be used to document performance of multiple step performance and to record data. A separate copy of Attachment L shall be prepared for each step series requiring multiple performance and all copies shall be attached to this procedure when the procedure is complete.

5.0 PROCEDURE

- 5.1 IF in Modes 5, 6, or defueled,
THEN verify the following:

- The Steam Generators are drained to a level sufficient to accept FW flows.
- The RCS is NOT solid.

N/A ^{RT}

N/A ^{RT}

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

NOTE: When operability testing of Train A is NOT required, then N/A Steps 5.2 through 5.38.

5.2 TRAIN A TEST

5.2.1 IF performing Section 5.2,
THEN the following auxiliary feedwater pumps with their associated flow paths, are operable as applicable.
(N/A the step that is NOT applicable.)

a. For two-unit operation:

P-38B, 1P-29, and 2P-29 are operable.

b. For single-unit operation:

P-38B and 1P-29 are operable for Unit 1.

OR

P-38B and 2P-29 are operable for Unit 2.

5.2.2 IF sufficient qualified operators are NOT available on shift to support Step 5.2.3,
THEN consider the equipment unavailable per Maintenance Rule AND N/A Step 5.2.3.

5.2.3 Assign a Level 4 Dedicated Operator in the Control Room
AND a Level 4 Dedicated Operator in the field per OM 3.26, Use of Dedicated Operators, to perform the restoration steps of Attachment J, if required. (Otherwise mark this step as N/A)

5.3 Enter the appropriate TS Action Condition for P-38A.
(N/A this step if NOT required for current plant conditions per TS: 3.7.5)

TIME 0400 DATE 10/23/02

** This is the original TS entry for P38A due to failure of grease oiler*

5.4 IF at any time during the performance of this test an Auxiliary Feedwater Initiation is required,
THEN immediately perform Attachment J to recover Train A.
(N/A this step if NOT required.)

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

CAUTION

If, at any time, equipment operation appears abnormal, secure the pump.

NOTE: C01A 2-8 and 2-10, Auxiliary Feedwater System Disabled,
annunciator will clear when P-38A is removed from PULLOUT.

5.14 Start P-38A.

Time Start 0008

P

NOTE: P-38A suction pressure trip is set at 6.5 psig (with a 20 second time delay).

5.15 Verify P-38A suction pressure as read on PI-4010A is greater than the 7.0 psig low suction pressure alarm setpoint. Record on Attachment B.

15.8

P for RSB

5.16 Check AF-4007, P-38A AFP Mini-Recirc Control, mini-recirculation valve open.

P

NOTE: The following step satisfies full stroke exercising of AF-115, P-38A Minimum Flow Check Valve.

5.17 Check mini-recirculation flow equal to or greater than 70 gpm on FIT-4050A AND record on Attachment B. 76.2

P for RSB

5.18 Check the packing glands for excessive leakage or overheating.

P for RSB

5.19 Check pump and motor for unusual noise or overheating.

P for RSB

5.20 WHEN P-38A has run for two-minutes,
THEN record the following on Attachment B.

- PI-4011, Pump Discharge Pressure. 310
- PI-4010A, Pump Suction Pressure. 15.8
- Recirculation Flow Vibration Data.

P for RSB

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

5.34 IF Level 4 Dedicated Operators were assigned to positions in Step 5.2.3,
THEN release them from their duties. (N/A if continuing with Train B)

NAP

5.35 IF test is being performed as a post-maintenance operability pump test,
THEN contact an IST Engineer or representative to verify measured
ASME OM Code data is acceptable prior to declaring the pump operable.
(Otherwise mark this step as N/A)

NAP

5.36 Check operability by comparing the test data with pump and valve
acceptance criteria in Attachments A, C, and D and sign the last page of
each Attachment.

P

5.37 IF test was satisfactory,
THEN exit the TS Action Condition for P-38A. Otherwise, N/A this step
and start fire rounds.

Time 0134 PM Date 10/25/02

P

5.38 IF Train B has already been tested OR is NOT planned on being tested,
THEN proceed to Step 5.76, Recovery.

NAP

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

NOTE: DSS permission is required to proceed with Step 5.39.

NOTE: When operability testing of Train B is NOT required, then N/A Steps 5.39 through 5.75.

5.39 TRAIN B TEST

5.39.1 IF performing Section 5.39,
THEN the following auxiliary feedwater pumps with their
associated flow paths, are operable as applicable.
(N/A the step that is NOT applicable.)

a. For two-unit operation:

P-38A, 1P-29, and 2P-29 are operable.

b. For single-unit operation:

P-38A and 1P-29 are operable for Unit 1.

OR

P-38A and 2P-29 are operable for Unit 2.

5.39.2 IF sufficient qualified operators are NOT available on shift to
support Step 5.39.3,
THEN consider the equipment unavailable per Maintenance Rule
AND N/A Step 5.39.3.

5.39.3 Assign a Level 4 Dedicated Operator in the Control Room
AND a Level 4 Dedicated Operator in the field per OM 3.26,
Use of Dedicated Operators, to perform the restoration steps of
Attachment K, if required. (Otherwise mark this step as N/A)

5.40 Enter the appropriate TS Action Condition for P-38B.
(N/A this step if NOT required for current plant conditions per TS: 3.7.5)
TIME 0312 DATE 10/25/02

5.41 IF at any time during the performance of this test an Auxiliary Feedwater
Initiation is required,
THEN immediately perform Attachment K to recover Train B. (N/A this
step if NOT required.)

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

CAUTION

If, at any time, equipment operation appears abnormal, secure the pump.

NOTE: C01A 2-8 and 2-10, Auxiliary Feedwater System Disabled,
annunciator will clear when P-38B is removed from PULLOUT.

5.51 Start P-38B.

Time Start 0331

P

NOTE: P-38B suction pressure trip is set at 6.5 psig (with a 20 second time delay).

5.52 Verify P-38B suction pressure as read on PI-4017A is greater than the
7.0 psig low suction pressure alarm setpoint. Record on Attachment F.

15.6

P for RSW

5.53 Check AF-4014, P-38B AFP Mini-Recirc Control, mini-recirculation
valve open.

74

P

NOTE: The following step satisfies full stroke open exercising of AF-116,
P-38B Minimum Flow Check Valve.

5.54 Check mini-recirculation flow equal to or greater than 70 gpm on
FIT-4050B AND record on Attachment F.

P for RSW

5.55 Check packing glands for excessive leakage or overheating.

P for RSW

5.56 Check the pump and motor for unusual noise or overheating.

P for RSW

5.57 WHEN P-38B has run for two-minutes,
THEN record the following data on Attachment F.

- PI-4018, Pump Discharge Pressure
- PI-4017A, Pump Suction Pressure
- Recirculation Flow Vibration Data

P for RSW

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

INITIALS

6.0 ANALYSIS

6.1 Operations

- 6.1.1 Comparisons with allowable ranges of Acceptance Criteria test values complete.

Robert Hagg
SRO

10/25/02 0456
Date/Time

- 6.1.2 Forward completed procedure to IST Coordinator

NOTE: To be completed within 96 hours of test completion by IST coordinator or his representative.

6.2 IST Coordinator

- 6.2.1 Comparisons with allowable ranges of test values and analysis of deviations complete.

REL

- 6.2.2 Any requirements for corrective action? (If yes, give details in the IST Remarks section.)

N/A

(Circle one) YES NO

- 6.2.3 IF Acceptance Criteria needs updating, THEN initiate a procedure revision.

James C. Brinkley
Data Analyzed By

10-25-02/0655
Date/Time

N/A

IST Remarks:

Asset must be
checked
10/25/02

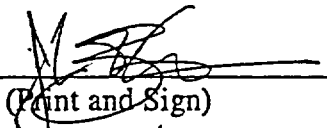
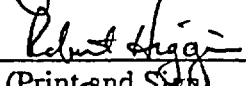
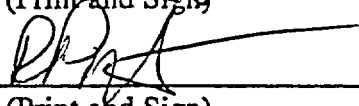
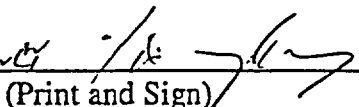
POINT BEACH NUCLEAR PLANT
INSERVICE TESTS

IT 10
SAFETY RELATED
Revision 45
September 9, 2002

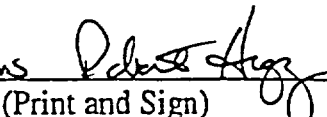
TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

Remarks:

Performed By:

JOHN BALMA	10-24-02 / 0700	
Performer (Print and Sign)	Date Time	Initials
Robert Higgins	10/24/02 2244	
Performer (Print and Sign)	Date Time	Initials
RPost	10/24/02 2337	
Performer (Print and Sign)	Date Time	Initials
Douglas K Mearns	10/25/02 0152	
Performer (Print and Sign)	Date Time	Initials
	/	
Performer (Print and Sign)	Date Time	Initials
	/	
Performer (Print and Sign)	Date Time	Initials

Reviewed By:

Robert Higgins	10/25/02 0952	
Reviewer (Print and Sign)	Date Time	Initials

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT A

VALVE STROKE VERIFICATION

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Quarterly Full Stroke Open and Shut, Timing and Position Indication of AF-4022, P-38A AFP Discharge to 2HX-1A Steam Generator						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.5.1	Time to OPEN	Stopwatch	sec.	17.94	15.27 - 20.67	P
5.5.1	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSB
5.5.2	Time to SHUT	Stopwatch	sec.	17.66	15.76 - 21.32	P
5.5.2	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSB

Quarterly Full Stroke Open and Shut, Timing and Position Indication of AF-4023, P-38A Discharge to 1HX-1A Steam Generator						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.6.1	Time to OPEN	Stopwatch	sec.	17.86	15.55 - 21.03	P
5.6.1	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSB
5.6.2	Time to SHUT	Stopwatch	sec.	17.36	15.62 - 21.14	P
5.6.2	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSB

Quarterly Stroke Open, Timing and Position Indication Test of AF-4012, P-38A AFP Discharge Control, and Forward Exercising of AF-133, P-38A AFP AF-4012 N ₂ Backup First-Off Isol						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.7.3	Time to OPEN	Stopwatch	sec.	5.83	4.8 - 14.4	P
5.7.3	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSB
5.7.4	Time to SHUT (info only)	Stopwatch	sec.	7.48	N/A	P
5.7.4	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSB

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT A - Continued
VALVE STROKE VERIFICATION

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Quarterly Stroke Open and Shut, Timing, Position Indication , and Fail-Safe Test of AF-4007, P-38A AFP. Mini-Recirc Control						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.9.3	Time to OPEN	Stopwatch	sec.	3.83	1.9 - 5.68.	P for RSB
5.9.3	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSB
5.9.5	Time to SHUT	Stopwatch	sec.	12.01	8.94 - 14.9	P for RSB
5.9.5	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSB

Acceptance Criteria Satisfied for all tested valves in Attachment A: (Circle one) SAT UNSAT
Remarks:

RP 10/25/02
10/24/02 6664
Performer Date/Time

SR 1 10/25/02 .0012
SRO Date/Time

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT B
P-38A, AFW PUMP PERFORMANCE DATA (RECIRCULATION FLOW)

NOTE 1: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

NOTE 2: Vibration points which are shaded must be recorded by the Micro-logger but are NOT required to be transferred to the table. Only points marked A, B, C, D, and E must be transferred to the table and are required for ASME OM Code. See Figure 1 for locations.

Step No.	Parameter Measured	Units	Reading	Acceptance Criteria	Initials
5.12.3	PI-4010A, P-38A AFP Suction Pressure	psig	16.0	N/A	Pfn RSB
5.15	PI-4010A, P-38A AFP Suction Pressure	psig	15.8	>7	Pfn RSB
5.17	Full Stroke Open Test of AF-115 FIT-4050A, Mini-Recirc Flow	gpm	75.2	≥70	Pfn RSB
5.20	PI-4011 Pump Discharge Pressure	psig	1310	N/A	Pfn RSB
5.20	PI-4010A, P-38A AFP Suction Pressure	psig	15.8	N/A	Pfn RSB
5.20	Recirculation Flow Vibration Data	INSTRUMENT		UNITS	READINGS
	P38A 1V ips	Micro-logger		IPS pk	
	P38A 1H ips	Micro-logger		IPS pk	
	P38A 1H ac	Micro-logger		G env	
	P38A 1H acc	Micro-logger		G pk	
	P38A 1A ips	Micro-logger		IPS pk	
	P38A 2V ips	Micro-logger		IPS pk	
	P38A 2H ips	Micro-logger		IPS pk	
	P38A 2H ac	Micro-logger		G env	
	P38A 2H acc	Micro-logger		G pk	
	P38A 2A ips	Micro-logger		IPS pk	
	P38A 3V ips	Micro-logger		IPS pk	
	P38A 3H ips	Micro-logger		IPS pk	
	P38A 3H ac	Micro-logger		G env	
	P38A 3H acc	Micro-logger		G pk	
	P38A 4V ips	Micro-logger		IPS pk	
	P38A 4H ips	Micro-logger		IPS pk	
	P38A 4H ac	Micro-logger		G env	
	P38A 4H acc	Micro-logger		G pk	
	P38A 4A ips	Micro-logger		IPS pk	

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT C

P-38A, AFW Pump Performance Data
1AF-102, AF-109, AF-112 and 2AF-103 Full Flow Test

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Quarterly Full Stroke Open Exercise Test of 1AF-102, P-38A AFP Discharge To 1HX-1A SG Check, AF-109, P-38A AFP Discharge Check, and AF-112, P-38A Suction Check From CSTs					
Step No.	Parameter Measured	Units	Reading	Acceptance Criteria	Initials
5.21.5	1PI-468, 1HX-1A SG Pressure	psig	810	N/A	P
5.21.5	1FI-4036, Flow to 1HX-1A SG	gpm	200	≥200	P for RSB

P-38A Full Flow IST Required Data (200 gpm)					
Step No.	Parameter Measured	Units	Reading	Acceptance Criteria	Initials
5.21.5	PI-4010A, P-38A AFP Suction Press	psig	15.1	N/A	P for RSB
5.21.5	PI-4011, P-38A AFP Discharge Press	psig	1205	N/A	P for RSB
5.21.5	P-38A Delta P Note 1	psig	1189.9	1186 - 1231	P
5.21.5	FIT-4050A, Mini-Recirc Flow	gpm	0	N/A	P for RSB
5.21.5	DPIS-4007, P-38A Flow	gpm	200	200	P for RSB
5.21.5	P38A 3V ips (C) vibration	IPS pk	0.0398	≤ 0.256	P for RSB
5.21.5	P38A 3H ips (D) vibration	IPS pk	0.0742	≤ 0.491	P for RSB
5.21.5	P38A 4A ips (E) vibration	IPS pk	0.0591	≤ 0.378	P for RSB
5.21.5	P38A 4V ips (A) vibration	IPS pk	0.0383	≤ 0.195	P for RSB
5.21.5	P38A 4H ips (B) vibration	IPS pk	0.1068	≤ 0.597	P for RSB

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT C

Full Flow Stroke Open Exercise Test of 2AF-103, P-38A AFP Discharge to 2HX-1A SG Check					
Step No.	Parameter Measured	Units	Reading	Acceptance Criteria	Initials
5.22.5	2PI-468, 2HX-1A SG Pressure	psig	800	N/A	P
5.22.5	2FI-4036, Flow to 2HX-1A SG	gpm	200	≥ 200	P
5.22.5	1TR-2000B, Pump Bearing Inboard Temp. Note 2	°F	72.6	< 160	P
5.22.5	1TR-2000B, Pump Bearing Outboard Temp. Note 2	°F	68.3	< 160	P
5.22.10	Pump Coastdown Behavior: Check (✓) if OK	N/A	✓	N/A	P for RSB

NOTE 1: Differential pressure = pump discharge pressure - pump suction pressure during test.

NOTE 2: Check recorded bearing temperatures are within the limits listed on Attachment I.

Acceptance Criteria Satisfied for all tested valves in Attachment C: (Circle one) **SAT** UNSAT
Remarks:

RP 10/25/02 0057
Performer Date/Time

RP 10/25/02 0052
SRO Date/Time

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT D
VALVE STROKE VERIFICATION

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Quarterly Shut Exercise Test (Pressure Drop Test) of Check Valve AF-133, P-38A AFP AF-4012 N ₂ Backup First-off Isol						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.23.6	PI-4051, Pressure	PI-4051	psig.	98	N/A	P for RSB
5.23.8	Time	Stopwatch	Min	15	≥ 15 min	P for RSB
5.23.8	PI-4051, Pressure	PI-4051	psig.	97.5	less than 3 psig drop after 15 Min.	P for RSB

Quarterly Open Exercise Test of AF-145, P-38A AFP AF-4012 N ₂ Backup South Bottle Quarterly Shut Exercise Test of AF-142, P-38A AFP AF-4012 N ₂ Backup North Bottle						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.24.9	Time to OPEN	Stopwatch	sec.	5.79	less than 20	P
5.24.11	Time to SHUT (info only)	Stopwatch	sec.	6.45	N/A	P

Quarterly Open Exercise Test of AF-142, P-38A AFP AF-4012 N ₂ Backup North Bottle Quarterly Shut Exercise Test of AF-145, P-38A AFP AF-4012 N ₂ Backup South Bottle						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.25.9	Time to OPEN	Stopwatch	sec.	5.94	less than 20	P
5.25.11	Time to SHUT (info only)	Stopwatch	sec.	6.15	N/A	P

Acceptance Criteria Satisfied for all tested valves in Attachment D: (Circle one) SAT UNSAT
Remarks:

RP/NT 10/25/02 0126
Performer Date/Time

Robert Hogg 1 10/25/02 0134
SRO Date/Time

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT E

VALVE STROKE VERIFICATION

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Perform Quarterly Full Stroke Open and Shut, Timing, and Position Indication Test of AF-4020, P-38B AFP Discharge to 2HX-1B Steam Generator						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.42.1	Time to OPEN	Stopwatch	sec.	19.01	15.67 - 21.21	P
5.42.1	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSW
5.42.2	Time to SHUT	Stopwatch	sec.	18.28	16.15 - 21.85	P
5.42.2	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSW

Quarterly Full Stroke Open and Shut, Timing, and Position Indication Test of AF-4021, P-38B AFP Discharge to 1HX-1B Steam Generator						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.43.1	Time to OPEN	Stopwatch	sec.	17.62	15.84 - 21.44	P
5.43.1	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSW
5.43.2	Time to SHUT	Stopwatch	sec.	16.49	16.01 - 21.65	P
5.43.2	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSW

Quarterly Stroke Open, Timing, and Position Indication Test of AF-4019, P-38B AFP Discharge Control, and Open (forward exercising) of Check Valve AF-153, P38B AFP AF-4019 N ₂ Backup First-Off Isol						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.44.3	Time to OPEN	Stopwatch	sec.	7.11	4.62 - 13.84	P
5.44.3	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSW
5.44.4	Time to SHUT (info only)	Stopwatch	sec.	7.52	N/A	P
5.44.4	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSW

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT E

VALVE STROKE VERIFICATION

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Quarterly Stroke Open and Shut, Timing, Position Indication and Fail-Safe Test of AF-4014, P-38B AFP Mini-Recirc Control						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.46.3	Time to OPEN	Stopwatch	sec.	3.78	1.78 - 5.34	P for RSW
5.46.3	Local Position Indication	N/A	N/A	OPEN	OPEN	P for RSW
5.46.5	Time to SHUT	Stopwatch	sec.	7.88	3.63 - 10.89	P for RSW
5.46.5	Local Position Indication	N/A	N/A	SHUT	SHUT	P for RSW

Acceptance Criteria Satisfied for all tested valves in Attachment E: (Circle one) SAT UNSAT
Remarks:

RPW 10/25/02, 0328
Performer Date/Time

Robert Hagg 10/25/02 0330
SRO Date/Time

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT F
P-38B, AFW PUMP PERFORMANCE DATA (RECIRCULATION FLOW)

NOTE 1: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

NOTE 2: Vibration points which are shaded must be recorded by the Micro-logger but are NOT required to be transferred to the table. Only points marked A, B, C, D, and E must be transferred to the table and are required for ASME OM Code. See Figure 1 for Locations.

Step No.	Parameter Measured	Units	Reading	Acceptance Criteria	Initials
5.49.3	PI-4017A, P-38B AFP Suction Pressure	psig	15.8	N/A	Pfor RSW
5.52	PI-4017A, P-38B AFP Suction Pressure	psig	15.6	>7	Pfor RSW
5.54	Full Stroke Open Test of AF-116 FIT-4050B, Mini-Recirc Flow	gpm	74	≥70	Pfor RSW
5.57	PI-4018 Pump Discharge Pressure	psig	1305	N/A	Pfor RSW
5.57	PI-4017A, P-38B AFP Suction Pressure	psig	15.6	N/A	Pfor RSW
5.57	Recirculation Flow Vibration Data	INSTRUMENT		UNITS	READINGS
	P38B 1V ips	Micro-logger	IPS pk		
	P38B 1H ips	Micro-logger	IPS pk		
	P38B 1H ac	Micro-logger	G env		
	P38B 1H acc	Micro-logger	G pk		
	P38B 1A ips	Micro-logger	IPS pk		
	P38B 2V ips	Micro-logger	IPS pk		
	P38B 2H ips	Micro-logger	IPS pk		
	P38B 2H ac	Micro-logger	G env		
	P38B 2H acc	Micro-logger	G pk		
	P38B 2A ips	Micro-logger	IPS pk		
	P38B 3V ips	Micro-logger	IPS pk		
	P38B 3H ips	Micro-logger	IPS pk		
	P38B 3H ac	Micro-logger	G env		
	P38B 3H acc	Micro-logger	G pk		
	P38B 4V ips	Micro-logger	IPS pk		
	P38B 4H ips	Micro-logger	IPS pk		
	P38B 4H ac	Micro-logger	G env		
	P38B 4H acc	Micro-logger	G pk		
	P38B 4A ips	Micro-logger	IPS pk		

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT G

P-38B, AFW Pump Full Flow Performance Test Data, and
Full Stroke Open Exercise Test of Check Valves
1AF-104, AF-110, AF-113 and 2AF-105

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Quarterly Full Stroke Open Exercise Test Of Check Valves 1AF-104, AF-110, AF-113					
Step No.	Parameter Measured	Units	Reading	Acceptance Criteria	Initials
5.58.5	1PI-478, SG B Pressure	psig	810	N/A	P
5.58.5	1FI-4037, SG B Total AF Flow	gpm	200	≥200	P

P-38B Full Flow IST Required Data (200 gpm)

Step No.	Parameter Measured	Units	Reading	Acceptance Criteria	Initials
5.58.5	PI-4017A, P-38B AFP Suction Pressure	psig	14.8	N/A	P for RSW
5.58.5	PI-4018, P-38B AFP Discharge Pressure	psig	1205	N/A	P for RSW
5.58.5	P-38B Delta P Note 1	psid	1190.2	1182 - 1251.3	P for RSW
5.58.5	FTT-4050B, Mini-Recirc Flow	gpm	0	N/A	P for RSW
5.58.5	DPIS-4014, P-38B Flow	gpm	200	200	P for RSW
5.58.5	P38B 3V ips (C) Vibration	IPS pk	0.0359	≤ 0.383	P for RSW
5.58.5	P38B 3H ips (D) Vibration	IPS pk	0.0511	≤ 0.4938	P for RSW
5.58.5	P38B 4A ips (E) Vibration	IPS pk	0.0641	≤ 0.252	P for RSW
5.58.5	P38B 4V ips (A) Vibration	IPS pk	0.0383	≤ 0.635	P for RSW
5.58.5	P38B 4H ips (B) Vibration	IPS pk	0.0787	≤ 0.7	P for RSW

TEST OF ELECTRICALLY-DRIVEN AUXILIARY FEED
PUMPS AND VALVES (QUARTERLY)

ATTACHMENT H
VALVE STROKE VERIFICATION

NOTE: Data that falls outside the listed Acceptance Criteria constitutes inoperability of the related equipment.

Quarterly Shut (Pressure Drop) Exercise Test of AF-153, P-38B AFP AF-4019 N ₂ Backup First-off Isol						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.60.6	PI-4056, Pressure	PI-4056	psig.	96	N/A	Pfn RSW
5.60.8	Time	Stopwatch	Min	15	≥ 15 min	Pfn RSW
5.60.8	PI-4056, Pressure	PI-4056	psig.	96	less than 3 psig drop after 15 Min.	Pfn RSW

Quarterly Open Exercise Test of AF-165, P-38B AFP AF-4019 N ₂ Backup North Bottle Check Valve, Quarterly Shut Exercise Test of AF-162, P-38B AFP AF-4019 N ₂ Backup South Bottle Check Valve						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.61.9	Time to OPEN	Stopwatch	sec.	7.41	less than 20	P
5.61.11	Time to SHUT (info only)	Stopwatch	sec.	7.55	N/A	P

Quarterly Open Exercise Test of AF-162, P-38B AFP AF-4019 N ₂ Backup South Bottle, Check Valve, Quarterly Shut Exercise Test of AF-165, P-38B AFP AF-4019 N ₂ Backup North Bottle Check Valve						
Step No.	Parameter Measured	Instrument Used	Units	Reading	Acceptance Criteria	Initials
5.62.9	Time to OPEN	Stopwatch	sec.	7.88	less than 20	P
5.62.11	Time to SHUT (info only)	Stopwatch	sec.	7.57	N/A	P

Acceptance Criteria Satisfied for all tested valves in Attachment H: (Circle one) **SAT** UNSAT
Remarks:

Pfn 10/25/02 0442
Performer Date/Time

Robert Hagan 10/25/02 0448
SRO Date/Time