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SUBJECT: Forwards responses to NRC 890928 ltr & 891011 telcon questions re inservice testing of auxiliary feedwater sys.

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United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
RESPONSES TO AFW IN-SERVICE TESTING QUESTIONS

Gentlemen:

Carolina Power & Light Company is providing responses, attached, to the questions provided in your September 28, 1989 letter, supplemented in an October 11, 1989 conversation with the Project Manager, regarding in-service testing of the Auxiliary Feedwater System.

Questions regarding this matter should be referred to Mr. R. W. Prunty at (919) 546-7318.

Yours very truly,

L. I. Loflin
Manager
Nuclear Licensing Section

LIL/cn (4687NED)

Attachments

cc: Mr. S. D. Ebneter
Mr. L. Garner (NRC - HBR)
Mr. R. Lo

A047
1/1

411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

Attachment 1

Response to AFW IST Questions

QUESTION 1 - "Provide a description of the in-service testing that is performed on the AFW pumps to include the frequency, flow path for each pump, and the parameters measured."

Prior to AFW Outage

Answer: Motor Driven Pump Monthly Test on Recirculation

The motor driven pumps were tested monthly with total discharge being routed through the recirculation orifice back to the CST. A provision was provided in OST-201 to feed the steam generators if desired; however, no performance data were taken during operation in this mode. As a visual aid, a marked flow diagram is provided that details the test flow path (Attachment 13). The following parameters as required by ASME Code Section XI, Table IWP-3100-1, were measured or observed:

Inlet pressure (prior to and during pump operation)
Differential pressure
Vibration amplitude
Proper lubricant level or pressure

Flow rate while on recirculation was not measured in keeping with a previously submitted relief request. Bearing temperatures are measured on an annual frequency in accordance with IWP-3300.

Attachment 2 provides a copy of the OST-201 data sheet that was completed for each pump after a run time of at least 15 minutes on recirculation has been verified.

After AFW Outage

Answer: Motor Driven Pump Monthly Test at limited flow.

The motor driven pumps will continue to be tested monthly; however, the discharge will be at a fraction of full flow to the steam generators with the recirculation piping open. The flow to the steam generators will be consistently maintained from test to test and during the test while collecting performance data. This change in testing is necessary to minimize pump wear. The parameters measured prior to this change will continue to be measured.

The OST-201 data sheet (Attachment 2) will be revised to incorporate new acceptance criteria for Pump DP to reflect the above described change in testing.

Prior to and After AFW Outage

Answer: Steam Driven Pump Monthly Test

The steam driven pump is tested monthly in the recirculation loop in a manner similar to the motor driven pumps. A marked flow diagram is included that defines the hydraulic circuit used in this testing. (Attachment 13)

The following code required parameters are measured or observed:

Speed
Inlet pressure (prior to and during Pump operation)
Differential pressure
Vibration amplitude
Proper lubricant level or pressure

Flow rate while on recirculation is not measured in keeping with a previously submitted relief request. Bearing temperature is measured annually in accordance with IWP-3300.

Attachment 3 provides a copy of the OST-202 data sheet listing the parameters measured after a run time of 15 minutes on recirculation has been verified.

To provide continuity and clarity, Question 5 will be answered next.

QUESTION 5 - "Assuming that the regular IST is performed using a minimum flow recirculation loop, provide the same information in Questions 1 and 2 for any testing that may be performed at shutdowns or refueling outages at a higher flow rate."

Prior to and After AFW Outage

Answer: Motor Driven Pump Flow Test at Cold Shutdown

These pumps are full flow tested by supplying the steam generators at cold shutdown. Flow is measured and differential pressure is calculated while the flow control valve for each pump is at 325 gpm. The recirculation loop is also flowing during the test and the flow through this loop is not accounted for by the flow controller or indicator. Each steam generator is separately supplied 325 gpm in this procedure. As information, the recirculation loop is isolated and flow is measured and differential pressure is calculated. This is done to provide a point for comparison to the manufacturer's pump curve. Attachment 4 provides the OST-207 data sheet used to record test values after the pump has operated for a minimum of 5 minutes. Also provided is a marked flow diagram that highlights the test configuration.

Prior to AFW Outage

Answer: Steam Driven Pump Flow Test prior to or after Cold Shutdown

The steam driven pump was also full flow tested, at power. Differential pressure was calculated while the pump was supplying 645 gpm to the 3 steam generators simultaneously. The recirculation loop was not in service during this test, thereby, making possible the accounting of all flow from the

pump. As an information point, differential pressure calculation is made possible and flow to the steam generators was measured with the recirculation loop in service. The flow controller setting was maintained at 600 gpm during this portion of the test.

Attachment 5 shows the data gathered during the performance of OST-206 after operation of at least 5 minutes has been verified. A marked flow diagram is provided that provides the test loop used.

After AFW Outage

Answer: Steam Driven Pump Flow Test prior to or after Cold Shutdown

The steam driven pump is no longer full flow tested, as the full flow capability has been restricted by Plant Modification M-1025. This modification's purpose was to minimize the effects of the steam driven pump flow control valve failure during a main steam line break accident. The pump will be tested at 280 gpm, and the recirculation loop will remain in-service throughout the duration of the test. Data gathered during the performance of OST-206 will remain the same, however, the data sheet (Attachment 5) acceptance criteria for Pump DP will be revised to reflect the above described change in testing.

QUESTION 2 - "Provide a copy of listing of the data recorded during the IST of these pumps over the past twenty-four months. Also provide a description of the test instrumentation and the associated accuracies."

Attachments 14-19 provide the surveillance instrument data as well as the test data requested for this question and Question 5:

Attachment 14

This attachment includes a list of AFW surveillance test instruments and each instruments' associated calibrated accuracy.

All the instruments identified are more accurate than the listing indicates; however, the I&C subunit calibrates the instruments to be within the accuracy listed on the attached. This listing includes all instruments used in one form or another. Those that are marked with an asterisk are the instruments which are specifically used to assess pump performance and are used to obtain values to compare with the test acceptance criteria and consequently pump operability.

Attachment 15

This attachment includes a list of the motor driven and steam driven AFW pump performance data tracked by the ISI subunit. Also included are plots of the performance data (developed head and vibration).

This list is only for pump performance when the pumps are operating on mini-flow recirculation during OST-201 and OST-202, and only for the time period requested (i.e., past 24 months). Note that future testing of the

MDAFW pumps will be different (they will not be tested strictly on mini-flow recirc) due to recognition of the fact that testing on mini-flow increases the wear of the pump internals.

Attachment 16

This attachment includes a copy of the pertinent pages of the motor driven and steam driven AFW pump performance tests, OST-201 and OST-202, respectively.

This information is only for the data requested (i.e., past 24 months). This information is also in support of Attachment 15. Note that copies of three surveillance tests were not located in the vault in the time frame allotted. However, these data points are plotted on the graphs. The dates of the missing tests copies are 3-17-88 for B MDAFW pump, a second test on 7-20-88 for the SDAFW pump, and 10-6-88 for the SDAFW pump.

Attachment 17

This attachment includes a copy of the pertinent pages of the motor driven and steam driven AFW pump performance tests, OST-207 and OST-206, respectively. Also included are plots of the performance data from these tests (developed head).

These tests are only for pump performance while the pumps are feeding the steam generators at rated flow. This information is only for the data requested (i.e., past 24 months). Note that future testing in this mode for the steam driven pump will be different as a result of changes made to the SDAFW pump flow control valve, FCV-6416, via Mod M-1025.

Attachment 18

This attachment includes copies of EST-013 that have been performed in the last 24 months.

EST-013 performs AFW pump bearing temperature measurements in accordance with the ASME Section XI code. This test is performed on an annual basis.

Attachment 19

This attachment includes copies of the ISI subunit valve stroke time data collection sheets for AFW Valves MS-V1-8A, 8B and 8C, AFW-V2-14A, 14B and 14C, AFW-V2-16A, 16B and 16C, and AFW-FCV-1424 and 1425. This information is for the time frame requested (past 24 months).

QUESTION 3 - "Provide the design or safety analysis values for differential pressure and flow."

Prior to AFW Outage

Answer: All acceptance criteria for flow and differential pressure were established in accordance with Table IWP-3100-2 contained in Section XI of the code. The following attachments list the acceptance for each aforementioned pump test:

Attachment 6: MDAFW Pump Monthly Recirculation Test
Attachment 7: SDAFW Pump Monthly Recirculation Test
Attachment 8: MDAFW Pump Flow Test at Cold Shutdown
Attachment 9: SDAFW Pump Flow Test at Cold Shutdown

After AFW Outage

Answer: All acceptance criteria will continue to meet the ASME Section XI Code described above, and revised accordingly to reflect changes in testing described in other sections of this response. In addition, the acceptance criteria will be revised as necessary to ensure the low side of Pump DP for the tested conditions adequately reflects acceptable performance to ensure the pump can deliver minimum required flow at accident conditions.

Attachment 10 lists the required flow from the AFW system for the applicable UFSAR Chapter 15.0, ATWS, and Station Blackout analyses.

QUESTION 4 - "Provide a copy of the manufacturer's pump curve for each pump."

Prior to and After AFW Outage

Answer: Attachment 11 and 12 are motor driven and steam driven pump curves respectively.

QUESTION 6 - "Provide a description of the maintenance history of these pumps over the past five years."

The requested data is provided in Attachment 20.

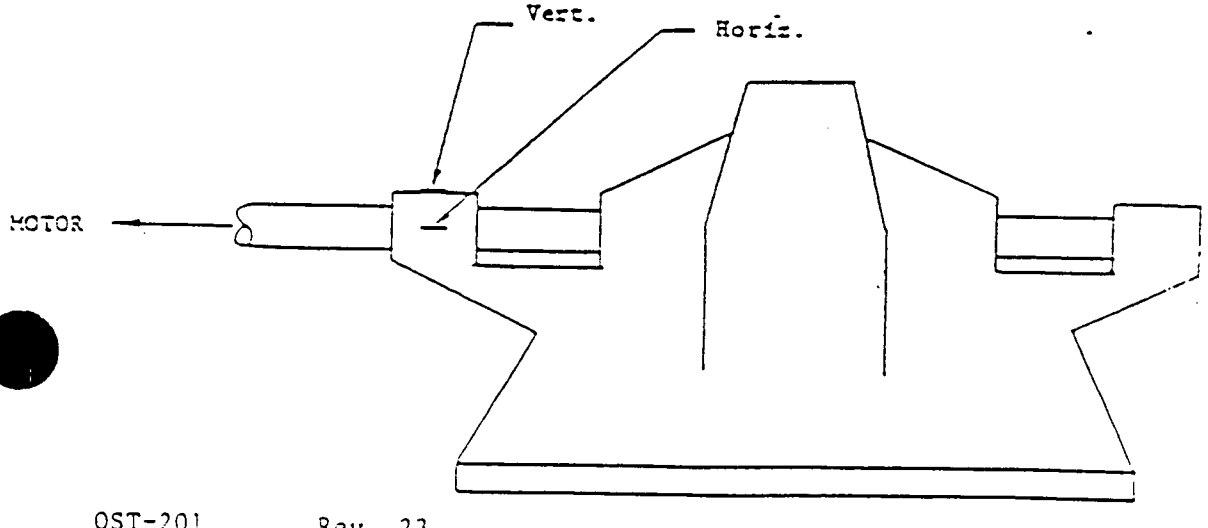
Attachment 2

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424			N/A	N/A
		"B" - PI-1425			N/A	N/A
	Vibration,* MILS	Horiz.			≤1.0	1.0
		Vert.			≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479		N/A	≥4.0	N/A
		"B" - PI-1480	N/A		N/A	≥4.0
	Oil Press. to Regulator, PSIG				N/A	N/A
	Oil Temp. to Cooler, °F				N/A	N/A
	Oil Temp from Cooler, °F				N/A	N/A
	Oil Sump. Temp, °F				N/A	N/A
	Cooling Water Outlet, °F TI-1636				N/A	N/A
	Header Press., PSIG PI-1421A				N/A	N/A
7.2.10	Pump ΔP PSIG, (1)			N/A	≥1333 ≤1462	N/A
7.3.10			N/A		N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



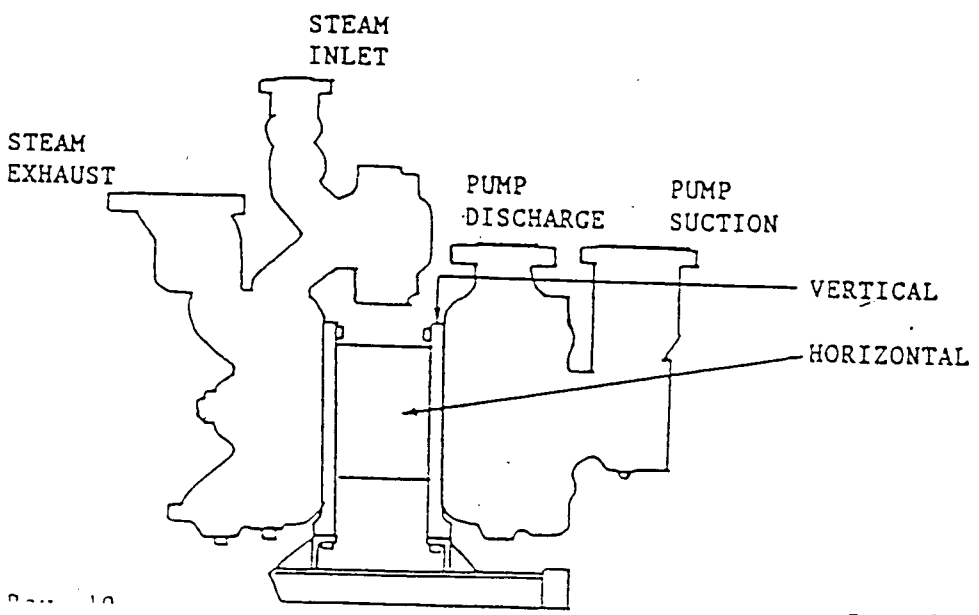
Attachment 3

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.18.2	Disch. Press. PI-1426 PSIG			N/A
7.2.18.2	Steam Inlet Press. PI-1357-2. PSIG			N/A
7.2.18.2	Pump Turbine Speed, RPM			N/A
7.2.19	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)			≥310
7.2.21	Pump Turbine Speed, RPM	As Found		N/A
7.2.22.1		As Left		(2)
7.2.23	Header Press PI-1421B, PSIG			N/A
	Oil Press to Regulator, PSIG			N/A
	Oil Press from Regulator, PSIG			N/A
	Oil Temp to Cooler, °F			N/A
	Oil Temp. from Cooler, °F			N/A
	Cooling Water Outlet Temp.			N/A
	Vibration Mils*	Horizontal		≤3.0
		Vertical		≤1.4
	Vibration in/sec*	Horizontal	(1)	N/A
		Vertical	(1)	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)			N/A
	Pump Suct. Press. PI-1478, PSIG			≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated)- Pump Suct. Press. PI-1478			≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.
(2) Pump speed must be able to be adjusted to within the range of 9400 to 9550 RPM (e.g. if As Found at 9600 RPM, the pump must be able to be adjusted back into range. If As Found is in range, then no need for adjustment, except as directed in this OST).

Vibration Data Points
*To be taken after 15 minutes of operation.



Attachment 4

PUMP AND VALVE DATA SHEET

REF. STEP NO.	PARAMETER	PUMP TESTED			ACCEPTANCE CRITERIA	
			A	B		
7.2.8 or 7.3.8	Disch. Press. PSIG	PI-1424		N/A	N/A	
		PI-1425	N/A		N/A	
	Suct. Press. PSIG	PI-1479		N/A	N/A	
		PI-1480	N/A		N/A	
7.2.10	RTGB Flow GPM	FI-1425A		N/A	N/A	
7.2.16		FI-1425B		N/A	N/A	
7.2.22		FI-1425C		N/A	N/A	
7.2.33 or 7.3.20	* Pump ΔP PSID				A Pump ≥1111, ≤1219 psig	B Pump ≥1105, ≤1212 psig
7.2.9 or 7.3.9	Vibration, Mils	Horizontal			≤1	
		Vertical			≤1	

* Pump ΔP = (Disch. Press.) - (Suct. Press.)

REF. STEP NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
7.2.7	AFW-40	
7.3.7	AFW-41	
7.2.7	AFW-68	
7.2.15	AFW-69	
7.2.21	AFW-70	

**Operability of check valves AFW-40 and AFW-41 OPENING is verified by obtaining a flowrate of 325 GPM through its respective AFW pump. Operability of check valves AFW-68, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

Attachment 5

Pump Speed AS FOUND _____RPM

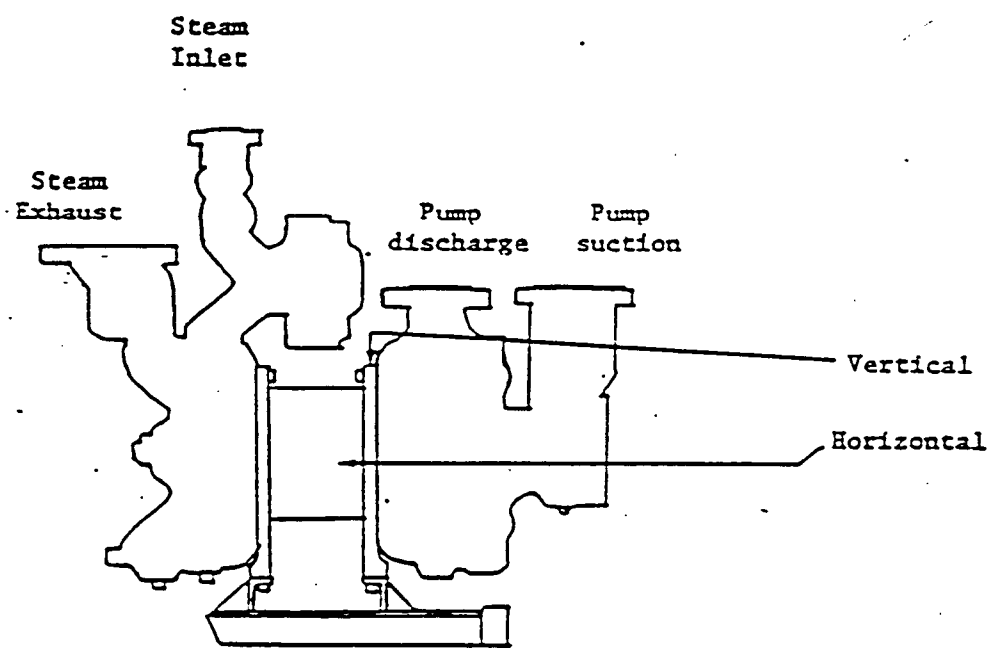
AS LEFT _____RPM

*VIBRATION DATA

PUMP	DATA		ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	MILS	≤1 MILS
	VERTICAL	MILS	≤1 MILS
SDAFW	HORIZONTAL	(1) IN/SEC	N/A
	VERTICAL	(1) IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.
*NOTE: SDAFW pump vibrations (displacement and velocity) should only be taken after 5 continuous minutes of feeding the S/G's at 280 gpm, maintaining this feed mode until all vibration readings are obtained.

VIBRATION DATA POINTS



Attachment 6

5.0 SPECIAL TOOLS AND EQUIPMENT (Continued)

5.2 Calibrated Stop Watch No. _____ Cal. Date _____ (Within 12 mo.)

6.0 ACCEPTANCE CRITERIA

6.1 Pump Acceptance Criteria

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 Pump data taken shall be compared to the appropriate baseline data. Each value shall be categorized into one of the ranges as indicated below.

6.1.2.1 MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS

ALLOWABLE RANGES OF TEST QUANTITIES

Parameter	Pump	Acceptable (1)	Alert (1)	Required Action(1)
Suction Pressure (PSI)	"A"	≥4.0	<4.0	<4.0
	"B"	≥4.0	<4.0	<4.0
ΔP (PSID)	"A"	≥1333 ≤1462	Low ≥1288 <1333 High >1462 ≤1476	<1288 >1476
	"B"	≥1340 ≤1470	Low ≥1297 <1340 High >1470 ≤1484	<1297 >1484
Vibration Amplitude (Mils)	"A"	≤1	>1 ≤1.5	>1.5
	"B"	≤1	>1 ≤1.5	>1.5

1. Ranges may be changed in accordance with the specification of IWP-3111 and IWP-3112.

Attachment 7

6.0 ACCEPTANCE CRITERIA (Continued)

6.1.2.1 STEAM DRIVEN AUXILIARY FEEDWATER PUMP ALLOWABLE RANGES OF TEST QUANTITIES

Parameter	Acceptable (1)	Alert (1)	Required Action (1)
Suction Pressure (PSIG) (2)	≥2.0	<2.0	<2.0
ΔP (PSID) at 9400 RPM (3)	≥1412 and ≤1548	Low ≥1366 <1412 High >1548 ≤1563	<1366 or >1563
Speed (RPM) (4)	≤9550 and ≥9400	>9550 or <9400	>9600 or <9400
Vibration Amplitude (Mils)	Horiz. ≤3.0 Vert. ≤1.4	Horiz. >3.0 ≤4.5 Vert. >1.4 ≤2.1	Horiz. >4.5 Vert. >2.1
Feed-Steam ΔP (PSID)	≥310	<310	<310

1. Ranges may be changed in accordance with the specification of IWP-3111 and IWP-3112.
2. This is suction pressure from gauge PI-1478 which is at elevation approximately five (5) feet above pump suction.
3. This pressure is to be obtained with pressure controller isolated and Turbine speed at 9400 + 20,-0 RPM.
4. With instrument air isolated to the Masoneilan Pressure Controller, turbine speed must be able to be adjusted within this range. This is applicable to As-Left RPM only.

6.1.3 When tests show deviations greater than allowed (Refer to Step 6.1.2.1), the instruments involved may be recalibrated and the test rerun.

6.1.4 If deviations fall within the ALERT RANGE of Step 6.1.2.1 of this procedure, the frequency of testing shall be doubled until the cause of the deviation is determined and corrected and either the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

Attachment 8

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	B	≥1105, ≤1212 psig	Low ≥1070, <1105 psig High >1212, ≤1224 psig	<1070, >1224 psig
Vibration Amplitude (Mils)	A	≤1	>1 ≤1.5	>1.5
	B	≤1	>1 ≤1.5	>1.5

6.2 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.3 Pump Data taken shall be compared to the appropriate baseline data. Each value shall be categorized into one of the ranges as indicated in Step 6.1.

6.4 Check valves shall exhibit a change of position as required by the data sheet.

6.5 If a check valve fails to exhibit the required change of valve position by this testing, then declare the valve inoperable. The condition shall be corrected prior to startup. A retest showing acceptable operation shall be run before the valve is returned to service.

6.6 All test data shall be analyzed within 96 hours after completion of a test.

6.7 The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OMM-015, Operations Surveillance Testing.

6.8 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

Attachment 9

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Calibrated Stop Watch No. _____ Cal. Date _____ (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1247 ≤1366 psig	Low ≥1206 <1247 psig High >1366 ≤1380 psig	<1206 >1380 psig
Vibration	SDAFW Pump	≤1 MILS	>1 ≤1.5 MILS	>1.5 MILS

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.43 or the vibration measured is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

Attachment 10

Form 244

CP&L

Carolina Power & Light Company

Company Correspondence

ROBINSON NUCLEAR PROJECT DEPARTMENT
POST OFFICE BOX 790
HARTSVILLE, SOUTH CAROLINA 29550

NOV 0 2 1989

Robinson File No: 3065

Serial: RNPD/89-3124

MEMORANDUM TO: R. A. Dayton

FROM: J. M. Moon

SUBJECT: AFW System Flow Rates for Accident Mitigation

Minimum flow requirements for the AFW pumps are summarized in this memorandum. Chapter 15.0 of the UFSAR has been reviewed and was used in this summary. Additionally, recent analyses by the Fuels Group and Westinghouse were also used as referenced material. While not specific Chapter 15.0 analyses, the AFW System response for Anticipated Transients Without Scram (ATWS) and Station Blackout are included.

A listing of each analysis involving an AFW System response and the required flow rate follows.

1. <u>UFSAR Section 15.1 - Increase in Heat Removal by the Secondary System</u>

   A. Inadvertent opening of a steam generator or safety valve - Required AFW flow rate - 240 gpm.

   Reference - UFSAR Table 15.0.8-1

   B. Steam system piping failure - Assumed AFW flow rate - 1300 gpm. Note that the 1300 gpm is used to exacerbate the accident condition. Termination of AFW flow would reduce consequences of this accident.

   Reference: UFSAR Table 15.1.5-1

2. <u>UFSAR Section 15.2 - Decrease in Heat Removal by the Secondary System</u>

   A. Loss of non-emergency AC power to the station auxiliaries - Required AFW flow rate - 240 gpm.

   Reference: UFSAR Table 15.0.8-1

   B. Loss of normal feedwater flow - Required AFW rate rate - 240 gpm.

   Reference: UFSAR Table 15.0.8-1

C. Feedwater system pipe break - Required AFW flow rate - 240 gpm.
Reference: UFSAR Table 15.0.8-1

3. UFSAR Section 15.6 - Decrease in Reactor Coolant System Inventory

A. Steam Generator tube failure - Required AFW flow rate - 240 gpm.
Reference: UFSAR Table 15.0.8-1

B. Loss of coolant accidents resulting from the spectrum of postulated piping breaks within the Reactor Coolant System pressure boundary - Required AFW flow rate (small break LOCA) - 240 gpm.
Reference: August 21, 1989 letter from G. O. Percival to S. R. Zimmerman; Serial: CPL-89-617

4. Anticipated Transient Without Scram -

Required AFW flow rate - 600 gpm (Capacity of 2 motor-driven).
Reference: August 21, 1989 letter from G. O. Percival to S. R. Zimmerman; Serial: CPL-89-617

5. Station Blackout -

Required AFW flow rate - 240 gpm
Reference: Nuclear Fuel Section Design Activity 89-0071 (assumes operator action to start AFW flow occurs 10 minutes after the station blackout)

The description of the AFW System contained in SD-027 will be revised to reflect the information contained in this memorandum.

SWF:lht

cc: R. A. Dayton
D. C. Stadler

Attachment 11

MOTOR DRIVEN PUMPS A & B

CONTRACTOR EBASCO

CUSTOMER CAROLINA POWER & LIGHT CO

ITEM NO. ——— P.O. NY-434107

IMPELLER PATTERN M-6146 M-6147/48

MAXIMUM DIAMETER 8½ 8½

RATED DIAMETER 8½ 8½

MINIMUM DIAMETER 7½ 7½

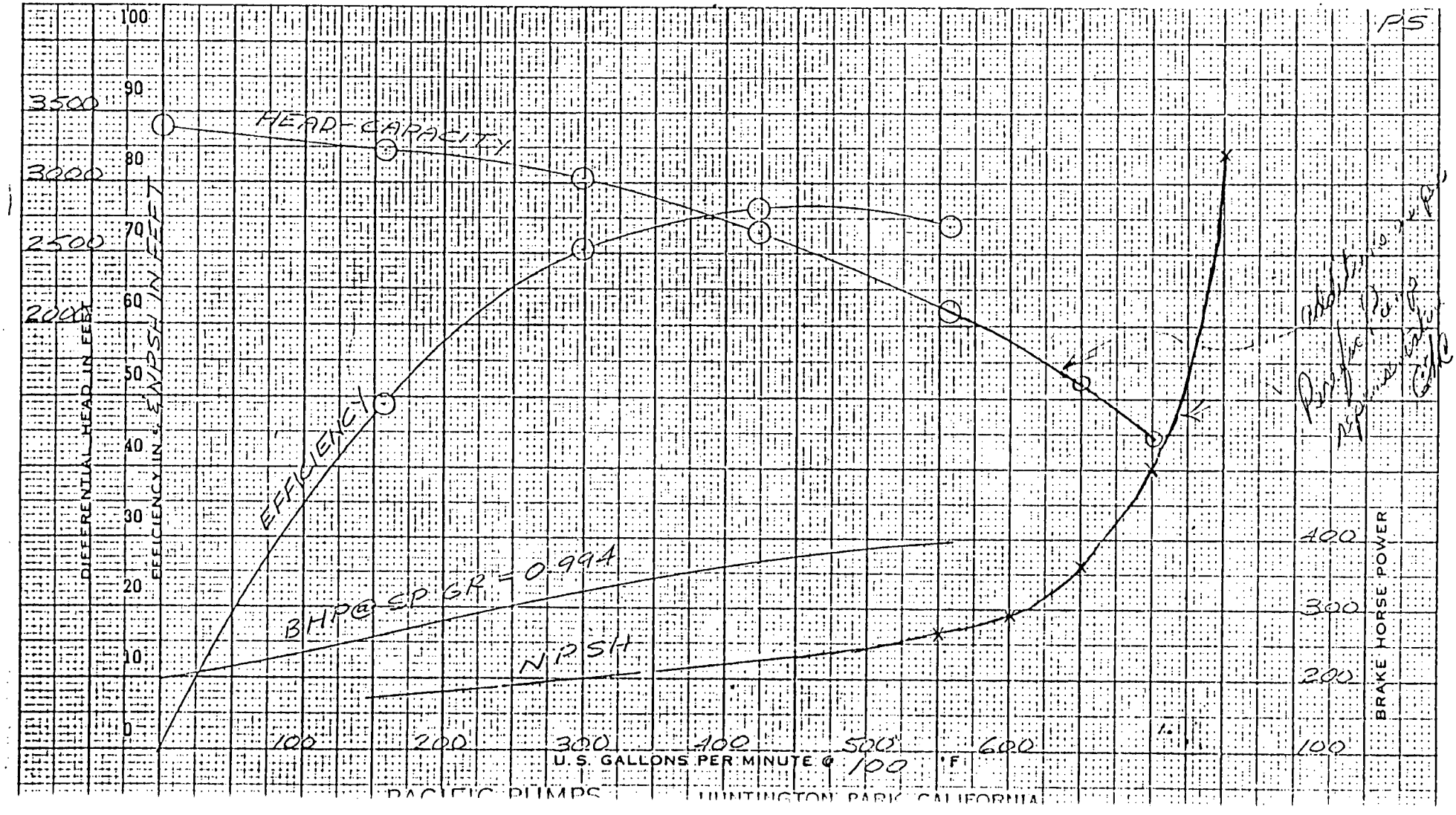
TEST PERFORMANCE CURVE NO. 33623

SIZE 2½ TYPE JTCH STAGES 10

R.P.M. 3550 DATE 7-15-68

PUMP NUMBER 44097

PERFORMANCE ALSO APPLIES TO PUMP NUMBER 44098



Attachment 12

PACIFIC STEAM TURBO PUMP

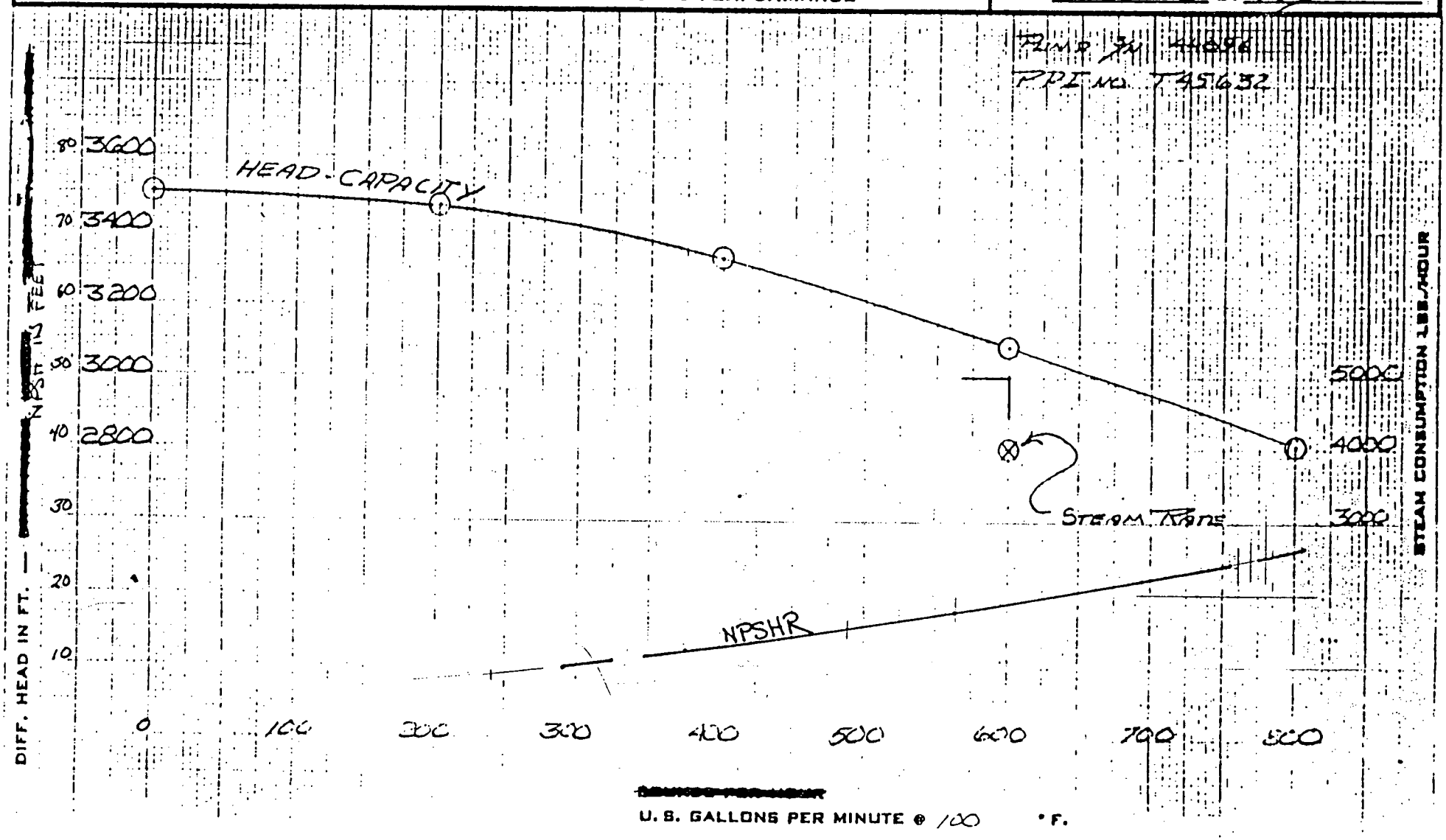
CUSTOMER CAROLINA POWER & LIGHT

STEAM: INLET 120 TO 100# P.S.I.G., QUALITY 350 FTT EXHAUST 0-15# P.S.I.G.

OPERATION BASED ON HAVING 23 FT. LIQUID HEAD ABOVE VAPOR PRESSURE NOT INCLUDED IN CURVE.

[redacted] PERFORMANCE

PERFORMANCE CURVE NUMBER T-3362
JOB NUMBER NY 434107
ITEM NUMBER —
SIZE PUMP 4X9 STAGES 1
SIZE TURBINE 3X12 STAGES 2 ROW
TYPE TBA-16 R.P.M. 9400
DATE 11-20-68 BY RMS



Attachment 13

Attachment 14

AFW SURVEILLANCE TEST INSTRUMENTATION

	CALIBRATED INSTRUMENT	CALIBRATED ACCURACY
* 1.	PI-1479-1	±2%
* 2.	PI-1480-1	±2%
* 3.	PI-1478-1	±2%
* 4.	PI-1424	±2%
* 5.	PI-1425	±2%
* 6.	PI-1426	±2%
* 7.	HANDHELD VIBRAMETER mdl. 306	±5%
* 8.	STOP WATCH	±0.05 sec.
* 9.	PI-1357-2	±2%
* 10.	TACHOMETER	±2%
11.	FI-1424	±2%
12.	FI-1425	±2%
* 13.	CONTACT PYROMETER(OPS. HANDHELD)	±5%
14.	FI-1425A	±2%
15.	FI-1425B	±2%
16.	FI-1425C	±2%
17.	FCV-1424 V/P	±4.2%
18.	FT-1424	±0.5%
19.	FCV-1425 V/P	±4.2%
20.	FT-1425	±0.5%
21.	FT-1425A	±0.5%
22.	FT-1425B	±0.5%
23.	FT-1425C	±0.5%
24.	FY-1425A	±1%
25.	FY-1425B	±1%
26.	FY-1425C	±1%
27.	FI-1426A	±2%
28.	FI-1426B	±2%
29.	FI-1426C	±2%
30.	FT-1426A	±0.5%
31.	FT-1426B	±0.5%
32.	FT-1426C	±0.5%
33.	FY-1426A	±1%
34.	FY-1426B	±1%
35.	FY-1426C	±1%
36.	FCV-6416 V/P	±4.2%
37.	FT-6416	±0.5%

* These instruments are used for pump performance determination

Attachment 15

DATA FOR MOTOR DRIVEN AFW PUMP A (OST-201)

DATE OF TEST	FLOW	DELTA-P	HORIZONTAL VIBRATION	VERTICAL VIBRATION
10/20/87	NOT APPLICABLE	1422.0	0.5	0.4
11/18/87	NOT APPLICABLE	1433.8	0.4	0.2
12/16/87	NOT APPLICABLE	1413.5	0.4	0.2
1/20/88	NOT APPLICABLE	1345.3	0.4	0.2
1/20/88	NOT APPLICABLE	1434.1	0.5	0.2
2/17/88	NOT APPLICABLE	1404.0	0.4	0.2
3/16/88	NOT APPLICABLE	1411.5	0.5	0.2
4/20/88	NOT APPLICABLE	1419.2	0.5	0.2
5/18/88	NOT APPLICABLE	1423.5	0.5	0.2
6/17/88	NOT APPLICABLE	1403.0	0.7	0.4
7/21/88	NOT APPLICABLE	1423.7	0.5	0.1
8/17/88	NOT APPLICABLE	1419.1	0.8	0.3
9/16/88	NOT APPLICABLE	1423.4	0.5	0.2
9/21/88	NOT APPLICABLE	1432.8	0.5	0.4
10/17/88	NOT APPLICABLE	1413.0	0.4	0.2
11/16/88	NOT APPLICABLE	1443.8	0.5	0.2
1/26/89	NOT APPLICABLE	1444.5	0.5	0.1
2/22/89	NOT APPLICABLE	1440.6	0.4	0.2
3/21/89	NOT APPLICABLE	1442.5	0.3	0.2
4/19/89	NOT APPLICABLE	1434.8	0.4	0.6
5/17/89	NOT APPLICABLE	1453.2	0.4	0.2
6/20/89	NOT APPLICABLE	1442.7	0.5	0.3
7/18/89	NOT APPLICABLE	1413.5	0.5	0.3
8/16/89	NOT APPLICABLE	1433.5	0.6	0.2

DATA FOR MOTOR DRIVEN AFW PUMP B (OST-201)

DATE OF TEST	FLOW	DELTA-P	HORIZONTAL VIBRATION	VERTICAL VIBRATION
10/20/87	NOT APPLICABLE	1411.6	0.4	0.3
11/18/87	NOT APPLICABLE	1388.5	0.4	0.3
12/16/87	NOT APPLICABLE	1393.2	0.5	0.3
1/20 88	NOT APPLICABLE	1413.4	0.5	0.1
1/20/88	NOT APPLICABLE	1385.5	0.5	0.2
2/17/88	NOT APPLICABLE	1403.5	0.4	0.2
3/16/88	NOT APPLICABLE	1410.8	0.4	0.2
3/17/88	NOT APPLICABLE	1383.2	0.4	0.3
4/20/88	NOT APPLICABLE	1420.8	0.4	0.2
5/18/88	NOT APPLICABLE	1423.3	0.3	0.2
5/18/88	NOT APPLICABLE	1413.0	0.3	0.2
6/17/88	NOT APPLICABLE	1407.0	0.3	0.3
7/21/88	NOT APPLICABLE	1423.2	0.4	0.2
8/08/88	NOT APPLICABLE	1422.7	0.4	0.2
8/17/88	NOT APPLICABLE	1418.3	0.5	0.3
8/30/88	NOT APPLICABLE	1443.1	0.4	0.3
8/31/88	NOT APPLICABLE	1432.7	0.5	0.3
9/16/88	NOT APPLICABLE	1427.9	0.4	0.3
9/21/88	NOT APPLICABLE	1422.1	0.5	0.5
10/17/88	NOT APPLICABLE	1431.6	0.4	0.2
11/16/88	NOT APPLICABLE	1433.8	0.4	0.2
1/26/89	NOT APPLICABLE	1430.6	0.5	0.3
2/13/89	NOT APPLICABLE	1431.4	0.5	0.3
2/22/89	NOT APPLICABLE	1430.5	0.5	0.3

DATA FOR MOTOR DRIVEN AFW PUMP B (OST-201)

DATE OF TEST	FLOW	DELTA-P	HORIZONTAL VIBRATION	VERTICAL VIBRATION
3/21/89	NOT APPLICABLE	1442.0	0.3	0.4
4/19/89	NOT APPLICABLE	1454.5	0.6	0.5
5/17/89	NOT APPLICABLE	1453.7	0.5	0.4
6/20/89	NOT APPLICABLE	1462.4	0.4	0.5
7/18/89	NOT APPLICABLE	1432.8	0.4	0.4
8/16/89	NOT APPLICABLE	1453.0	0.9	0.4

DATA FOR STEAM DRIVEN AFW PUMP (OST-202)

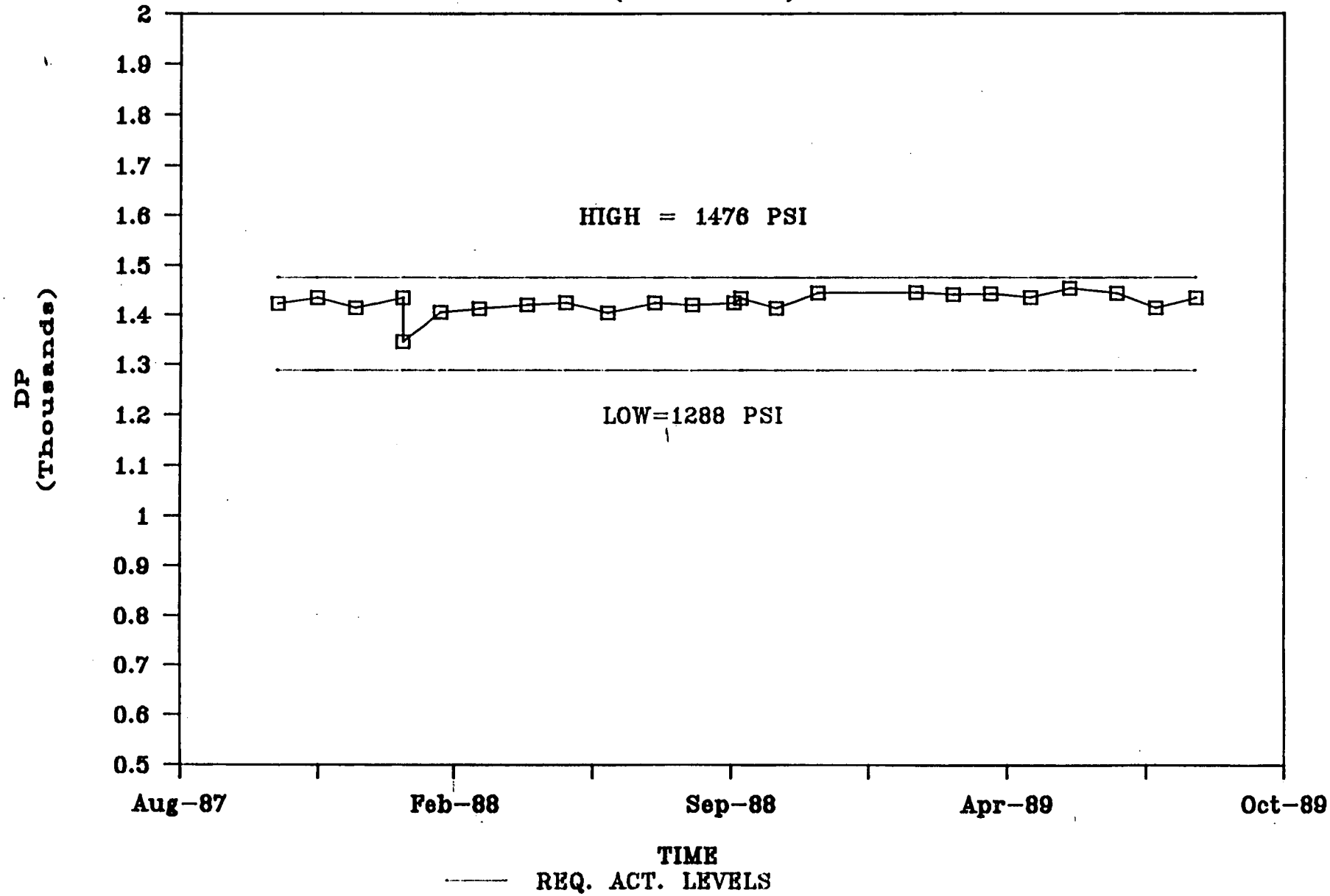
DATE OF TEST	FLOW	DELTA-P	HORIZONTAL VIBRATION	VERTICAL VIBRATION
10/21/87	NOT APPLICABLE	1476.0	0.9	0.5
11/18/87	NOT APPLICABLE	1477.5	0.7	0.4
12/15/87	NOT APPLICABLE	1517.0	1.0	0.5
1/05/88	NOT APPLICABLE	1547.5	0.5	0.6
1/20/88	NOT APPLICABLE	1548.0	0.7	0.6
3/10/88	NOT APPLICABLE	1545.0	0.9	0.5
3/16/88	NOT APPLICABLE	1545.5	0.8	0.6
4/18/88	NOT APPLICABLE	1536.9	0.4	0.2
5/17/88	NOT APPLICABLE	1537.0	1.0	0.9
6/17/88	NOT APPLICABLE	1576.0	0.8	0.5
6/17/88	NOT APPLICABLE	1535.8	1.0	0.8
7/20/88	NOT APPLICABLE	1558.5	0.6	0.4
7/20/88	NOT APPLICABLE	1527.0	0.8	0.5
8/17/88	NOT APPLICABLE	1527.0	1.5	0.7
8/17/88	NOT APPLICABLE	1487.0	1.2	0.9
8/29/88	NOT APPLICABLE	1545.8	1.5	1.3
9/19/88	NOT APPLICABLE	1527.0	0.9	0.9
10/04/88	NOT APPLICABLE	1546.5	2.2	0.9
10/06/88	NOT APPLICABLE	1516.0	1.5	0.7
10/19/88	NOT APPLICABLE	1524.6	0.9	1.0
2/10/89	NOT APPLICABLE	1476.9	0.8	0.5
2/24/89	NOT APPLICABLE	1486.5	0.6	0.6
3/22/89	NOT APPLICABLE	1536.4	1.2	0.7

DATA FOR STEAM DRIVEN AFW PUMP (OST-202)

DATE OF TEST	FLOW	DELTA-P	HORIZONTAL VIBRATION	VERTICAL VIBRATION
4/19/89	NOT APPLICABLE	1538.0	1.0	0.8
5/17/89	NOT APPLICABLE	1526.5	1.5	0.9
6/17/89	NOT APPLICABLE	1586.8	1.5	0.8
6/20/89	NOT APPLICABLE	1495.8	0.8	1.1
7/18/89	NOT APPLICABLE	1506.4	1.5	0.8
8/16/89	NOT APPLICABLE	1516.5	0.7	0.6

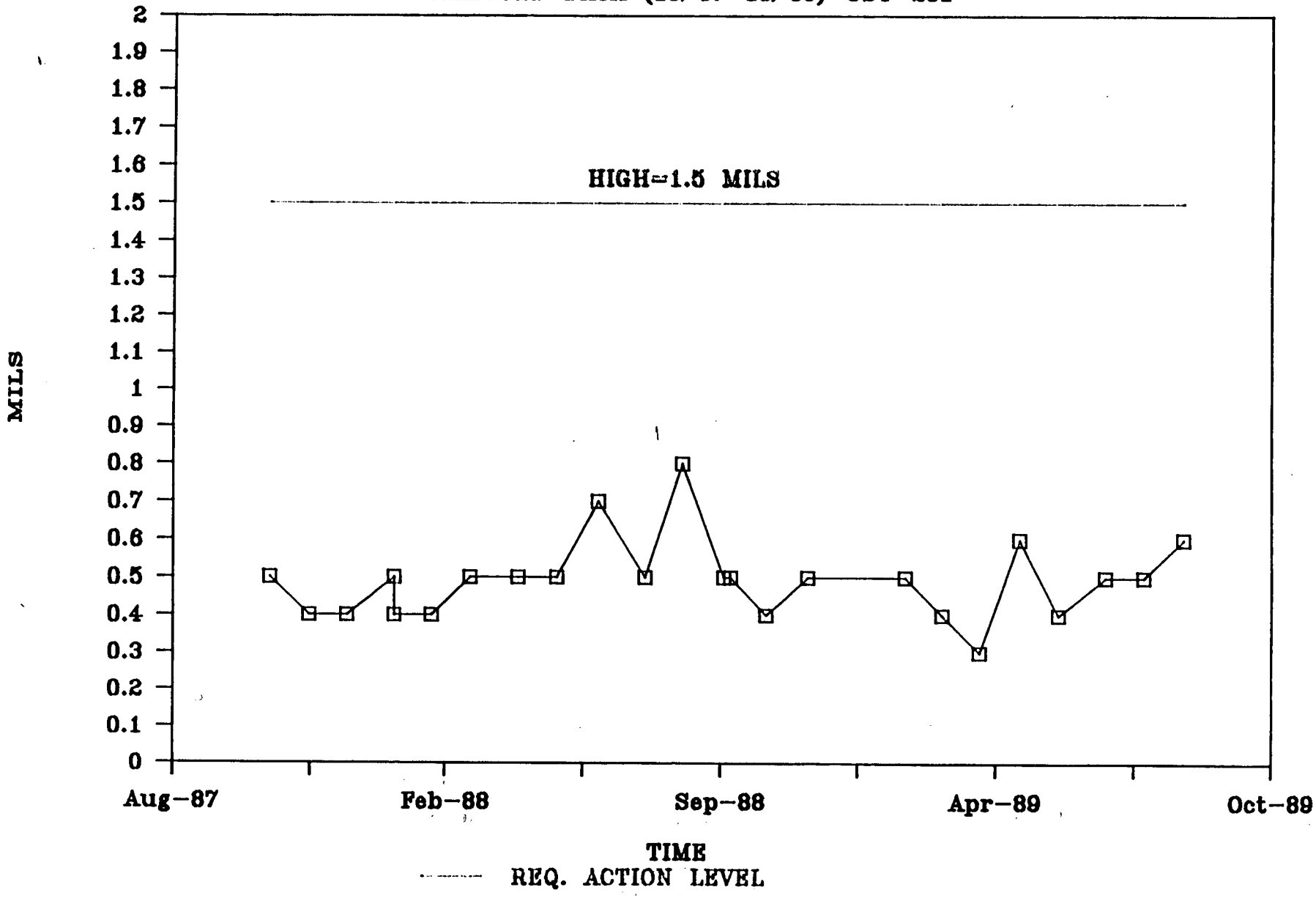
MOTOR DRIVEN AFW PUMP "A" (OST-201)

COLLECTED DATA(10/87-10/89)RECIRC FLOW



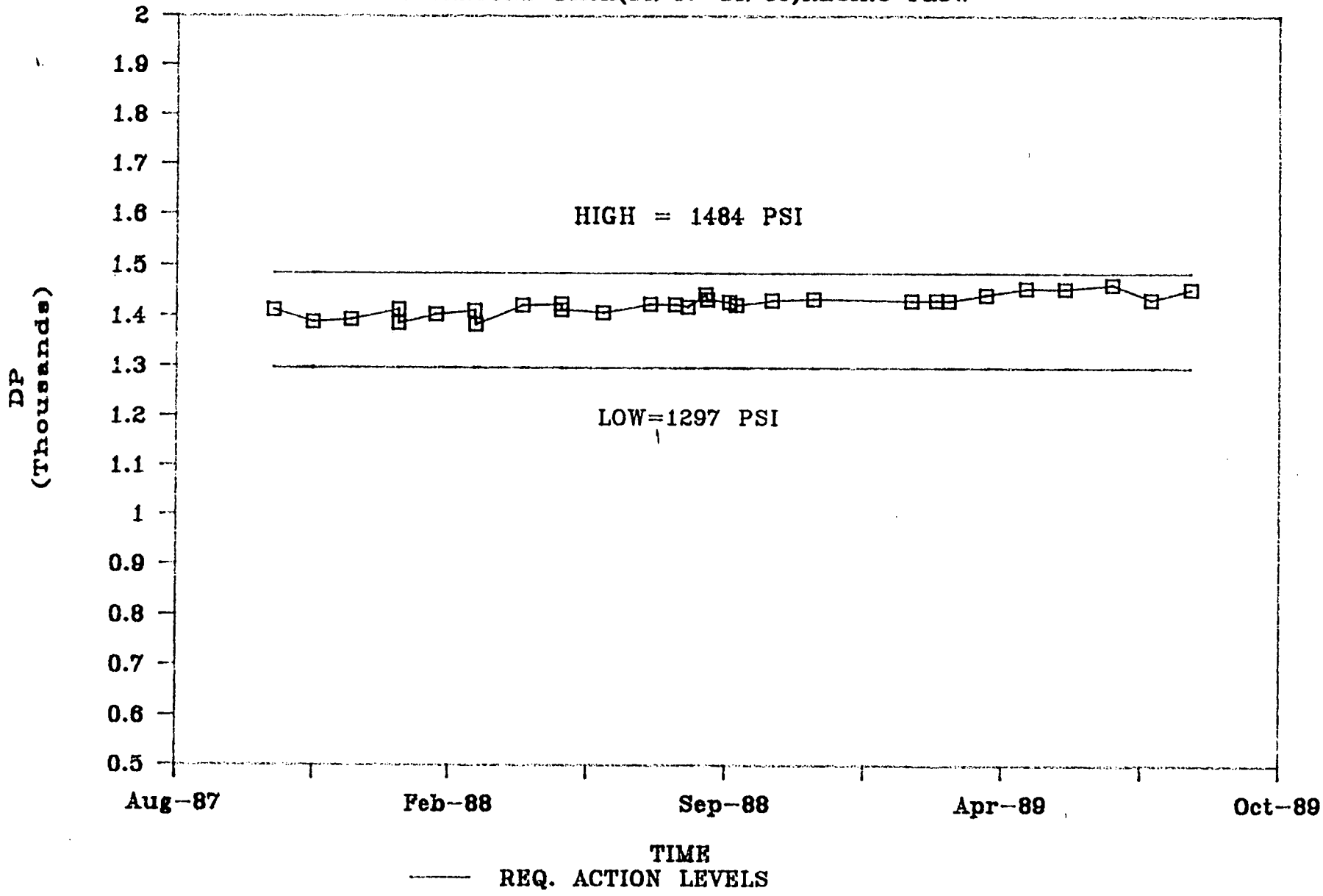
MOTOR DRIVEN AFW PUMP "A" VIBS. DATA

COLLECTED DATA (10/87-10/89)-OST-201



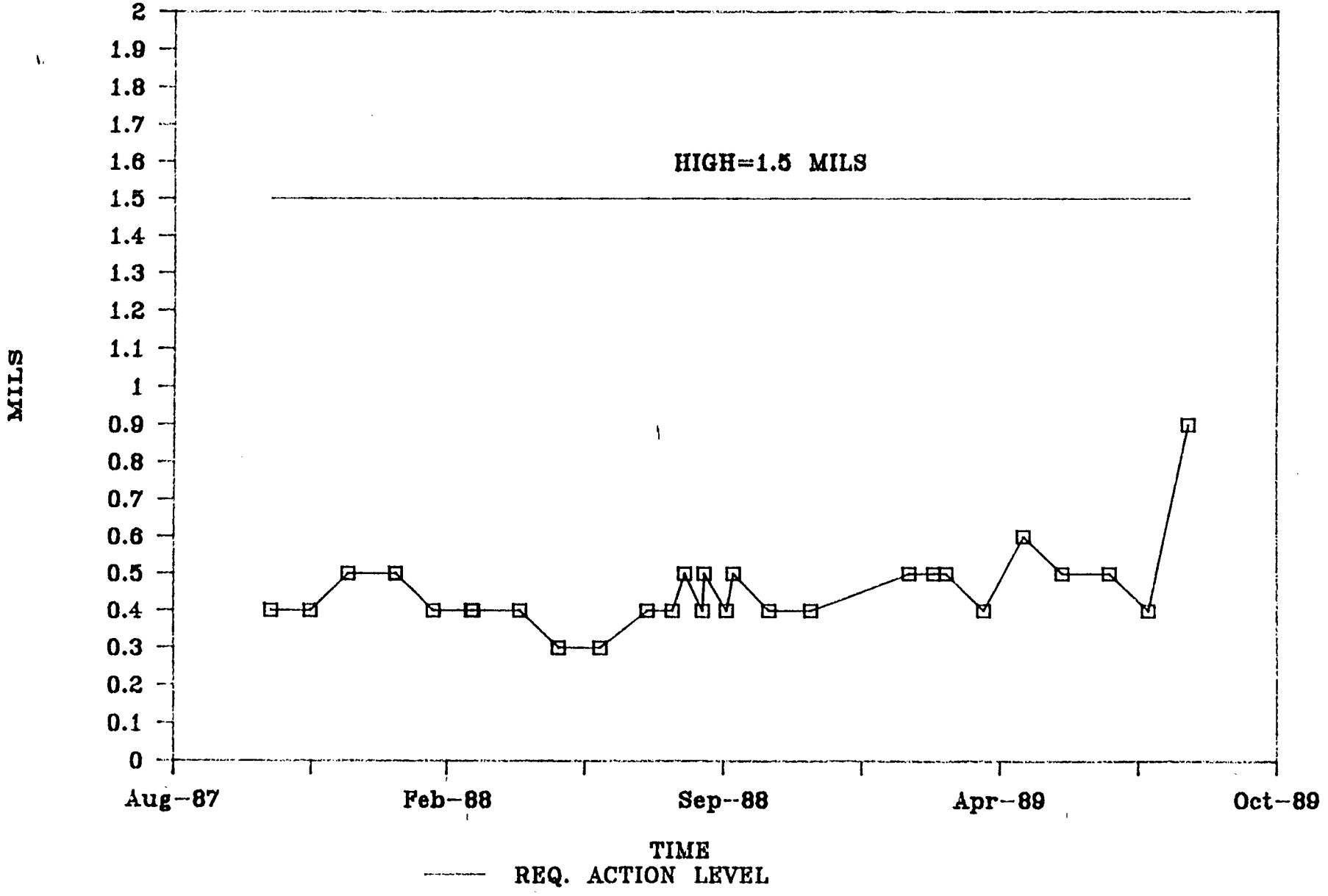
MOTOR DRIVEN AFW PUMP "B" (OST-201)

COLLECTED DATA(10/87-10/89)RECIRC FLOW



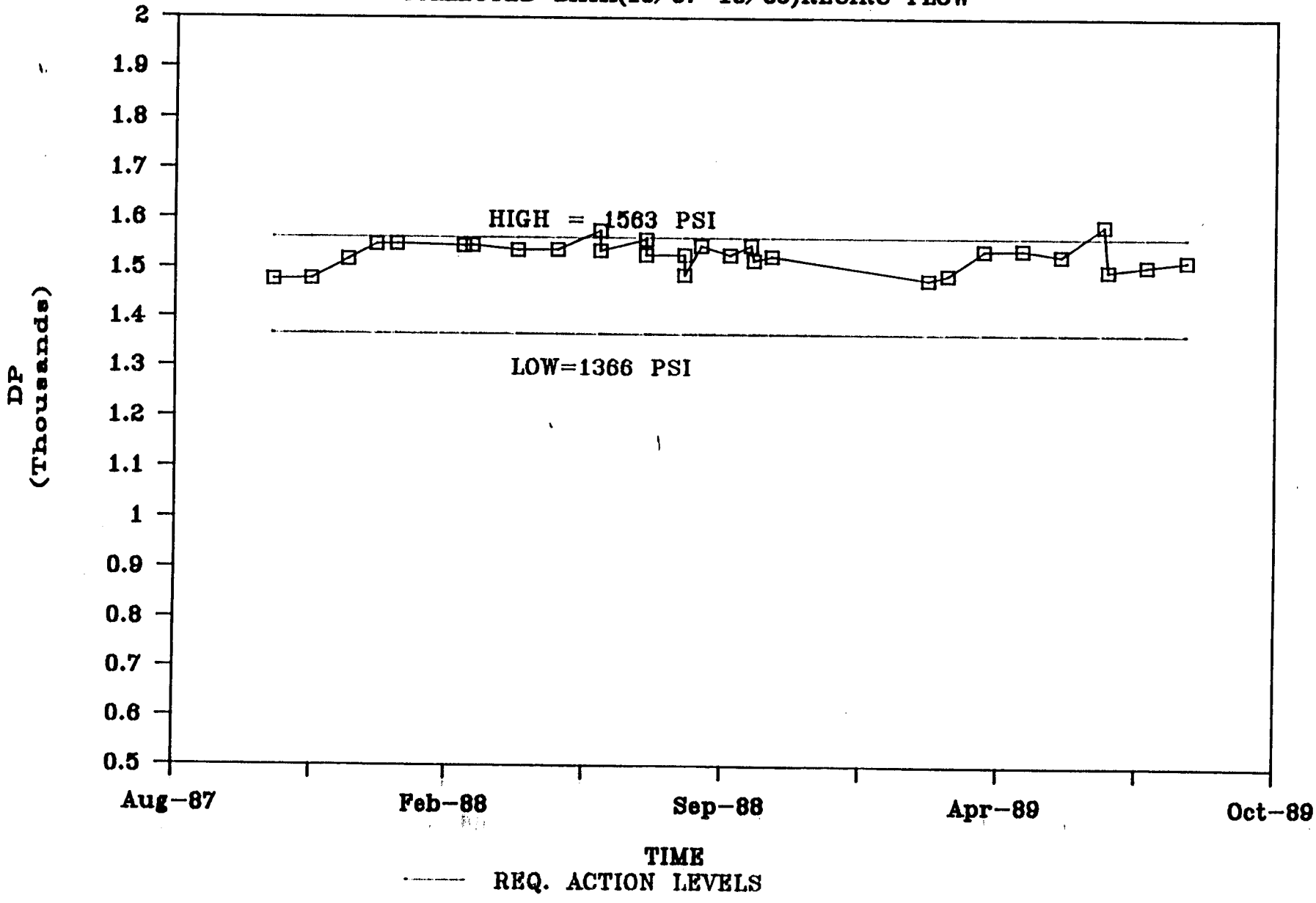
MOTOR DRIVEN AFW PUMP "B" VIBS. DATA

COLLECTED DATA (10/87 -- 10/89)--OST-201

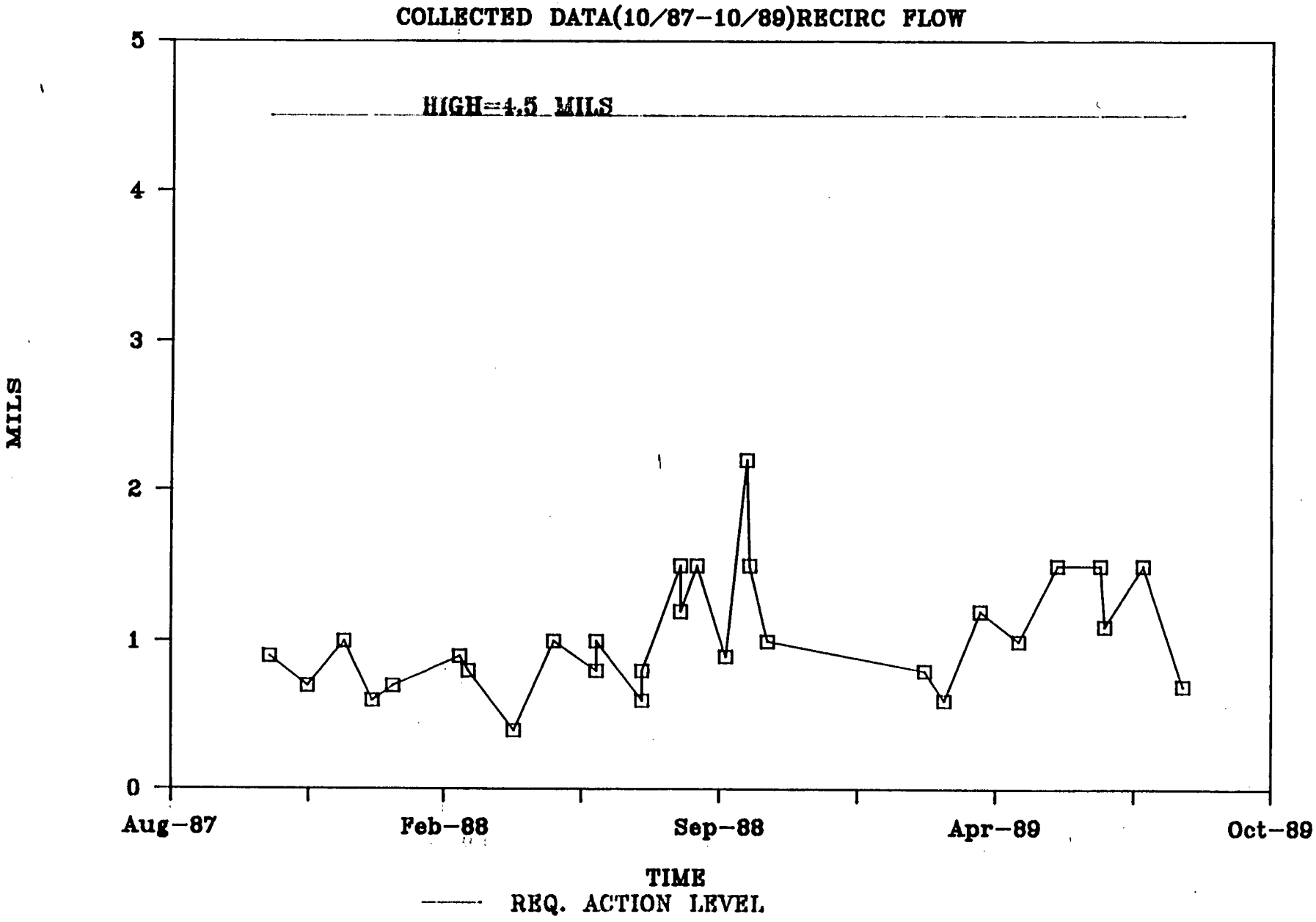


STEAM DRIVEN AFW PUMP (OST-202)

COLLECTED DATA(10/87-10/89)RECIRC FLOW



STEAM DRIVEN AFW PUMP VIBS DATA-OST-202



Attachment 16

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

[illegible]	(Print)	[illegible]	[illegible]
Name		Signature	Date

3.5 The Shift Foreman has given his permission to conduct this test.

[illegible]	10-20-87
Shift Foreman	Date

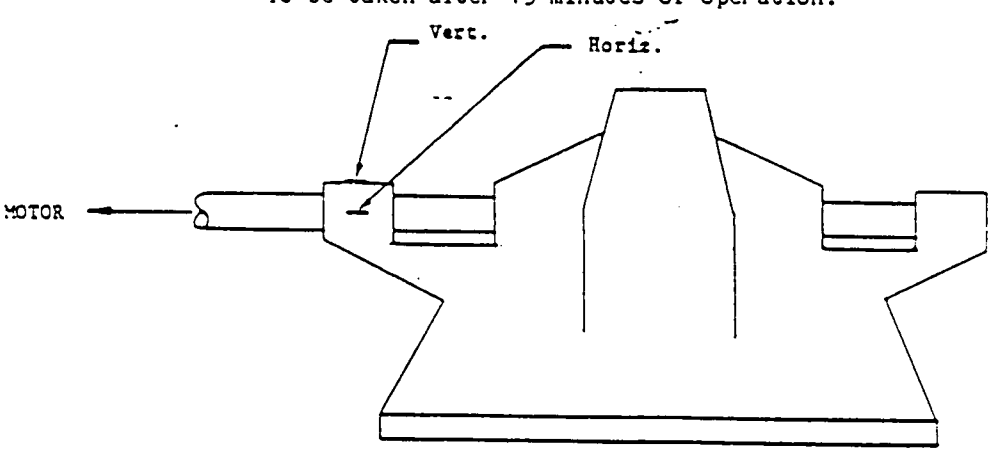
MUSFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1430	0	N/A	N/A
		"B" - PI-1425	0	1420	N/A	N/A
	Vibration,* MILS	Horiz.	0.5	0.4	≤1.0	≤1.0
		Vert.	0.2	0.28	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	8.0	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	8.4	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		106	100	N/A	N/A
	Oil Temp from Cooler, °F		98	94	N/A	N/A
	Oil Sump. Temp, °F		104	90	N/A	N/A
	Cooling Water Outlet, °F TI-1636		78	76	N/A	N/A
	Header Press., PSIG PI-1421A		1450	1475	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1422	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1411.6	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	CDW	CD WINTERS	10/20/87
	[illegible]	STEVE [illegible]	10/20/87
	[illegible]	W. CUTRIGHT	10-20-87
	[illegible]	K. DARWIN	10-20-87

Test Complete: Date 10-20-87 Time 2250

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman
Date 10-20-87 Time 2300

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature]
Unit 2 - Operating Supervisor
Date 10-23-87

Reviewed by: [signature]
ISI Coordinator
Date 11/11/87

2321 0032

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Ben Larson (Print) Ben Larson 11-17-87

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman Date

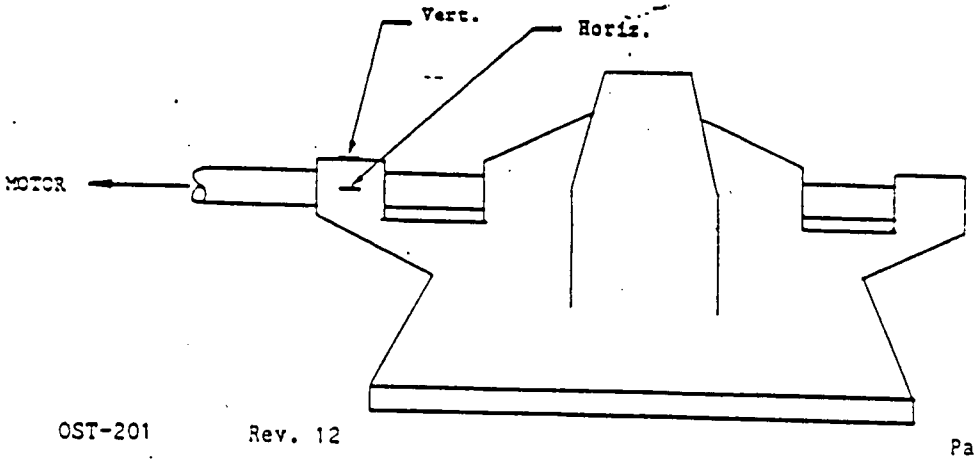
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1440	0	N/A	N/A
		"B" - PI-1425	0	1395	N/A	N/A
	Vibration,* MILS	Horiz.	.40 ~~.40~~	.38	≤1.0	≤1.0
		Vert.	.21 ~~.10~~	.25	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	6.2	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.5	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		109	104	N/A	N/A
	Oil Temp from Cooler, °F		100	93	N/A	N/A
	Oil Sump. Temp, °F		97	91	N/A	N/A
	Cooling Water Outlet, °F TI-1636		70	72	N/A	N/A
	Header Press., PSIG PI-1421A		1425	1460	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1433.8	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1388.5	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	NB	Steve Atlee	11-18-87
		Jim Burch	11-17-87
		Rick Burnell	11-17-87
		Ben Tarvin	11-17-87
	BCW	B. Caldwell	11-17-87

Test Complete: Date 11-18-87 Time 0410

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Date ~~0545~~ 11-18-87 Time 0545
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: _____ Date 11-25-87
Unit 2 - Operating Supervisor

Reviewed by: _____ Date 12/4/87
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

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3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

BRYAN C. WALDSMITH (Print) Bryan C. Waldsmith 15 Dec 87
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

[illegible] 12-15-87
Shift Foreman Date

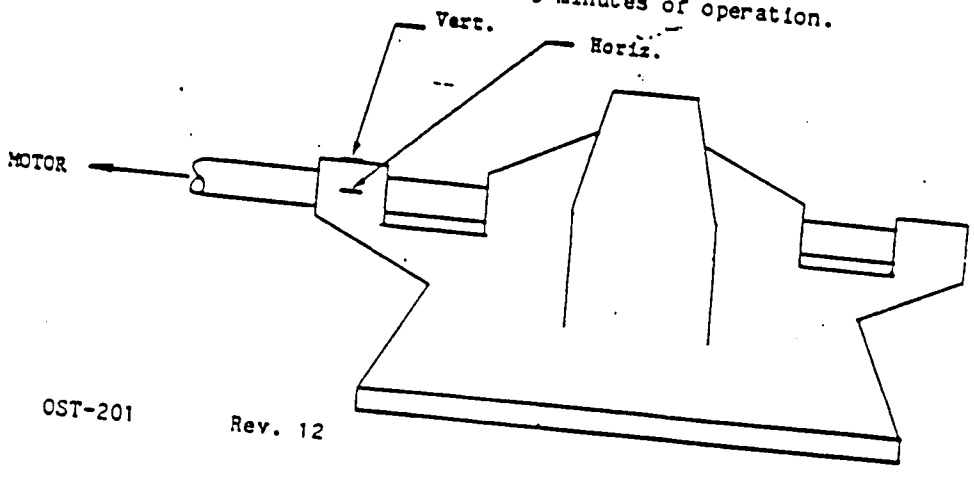
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1420	0	N/A	N/A
		"B" - PI-1425	0	1400	N/A	N/A
	Vibration,* MILS	Horiz.	.42	.52	≤1.0	≤1.0
		Vert.	.24	.32	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	6.5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.8	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	14	N/A	N/A
	Oil Temp. to Cooler, °F		102	97	N/A	N/A
	Oil Temp from Cooler, °F		92	85	N/A	N/A
	Oil Sump. Temp, °F		92	86	N/A	N/A
	Cooling Water Outlet, °F TI-1636		72	68	N/A	N/A
	Header Press., PSIG PI-1421A		1440	1450	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1413.5	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1393.2	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	BCW	B. C. WALDSMITH	15 Dec 1987
	TDH	TD Hartt	12/16/87
	Joe	John Leone	12.16.87
	RH	R Haley	12-16-87

Test Complete: Date 12/16/87 Time 0227

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Date 12-16-87 Time 0315
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: _____ Date 12-23-87
Unit 2 - Operating Supervisor

Reviewed by: _____ Date 12/29/87
ISI Coordinator

2361 0849

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Name (Print) Signature Date 11/10/88

3.5 The Shift Foreman has given his permission to conduct this test.

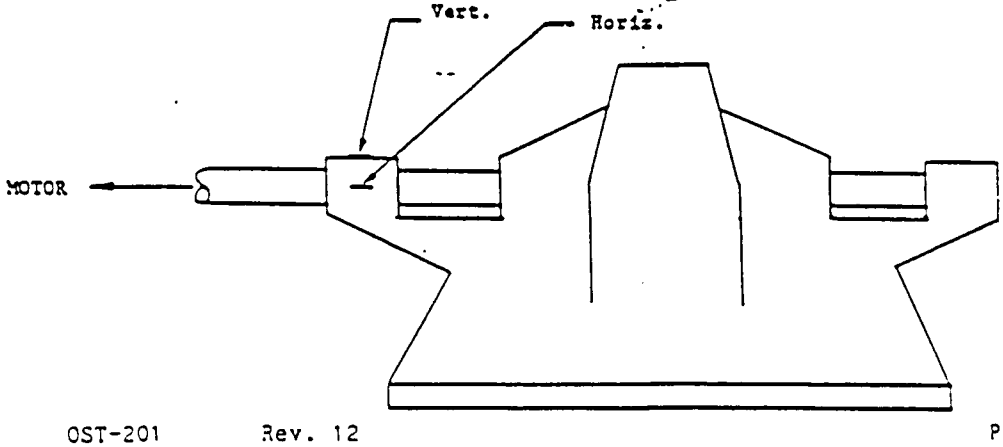
Shift Foreman Date 11/19/88

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1350	0	N/A	N/A
		"B" - PI-1425	0	1390	N/A	N/A
	Vibration,* MILS	Horiz.	.40	.50	≤1.0	≤1.0
		Vert.	.24	.22	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	4.7	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	4.5	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		106	95	N/A	N/A
	Oil Temp from Cooler, °F		95	80	N/A	N/A
	Oil Sump. Temp, °F		95	77	N/A	N/A
	Cooling Water Outlet, °F TI-1636		60	60	N/A	N/A
	Header Press., PSIG PI-1421A		1500	1450	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1345.3	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1355.5	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	TDH	T. D. Hocutt	1/20/88
	RH	R. Haley	1/20/88

Test Complete: Date ~~N/A~~ 1-28-88 Time ~~N/A~~ 0700 1-27-88 PM

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 1-20-88 Time ~~N/A~~ 0700 1-27-88 PM
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)
① 'A' pump running prior to test to feed S/G's. 0549 was start time of test. AFW-46 was open at start of test. THIS TEST WAS NOT COMPLETED DUE TO NECESSITY OF FEEDING STEAM GENERATORS. TEST WILL BE PERFORMED AT LATER TIME.

Approved by: [signature] Date 2-11-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 4/6/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

_____ (Print) _____ _____
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

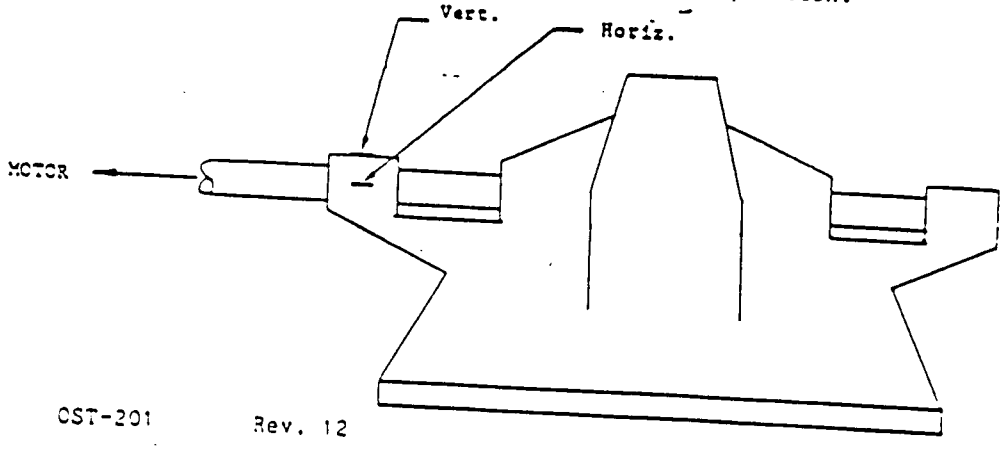
_____ 1-20-88
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1440	0	N/A	N/A
		"B" - PI-1425	0	1420	N/A	N/A
	Vibration,* MILS	Horiz.	.45	.45	≤1.0	≤1.0
		Vert.	.2	.1	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	[illegible]	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.6	N/A	≥4.0
	Oil Press. to Regulator, PSIG		31	15	N/A	N/A
	Oil Temp. to Cooler, °F		98	92	N/A	N/A
	Oil Temp from Cooler, °F		85	80	N/A	N/A
	Oil Sump. Temp, °F		80	74	N/A	N/A
	Cooling Water Outlet, °F TI-1636		<6	51	N/A	N/A
	Header Press., PSIG PI-1421A		1440	1460	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		[illegible]	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1113.4	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	[illegible]	J Leone	1-20-88
	[illegible]	W.E. STOKER	1-20-88
	[illegible]	[illegible]	1-20-88
	[illegible]	R.O. MOORE	1-20-88

Test Complete: Date 1-20-88 Time 1855

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible]
Unit 2 - Shift Foreman

Date 1-20-88 Time 1900

Comments: (Required if results were unsatisfactory) LCL #88-[illegible] [illegible] 17
[illegible] 1425 C - Declared inoperable
AV 1944 hrs

Approved by: [illegible]
Unit 2 - Operating Supervisor

Date 1-20-88

Reviewed by: [illegible]
ISI Coordinator

Date 1/20/88

2.0 **REFERENCES**

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

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2.4.2 G-190199, Service and Cooling Water System

3.0 **PREREQUISITES**

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

M W Burriss (Print) M W Burriss 17FEB88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 17FEB88

Shift Foreman Date

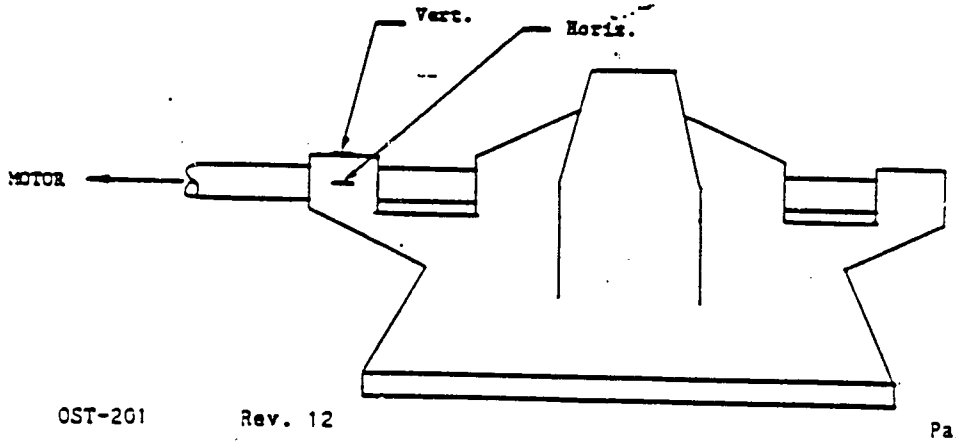
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1410	0	N/A	N/A
		"B" - PI-1425	0	1410	N/A	N/A
	Vibration,* MILS	Horiz.	.4	.38	≤1.0	≤1.0
		Vert.	.25	.19	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	6	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.5	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		95	90	N/A	N/A
	Oil Temp from Cooler, °F		80	77	N/A	N/A
	Oil Sump. Temp, °F		80	70	N/A	N/A
	Cooling Water Outlet, °F TI-1636		56	56	N/A	N/A
	Header Press., PSIG PI-1421A		1400	1490	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1404	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1403.5	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	[illegible]	M W Burriss	17FEB88
	[illegible]	[illegible] Kirk	17FEB88
	[illegible]	Ralph C Downey	2-17-88

Test Complete: Date 2-17-88 Time 0318

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Unit 2 - Shift Foreman Date 2-17-88 Time 0500

Comments: (Required if results were unsatisfactory) STEP 7.3.15 AMT-1425C
88-ACCQ1 Work Request Submitted - F(m) indicator inoperable @ 0318 hrs

Approved by: [signature] Unit 2 - Operating Supervisor Date 2-18-88

Reviewed by: [signature] ISI Coordinator Date 3/3/88

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

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3.4 This revision is the latest revision available and has been verified against the Revision Status List.

M. Jones (Print)	M. Jones	3-15-88
Name	Signature	Date

3.5 The Shift Foreman has given his permission to conduct this test.

	3-15-88
Shift Foreman	Date

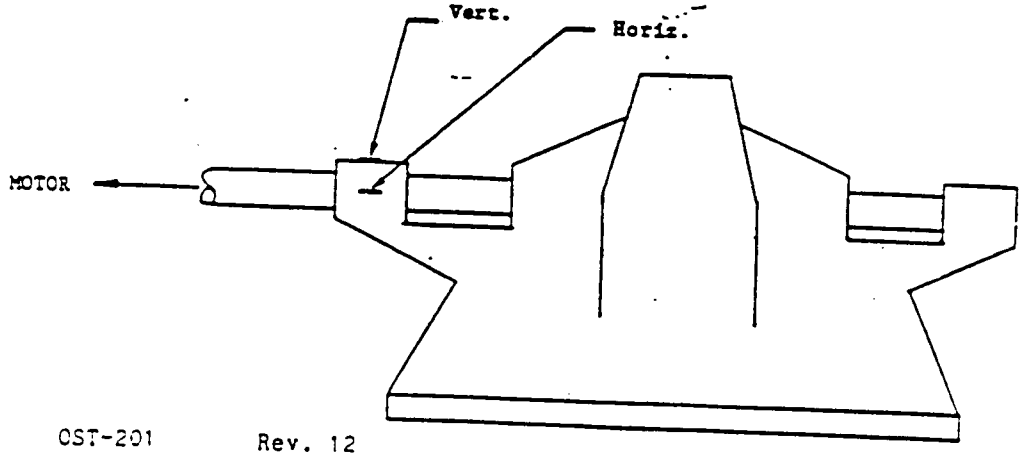
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1420	0	N/A	N/A
		"B" - PI-1425	0	1420	N/A	N/A
	Vibration,* MILS	Horiz.	0.5	0.4	≤1.0	≤1.0
		Vert.	0.2	0.2	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	8.5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	9.20	N/A	≥4.0
	Oil Press. to Regulator, PSIG		29	16	N/A	N/A
	Oil Temp. to Cooler, °F		104	95	N/A	N/A
	Oil Temp from Cooler, °F		93	89	N/A	N/A
	Oil Sump. Temp, °F		90	80	N/A	N/A
	Cooling Water Outlet, °F TI-1636		61	63	N/A	N/A
	Header Press., PSIG PI-1421A		1420	1490	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1411.5	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1410.8	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	MM	M JONES	3-16-88
	BCW	B. C. WALDSMITH	16 MAR 88
	KC	KODA SMITH	3/16/88

Test Complete: Date 3/16/88 Time 0330

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Date 3-16-88 Time 0410
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: _____ Date 3-22-88
Unit 2 - Operating Supervisor

Reviewed by: _____ Date 3/29/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

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3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Geoff H. Downey (Print) _____ 4-19-88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 4-19-88
Shift Foreman Date

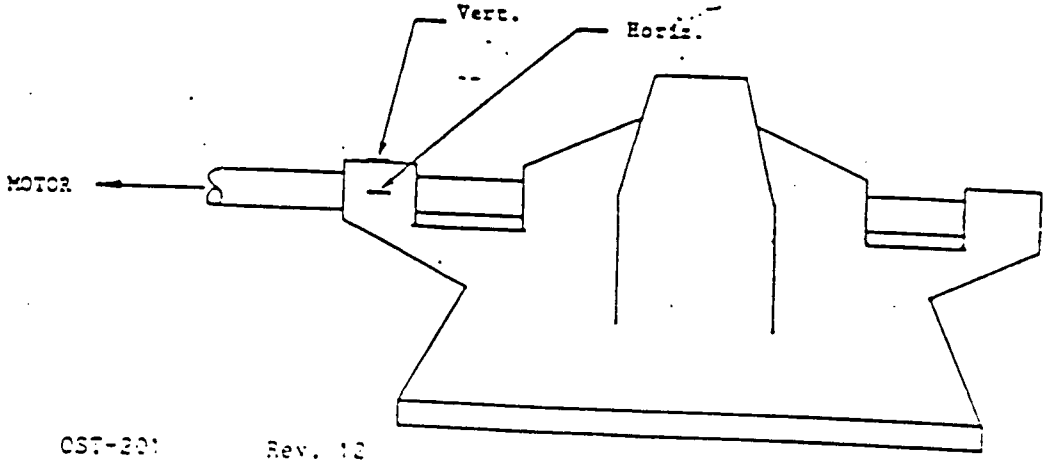
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1425	0	N/A	N/A
		"B" - PI-1425	0	1424	N/A	N/A
	Vibration,* MILS	Horiz.	0.5	0.42	≤1.0	≤1.0
		Vert.	0.25	0.2	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	5.8	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	8.25	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	16	N/A	N/A
	Oil Temp. to Cooler, °F		113	108	N/A	N/A
	Oil Temp from Cooler, °F		104	90	N/A	N/A
	Oil Sump. Temp, °F		100	90	N/A	N/A
	Cooling Water Outlet, °F TI-1636		71	72	N/A	N/A
	Header Press., PSIG PI-1421A		1425	1490	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1419.2	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1420.8	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	K. Darwin Rawlins	4/19/88 4-20-88
	[illegible]	PM. Dushock	4-19-88 4-20-88
	[illegible]	TE White	4/19/88
	[illegible]	M Rohandt	4-20-88

Test Complete: Date ~~4-19-88~~ 4-20-88 Time 1125

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 4-20-88 Time 1211
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature] Date 4-27-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 4/29/88
ISI Coordinator

2438 1602

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

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3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Mark Rabandt (Print) Mark Rabandt 5-17-98
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

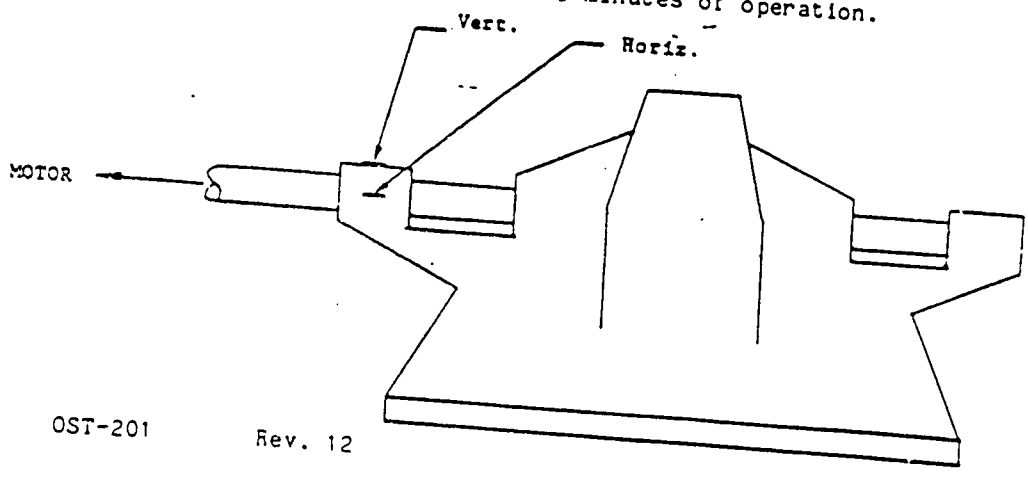
[illegible] 5/17/98
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1430	0	N/A	N/A
		"B" - PI-1425	0	1430	N/A	N/A
	Vibration,* MILS	Horiz.	0.5	0.35	≤1.0	≤1.0
		Vert.	0.24	0.22	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	6.5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.75	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		115	105	N/A	N/A
	Oil Temp from Cooler, °F		105	100	N/A	N/A
	Oil Sump. Temp, °F		100	98	N/A	N/A
	Cooling Water Outlet, °F TI-1636		81	84	N/A	N/A
	Header Press., PSIG PI-1421A		1440	1475	N/A	N/A
7.2.9	Pump ΔP		1423.5	N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)		N/A	1423.25	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	M. Pobanatt	5-17-88
	[illegible]	K. Darwin	5/17/88
	[illegible]	T. Fuchite	5/17/88

Test Complete: Date 5/18/88 Time 0200

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible]
Unit 2 - Shift Foreman
Date 5/18/88 Time 0410

Comments: (Required if results were unsatisfactory) 'B' MDAFW PUMP ΔP WAS IN THE ALERT RANGE - OST 201 WILL BE RE-RAN ON 'B' MDAFW PUMP AND ATTACHED TO THIS OST - THIS OST WAS ACCEPTED AS IN 6.1.6 AS THE REFERENCE FOR ACCEPTANCE FOR PUMP ΔP IN ALERT RANGE SEE WR # 95 AFEW TO CHECK CALIB OF PI1425

Approved by: [illegible]
Unit 2 - Operating Supervisor
Date 5-21-88

Reviewed by: [illegible]
ISI Coordinator
Date 6/16/88

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

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3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Name (Print) Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman Date

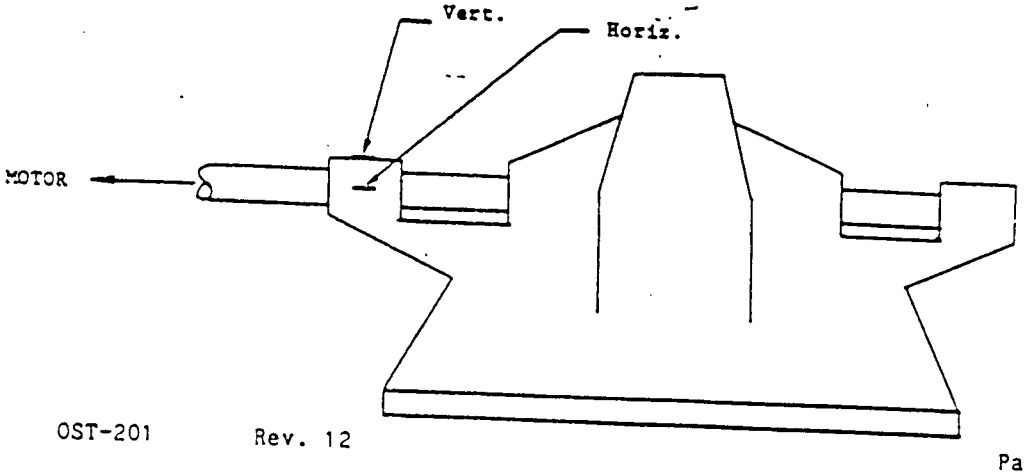
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	N/A	0	N/A	N/A
		"B" - PI-1425		1420	N/A	N/A
	Vibration,* MILS	Horiz.		① .35 ~~1.1~~	≤1.0	≤1.0
		Vert.		① .22 ~~0.8~~	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479		N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.0	N/A	≥4.0
	Oil Press. to Regulator, PSIG		N/A	15	N/A	N/A
	Oil Temp. to Cooler, °F			111	N/A	N/A
	Oil Temp from Cooler, °F			100	N/A	N/A
	Oil Sump. Temp, °F			96	N/A	N/A
	Cooling Water Outlet, °F TI-1636			82	N/A	N/A
	Header Press., PSIG PI-1421A			1475	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)			N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1413	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

① Read wrong scale.

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Pg-1-10, 13-15, 19-20, 23 Retest B main fp to to check DP

	Initials	Name (Print)	Date
Test Performed by	[illegible]	T.W. White	5/18/88
	[illegible]	M Robundt	5-18-88

Test Complete: Date 5/18/88 Time 0550

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 5/18/88 Time 0555
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) THIS OST WAS PERFORMED ON B MAIN FEED PUMP TO VERIFY PUMP DP. PREVIOUS DP WAS IN THE ALERT RANGE

Approved by: [illegible] Date 5-24-88
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 6/16/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

T. Hocutt (Print) T. Hocutt 6/17/88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 6-17-88

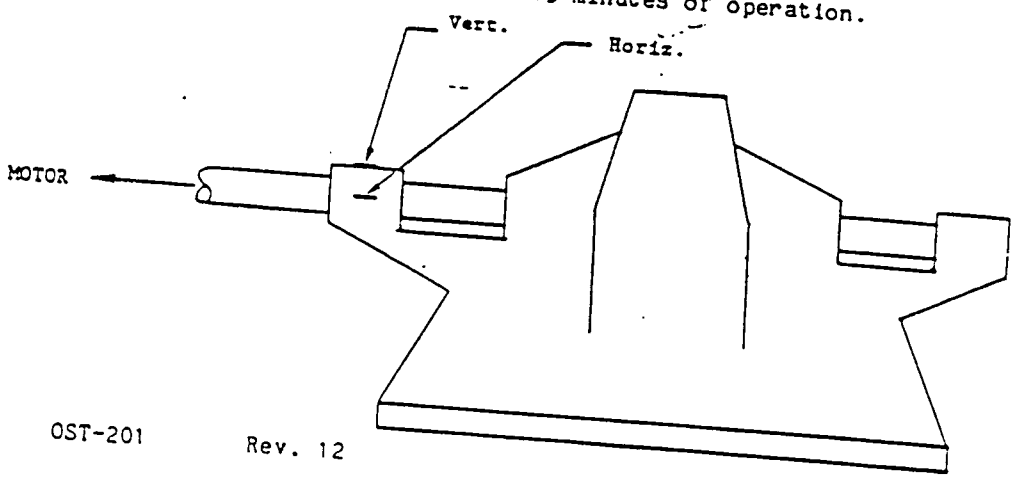
Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1410	0	N/A	N/A
		"B" - PI-1425	0	1415	N/A	N/A
	Vibration,* MILS	Horiz.	.65	.35	≤1.0	≤1.0
		Vert.	.40	.30	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	7.0	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	8.0	N/A	≥4.0
	Oil Press. to Regulator, PSIG		29	15	N/A	N/A
	Oil Temp. to Cooler, °F		121	111	N/A	N/A
	Oil Temp from Cooler, °F		110	104	N/A	N/A
	Oil Sump. Temp, °F		110	107	N/A	N/A
	Cooling Water Outlet, °F TI-1636		86	86	N/A	N/A
	Header Press., PSIG PI-1421A		1400	1450	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1403	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1407	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	TDH	T. D. Hocutt	6/17/88
	CW	W. CUTRIGHT	6-17-88
	HW	H.A. WINGER	6/17/88

Test Complete: Date 6-17-88 Time 1721

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Date 6-17-88 Time 1735
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: _____ Date 6-24-88
Unit 2 - Operating Supervisor

Reviewed by: _____ Date 6/29/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Dan Akers (Print) _____ 7/19/88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 7/19/88

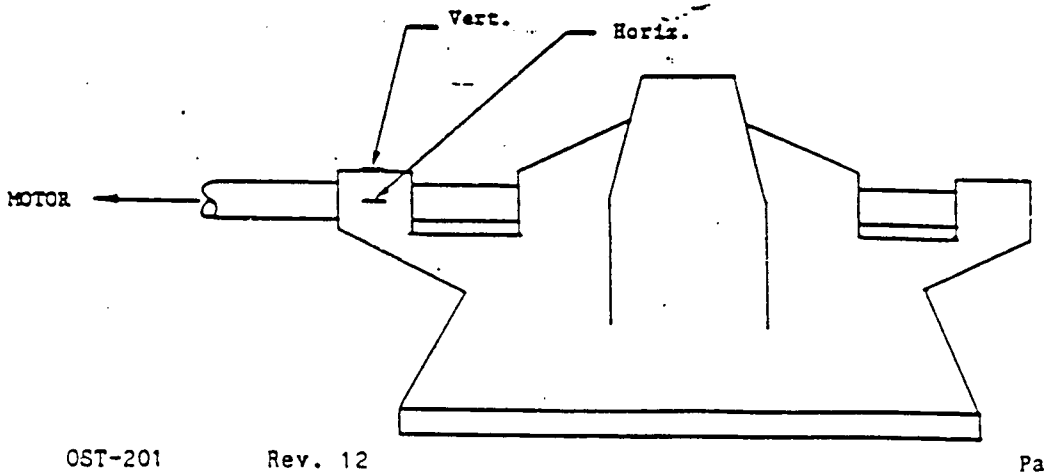
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1430	0	N/A	N/A
		"B" - PI-1425	0 ~~1430~~	1430	N/A	N/A
	Vibration,* MILS	Horiz.	.50	0.37	≤1.0	≤1.0
		Vert.	.07	0.25	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	6.3	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.8	N/A	≥4.0
	Oil Press. to Regulator, PSIG		29	15	N/A	N/A
	Oil Temp. to Cooler, °F		124	117	N/A	N/A
	Oil Temp from Cooler, °F		118	110	N/A	N/A
	Oil Sump. Temp, °F		119	110	N/A	N/A
	Cooling Water Outlet, °F TI-1636		94	96	N/A	N/A
	Header Press., PSIG PI-1421A		1430	1480	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1423.7	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1423.2	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	[illegible]	H.A. WINGER	7/21/88
	[illegible]	DAN AVERS	7/19/88
	[illegible]	David A. Cook	7/19/88
	[illegible]	WRIGHT	7-21-88
	[illegible]	M. GANN	7/21/88

Test Complete: Date 7-21-88 Time 1115

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 7/21/88 Time 1115
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) WROTE WR #88-AGEN1 ON "B" PUMP DISCHARGE GAGE. IN ALERT RANGE. This OST also tests A+B M/D AFW Pgm FI-1426A BIS. V2-20A Stroke time verified after packing adjustment. LCTR #15 88-743, 747 -751 respectively

Approved by: [signature] Date 7-22-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 8/8/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

E. A. Lee (Print) _____ 8-8-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 8-8-88

Shift Foreman Date

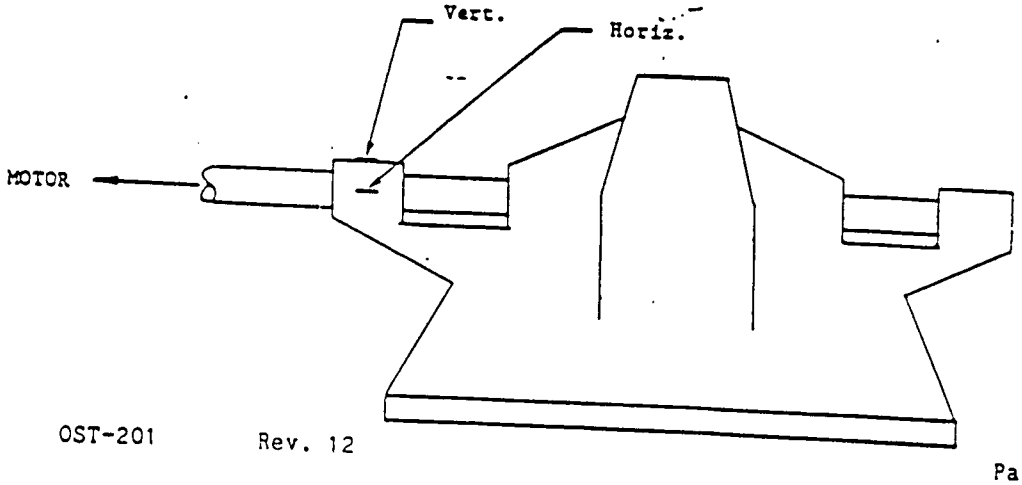
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	NA	0	N/A	N/A
		"B" - PI-1425	NA	1430	N/A	N/A
	Vibration,* MILS	Horiz.	NA	.4	≤1.0	≤1.0
		Vert.	NA	.23	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	NA	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.3	N/A	≥4.0
	Oil Press. to Regulator, PSIG		NA	15	N/A	N/A
	Oil Temp. to Cooler, °F		NA	116	N/A	N/A
	Oil Temp from Cooler, °F		NA	106	N/A	N/A
	Oil Sump. Temp, °F		NA	104	N/A	N/A
	Cooling Water Outlet, °F TI-1636		NA	105	N/A	N/A
	Header Press., PSIG PI-1421A		NA	1480	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		NA	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1422.7	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) B PUMP IN THE ALERT RANGE (p. 1-23)

Test Performed by	Initials	Name (Print)	Date
	[illegible]	Larry D. Smith	8/8/88
	[illegible]	G.L. Hale	8/8/88
	[illegible]	L. WIELAND	8-8-88

Test Complete: Date ~~[illegible]~~ JA 8-16-88 8-8-88 Time 1558

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 1603 Time 8-8-88

Comments: (Required if results were unsatisfactory) B AFW Motor Driven Pump in Alert Range

Approved by: [signature]
Unit 2 - Operating Supervisor Date 8-10-88

Reviewed by: [signature]
ISI Coordinator Date 8/10/88

2607 1336

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTCB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

W. E. STOVER (Print) _____ 8-16-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 8-16-88

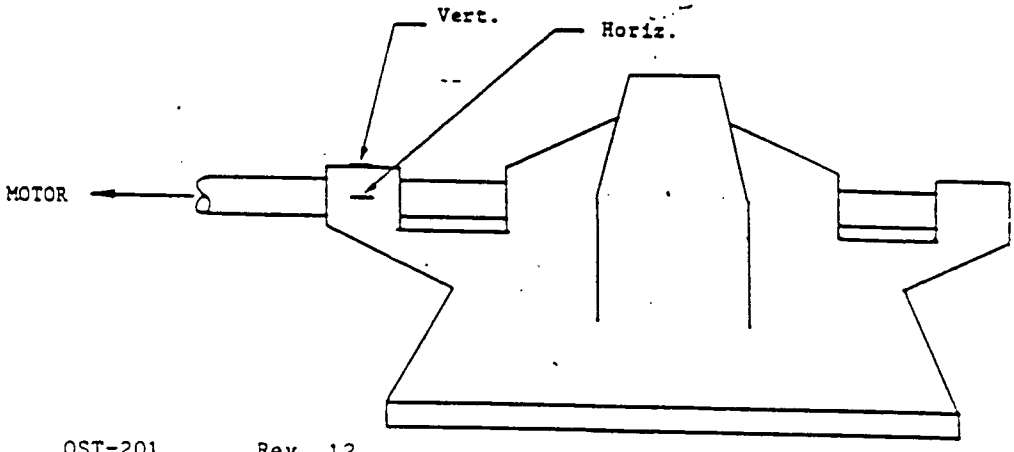
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A" 8/16/88	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1425	0	N/A	N/A
		"B" - PI-1425	0	1425	N/A	N/A
	Vibration,* MILS	Horiz.	.85	.52	≤1.0	≤1.0
		Vert.	.30	.35	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479	5.9	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.7	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		120	115	N/A	N/A
	Oil Temp from Cooler, °F		110	105	N/A	N/A
	Oil Sump. Temp, °F		112	106	N/A	N/A
	Cooling Water Outlet, °F TI-1636		98	95	N/A	N/A
	Header Press., PSIG PI-1421A		1425	1475	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1419.1	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1418.3	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	WEI	W.E. STOVER	8-16-88
	(W)	W. CUTRIGHT	8-16-88
	TDH	T.D. Hocutt	8/16/88
	RS	R Shaner	8/16/88
	DBA	DAN AKERS	8/16/88

Test Complete: Date 8/17/88 Time 0001

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Date 8/17/88 Time 0000
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: _____ Date 8-18-88
Unit 2 - Operating Supervisor

Reviewed by: _____ Date 8/18/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

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3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Rick Burnell (Print) _____ 8/30/88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 8-30-88
Shift Foreman Date

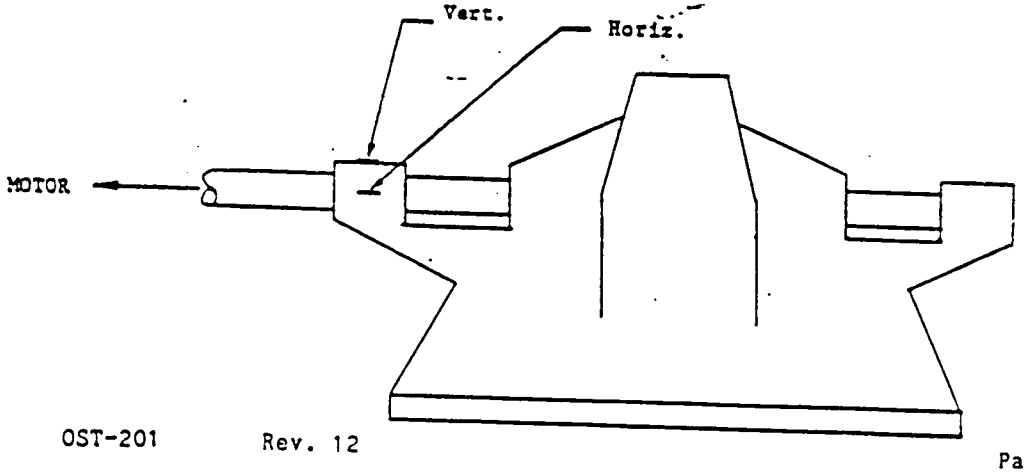
2651 0132

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	n/a	0	N/A	N/A
		"B" - PI-1425		1450	N/A	N/A
	Vibration,* MILS	Horiz.		0.44	≤1.0	≤1.0
		Vert.		0.3	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479		N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.9	N/A	≥4.0
	Oil Press. to Regulator, PSIG		n/a	15	N/A	N/A
	Oil Temp. to Cooler, °F			116	N/A	N/A
	Oil Temp from Cooler, °F			106	N/A	N/A
	Oil Sump. Temp, °F			105	N/A	N/A
	Cooling Water Outlet, °F TI-1636			95	N/A	N/A
	Header Press., PSIG PI-1421A			1470	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)			N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1443.1	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) ALL PAGES
THIS OST RUN DUE TO "B" PUMP BEING IN ALERT RANGE

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Rick Burnell	[illegible]
	[illegible]	Greg Taylor	8-30-88
	[illegible]	[illegible]	8-30-88

Test Complete: Date 8-30-88 Time 2100

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 8-30-88 Time 2100
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)
"B" AFW DECLARED OOS DUE TO AP BEING HIGH. THIS WAS FIRST TIME OST HAS BEEN RUN WITH THIS NEW DISCHARGE PRESSURE

Approved by: [signature] Date 9-7-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 9/5/88
ISI Coordinator

2651 0157
2651 0150

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

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3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

D Knight (Print) — Name; Signature; 8-31-88 — Date

3.5 The Shift Foreman has given his permission to conduct this test.

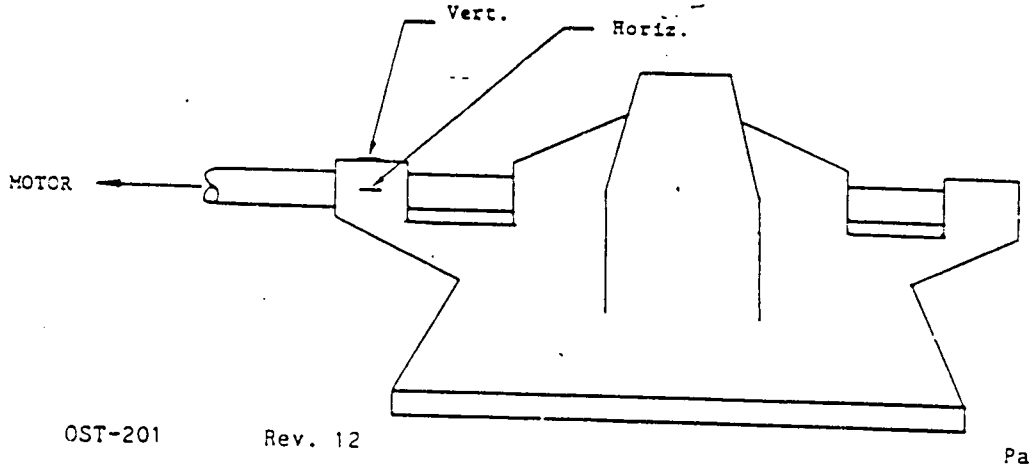
Shift Foreman; 8-31-88 — Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	N/A	0	N/A	N/A
		"B" - PI-1425		1440	N/A	N/A
	Vibration,* MILS	Horiz.		.45	≤1.0	≤1.0
		Vert.		.32	≤1.0	≤1.0
	Suct. Press. PSIG	"A" - PI-1479		N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.3	N/A	≥4.0
	Oil Press. to Regulator, PSIG		N/A	15	N/A	N/A
	Oil Temp. to Cooler, °F			116	N/A	N/A
	Oil Temp from Cooler, °F			126	N/A	N/A
	Oil Sump. Temp, °F			107	N/A	N/A
	Cooling Water Outlet, °F TI-1636			94	N/A	N/A
	Header Press., PSIG PI-1421A			1415	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)			N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1432.7	N/A	≥1296 ≤1421

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) TO PLACE B O/D AFW PUMP BACK
ALL PAGES USED (p.1-23)

	Initials	Name (Print)	Date
Test Performed by	[illegible]	R.L. Bowell	8-31-88
	[illegible]	Greg Taylor	8-31-88
	[illegible]	D Billings	8-31-88

Test Complete: Date 8-31-88 Time 0205

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible]
Unit 2 - Shift Foreman
Date 8-31-88 Time 0310

Comments: (Required if results were unsatisfactory) THIS OST WAS RUN AFTER VENTING THE NEW DISCHARGE PRESSURE GAGE PI-1425. THE PREVIOUSLY RUN OST-201 SHOWED THE U/D IN THE REQUIRED ACTION CATEGORY ON 8-30-88 AT 2100. THIS OST-201 (AFTER VENTING GAGE) SHOWS THE PUMP TO BE WITHIN THE ALERT RANGE (WHERE IT WAS BEFORE ~~THE~~ 8-30-88).

Approved by: [illegible]
Unit 2 - Operating Supervisor
Date 9-2-88

Reviewed by: [illegible]
ISI Coordinator
Date 9/5/88

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Greg Taylor (Print) Greg Taylor 9-16-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 9-16-88

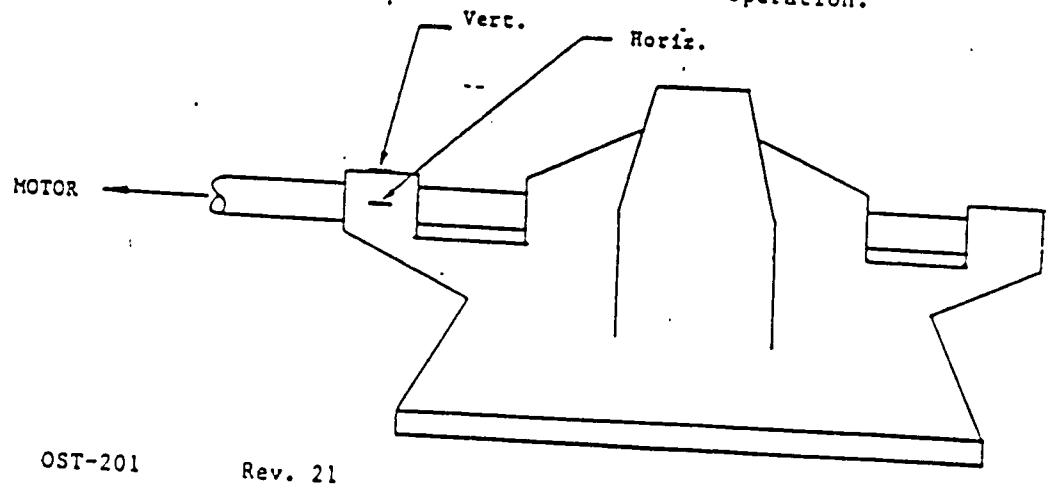
Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1430	0	N/A	N/A
		"B" - PI-1425	0	1435	N/A	N/A
	Vibration,* MILS	Horiz.	.54	.44	≤1.0	1.0
		Vert.	.22	.28	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	6.6	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.1	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		115	109	N/A	N/A
	Oil Temp from Cooler, °F		108	98	N/A	N/A
	Oil Sump. Temp, °F		110	96	N/A	N/A
	Cooling Water Outlet, °F TI-1636		80	84	N/A	N/A
	Header Press., PSIG PI-1421A		1425	1450	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1423.4	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1427.9	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Performed due to maintenance completed during outage and for SP-002.

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Glen Taylor	9-16-88
	[illegible]	Kona Smith	9/16/88
	[illegible]	R. C. [illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Test Complete: Date 9-16-88 Time 1408

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 9-16-88 Time 1415
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)

Approved by: [signature] Date [illegible]
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 9/23/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

T. Hocutt (Print) T Hocutt 9/20/88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

D X Lynch 9/20/88

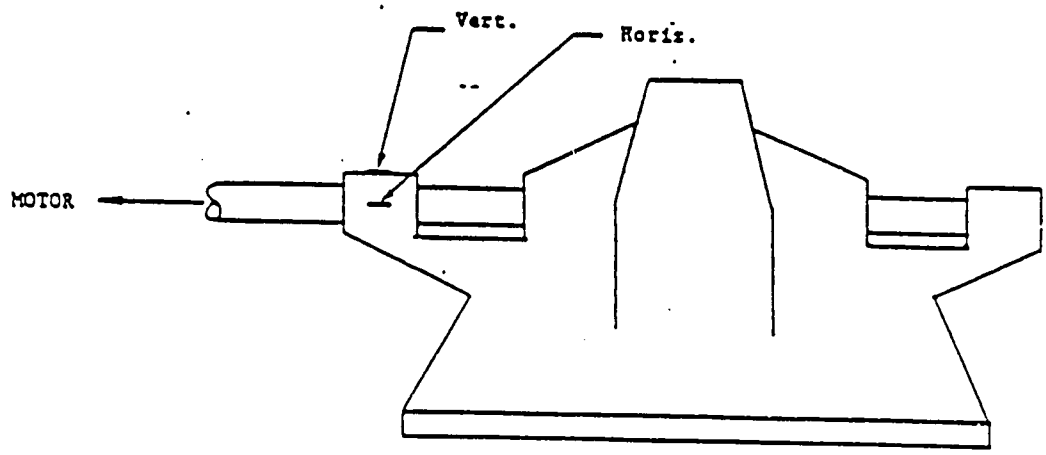
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1440	0	N/A	N/A
		"B" - PI-1425	0	1430	N/A	N/A
	Vibration,* MILS	Horiz. TDH 4/4/88	.53 ~~.32~~	.45	≤1.0	1.0
		Vert. TDH 9/14/88	.40 ~~.25~~	.51	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	7.2	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.9	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	14	N/A	N/A
	Oil Temp. to Cooler, °F		115	110	N/A	N/A
	Oil Temp from Cooler, °F		103	98	N/A	N/A
	Oil Sump. Temp, °F		104	99	N/A	N/A
	Cooling Water Outlet, °F TI-1636		89	90	N/A	N/A
	Header Press., PSIG PI-1421A		1430	1460	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1432.8	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1422.1	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	JDH	T. D. Hocutt	9/21/88
	D	W. Cutright	9-21-88
	[illegible]	H. A. Wingard	9/21/88

Test Complete: Date 9/21/88 Time 0322

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 9/21/88 Time 0900
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature] Date 9-23-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 9/29/88
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Ralph C. Downey (Print) Ralph C. Downey 10-17-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

D. M. Quill 10-17-88

Shift Foreman Date

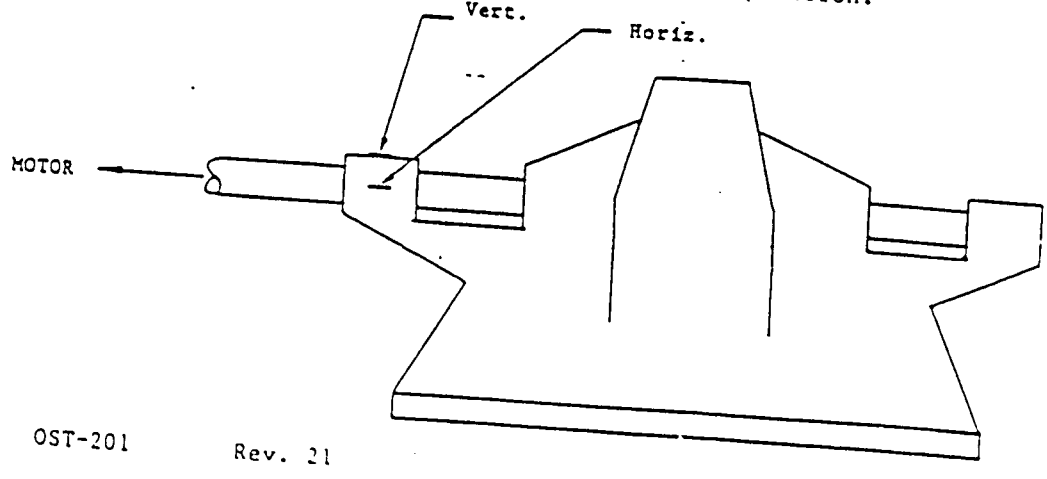
MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1420	0	N/A	N/A
		"B" - PI-1425	0	1440	N/A	N/A
	Vibration,* MILS	Horiz.	.38	.4	≤1.0	1.0
		Vert.	.2	.2	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	7	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	8.4	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		120	100	N/A	N/A
	Oil Temp from Cooler, °F		90	90	N/A	N/A
	Oil Sump. Temp, °F		85	90	N/A	N/A
	Cooling Water Outlet, °F TI-1636		78	78	N/A	N/A
	Header Press., PSIG PI-1421A		1425	1460	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1413	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1431.6	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	RD	Randy C. Downey	10-17-88
	MSM	Michael S. Moore	10-17-88
	RLH	R.L. Hale	10-17-88

Test Complete: Date 10-17-88 Time 1205

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Unit 2 - Shift Foreman Date 10/17/88 Time 1515

Comments: (Required if results were unsatisfactory) A MAFW RUN FOR MORE THAN 30 MINUTES DUE TO READING 3/4's

Approved by: _____ Unit 2 - Operating Supervisor Date 10-18-88

Reviewed by: _____ ISI Coordinator Date 10/20/88

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during cold shutdown, hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

MJJONES	(Print)		11-15-88
Name		Signature	Date

3.5 The Shift Foreman has given his permission to conduct this test.

	11-15-88
Shift Foreman	Date

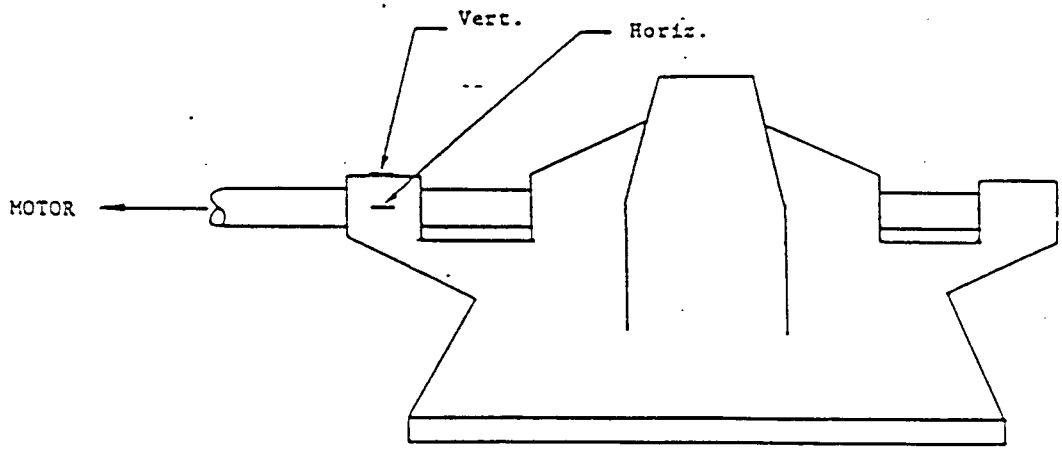
2707 0778

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.8 or 7.3.8	Disch. Press. PSIG	"A" - PI-1424	1450	0	N/A	N/A
		"B" - PI-1425	0	1440	N/A	N/A
	Vibration,* MILS	Horiz.	0.45	0.38	≤1.0	1.0
		Vert.	0.20	0.20	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	6.20	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	6.25	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		106	106	N/A	N/A
	Oil Temp from Cooler, °F		96	97	N/A	N/A
	Oil Sump. Temp, °F		90	88	N/A	N/A
	Cooling Water Outlet, °F TI-1636		77	75	N/A	N/A
	Header Press., PSIG PI-1421A		1420	1450	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)		1443.80	N/A	≥1333 ≤1462	N/A
7.3.9			N/A	1433.75	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	MM	MJJONES	11-15-88
	BCW	B. C. WALDSMITH	16 Nov 88
	DM	D. Morrison	11/16/88

Test Complete: Date 11/16/88 Time 0315

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Date 11/16/88 Time 0341
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)
'B' AFW pump used to feed A+B S/G's

Approved by: _____ Date 11-15-88
Unit 2 - Operating Supervisor

Reviewed by: _____ Date 11/25/88
ISI Coordinator

2707 0796

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during cold shutdown, hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Martin L. Arnold (Print) Martin L. Arnold 23-Jan-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

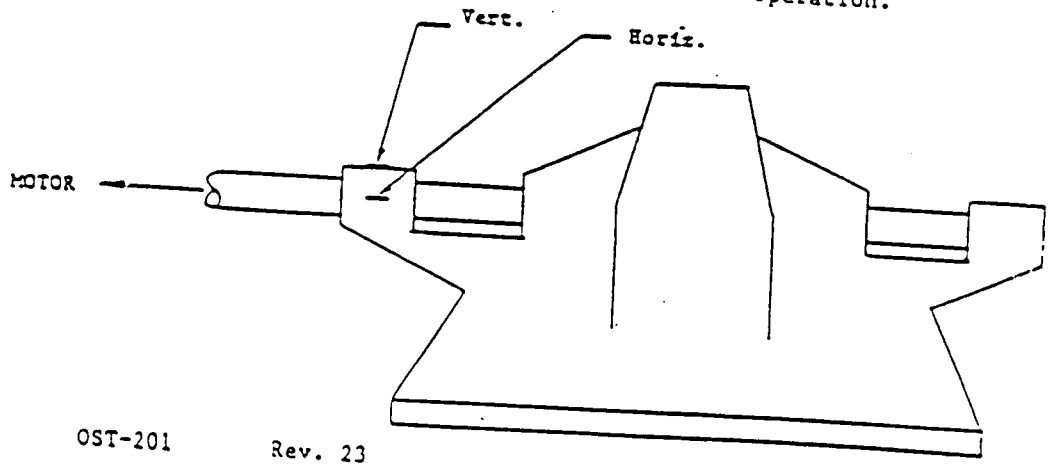
[illegible] 1-23-89
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1450	0	N/A	N/A
		"B" - PI-1425	0	1440	N/A	N/A
	Vibration,* MILS	Horiz.	.45	0.52	≤1.0	1.0
		Vert.	.15	0.28	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	5.5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	9.4	N/A	≥4.0
	Oil Press. to Regulator, PSIG		28	17	N/A	N/A
	Oil Temp. to Cooler, °F		80	85	N/A	N/A
	Oil Temp from Cooler, °F		73	75	N/A	N/A
	Oil Sump. Temp, °F		75	76	N/A	N/A
	Cooling Water Outlet, °F TI-1636		48	50	N/A	N/A
	Header Press., PSIG PI-1421A		1440	1470	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		1444.5	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1430.6	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	MLA/WED	Martin L. Arnold/WE STOUFF	23-Jan-89 / 1-23-89
	BM/CM	B. Milligan/CANNONS	1-23-89 / 1/26/89
	GT/MM	Greg Taylor/MALLMAN	1-25-89 / 1/25/89
	SA/KA	Steve Ashe/KORRAN	1-25-89 / 1/25/89

Test Complete: Date 1/26/89 Time 1413

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 1/24/89 Time 1413

Comments: (Required if results were unsatisfactory) USED STANWATCH & HGR-4

Approved by: [signature]
Unit 2 - Operating Supervisor Date 1-28-89

Reviewed by: [signature]
ISI Coordinator Date 1/30/89

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

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3.1 The AFW system components can be tested during cold shutdown, hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

_____ (Print) _____ _____
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 2-13-89
Shift Foreman Date

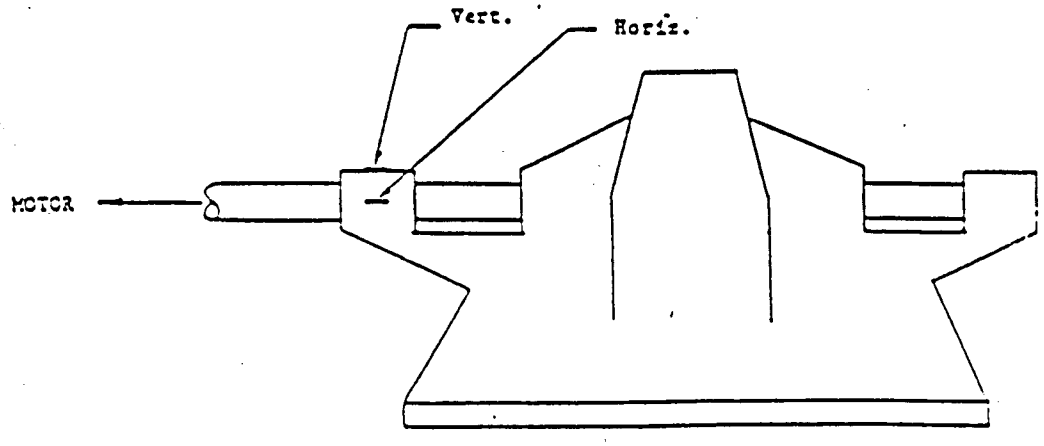
12

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	N/A	0	N/A	N/A
		"B" - PI-1425	N/A	1440	N/A	N/A
	Vibration,* MILS	Horiz.	N/A	.45	≤1.0	1.0
		Vert.	N/A	.35	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	N/A	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	8.6	N/A	≥4.0
	Oil Press. to Regulator, PSIG		N/A	16	N/A	N/A
	Oil Temp. to Cooler, °F		N/A	80	N/A	N/A
	Oil Temp from Cooler, °F		N/A	72	N/A	N/A
	Oil Sump. Temp, °F		N/A	70	N/A	N/A
	Cooling Water Outlet, °F TI-1636		N/A	53	N/A	N/A
	Header Press., PSIG PI-1421A		N/A	1460	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		N/A	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1431.4	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE

CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) "B" MDAFW Pump only for deloring BTS IAW OWP (Pg 1-14 of 22, 18-22 of 22)

	Initials	Name (Print)	Date
Test Performed by	MIA	M. A. Arnold	13 Feb 89
	BCW	B. C. WALDSMITH	13 Feb 89

Test Complete: Date 13 Feb 89 Time 1755

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 2-13-89 Time 1800
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)

Approved by: [signature] Date 2/15/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 2/22/89
ISI Coordinator

p. 24 of 24

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

3.0 PREREQUISITES

3.1 The AFW system components can be tested during cold shutdown, hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

_____ (Print) _____ _____
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

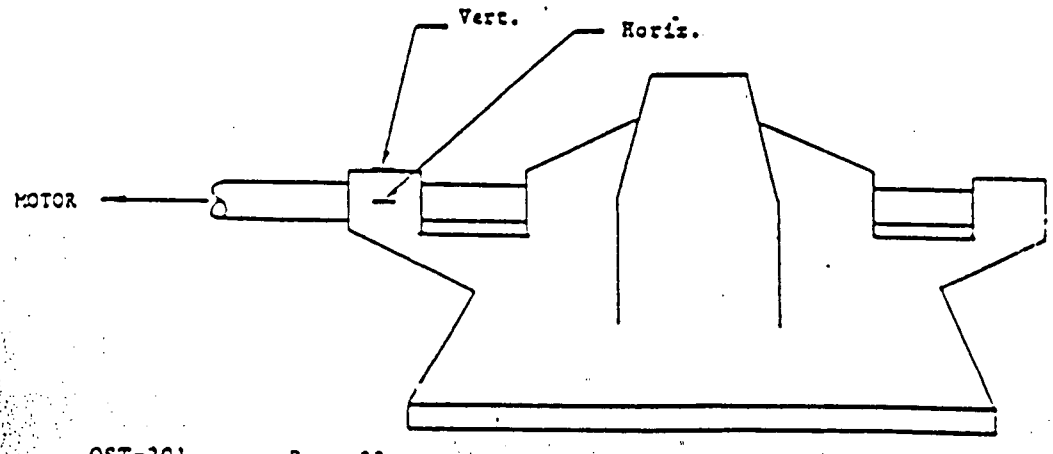
_____ _____
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1450	[illegible] 0	N/A	N/A
		"B" - PI-1425	0	[illegible] 1440	N/A	N/A
	Vibration,* MILS	Horiz.	.4	.46	≤1.0	1.0
		Vert.	.46	.3	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	8.4	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	8.5	N/A	≥4.0
	Oil Press. to Regulator, PSIG		29	17	N/A	N/A
	Oil Temp. to Cooler, °F		85	84	N/A	N/A
	Oil Temp from Cooler, °F		77	75	N/A	N/A
	Oil Sump. Temp, °F		71	70	N/A	N/A
	Cooling Water Outlet, °F TI-1636		56	52	N/A	N/A
	Header Press., PSIG PI-1421A		14.0	14.25	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		1440.6	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1430.5	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	[illegible]	Steve Atlee	2-22-89
	[illegible]	F. B. SCHWIER	2-22-89
	[illegible]	G. Taylor	2-22-89
	[illegible]	C. Winter	2/22/89

Test Complete: Date 2-22-89 Time 0038

Test Satisfactory: Yes / No (Circle one)

Reviewed by: C. Winter
Unit 2 - Shift Foreman
Date 2/22/89 Time 0100

Comments: (Required if results were unsatisfactory) A MDAFW and L. Cut is in for a 2 [illegible] 2 [illegible]

Approved by: [illegible]
Unit 2 - Operating Supervisor
Date 2/23/89

Reviewed by: W. McCutcheon
ISI Coordinator
Date 2/23/89

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

2.4.2 G-190199, Service and Cooling Water System

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3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Mel Kirk (Print) _____ 21 MAR 89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

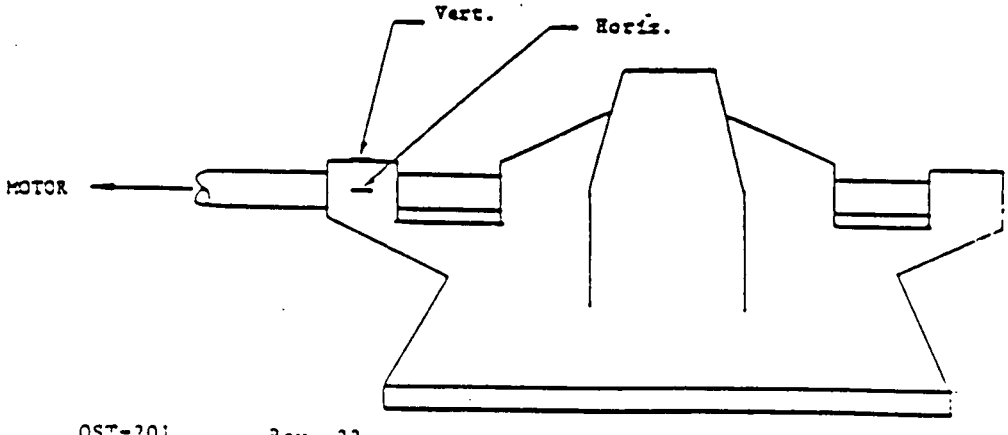
_____ 5/21/89
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1450	0 ~~1450~~	N/A	N/A
		"B" - PI-1425	0	1450	N/A	N/A
	Vibration,* MILS	Horiz.	.27	.39	≤1.0	1.0
		Vert.	.18	.39	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	7.5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	8.0	N/A	≥4.0
	Oil Press. to Regulator, PSIG		29	15.5	N/A	N/A
	Oil Temp. to Cooler, °F		95	95	N/A	N/A
	Oil Temp from Cooler, °F		87	86	N/A	N/A
	Oil Sump. Temp, °F		88	90	N/A	N/A
	Cooling Water Outlet, °F TI-1636		67	65	N/A	N/A
	Header Press., PSIG PI-1421A		1450	1455	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		1442.5	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1442	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	MA	M. GANN	3/21/89
	MK	MW KIRK	21 MAR 89
	JM	J F METIS	3/21/89

Test Complete: Date 3-21-89 Time 2320

Test Satisfactory: Yes / No (Circle one)

Reviewed by: D. McDill
Unit 2 - Shift Foreman Date 3/22/89 Time 0353

Comments: (Required if results were unsatisfactory) _____

Approved by: BOB STEELE by [illegible]
Unit 2 - Operating Supervisor Date 3-31-89

Reviewed by: [illegible]
ISI Coordinator Date 4/10/89

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

2.4.1 G-190197, Feedwater, Condensate and Air Evacuation

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3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

E Lewis (Print) 4-18-89

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

4-18-89

Shift Foreman Date

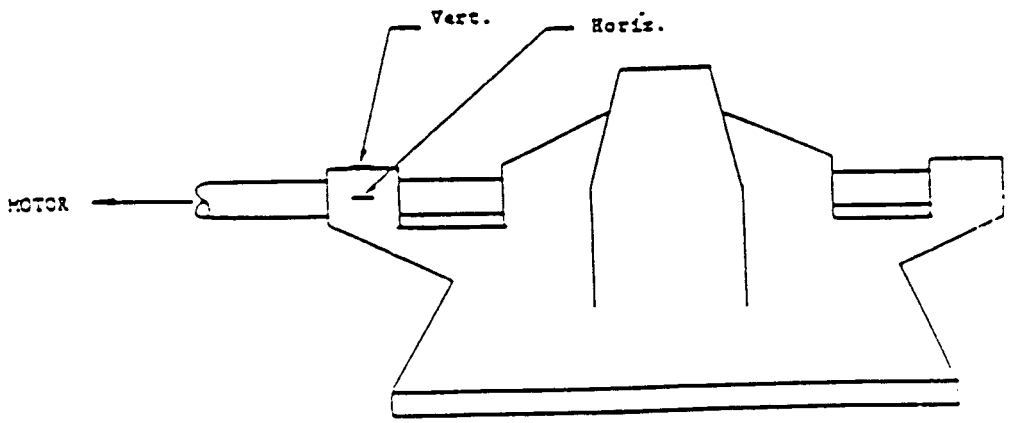
2877 1678

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1440	0	N/A	N/A
		"B" - PI-1425	0	1460	N/A	N/A
	Vibration,* MILS	Horiz.	0.4	0.55	≤1.0	1.0
		Vert.	0.6	0.45	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	5.2	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	5.5	N/A	≥4.0
	Oil Press. to Regulator, PSIG		32	16	N/A	N/A
	Oil Temp. to Cooler, °F		95	94	N/A	N/A
	Oil Temp from Cooler, °F		90	85	N/A	N/A
	Oil Sump. Temp, °F		90	92	N/A	N/A
	Cooling Water Outlet, °F TI-1636		68	66	N/A	N/A
	Header Press., PSIG PI-1421A		1450	1475	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		1434.8	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1454.5	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	M. Rebandt	4-19-89
	[illegible]	W. Cutright	4-19-89
	[illegible]	T. White	4/19/89
	[illegible]	H. Fletcher	4-19-89

Test Complete: Date 4/19/89 Time 0455

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 4-19-89 Time 0528
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature] Date 4/19/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 4/24/89
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.3 OP-402 Auxiliary Feedwater

2.4 Engineering flow diagrams:

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3.1 The AFW system components can be tested during cold shutdown, hot shutdown or power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.

3.2 Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.

3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

DAN AKERS (Print) _____ 5/16/89

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 5/16/89

Shift Foreman Date

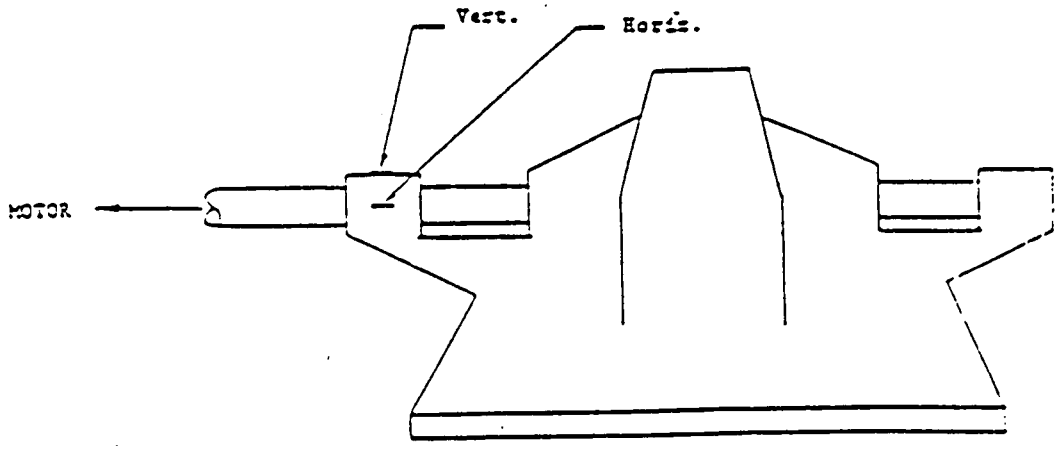
2904 12266

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1460	0	N/A	N/A
		"B" - PI-1425	0	1461	N/A	N/A
	Vibration,* MILS	Horiz.	.4	.5	≤1.0	1.0
		Vert.	.2	.4	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	6.8	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.3	N/A	≥4.0
	Oil Press. to Regulator, PSIG		29	15	N/A	N/A
	Oil Temp. to Cooler, °F		102	100	N/A	N/A
	Oil Temp from Cooler, °F		95	93	N/A	N/A
	Oil Sump. Temp, °F		98	95	N/A	N/A
	Cooling Water Outlet, °F TI-1636		80	78	N/A	N/A
	Header Press., PSIG PI-1421A		1450	1475	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		1453.2	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1453.7 ~~1412.7~~ MW 2/17/84	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	DAN AKERS	5/17/89
	[illegible]	K OREWIN	5/17/89
	[illegible]	STEVE BIDDERMAN	5/17/89
	[illegible]	C WINTERS	5/17/89

Test Complete: Date 5/17/89 Time 0315

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 5/17/89 Time 0345
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature] Date 5/19/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 5/31/89
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

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3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

DAN AKERS (Print) _____ 6/20/89

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 6-20-89

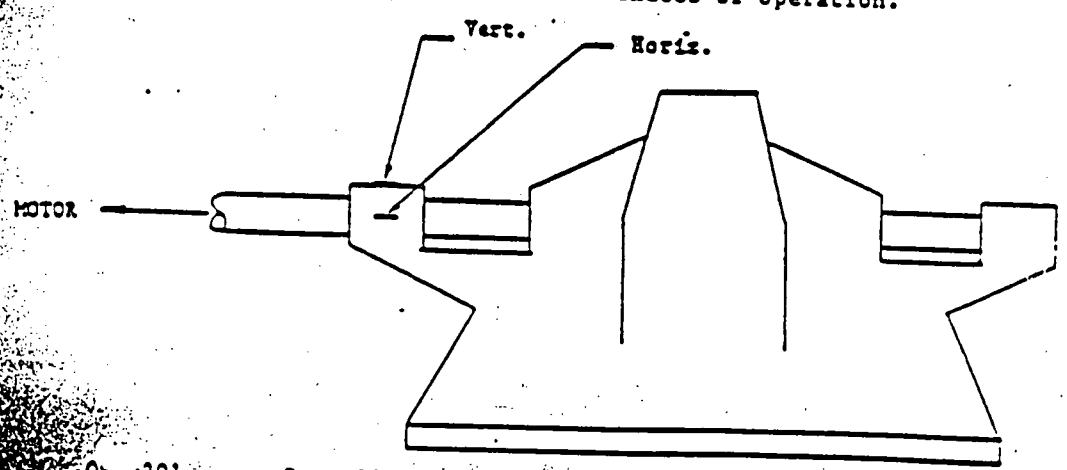
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1450	~~0~~ 1470 0	N/A	N/A
		"B" - PI-1425	0	1470	N/A	N/A
	Vibration,* MILS	Horiz.	0.47	.41	≤1.0	1.0
		Vert.	0.27	.52	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	7.3	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.6	N/A	≥4.0
	Oil Press. to Regulator, PSIG		30	15	N/A	N/A
	Oil Temp. to Cooler, °F		110	110	N/A	N/A
	Oil Temp from Cooler, °F		103	100	N/A	N/A
	Oil Sump. Temp, °F		103	101	N/A	N/A
	Cooling Water Outlet, °F TI-1636		88	85	N/A	N/A
	Header Press., PSIG PI-1421A		1440	1460	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		1442.7	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1462.4	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	RALPH C. DOWNEY	6-20-89
	[illegible]	DAN AKERS	6/20/89
	[illegible]	STEVE BIEDENBACH	6/20/89
	[illegible]	H.A. WINGER	6/20/89

Test Complete: Date 6/20/89 Time 2210

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 6-20-89 Time 2310
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature] for R. STEELE Date 6-23-89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 6/26/89
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

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3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Jim Barry (Print) _____ 7-18-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

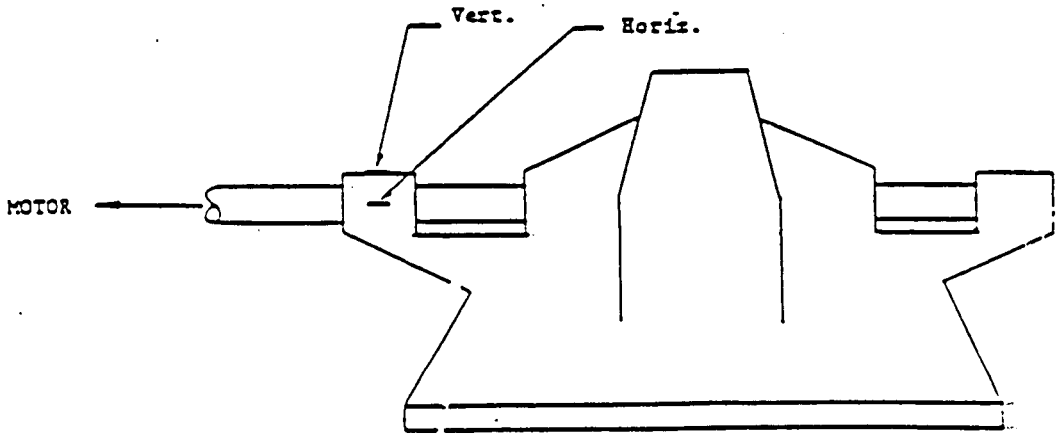
_____ 7/18/89
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1420	0	N/A	N/A
		"B" - PI-1425	0 ~~N/A~~	~~1440~~	N/A	N/A
	Vibration,* MILS	Horiz.	0.5	.4/4	≤1.0	1.0
		Vert.	0.3	.4/	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	6.5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.2	N/A	≥4.0
	Oil Press. to Regulator, PSIG		22	14	N/A	N/A
	Oil Temp. to Cooler, °F		110	111	N/A	N/A
	Oil Temp from Cooler, °F		105	105	N/A	N/A
	Oil Sump. Temp, °F		100	104	N/A	N/A
	Cooling Water Outlet, °F TI-1636		89	90	N/A	N/A
	Header Press., PSIG PI-1421A		1440	~~1440~~	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		~~14135~~ ~~1433.5~~	N/A 1432.8	≥1333 ≤1462	N/A
7.3.10			N/A	~~1472~~	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	D. Billings	7-18-89
	[illegible]	David A. Cook	7/18/89
	[illegible]	Jim Barry	7-18-89
	[illegible]	L.T. Davis	7-18-89

Test Complete: Date 7/18/89 Time 1658

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 7/18/89 Time 1658
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature] Date 7/21/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 7/31/89
ISI Coordinator

2.0 REFERENCES

2.1 Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33

2.2 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

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3.3 Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked, and the MDAFW Pumps.

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

_____ (Print) _____ _____
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

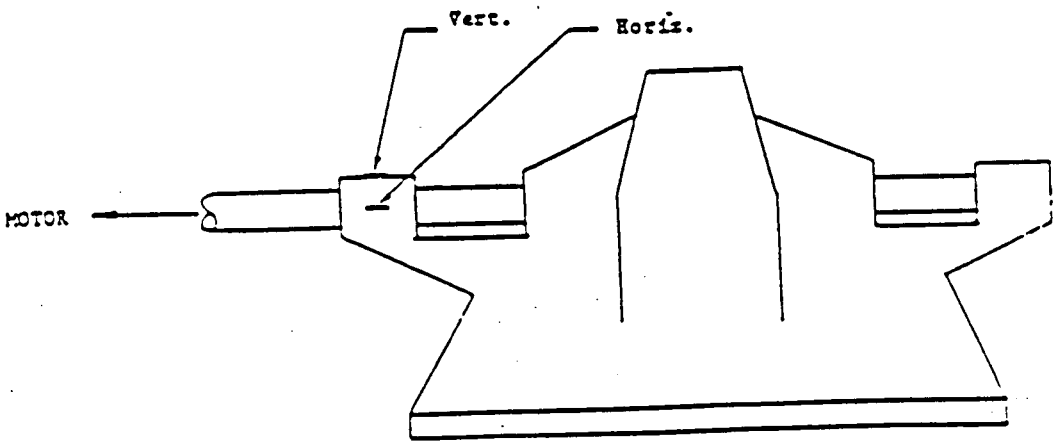
_____ 8/15/89
Shift Foreman Date

MDAFW PUMP DATA

REF. STEP NO.	PARAMETER		PUMP TESTED "A"	PUMP TESTED "B"	ACCEPTANCE CRITERIA "A"	ACCEPTANCE CRITERIA "B"
7.2.9 or 7.3.9	Disch. Press. PSIG	"A" - PI-1424	1440	~~1460~~ 0	N/A	N/A
		"B" - PI-1425	0	1460	N/A	N/A
	Vibration,* MILS	Horiz.	.6	.9	≤1.0	1.0
		Vert.	.2	.44	≤1.0	1.0
	Suct. Press. PSIG	"A" - PI-1479	6.5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	7.0	N/A	≥4.0
	Oil Press. to Regulator, PSIG		22.5	13.5	N/A	N/A
	Oil Temp. to Cooler, °F		112	112	N/A	N/A
	Oil Temp from Cooler, °F		105	105	N/A	N/A
	Oil Sump. Temp, °F		103	108	N/A	N/A
	Cooling Water Outlet, °F TI-1636		70	87	N/A	N/A
	Header Press., PSIG PI-1421A		1450	1425	N/A	N/A
7.2.10	Pump ΔP PSIG, (1)		1433.5	N/A	≥1333 ≤1462	N/A
7.3.10			N/A	1453	N/A	≥1340 ≤1470

Calculations: (1) Pump ΔP = (Disch. Press) - (Suct. Press)
"A" = (PI-1424) - (PI-1479)
"B" = (PI-1425) - (PI-1480)

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	T.E. White	8/15/89
	[illegible]	F.B. Schwein	8-15-89
	[illegible]	W. Cutright	8-16-89
	[illegible]	C. Mainitzer	8/16/89

Test Complete: Date 8-16-89 Time 0245

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 8/16/89 Time 0250
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) FCV-405 failed stroke time of 10 seconds [illegible] AH-501

Approved by: [illegible] Date 8/17/89
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 8/25/89
ISI Coordinator

2983 0527

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Bob Steele (Print) _____ 10-20-87
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 10-20-87
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

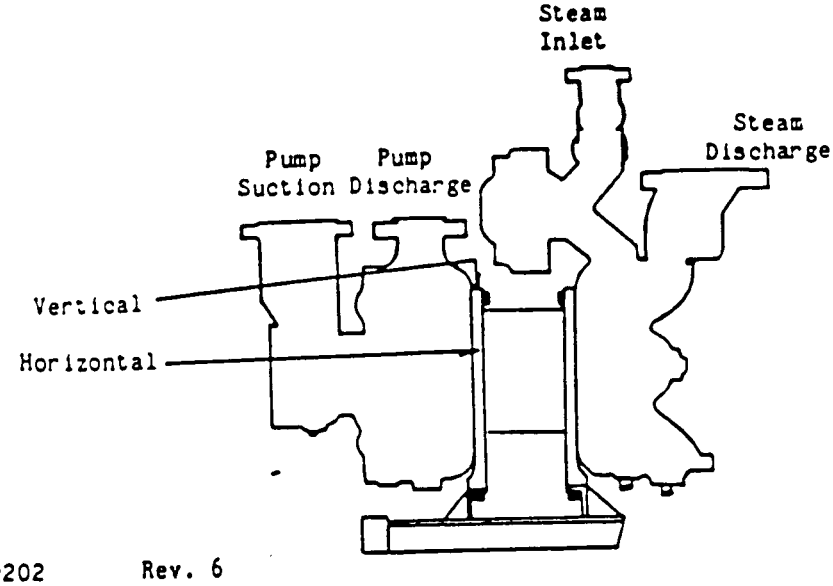
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.15.2	Disch. Press. PI-1426 PSIG		1300	N/A
7.2.15.2	Steam Inlet Press. PI-1357-2. PSIG		805	N/A
7.2.16	Feed to Steam ΔP, PSI (1)		495	≥310
7.2.18	Pump Turbine Speed, RPM		9410	≤9550 ≥9400
7.2.19	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1480	N/A
	Pump Suct. Press. PI-1478, PSIG		4.0	≥2.0
	Header Press PI-1421B, PSIG		1480	N/A
	Oil Press to Regulator, PSIG		~~28~~ 7	N/A
	Oil Press from Regulator, PSIG		20	N/A
	Oil Temp to Cooler, °F		145	N/A
	Oil Temp. from Cooler, °F		130	N/A
	Cooling Water Outlet Temp.		100	N/A
	Vibration Mils*	Horizontal	0.4	≤1.2
		Vertical	0.5	≤1.0
7.2.20	Pump ΔP, PSI, (2)		1476	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	[illegible]	K. DARWIN	10/21/87
	[illegible]	JF METTS	10/21/87
	[illegible]	STEVE BADENBACH	10/21/87
	[illegible]	W. CUTRICHT	10-21-87

Test Complete: Date 10/21/87 Time 0115

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 10-21-87 Time 0200

Comments: (Required if results were unsatisfactory) WR-87 APAY1
WRITTEN FOR FLOW TRANSDUCER
TEST ACCEPTED AS SET WITH FAULT LIST ON FT-M26A DUE TO NR BEING
WRITTEN AND EIR ON EQUIPMENT ENSURING ITS REPAIR and RECEIPT

Approved by: [signature]
Unit 2 - Operating Supervisor Date 10-23-87

Reviewed by: [signature]
ISI Coordinator Date 11/11/87

2328 1772

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Ben Parvin (Print) _____ 11-17-81

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 11-17-87

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

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4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

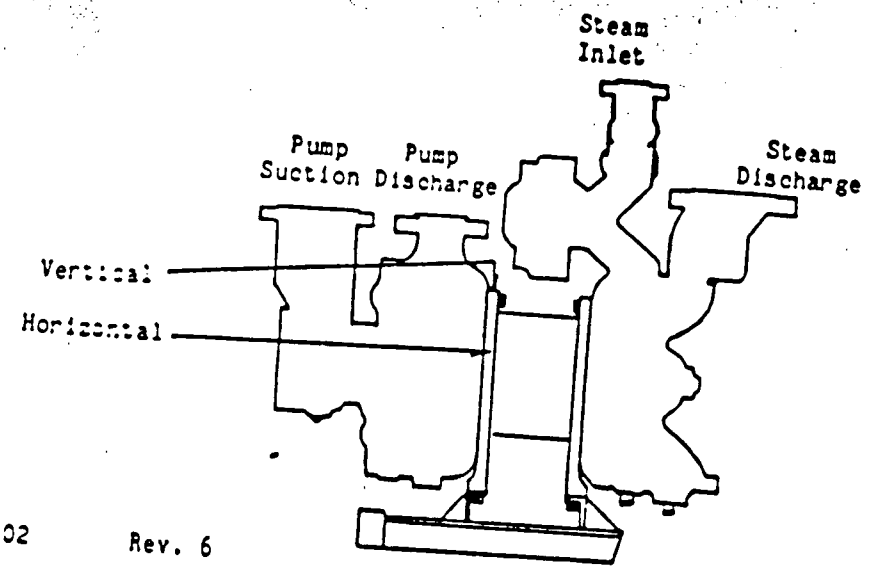
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.15.2	Disch. Press. PI-1426 PSIG		1200	N/A
7.2.15.2	Steam Inlet Press. PI-1357-2. PSIG		800	N/A
7.2.16	Feed to Steam ΔP, PSI (1)		400	≥310
7.2.18	Pump Turbine Speed, RPM		9500	≤9550 ≥9400
7.2.19	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1430 ~~1070~~ ~~1200~~	N/A
	Pump Suct. Press. PI-1478, PSIG		2.5	≥2.0
	Header Press PI-1421B, PSIG		1510 ~~1075~~	N/A
	Oil Press to Regulator, PSIG		22	N/A
	Oil Press from Regulator, PSIG		7	N/A
	Oil Temp to Cooler, °F		123	N/A
	Oil Temp. from Cooler, °F		105	N/A
	Cooling Water Outlet Temp.		80	N/A
	Vibration Mils*	Horizontal	.65	≤1.2
		Vertical	.36	≤1.0
7.2.20	Pump ΔP, PSI, (2)		1477.5 ~~1067.5~~	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	JB	Jim Darcy	11-18-87
	RS	Rick Burrell	11-18-87
	BCW	B.C. WALDSMITH	18 NOV 87
	[illegible]	SM Atlee	11-18-87

Test Complete: Date 11-18-87 Time 0403

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman
Date 11-18-87 Time [illegible]

Comments: (Required if results were unsatisfactory) STEAM GENERATOR WIDE RANGE LEVEL CHECKING. GOVERN. SETTINGS AND DESIGN PRESSURE READINGS.

Approved by: [signature]
Unit 2 - Operating Supervisor
Date 11-25-87

Reviewed by: [signature]
ISI Coordinator
Date 12/4/87

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

BRYAN L. WALDSMITH (Print) Bryan L. Waldsmith 15 Dec 87
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 12-15-87
Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

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4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

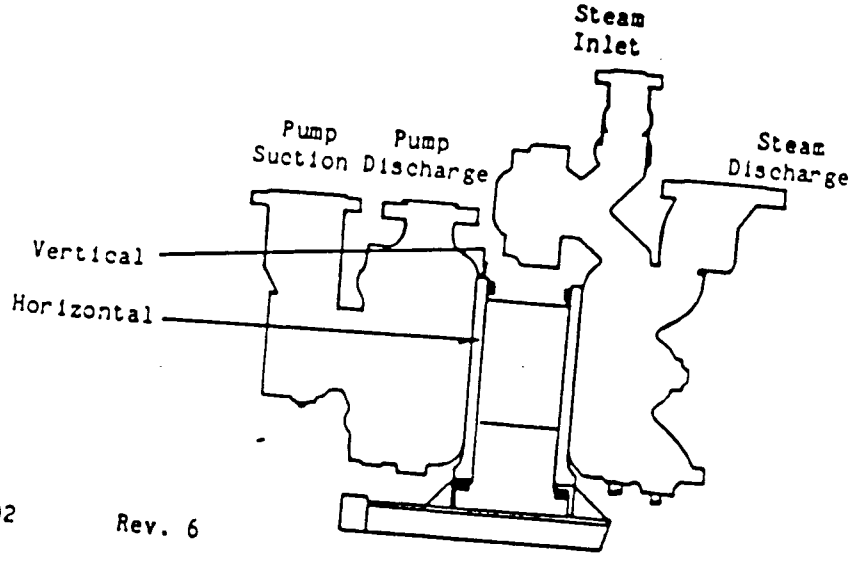
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.15.2	Disch. Press. PI-1426 PSIG		1220	N/A
7.2.15.2	Steam Inlet Press. PI-1357-2. PSIG		800	N/A
7.2.16	Feed to Steam ΔP, PSI (1)		420	≥310
7.2.18	Pump Turbine Speed, RPM		9500	≤9550 ≥9400
7.2.19	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1520	N/A
	Pump Suct. Press. PI-1478, PSIG		3.0	≥2.0
	Header Press PI-1421B, PSIG		1530	N/A
	Oil Press to Regulator, PSIG		21.5	N/A
	Oil Press from Regulator, PSIG		7.9	N/A
	Oil Temp to Cooler, °F		123	N/A
	Oil Temp. from Cooler, °F		104	N/A
	Cooling Water Outlet Temp.		79	N/A
	Vibration Mils*	Horizontal	1.0	≤1.2
		Vertical	.54	≤1.0
7.2.20	Pump ΔP, PSI, (2)		1517	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	BCW	B. C. WALDSMITH	15 Dec 87
	[illegible]	John A. Leone	15 Dec 87
	TDH / [illegible]	TDHault / D Akers	12/15/87 / 12/15/87
	[illegible]	[illegible]	[illegible]

Test Complete: Date 12/15/87 Time 2250

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____ Date 12-15-87 Time 2310
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: _____ Date 12-23-87
Unit 2 - Operating Supervisor

Reviewed by: _____ Date 12/29/87
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

B. Mulligan (Print) B. Mulligan 1-5-88 BM 1-5-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 1-5-88

Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

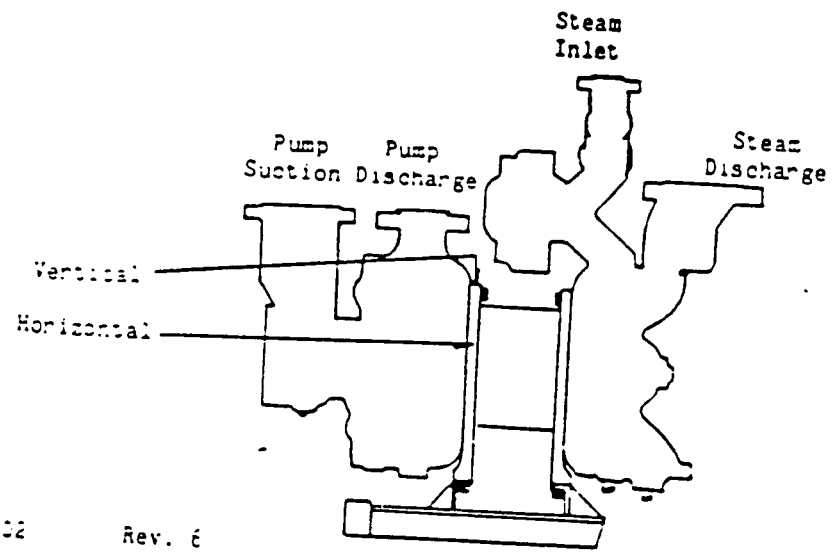
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.15.2	Disch. Press. PI-1426 PSIG		1230	N/A
7.2.15.2	Steam Inlet Press. PI-1357-2. PSIG		800	N/A
7.2.16	Feed to Steam ΔP, PSI (1)		430	≥310
7.2.18	Pump Turbine Speed, RPM		9500	≤9550 ≥9400
7.2.19	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1550	N/A
	Pump Suct. Press. PI-1478, PSIG		2.5	≥2.0
	Header Press PI-1421B, PSIG		1560	N/A
	Oil Press to Regulator, PSIG		20	N/A
	Oil Press from Regulator, PSIG		8	N/A
	Oil Temp to Cooler, °F		120	N/A
	Oil Temp. from Cooler, °F		100	N/A
	Cooling Water Outlet Temp.		60	N/A
	Vibration Mils*	Horizontal	.5	≤1.2
		Vertical	.6	≤1.0
7.2.20	Pump ΔP, PSI, (2)		1547.5	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



2395 0599 2427 0045

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) IA 1-19pgs 20-24pgs Returned to service per OWP Due to repair of oil leak on Governor

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Mark Rehandt	1-5-88
	[illegible]	B. Mulligan	1-5-88
	[illegible]	K. Darwin	1/5/88
	[illegible]	F Legette	1-5-88

Test Complete: Date 1/5/88 Time 1545

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 1-5-88 Time 1725

Comments: (Required if results were unsatisfactory) Step 7.2.2 pressure reading for Turb Aux oil pump reads 5psig

Approved by: [signature] For D. Nelson
Unit 2 - Operating Supervisor Date 1/19/88

Reviewed by: [signature]
ISI Coordinator Date 1/21/88

2-39-15 2427 0-0-0 2 4 3

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

W E Stroik (Print) _____ 1-20-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 1-20-88

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

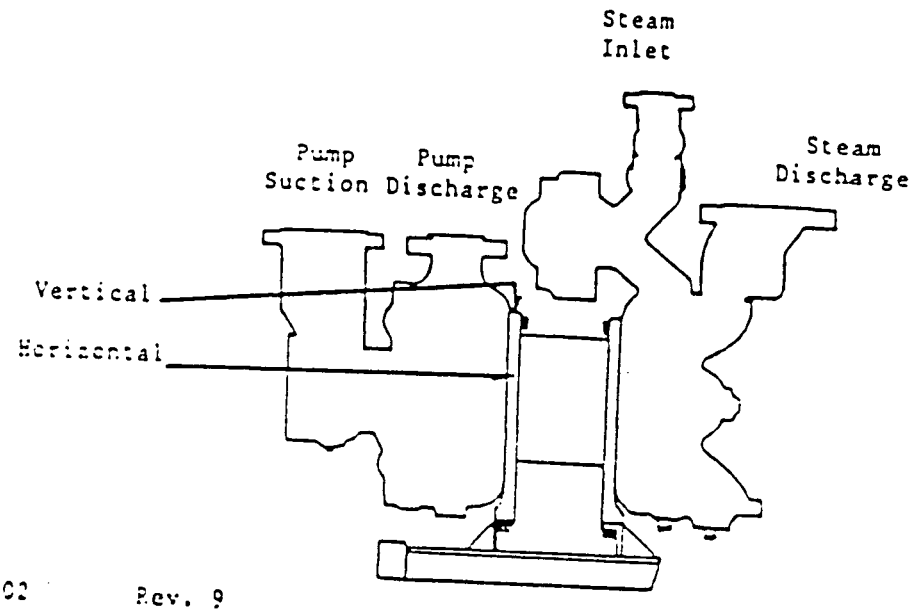
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG		1300	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG		980	N/A
7.2.17	Feed to Steam ΔP, PSI (1)		320	≥310
7.2.19	Pump Turbine Speed, RPM	As Found As Left	9500	≤9550 ≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1550	N/A
	Pump Suct. Press. PI-1478, PSIG		2.0	≥2.0
	Header Press PI-1421B, PSIG		1550	N/A
	Oil Press to Regulator, PSIG		21	N/A
	Oil Press from Regulator, PSIG		8	N/A
	Oil Temp to Cooler, °F		117	N/A
	Oil Temp. from Cooler, °F		97	N/A
	Cooling Water Outlet Temp.		75	N/A
	Vibration Mils*	Horizontal	0.7	≤1.2
		Vertical	.55	≤1.0
7.2.21	Pump ΔP, PSI, (2)		1548	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	WEA	W. E. Stout	1-20-88
	[illegible]	[illegible]	1-20-88
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Test Complete: Date 1-20-88 Time 1610

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 1-20-88 Time 1651
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) [illegible]
[illegible] - ART-14216 [illegible]
[illegible] S/G [illegible] [illegible]

Approved by: [signature] Date [illegible]
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 1/20/88
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

K. DARWIN (Print) _____ 3/10/88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 3-10-88
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

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4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

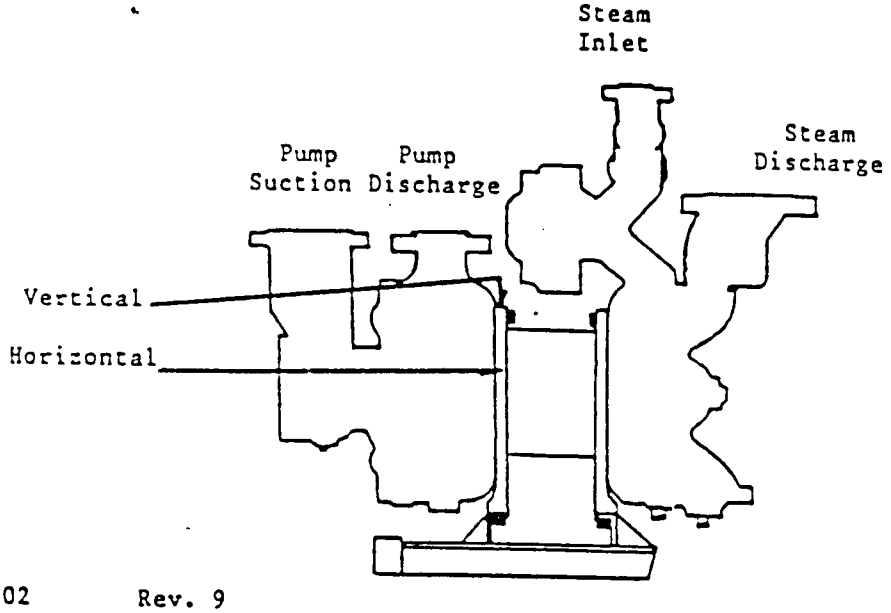
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG		1370	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG		1030	N/A
7.2.17	Feed to Steam ΔP, PSI (1)		340	≥310
7.2.19	Pump Turbine Speed, RPM	As Found	9600	≤9550
		As Left	9530	≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1550	N/A
	Pump Suct. Press. PI-1478, PSIG		5	≥2.0
	Header Press PI-1421B, PSIG		1575	N/A
	Oil Press to Regulator, PSIG		21	N/A
	Oil Press from Regulator, PSIG		8	N/A
	Oil Temp to Cooler, °F		120	N/A
	Oil Temp. from Cooler, °F		120	N/A
	Cooling Water Outlet Temp.		63	N/A
	Vibration Mils*	Horizontal	.9	≤1.2
		Vertical	.5	≤1.0
7.2.21	Pump ΔP, PSI, (2)		1545	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Performance test CSP-005 1-21

Test Performed by	Initials	Name (Print)	Date
	(illegible)	Paul M Duchesne	3-10-88
	(illegible)	K. DARWIN	3/10/88
	(illegible)	Joel Wiggins	3-10-88
	(illegible)	M. Robarge	3-10-88
	TEW	TE White	3/10/88

Test Complete: Date 3-10-88 Time 2300

Test Satisfactory: Yes / No (Circle one)

Reviewed by: (signature)
Unit 2 - Shift Foreman Date 3-10-88 Time 2355

Comments: (Required if results were unsatisfactory) Pump ran greater than 15 min → Used pump to feed S/G's
Fault light on AMT-1426A insi WR# 88-ADJ51
Fault light on AMT 1426B insi WR# 88-ADJ71
S/G Pump (illegible) Satisfactory, only problem was flow indication (illegible) in A & B lines

Approved by: (signature)
Unit 2 - Operating Supervisor Date 3-22-88

Reviewed by: (signature)
ISI Coordinator Date 4/6/88

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

M. JONES (Print)		3-15-88
Name	Signature	Date

3.5 The Shift Foreman has given his permission to conduct this test.

	3-15-88
Shift Foreman	Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

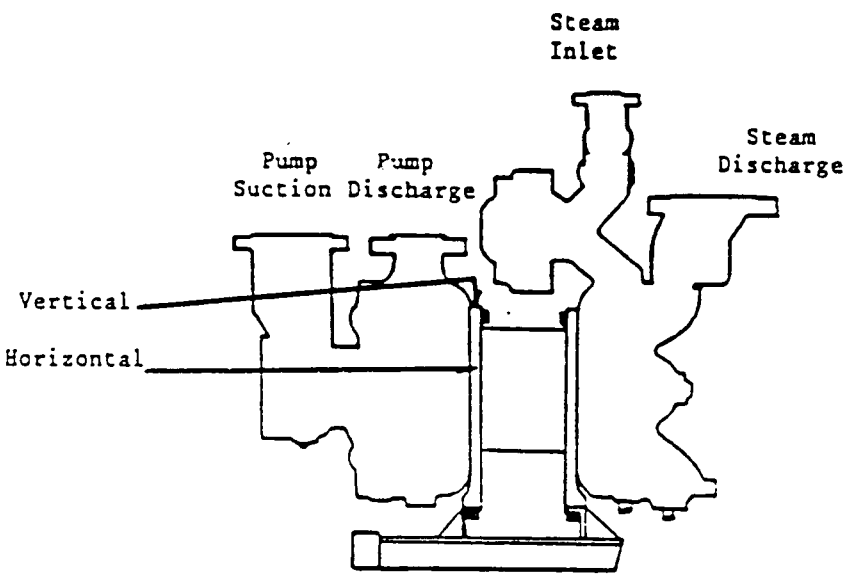
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG		1280	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG		855	N/A
7.2.17	Feed to Steam ΔP, PSI (1)		425	≥310
7.2.19	Pump Turbine Speed, RPM	As Found As Left	9550 3-15 ~~9550~~ 9450	≤9550 ≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1550	N/A
	Pump Suct. Press. PI-1478, PSIG		4.5	≥2.0
	Header Press PI-1421B, PSIG		1550	N/A
	Oil Press to Regulator, PSIG		22	N/A
	Oil Press from Regulator, PSIG		7.5	N/A
	Oil Temp to Cooler, °F		120	N/A
	Oil Temp. from Cooler, °F		100	N/A
	Cooling Water Outlet Temp.		59	N/A
	Vibration Mils*	Horizontal	0.8	≤1.2
		Vertical	0.6	≤1.0
7.2.21	Pump ΔP, PSI, (2)		1545.5	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	MM	M JONES	3-15-88
	BCW	B.C. WALDSMITH	15Mar88
	KS	KODA SMITH	3/16/88

Test Complete: Date 3/16/88 Time 0122

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 3-16-88 Time 0210
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature] Date 3-22-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 3/29/88
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Steve Allen (Print) 4-18-88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 4-18-88
Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

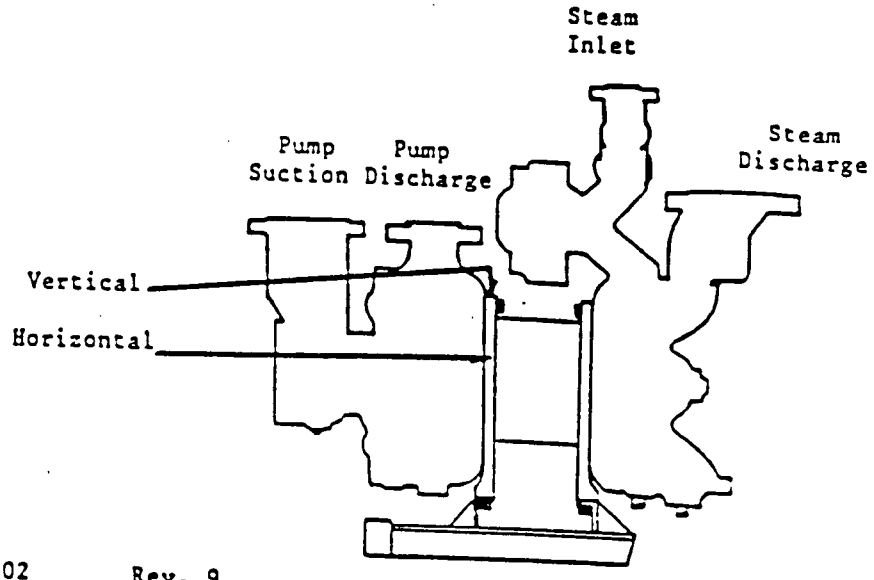
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG		1190	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG		880	N/A
7.2.17	Feed to Steam ΔP, PSI (1)		310	≥310
7.2.19	Pump Turbine Speed, RPM	As Found	9400	≤9550
		As Left	9400	≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1540	N/A
	Pump Suct. Press. PI-1478, PSIG		3.1	≥2.0
	Header Press PI-1421B, PSIG		1550	N/A
	Oil Press to Regulator, PSIG		20	N/A
	Oil Press from Regulator, PSIG		7.5	N/A
	Oil Temp to Cooler, °F		123	N/A
	Oil Temp. from Cooler, °F		107	N/A
	Cooling Water Outlet Temp.		78	N/A
	Vibration Mils*	Horizontal	.38	≤1.2
		Vertical	.25	≤1.0
7.2.21	Pump ΔP, PSI, (2)		1536.9	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	David A. Cook	4/18/88
	[illegible]	Steve Atlee	4-18-88
	[illegible]	JA Wingard	4/18/88

Test Complete: Date 4-18-88 Time 1545

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 4/18/88 Time 1545
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) Pump run > 30 min due to OST-202; generators were fed after 30 min run

Approved by: [signature] for D. Nelson Date 4-19-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 4/29/88
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Mark Rebendt (Print) Mark Rebendt 5-17-88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

C M Waters 5/17/88
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

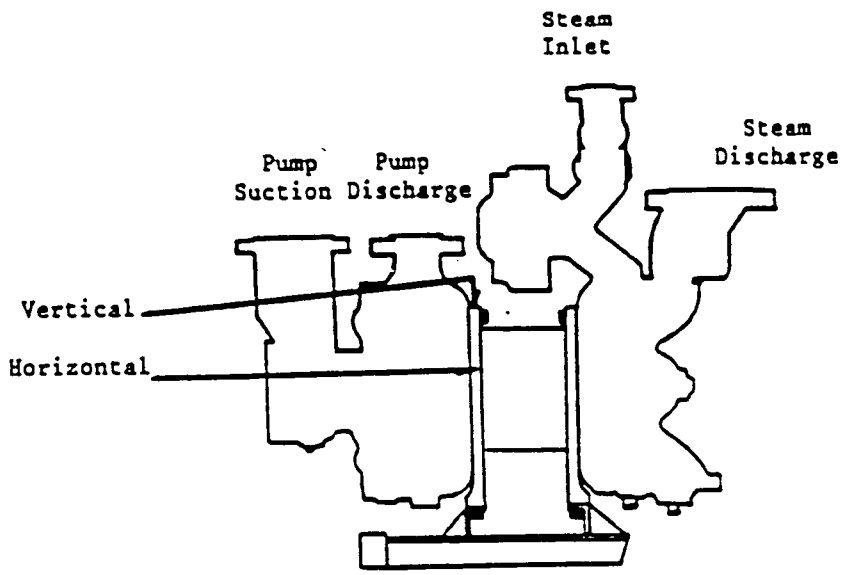
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG		1250	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG		800	N/A
7.2.17	Feed to Steam ΔP, PSI (1)		450	≥310
7.2.19	Pump Turbine Speed, RPM	As Found	9450	≤9550
		As Left	9450	≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1540	N/A
	Pump Suct. Press. PI-1478, PSIG		3	≥2.0
	Header Press PI-1421B, PSIG		1550	N/A
	Oil Press to Regulator, PSIG		20	N/A
	Oil Press from Regulator, PSIG		8	N/A
	Oil Temp to Cooler, °F		132	N/A
	Oil Temp. from Cooler, °F		115	N/A
	Cooling Water Outlet Temp.		84	N/A
	Vibration Mils*	Horizontal	1.0	≤1.2
		Vertical	0.9	≤1.0
7.2.21	Pump ΔP, PSI, (2)		1537	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	M. Robandt	5-17-88
	[illegible]	PM Duchock	5-17-88
	[illegible]	K. DARWIN	5/17/88

Test Complete: Date 5/17/88 Time 2230

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 5/17/88 Time 2300
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) FT 1426A AND FT1426C FAULT LIGHTS WILL NOT CLEAR WHEN WR # 88-AFT41. OST 202 WAS SATISFACTORY WITH THE EXCEPTION OF THE FAULT LIGHTS ON FT1426A & C.

Approved by: [signature] Date 5-24-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 5/31/88
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

T. Hocutt (Print) T. Hocutt 6/17/88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

[illegible] 6-17-88
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

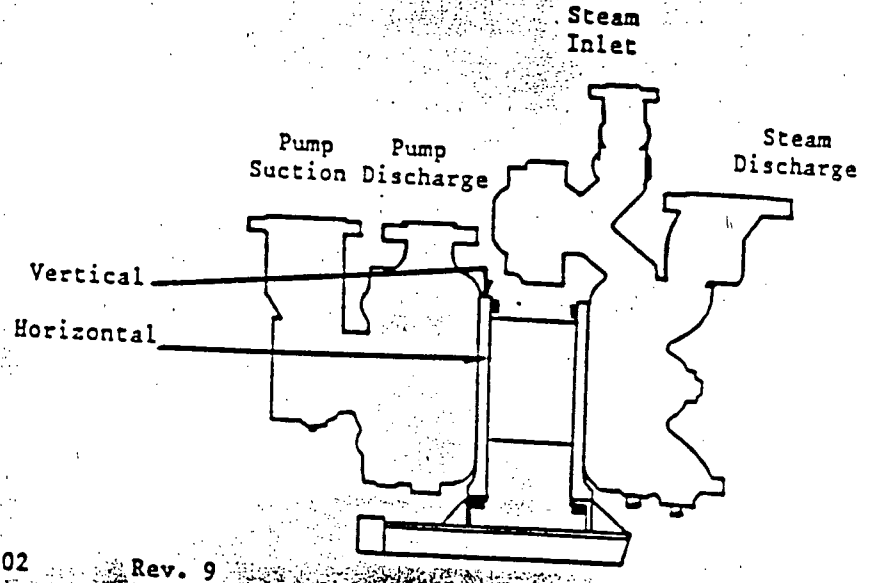
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG		1200	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG		790	N/A
7.2.17	Feed to Steam ΔP, PSI (1)		410	≥310
7.2.19	Pump Turbine Speed, RPM	As Found	9325	≤9550
		As Left	~~9420~~ 9400	≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1580	N/A
	Pump Suct. Press. PI-1478, PSIG		4.0	≥2.0
	Header Press PI-1421B, PSIG		1550	N/A
	Oil Press to Regulator, PSIG		20 ~~30.0~~	N/A
	Oil Press from Regulator, PSIG		7.0	N/A
	Oil Temp to Cooler, °F		135	N/A
	Oil Temp. from Cooler, °F		120	N/A
	Cooling Water Outlet Temp.		100	N/A
	Vibration Mils*	Horizontal	.8	≤1.2
		Vertical	.5	≤1.0
7.2.21	Pump ΔP, PSI, (2)		1576 ~~1546~~	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by:	[illegible]	J.A. Wenger	6/17/88
	TDH	T. D. Hocutt	6/17/88
	[illegible]	W. Cutright	6-17-88
	[illegible]	R.O. Moore	6-17-88

Test Complete: Date 6/17/88 Time 1846

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible]
Unit 2 - Shift Foreman Date 6-17-88 Time 1900

Comments: (Required if results were unsatisfactory)
① Pump was run for more than 30 minutes in order to get engineering data while feeding steam generators.
② SDAFW pump declared inoperable at 1900 hrs due to high pump DP.

Approved by: [illegible]
Unit 2 - Operating Supervisor Date 6-24-88

Reviewed by: [illegible]
ISI Coordinator Date 6/29/88

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Rick Burnell (Print) _____ 6/17/88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 6-17-88

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

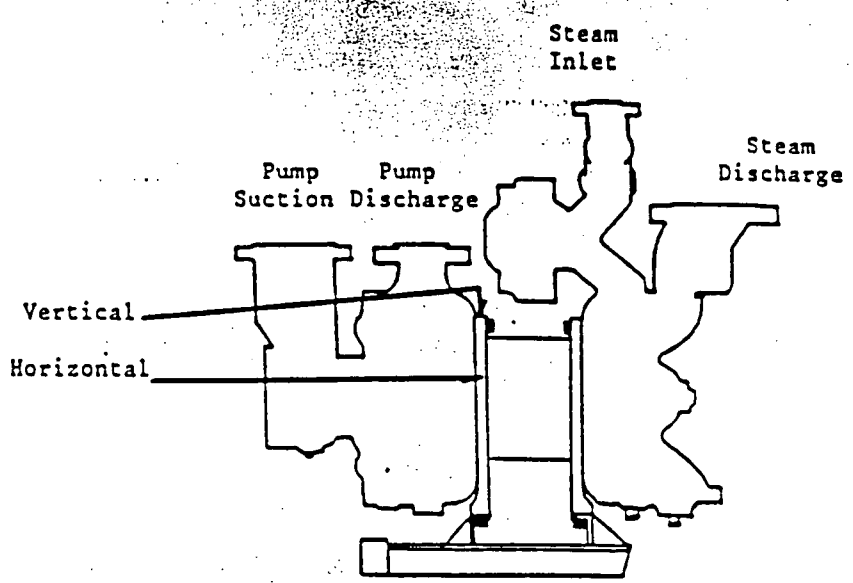
REF. STEP NO.	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG	1270	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2, PSIG	845	N/A
7.2.17	Feed to Steam ΔP, PSI (1)	425	≥310
7.2.19	Pump Turbine Speed, RPM — As Found	9550	≤9550
	As Left	9400	≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1540	N/A
	Pump Suct. Press. PI-1478, PSIG	4.2	≥2.0
	Header Press PI-1421B, PSIG	1560	N/A
	Oil Press to Regulator, PSIG	22	N/A
	Oil Press from Regulator, PSIG	7.5	N/A
	Oil Temp to Cooler, °F	136	N/A
	Oil Temp. from Cooler, °F	122	N/A
	Cooling Water Outlet Temp.	98	N/A
	Vibration Mils* — Horizontal	1.5	≤1.2
	Vibration Mils* — Vertical	.8	≤1.0
7.2.21	Pump ΔP, PSI, (2)	1535.8	≥1412 ≤1548

Calculations: (1) Feed to Steam ΔP = (Discharge Press) - (Steam Inlet Press)

(2) Pump ΔP - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Test performed to place SDAFW pump back in service. Pages 1-17, 21, 22, 24 Att. 8.2 N/A's due to testing done on previous 202

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Rick Burnell	6-17-88
	[illegible]	Steve Atlee	6-17-88
	[illegible]	D. Billings	6-17-88

Test Complete: Date 6-17-88 Time 2255

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 6-17-88 Time 2330

Comments: (Required if results were unsatisfactory) ① SDAFW pump test declared inoperable due to faulty light switch Lights # 88-AGQ-1 Submitted ② Page 16 Step 7.2.27 AMT-1426C

Approved by: [signature]
Unit 2 - Operating Supervisor Date 6-24-88

Reviewed by: [signature]
ISI Coordinator Date 6/29/88

2572 1393

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

R.R. FEMAL (Print) R.R. Femal 7-19-88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

R.R. Femal 7-19-88
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

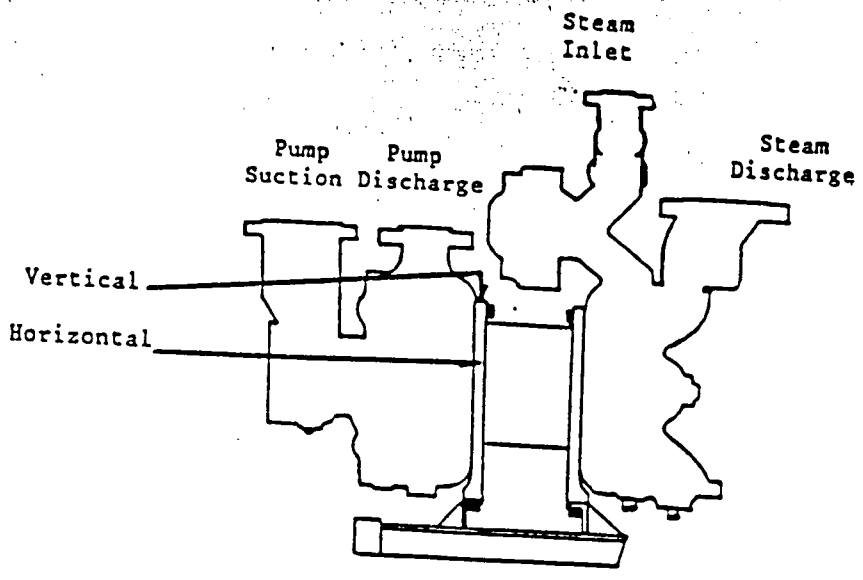
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER	DATA	ACCEPTANCE CRITERIA	
7.2.16.2	Disch. Press. PI-1426 PSIG	780	N/A	*
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG	810	N/A	*
7.2.17	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)	30	≥310	
7.2.19	Pump Turbine Speed, RPM — As Found	9500	≤9550	
	As Left	9500	≥9400	
7.2.20	Header Press PI-1421B, PSIG	1570	N/A	
	Oil Press to Regulator, PSIG	20	N/A	
	Oil Press from Regulator, PSIG	7.5	N/A	
	Oil Temp to Cooler, °F	136	N/A	
	Oil Temp. from Cooler, °F	124	N/A	
	Cooling Water Outlet Temp.	96	N/A	
	Vibration Mils* — Horizontal	.55	≤1.2	
	Vertical	.36	≤1.0	
	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1560	N/A	
	Pump Suct. Press. PI-1478, PSIG	1.5	≥2.0	*
7.2.21	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	1558.5	≥1412 ≤1548	*

CST 54%

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	[illegible]	D. Billings	7-20-88
	MSR	M.S. RADCLIFF	7-20-88
	CP	C Pritchard	7-20-88
	MLA	R.L. Haley MLAwald	7-20-88 7-20-88

Test Complete: Date 7/20/88 Time 0300

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 7-20-88 Time 0330

Comments: (Required if results were unsatisfactory) D/P unacceptable due to Low Disch and Stm inlet press. After Isol Regulator and then unisolating Regulator pressures were 1100# for Disch and 725# for Steam inlet. Pump suction while isolated was 1.5#, unisolated was 3.0# Air Regulator press unisolated was 37# for pump controller and FI-1426A respectively. WR's 88-AHL71 and 88-AHMA1

Approved by: [signature]
Unit 2 - Operating Supervisor Date 7-25-88

Reviewed by: [signature]
ISI Coordinator Date 8/5/88

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

W.E. STOVER (Print) _____ 8-16-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 8-16-88

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

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4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

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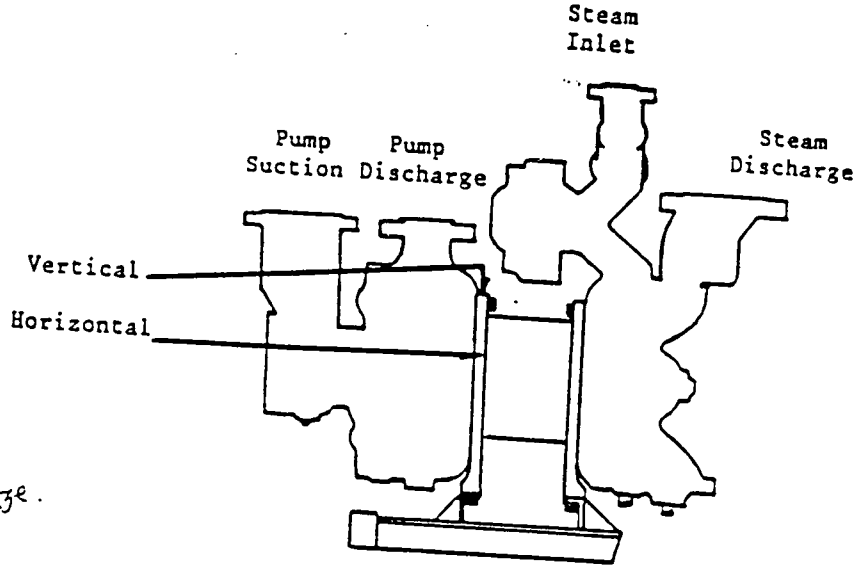
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG	1530	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG	775	N/A
7.2.17	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)	755	≥310
7.2.19	Pump Turbine Speed, RPM — As Found	9500	≤9550
	As Left	9500	≥9400
7.2.20	Header Press PI-1421B, PSIG	1575	N/A
	Oil Press to Regulator, PSIG	20	N/A
	Oil Press from Regulator, PSIG	7.2	N/A
	Oil Temp to Cooler, °F	144	N/A
	Oil Temp. from Cooler, °F	128	N/A
	Cooling Water Outlet Temp.	100	N/A
	Vibration Mils* — Horizontal	@ (1.5)	≤1.2
	Vibration Mils* — Vertical	.7	≤1.0
	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1530	N/A
	Pump Suct. Press. PI-1478, PSIG		
7.2.21	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	3.0	≥2.0
		1527	≥1412 ≤1548

Vibration Data Points

*To be taken after 15 minutes of operation.



@ Alert range.

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	WEA	W.E. STOKE	8-16-88
	DAC	David A. Cook	8/17/88
	TDH	Tilson D. Hocutt	8/17/88
	[illegible]	W. CARTRIGHT	8-17-88
	[illegible]	H.A. WINGER	8/17/88

Test Complete: Date 8/17/88 Time 0205

Test Satisfactory: Yes / No (Circle one)

Reviewed by: E. McGill
Unit 2 - Shift Foreman
Date 8/17/88 Time 0245

Comments: (Required if results were unsatisfactory)
Horiz. vibs on SD AFW Pump is in the alert range. FT-1426A has a fault light that will not clear. TT # 88-AIM X 1. All other acceptance criteria met.

Approved by: [illegible]
Unit 2 - Operating Supervisor
Date 8-26-88

Reviewed by: [illegible]
ISI Coordinator
Date 8/17/88

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

W.E. Stout (Print) _____ 8/17/88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 8/17/88
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

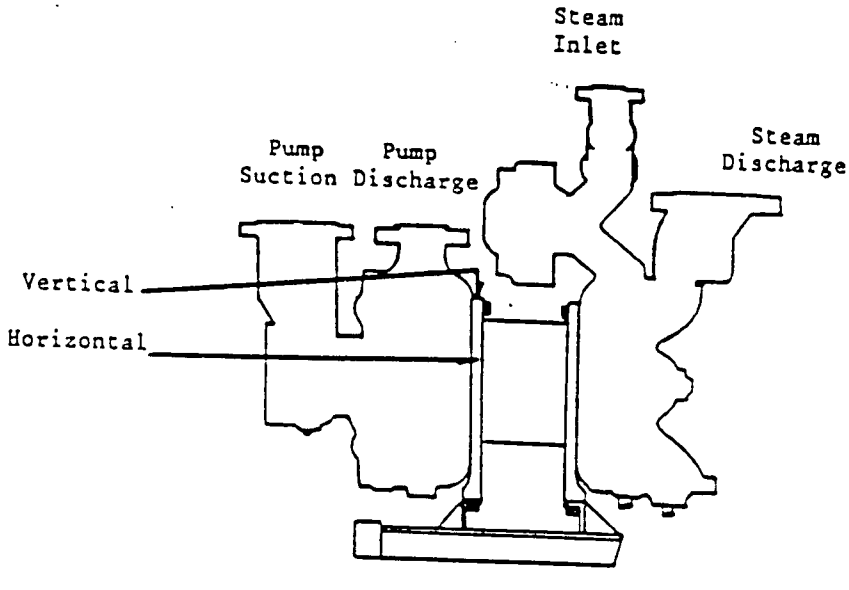
4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG	1520	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG	775	N/A
7.2.17	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)	745	≥310
7.2.19	Pump Turbine Speed, RPM — As Found	9500	≤9550
	As Left	9400	≥9400
7.2.20	Header Press PI-1421B, PSIG	1500	N/A
	Oil Press to Regulator, PSIG	21	N/A
	Oil Press from Regulator, PSIG	73	N/A
	Oil Temp to Cooler, °F	145	N/A
	Oil Temp. from Cooler, °F	120	N/A
	Cooling Water Outlet Temp.	103	N/A
	Vibration Mils* — Horizontal	1.2	≤1.2
	Vibration Mils* — Vertical	0.9	≤1.0
	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1490	N/A
	Pump Suct. Press. PI-1478, PSIG	3.0	≥2.0
7.2.21	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	1487	≥1412 ≤1548

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) All Pages Used To Run SDAFW Pump For Verification Analysis, (P. 1-24)

	Initials	Name (Print)	Date
Test Performed by	[illegible]	[illegible]	17 AUG 88
	[illegible]	R. [illegible]	17 AUG 88
	[illegible]	W.E Stover	8-17-88
	[illegible]	MW Kirk	17 AUG 88

Test Complete: Date 8-17-88 Time 1311

Test Satisfactory: Yes No (Circle one)

Reviewed by: [illegible]
Unit 2 - Shift Foreman Date 8-17-88 Time 1548

Comments: (Required if results were unsatisfactory)

Approved by: [illegible]
Unit 2 - Operating Supervisor Date 8 18 88

Reviewed by: [illegible]
ISI Coordinator Date 8/18/88

2521 1090

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

B. MULLIGAN (Print) B. Mulligan 8-29-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 8-29-88

Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG		1500	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG		780	N/A
7.2.17	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		720	≥310
7.2.19	Pump Turbine Speed, RPM	As Found	9500 (9384) ①	≤9550
		As Left	9500	≥9400
7.2.20	Header Press PI-1421B, PSIG		1550	N/A
	Oil Press to Regulator, PSIG		21	N/A
	Oil Press from Regulator, PSIG		7	N/A
	Oil Temp to Cooler, °F		143	N/A
	Oil Temp. from Cooler, °F		125	N/A
	Cooling Water Outlet Temp.		96	N/A
	Vibration Mils*	Horizontal	1.5 ②	≤1.2
		Vertical	1.5 ②	≤1.0
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1550	N/A
	Pump Suct. Press. PI-1478, PSIG		1.2	≥2.0
7.2.21	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1545.8 ~~1455.8~~	≥1412 ≤1548

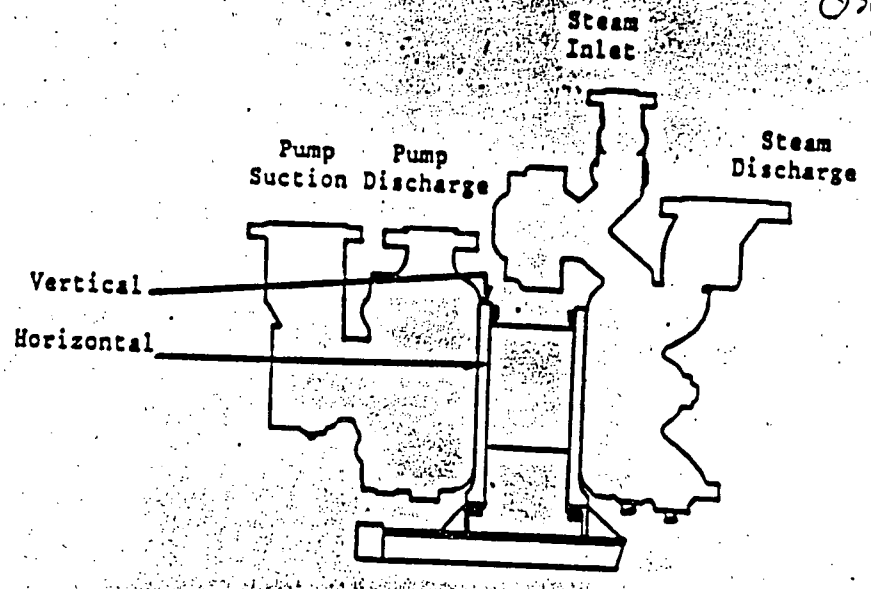
8.4.88

① SI informed speed was adjusted.

② SI informed.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) All Pages used to run SAFW Pump due to vibrations in the Alert Range

	Initials	Name (Print)	Date
Test Performed by	BM	B. Mulligan	8-29-88
	TW	R.T. Davis	8-29-88
	MA	M. Arnold	29-Aug-88
	MG	M. Gann	8/29/88
		MW/Burrow	8/29/88

Test Complete: Date 8-29-88 Time 1016

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 8-29-88 Time 1154

Comments: (Required if results were unsatisfactory) Step 7.2.2 Lube oil press reading 4.5 pounds, 0932 commenced reading slow TT 88-AUX1 written, 0932 commenced reading s/lis, Horizontal and Vertical vibrations are within the Alert Range on Page 21, Pump used to Feed s/G's for ISI personnel to gather data on pump vibrations

Approved by: [signature]
Unit 2 - Operating Supervisor Date 8-30-88

Reviewed by: [signature]
ISI Coordinator Date 8/30/88

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

C. Pritchard (Print) C Pritchard 9-18-88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

[illegible] 9-18-88
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

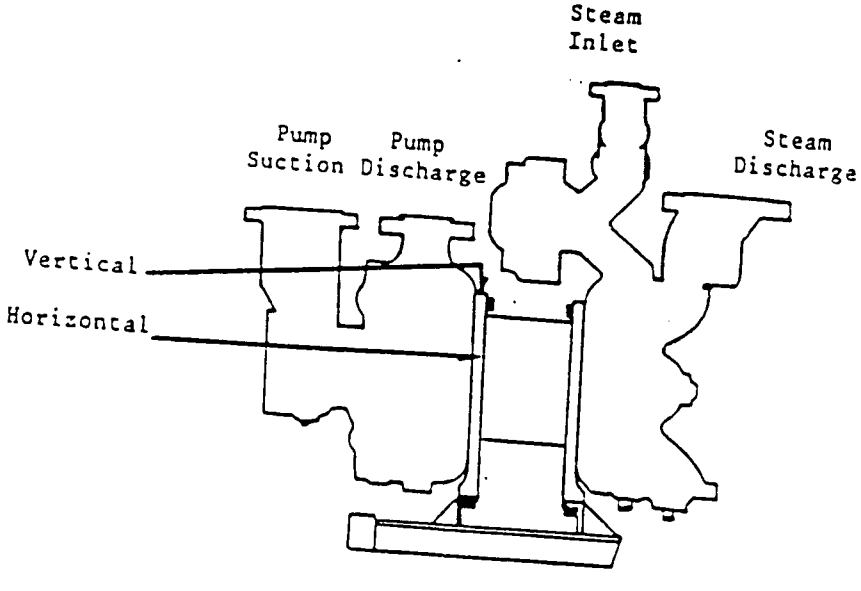
4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG	1520	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG	970	N/A
7.2.17	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)	550	≥310
7.2.19	Pump Turbine Speed, RPM — As Found	9550	≤9550
	As Left	9550	≥9400
7.2.20	Header Press PI-1421B, PSIG	1550	N/A
	Oil Press to Regulator, PSIG	21	N/A
	Oil Press from Regulator, PSIG	7	N/A
	Oil Temp to Cooler, °F	135	N/A
	Oil Temp. from Cooler, °F	120	N/A
	Cooling Water Outlet Temp.	86	N/A
	Vibration Mils* — Horizontal	.9	≤1.2
	Vibration Mils* — Vertical	.9	≤1.0
	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1530	N/A
	Pump Suct. Press. PI-1478, PSIG	3.0	≥2.0
7.2.21	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	1527	≥1412 ≤1548

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Run Pump GP-005

Test Performed by	Initials	Name (Print)	Date
	[illegible]	Larry D. Smith	9/19/88
	[illegible]	M. Robandt	9-19-88
	[illegible]	R. Haley	9/19/88
	[illegible]	E.A. Schwion / D.B. Illings	9-19-88 / 9-19-88

Test Complete: Date 9-19-88 Time 0802

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible]
Unit 2 - Shift Foreman Date 9/19/88 Time 0815

Comments: (Required if results were unsatisfactory)
Stm Driven Pump was run beyond 30 minutes with feed to steam generators in compliance with OST-206

Approved by: [illegible]
Unit 2 - Operating Supervisor Date [illegible]

Reviewed by: [illegible]
ISI Coordinator Date 9/23/88

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

M.S. RADCLIFF (Print) M S Radcliff 10-4-88
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

D. McGill 10/4/88
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

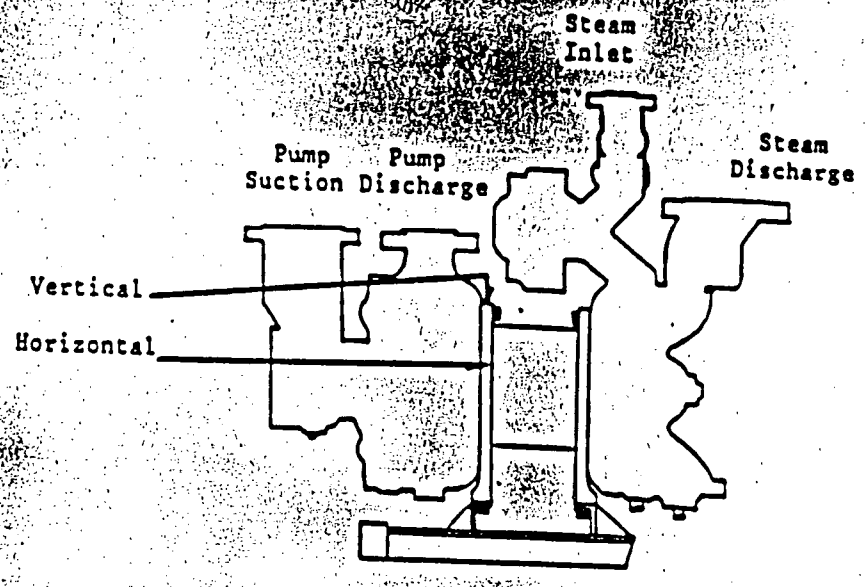
4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.16.2	Disch. Press. PI-1426 PSIG	1520	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG	790	N/A
7.2.17	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)	730	≥310
7.2.19	Pump Turbine Speed, RPM — As Found	9450	≤9550
	As Left	9450	≥9400
7.2.20	Header Press PI-1421B, PSIG	1560	N/A
	Oil Press to Regulator, PSIG	20	N/A
	Oil Press from Regulator, PSIG	19.5	N/A
	Oil Temp to Cooler, °F	138	N/A
	Oil Temp. from Cooler, °F	122	N/A
	Cooling Water Outlet Temp.	84	N/A
	Vibration Mils* — Horizontal	2.2	≤1.2
	Vibration Mils* — Vertical	.88	≤1.0
	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1550	N/A
	Pump Suct. Press. PI-1478, PSIG	3.5	≥2.0
7.2.21	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	1546.5	≥1412 ≤1548

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE

CERTIFICATION AND REVIEW FORM

Scheduled Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Test scheduled due to low and high frequency alarms in vibration monitoring alert range on previous test (pages 1-24)

	Initials	Name (Print)	Date
Test Performed by	MSR	M.S. RADCLIFF	10-4-88
	[illegible]	P.M. Dudzinski	10-4-88
	[illegible]	E. Hale	10-4-88

Test Complete: Date 10-4-88 Time 1130

Test Satisfactory: Yes No (Circle one)

Reviewed by: [illegible] Date 10/4/88 Time 1245
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) WR# 88-AKJ61
due to High Vibration Stm. Driven AFW Pump

Approved by: [illegible] Date 10-5-88
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 10/10/88
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Name (Print) Signature Date 18OCT88

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman Date 10-18-88

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This is caused by turbulence due to voids that were formed and backleakage past the discharge valve seats. This condition is temporary and will clear.

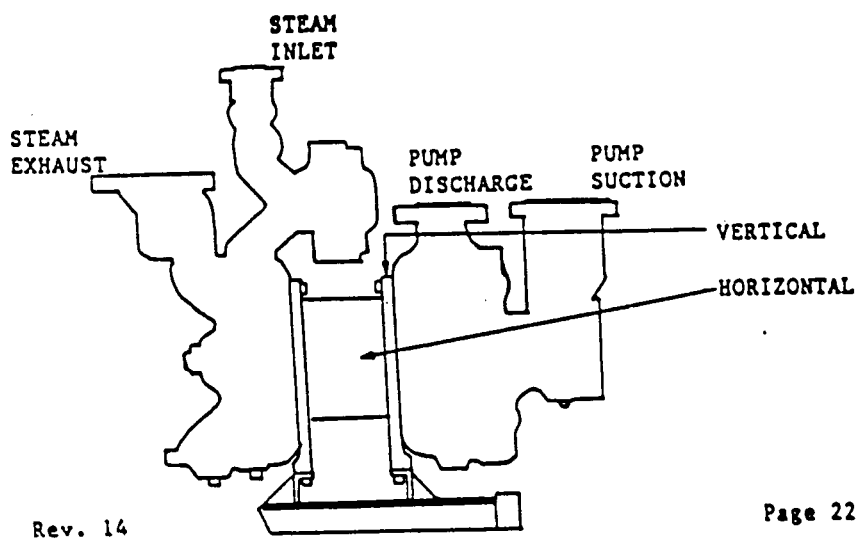
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		1530	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		842	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		688	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9500	≤9550
		As Left.	9500	≥9400
7.2.23	Header Press PI-1421B, PSIG		1500	N/A
	Oil Press to Regulator, PSIG		21	N/A
	Oil Press from Regulator, PSIG		7.4	N/A
	Oil Temp to Cooler, °F		140	N/A
	Oil Temp. from Cooler, °F		130	N/A
	Cooling Water Outlet Temp.		92	N/A
	Vibration Mils*	Horizontal	.9	≤3.0
		Vertical	1.0	≤1.4
	Vibration in/sec*	Horizontal	(1) .17	N/A
		Vertical	(1) .21	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1580	N/A
	Pump Suct. Press. PI-1478, PSIG		5.4	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1524.6	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	R.D. Moser	10-19-88
	BM	B. Mulligan	10-19-88
	[illegible]	[illegible]	12 OCT 88

Test Complete: Date 10-19-88 Time 0574

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible]
Unit 2 - Shift Foreman
Date 10-19-88 Time 0621

Comments: (Required if results were unsatisfactory) Commence Performing S/G B at 0411, stopped performing S/G B at 0412; W/R 88 Answer was written on Amt. 1426B for Fault light that would not clear on stop 7.2.2.9 - Amt-1426B Declared inoperable at 0412 hours

Approved by: [illegible]
Unit 2 - Operating Supervisor
Date 10-27-88

Reviewed by: [illegible]
ISI Coordinator
Date 11/4/88

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

DAN AKERS (Print) _____ 2/10/89

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 2-10-89.

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

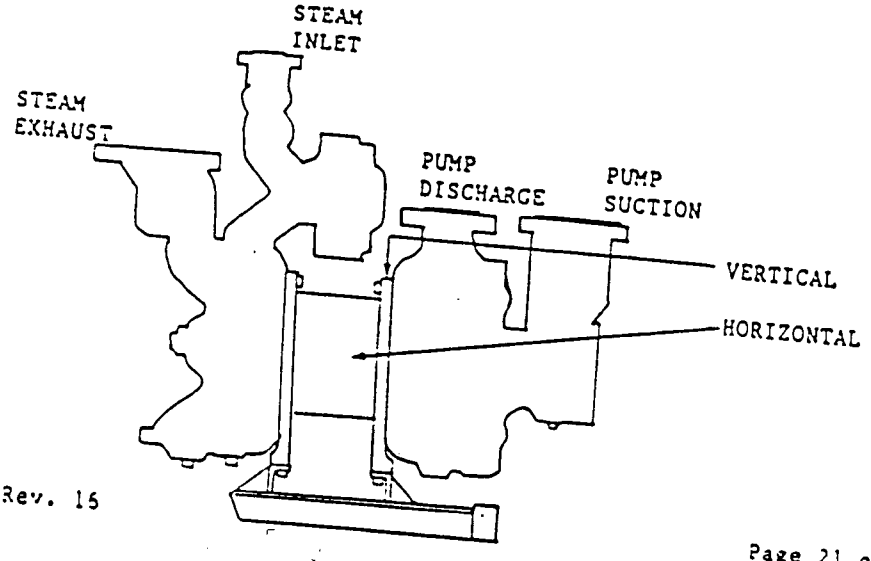
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		03 4/14/89 1235/1290	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		970	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		320	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9600	≤9550
		As Left	9450	≥9400
7.2.23	Header Press PI-1421B, PSIG		1500	N/A
	Oil Press to Regulator, PSIG		21	N/A
	Oil Press from Regulator, PSIG		8	N/A
	Oil Temp to Cooler, °F		110	N/A
	Oil Temp. from Cooler, °F		90	N/A
	Cooling Water Outlet Temp.		54	N/A
	Vibration Mils*	Horizontal	.09	≤3.0
		Vertical	.50	≤1.4
	Vibration in/sec*	Horizontal	(1) 0.26	N/A
		Vertical	(1) 0.19	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1480	N/A
	Pump Suct. Press. PI-1478, PSIG		3.1	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1476.9	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	DAN AYERS	2/10/89
	[illegible]	B. MULLIGAN	2-10-89
	MLA	Martin L. Arnold	2-10-89

Test Complete: Date 2/10/89 Time 1330

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 2-10-89 Time [illegible]
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____
Scheduled per 01-035

Approved by: [signature] Date 2/13/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 2/22/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

B. Mulligan (Print) B. Mulligan 2-24-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

D. McDell 2-24-89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

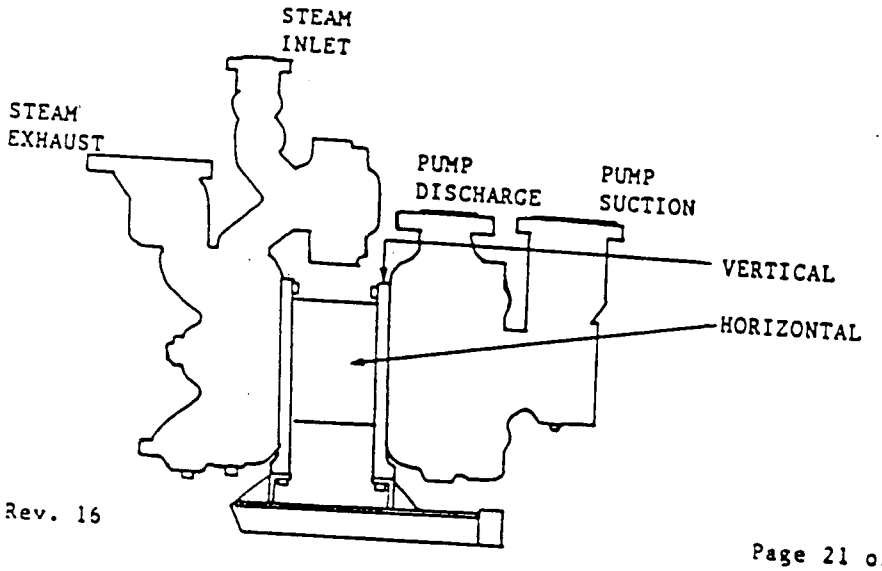
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		1490	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		980	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		510	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9400	≤9550
		As Left	9400	≥9400
7.2.23	Header Press PI-1421B, PSIG		1500	N/A
	Oil Press to Regulator, PSIG		20	N/A
	Oil Press from Regulator, PSIG		8	N/A
	Oil Temp to Cooler, °F		112	N/A
	Oil Temp. from Cooler, °F		90	N/A
	Cooling Water Outlet Temp.		110	N/A
	Vibration Mils*	Horizontal	.55	≤3.0
		Vertical	.6	≤1.4
	Vibration in/sec*	Horizontal	(1) .15	N/A
		Vertical	(1) .15	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1490	N/A
	Pump Suct. Press. PI-1478, PSIG		3.5	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1486.5	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) All pages.
Stopwatch Serial #HR-4 Cal. Date 1-25-89
Return SD AFW pump to Service.

	Initials	Name (Print)	Date
Test Performed by	MR	M S. RAMUFF	2-24-89
	BM	B. Mulligan	2-24-89
	[illegible]	J F MEYS	2-24-89
	[illegible]	MW Kirk	24Feb89

Test Complete: Date 2/24/89 Time 1630

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman
Date 2/24/89 Time 1640

Comments: (Required if results were unsatisfactory) BM 2-24-89
~~For~~ BM 2-24-89 ~~FT 88-AI-KH1 written~~

Approved by: [signature] for R Starla
Unit 2 - Operating Supervisor
Date 3-23-89

Reviewed by: [signature]
ISI Coordinator
Date 3/24/89

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

M. Kiak (Print) _____ 21 MAR 89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 3/21/89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

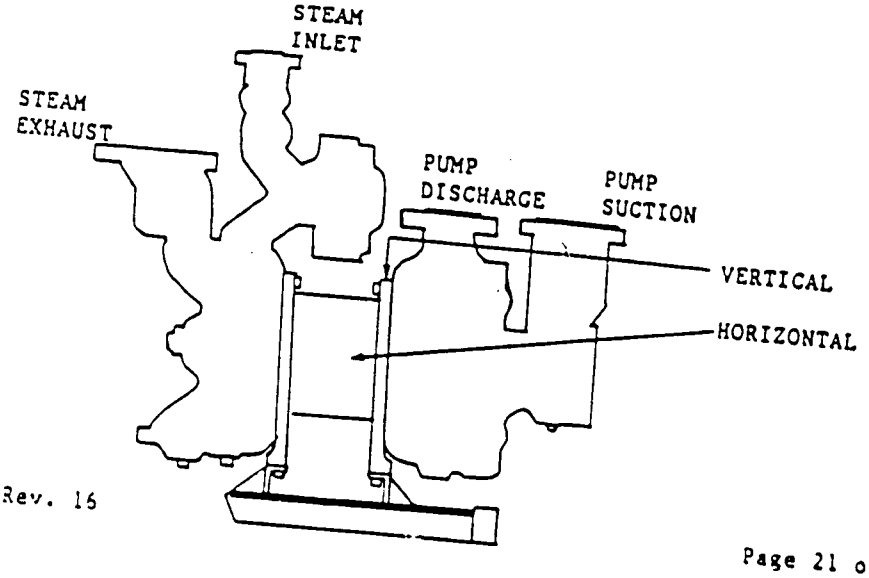
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		1480	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		780	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		700	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9400	≤9550
		As Left	9400	≥9400
7.2.23	Header Press PI-1421B, PSIG		1550	N/A
	Oil Press to Regulator, PSIG		22	N/A
	Oil Press from Regulator, PSIG		8	N/A
	Oil Temp to Cooler, °F		121	N/A
	Oil Temp. from Cooler, °F		103	N/A
	Cooling Water Outlet Temp.		78	N/A
	Vibration Mils*	Horizontal	1.2	≤3.0
		Vertical	0.7	≤1.4
	Vibration in/sec*	Horizontal	(1) .17	N/A
		Vertical	(1) .19	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1540	N/A
	Pump Suct. Press. PI-1478, PSIG		3.6	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1536.4	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	MK	M. GANN	3/22/89
	MK	MAS KIRK	22 MAR 89
	MS	M.S. RADCLIFF	3-22-89
	[illegible]	J E METTS	3-22-89
	[illegible]	[illegible]	3-22-89

Test Complete: Date 3/22/89 Time 0505

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 3/22/89 Time 0630
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)
Stopwatch used for this OST was HBR #5.

Approved by: [signature] Date 3-31-89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 4/10/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

E Lagrette (Print) _____ 4-18-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 4-18-89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

2 77 1704

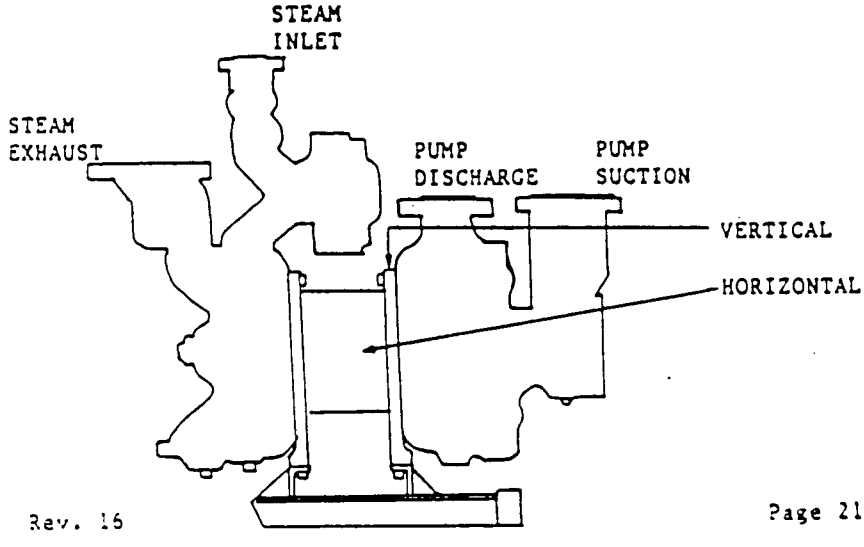
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		1520	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		800	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		720	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9500	≤9550
		As Left	9500	≥9400
7.2.23	Header Press PI-1421B, PSIG		1540	N/A
	Oil Press to Regulator, PSIG		22	N/A
	Oil Press from Regulator, PSIG		7.5	N/A
	Oil Temp to Cooler, °F		135	N/A
	Oil Temp. from Cooler, °F		120	N/A
	Cooling Water Outlet Temp.		94	N/A
	Vibration Mils*	Horizontal	1.0	≤3.0
		Vertical	0.8	≤1.4
	Vibration in/sec*	Horizontal	(1) 0.22	N/A
		Vertical	(1) 0.25	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1540	N/A
	Pump Suct. Press. PI-1478, PSIG		2.0	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1538	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	M. Robandt	4-19-89
	[illegible]	H Fletcher	4-19-89
	[illegible]	F Legette	4-19-89
	[illegible]	Thurhite	4/19/89

Test Complete: Date 4/19/89 Time 0220

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 4-19-89 Time 02.50
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [illegible] Date 4/19/89
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 4/24/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

DAN AKERS (Print) _____ 5/16/89

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 5/16/89

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

2389 01 27

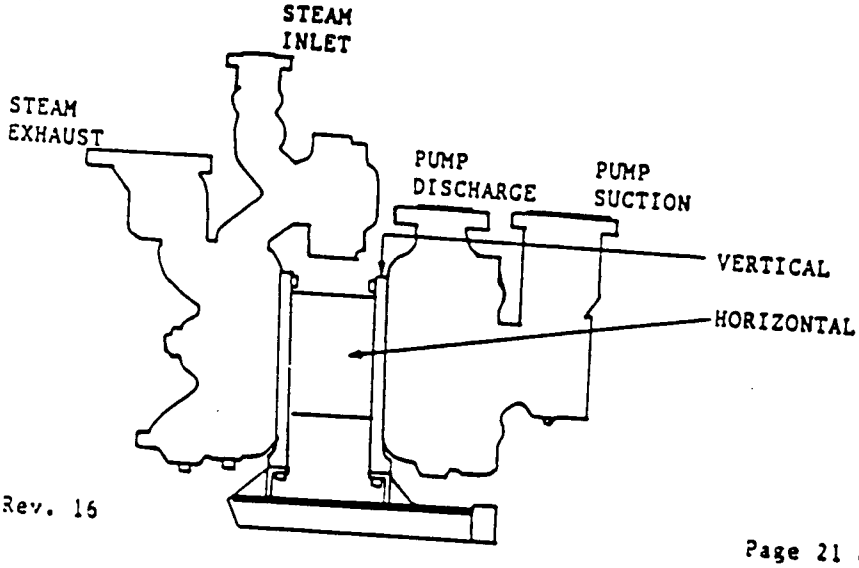
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		1530	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		785	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		745	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9350	≤9550
		As Left	9425	≥9400
7.2.23	Header Press PI-1421B, PSIG		1575	N/A
	Oil Press to Regulator, PSIG		21	N/A
	Oil Press from Regulator, PSIG		7	N/A
	Oil Temp to Cooler, °F		130	N/A
	Oil Tamp. from Cooler, °F		117	N/A
	Cooling Water Outlet Temp.		80	N/A
	Vibration Mils*	Horizontal	1.5	≤3.0
		Vertical	.95	≤1.4
	Vibration in/sec*	Horizontal	(1) .2	N/A
		Vertical	(1) .2	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1530 ~~1550~~ (2/17/89)	N/A
	Pump Suct. Press. PI-1478, PSIG		3.5	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1526.5	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	[illegible]	DAN AKERS	5/17/89
	[illegible]	K DRKWIN	5/17/89
	[illegible]	STEVE BIDENBACH	5/17/89
	[illegible]	C WINGERS	5/17/89

Test Complete: Date 5/17/89 Time 0220 [illegible] 5/17/89

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman
Date 5/17/89 Time 0400

Comments: (Required if results were unsatisfactory) _____

Approved by: [signature]
Unit 2 - Operating Supervisor
Date 5/15/89

Reviewed by: [signature]
ISI Coordinator
Date 5/24/89

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

HCFletcher (Print) _____ 6-17-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 6-17-89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, on recirc, before any pump data is recorded. Maintain recirc mode while obtaining data. This will allow heating between the casing and impeller to stabilize. Secure the pump after data is obtained to minimize run time while on recirc.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

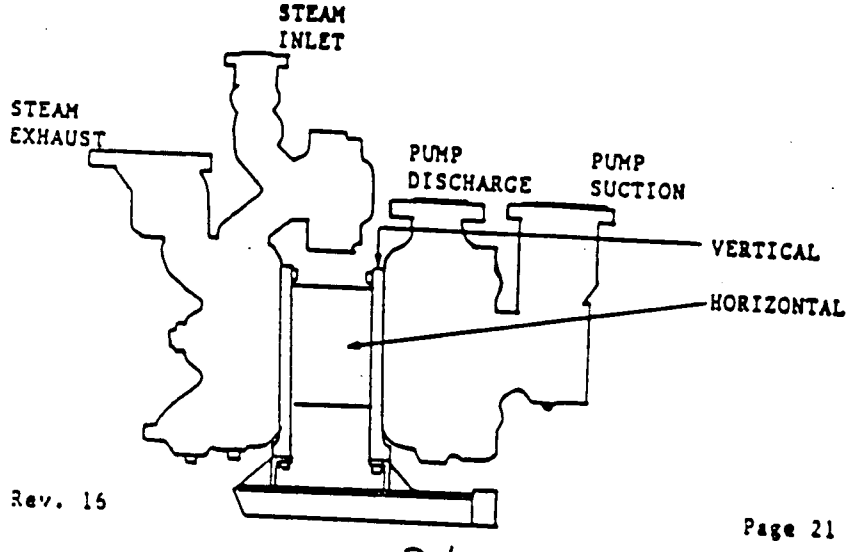
SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		1590	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		775	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		815	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9400	≤9550
		As Left	9450	≥9400
7.2.23	Header Press PI-1421B, PSIG		1600	N/A
	Oil Press to Regulator, PSIG		20	N/A
	Oil Press from Regulator, PSIG		7.5	N/A
	Oil Temp to Cooler, °F		135	N/A
	Oil Temp. from Cooler, °F		117	N/A
	Cooling Water Outlet Temp.		90	N/A
	Vibration Mils*	Horizontal	1.5	≤3.0
		Vertical	.75	≤1.4
	Vibration in/sec*	Horizontal	(1) .24	N/A
		Vertical	(1) .2	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1590	N/A
	Pump Suct. Press. PI-1478, PSIG		3.2	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1586.8	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) OST performed on pump only as part of Maintenance trouble shooting, All pages included

	Initials	Name (Print)	Date
Test Performed by	BTM	B. Mulligan	6-17-89
		E. Lesette	6-17-89
		M. Pabanett	6-17-89
		R.O. Moore	6-17-89

Test Complete: Date 6-17-89 Time 0346

Test Satisfactory: Yes No (Circle one)

Reviewed by: _____ Unit 2 - Shift Foreman Date 6-17-89 Time 0442

Comments: (Required if results were unsatisfactory) ① Pump DP High in the Required Action Range. Pump was already declared inoperable due to Pump DP and Vibrations being in the Required Action Range on OST-202. Work Requests #89-AFXZ1 and 89-AFXW1 have been submitted

Approved by: _____ Unit 2 - Operating Supervisor Date 7/4/89

Reviewed by: _____ ISI Coordinator Date 7/6/89

1800 6/17/89 This test accepted IAW OMM-015. See attached sheet.

OST-202 Rev. 16

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

M.K. Clouse (Print) M.K. Clouse 6-20-89

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

C.M. Smith 6/20/89

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, on recirc, before any pump data is recorded. Maintain recirc mode while obtaining data. This will allow heating between the casing and impeller to stabilize. Secure the pump after data is obtained to minimize run time while on recirc.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

SDAFW PUMP DATA

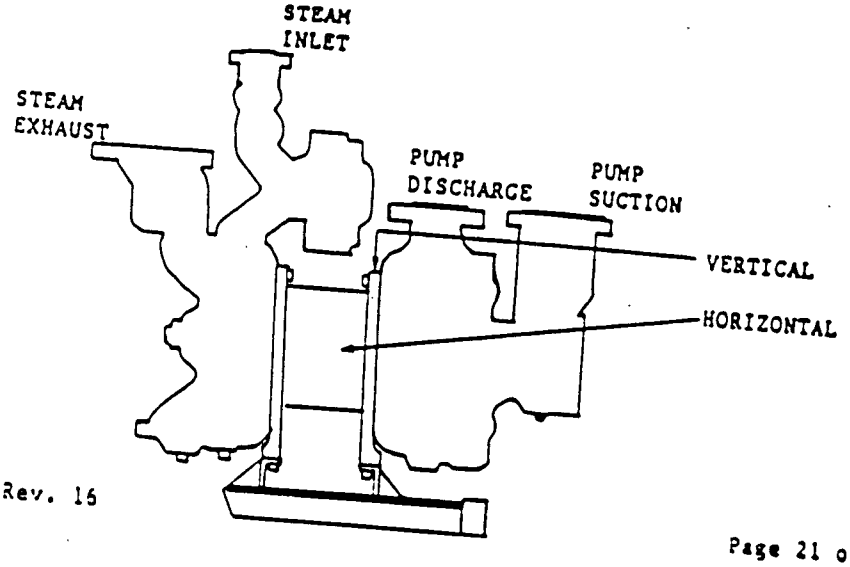
REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Press. PI-1426 PSIG		1570	N/A
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG		780	N/A
7.2.20	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		790	≥310
7.2.22	Pump Turbine Speed, RPM	As Found	9600 (1)	≤9550
		As Left	9400	≥9400
7.2.23	Header Press PI-1421B, PSIG		1500	N/A
	Oil Press to Regulator, PSIG		22	N/A
	Oil Press from Regulator, PSIG		7.5	N/A
	Oil Temp to Cooler, °F		136	N/A
	Oil Temp. from Cooler, °F		119	N/A
	Cooling Water Outlet Temp.		96	N/A
	Vibration Mils*	Horizontal	0.8	≤3.0
		Vertical	1.1	≤1.4
	Vibration in/sec*	Horizontal	(1) .28	N/A
		Vertical	(1) .21	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1500	N/A
	Pump Suct. Press. PI-1478, PSIG		42	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478		1445.8	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

(1) SEE COMMENTS

*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	KODA SMITH	6/20/89
	[illegible]	M.K. Cook	6/20/89
	RCI	RANDY C INEY	6/20/89
	[illegible]	L. WIEGAND	6-20-89

Test Complete: Date 6-20-89 Time 1720

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 1722 Time 6/20/89
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) SG's WERE FED AT VARIOUS FLOW RATES AFTER STMP 7.2.25 FOR DATA COLLECTION by SYSTEMS ENGINEER
① PUMP SPEED FOUND @ 900 RPM AND HAT @ 900 WHICH IS WITHIN ACCEPTANCE CRITERIA.

Approved by: [signature] Date 7/1/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 7/6/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

RANDY C IVEY (Print) _____ 7-18-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 7-18-89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, on recirc, before any pump data is recorded. Maintain recirc mode while obtaining data. This will allow heating between the casing and impeller to stabilize. Secure the pump after data is obtained to minimize run time while on recirc.

4.4 If the annual frequency bearing temperature test, EST-013 is due, then continue to run the pump on recirc. with instrument air isolated to the Masoneilan Pressure Controller until all data is collected for EST-013. When EST-013 is complete, then continue with this OST to complete the remaining steps.

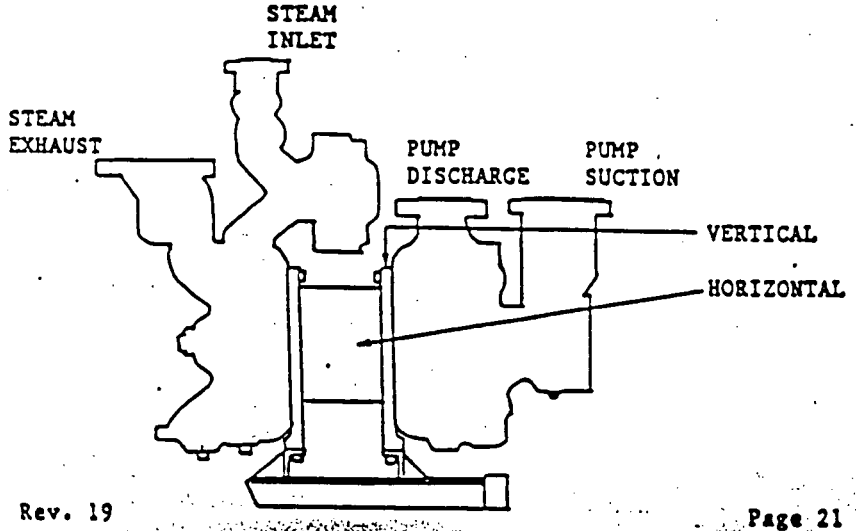
4.5 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.18.2	Disch. Press. PI-1426 PSIG		1500	N/A
7.2.18.2	Steam Inlet Press. PI-1357-2. PSIG		780	N/A
7.2.18.2	Pump Turbine Speed, RPM		9250	N/A
7.2.19	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		720	≥310
7.2.21	Pump Turbine Speed, RPM	As Found	9330	N/A
7.2.22.1		As Left	9400	(2)
7.2.23	Header Press PI-1421B, PSIG		~~810~~ 1530	N/A
	Oil Press to Regulator, PSIG		21	N/A
	Oil Press from Regulator, PSIG		7.5	N/A
	Oil Temp to Cooler, °F		137	N/A
	Oil Temp. from Cooler, °F		120	N/A
	Cooling Water Outlet Temp.		95	N/A
	Vibration Mils*	Horizontal	1.5	≤3.0
		Vertical	0.8	≤1.4
	Vibration in/sec*	Horizontal	(1) 0.16	N/A
		Vertical	(1) 0.22	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		~~1540~~ 1530	N/A
	Pump Suct. Press. PI-1478, PSIG		3.6	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated)- Pump Suct. Press. PI-1478		1526.4	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.
(2) Pump speed must be able to be adjusted to within the range of 9400 to 9550 RPM (e.g. if As Found at 9600 RPM, the pump must be able to be adjusted back into range. If As Found is in range, then no need for adjustment, except as directed in this OST).

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	M.K. Clouse	7-18-89
	[illegible]	Randy C Ivey	7-18-89
	MIA	Martin L. Arnold	7-18-89
	BCW	B. E. Waldsmith	7-18-89

Test Complete: Date 7-18-89 Time 2306

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 7-18-89 Time 2354
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)
(1) Valves V2-14 A, B, C and V1-8 A, B, C timed with HBR #4
Valve TCV-1902-A timed with HBR #3

Approved by: [signature] Date 7/19/89
Unit 2 - Operating Supervisor
[illegible] 7-19-89

Reviewed by: [signature] Date 7/31/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

L. Wright (Print) L Wright 8-15-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

C M Wuste 8/15/89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, on recirc, before any pump data is recorded. Maintain recirc mode while obtaining data. This will allow heating between the casing and impeller to stabilize. Secure the pump after data is obtained to minimize run time while on recirc.

4.4 If the annual frequency bearing temperature test, EST-013 is due, then continue to run the pump on recirc. with instrument air isolated to the Masoneilan Pressure Controller until all data is collected for EST-013. When EST-013 is complete, then continue with this OST to complete the remaining steps.

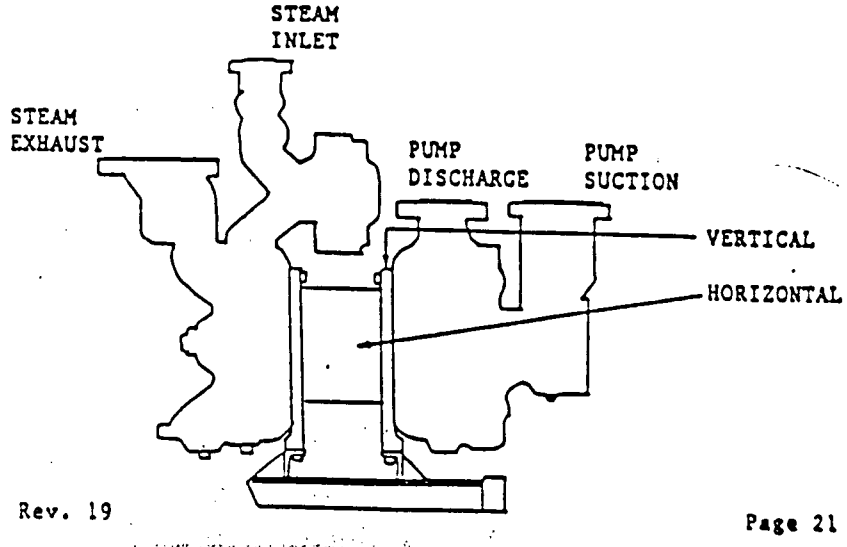
4.5 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.18.2	Disch. Press. PI-1426 PSIG		1480	N/A
7.2.18.2	Steam Inlet Press. PI-1357-2. PSIG		780	N/A
7.2.18.2	Pump Turbine Speed, RPM		9550	N/A
7.2.19	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		700	≥310
7.2.21	Pump Turbine Speed, RPM	As Found	9400	N/A
7.2.22.1		As Left	9400	(2)
7.2.23	Header Press PI-1421B, PSIG		1525	N/A
	Oil Press to Regulator, PSIG		22	N/A
	Oil Press from Regulator, PSIG		0	N/A
	Oil Temp to Cooler, °F		136	N/A
	Oil Temp. from Cooler, °F		118	N/A
	Cooling Water Outlet Temp.		94	N/A
	Vibration Mils*	Horizontal	.2	≤3.0
		Vertical	.6	≤1.4
	Vibration in/sec*	Horizontal	(1) .22	N/A
		Vertical	(1) .2	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1520	N/A
	Pump Suct. Press. PI-1478, PSIG		3.5	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated)- Pump Suct. Press. PI-1478		1516.5	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.
(2) Pump speed must be able to be adjusted to within the range of 9400 to 9550 RPM (e.g. if As Found at 9600 RPM, the pump must be able to be adjusted back into range. If As Found is in range, then no need for adjustment, except as directed in this OST).

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	T.L. White	8/16/89
	[illegible]	E.B. Schwier	8-16-89
	[illegible]	W. Cutright	8-16-89

Test Complete: Date 8/16/89 Time 0245

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 8/16/89 Time 0518
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [illegible] Date 8/17/89
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 8/25/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

D. Curtright (Print) W Curtright 8-15-89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

C M Wurster 8/15/89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 15 minutes, on recirc, before any pump data is recorded. Maintain recirc mode while obtaining data. This will allow heating between the casing and impeller to stabilize. Secure the pump after data is obtained to minimize run time while on recirc.

4.4 If the annual frequency bearing temperature test, EST-013 is due, then continue to run the pump on recirc. with instrument air isolated to the Masoneilan Pressure Controller until all data is collected for EST-013. When EST-013 is complete, then continue with this OST to complete the remaining steps.

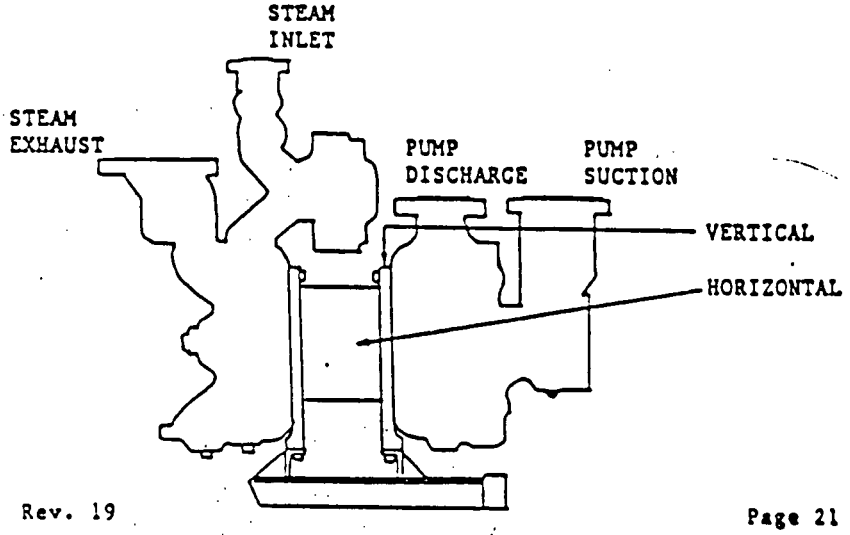
4.5 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

SDAFW PUMP DATA

REF. STEP NO.	PARAMETER		DATA	ACCEPTANCE CRITERIA
7.2.18.2	Disch. Press. PI-1426 PSIG		1480	N/A
7.2.18.2	Steam Inlet Press. PI-1357-2. PSIG		780	N/A
7.2.18.2	Pump Turbine Speed, RPM		9550	N/A
7.2.19	Feed to Steam ΔP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)		700	≥310
7.2.21	Pump Turbine Speed, RPM	As Found	9600	N/A
7.2.22.1		As Left	9600	(2)
7.2.23	Header Press PI-1421B, PSIG		1525	N/A
	Oil Press to Regulator, PSIG		.22	N/A
	Oil Press from Regulator, PSIG		0	N/A
	Oil Temp to Cooler, °F		136	N/A
	Oil Temp. from Cooler, °F		110	N/A
	Cooling Water Outlet Temp.		94	N/A
	Vibration Mils*	Horizontal	.2	≤3.0
		Vertical	.6	≤1.4
	Vibration in/sec*	Horizontal	(1) .22	N/A
		Vertical	(1) .2	N/A
	Disch. Press. PI-1426, PSIG (Reg. Isolated)		1520	N/A
	Pump Suct. Press. PI-1478, PSIG		3.5	≥2.0
7.2.24	Pump ΔP, PSI, Disch. Press. PI-1426 (Reg. Isolated)- Pump Suct. Press. PI-1478		1516.5	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.
(2) Pump speed must be able to be adjusted to within the range of 9400 to 9550 RPM (e.g. if As Found at 9600 RPM, the pump must be able to be adjusted back into range. If As Found is in range, then no need for adjustment, except as directed in this OST).

Vibration Data Points
*To be taken after 15 minutes of operation.



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	T.R. White	8/16/89
	[illegible]	E.B. Schwien	8-16-89
	[illegible]	W. Cutright	8-16-89

Test Complete: Date 8/16/89 Time 0245

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 8/16/89 Time 0518
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

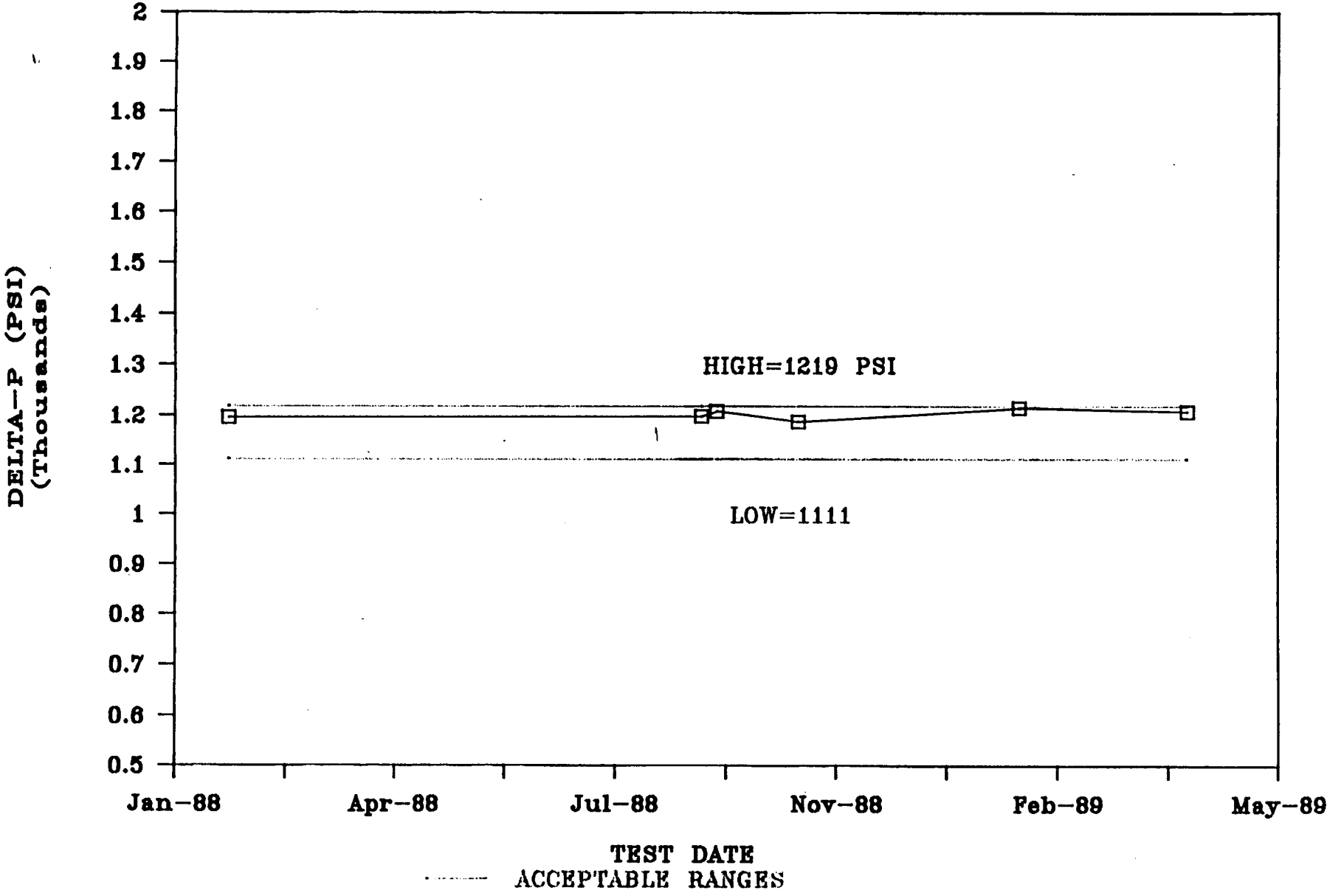
Approved by: [signature] Date 8/17/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 8/25/89
ISI Coordinator

Attachment 17

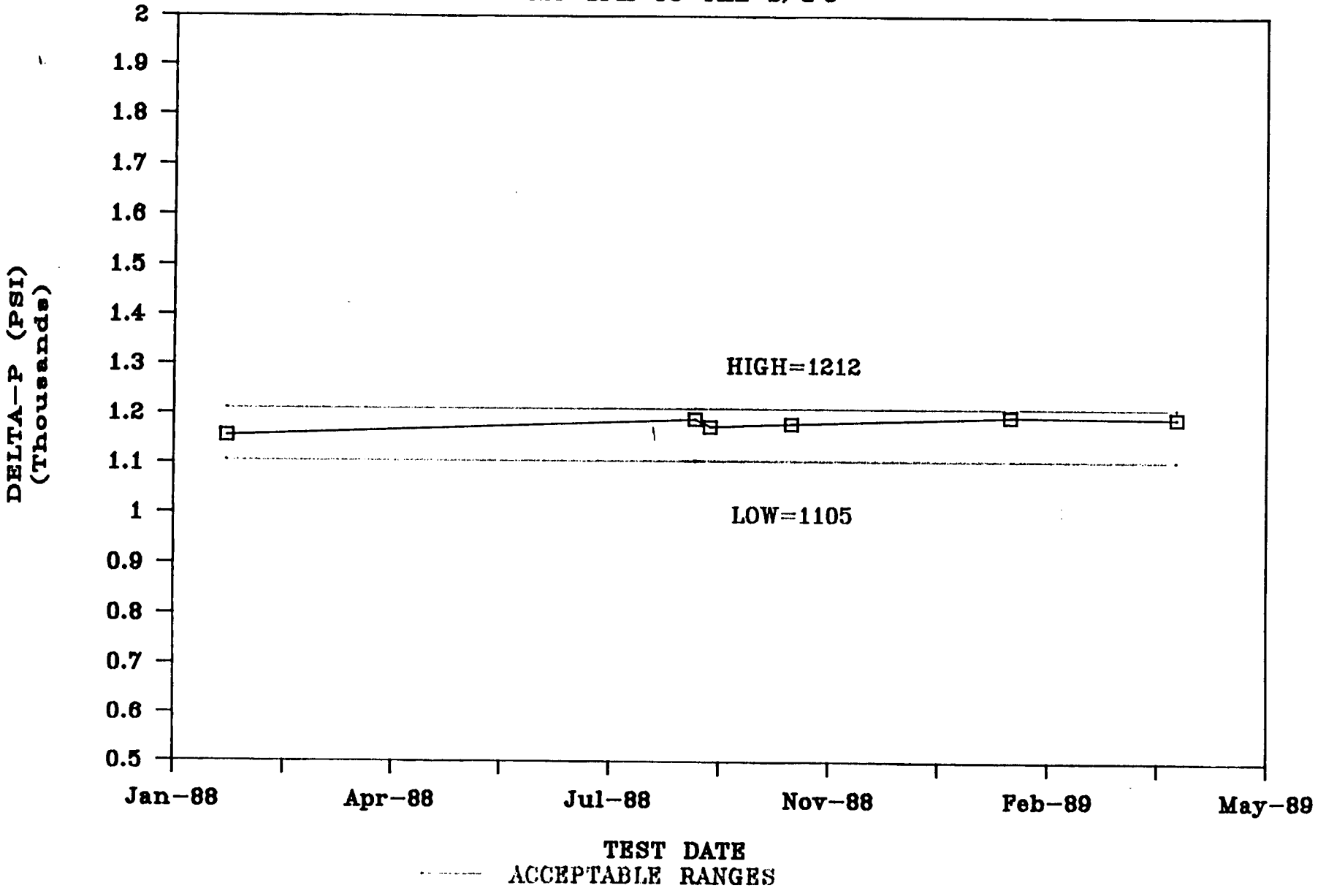
"A" MOTOR DRIVEN AFW PUMP (OST-207)

325 GPM TO THE S/G's



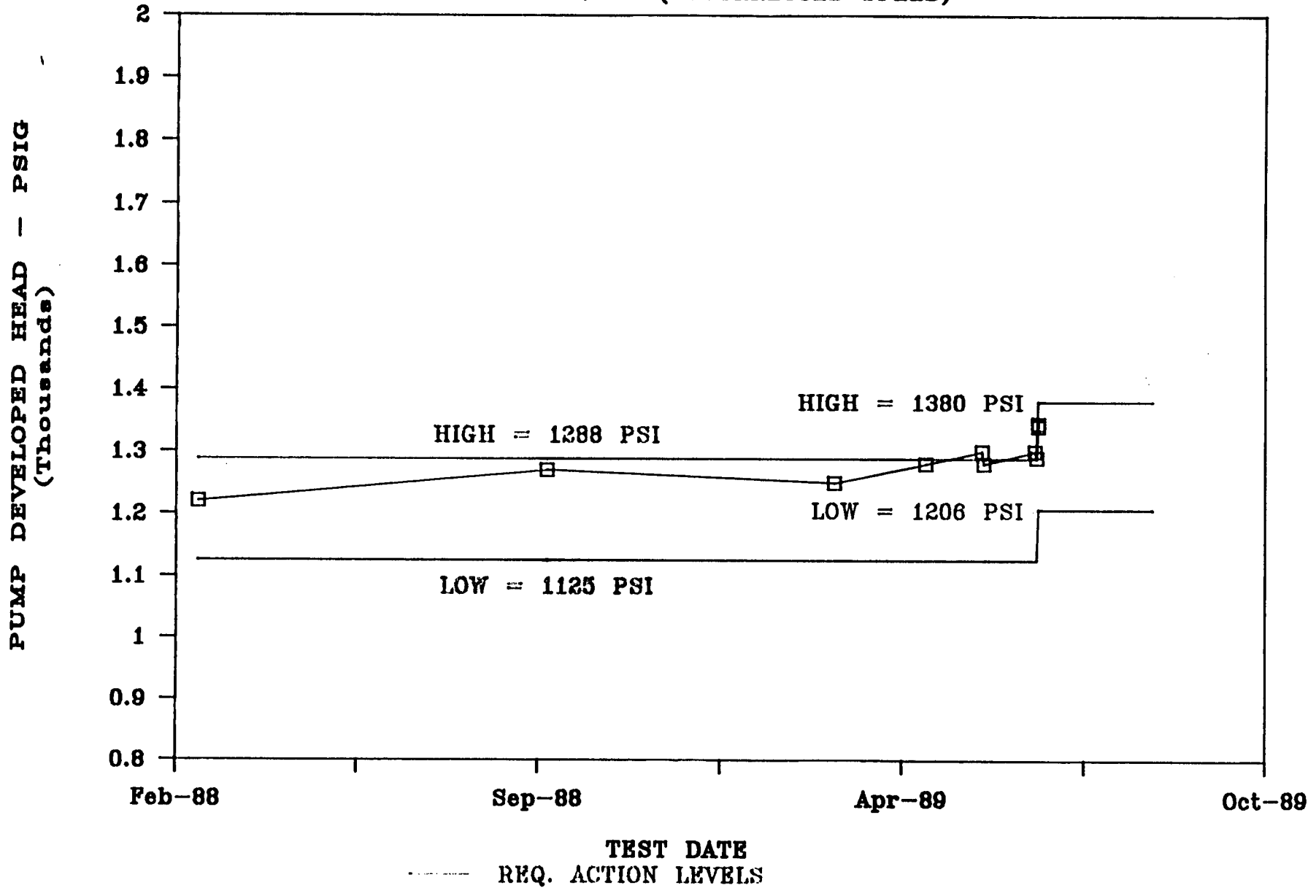
"B" MOTOR DRIVEN AFW PUMP (OST-207)

325 GPM TO THE S/G's



SDAFW PUMP DELTA-P (OST-206)

600 GPM TO S/G'S (UNCORRECTED SPEED)



1.0 PURPOSE

1.1 To verify mechanical performance and assess operational readiness of components to fulfill their required safeguard functions.

1.2 The steam driven auxiliary feedwater pump will be tested for flow and differential pressure in accordance with Section XI ASME Code. Check valve AFW-84 will also be checked for forward flow.

2.0 REFERENCES

2.1 ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda

2.2 OP-402 Auxiliary Feedwater

2.3 Engineering Flow Diagrams G-190197, Feedwater, Condensate, and Air Evacuation

3.0 PREREQUISITES

3.1 The AFW system is aligned in accordance with OP-402, ATTACHMENT 9.1.

3.2 Only the steam driven pump shall be run during this test. The motor driven AFW pumps should not be operated during this test.

3.3 The Plant is in a power operation condition.

3.4 The steam driven pump flow controller, FIC-6-16, shall be set at 600 gpm and in auto.

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

E Lozette (Print) 3-10-88

Name Signature Date

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Time Piece

5.2 RPM Indicator

5.3 Two-way Radios

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If the differential pressure calculated in Step 7.2.21 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.2 If the differential pressure calculated in Step 7.2.21 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

6.1.3 If the differential pressure calculated in Step 7.2.21 falls within the REQUIRED ACTION RANGE of 6.1, the pump shall be declared inoperable and not returned to service until the condition has been corrected.

6.1.4 The corrective action shall be considered completed when a satisfactory inservice test has been conducted in accordance with IWP-3111 (ASME Section XI) or an analysis is performed that demonstrates that the condition does not impair pump operability and that the pump will still fulfill its function.

7.0 PROCEDURE (Continued) INITIALS

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A OPEN ____

2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B OPEN ____

3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C OPEN ____

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A OPEN ____

2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B OPEN ____

3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C OPEN ____

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. ____

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9115 RPM ____

SDAFW Pump Discharge Pressure (PI-1426) 1220 psig ____

SDAFW Pump Suction Pressure (PI-1478) 0 psig ____

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.0 PROCEDURE (Continued) INITIALS VERIFIED BY

7.2.14 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. ZHR

7.2.15 Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.

PI-1426 ~~1320~~ 1290 psig FI-6416 600 gpm

Speed 9150 RPM

7.2.16 OPEN AFW-17, SDAFW Pump Recirculation Isolation. ZHR

7.2.17 STOP the SDAFW pump by closing the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A CLOSED
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B CLOSED
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C CLOSED

7.2.18 CLOSE the following valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A CLOSED
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B CLOSED
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C CLOSED

7.2.19 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.

AFW-FCV-6416 OPEN

7.2.20 Return FIC-6416 to AUTO mode and set at 600 gpm.

FIC-6416 IN AUTO

FIC-6416 AT 600 GPM

7.2.21 Calculate pump ΔP from the data gathered in Step 7.2.13.

1220 (Discharge Pressure (PI-1426)) − 0 (Suction Pressure (PI-1478)) = 1220 ΔP

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) GP-005 REQUIRED pages (1-14)

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Paul M. Duchock	3-10-88
	[illegible]	K. DAVIN	3-10-88
	[illegible]	TE White	3/10/88
	[illegible]	M. Rebandt	3-10-88

Test Complete: Date 3-10-88 Time 2330

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 3-10-88 Time 2335
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)

Approved by: [illegible] Date 3-11-88
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 9/23/88
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

C Pritchard (Print) C Pritchard 9/18/88

Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

RCH 9-18-88

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Time Piece

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.~~21~~ 23 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.3 If the differential pressure calculated in Step 7.2.~~21~~ 23 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

T-3351

T-3351

INITIALS

7.0 PROCEDURE (Continued)

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A OPEN [illegible]
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B OPEN [illegible]
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C OPEN [illegible]

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A OPEN [illegible]
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B OPEN [illegible]
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C OPEN [illegible]

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. [illegible]

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9600 RPM [illegible]
SDAFW Pump Discharge Pressure (PI-1426) 1270 psig [illegible]
SDAFW Pump Suction Pressure (PI-1478) <0 psig [illegible]

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.0 PROCEDURE (Continued) — INITIALS VERIFIED BY

7.2.14 Record SDAFW Pump vibration on ATTACHMENT 8.1. WA

7.2.15 Record bearing temperature per EST-013. Fm

7.2.16 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. WA

7.2.17 Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.

PI-1426 1330 psig FI-6416 725 gpm

Speed 9500 RPM

7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. WA MSR

7.2.19 STOP the SDAFW pump by closing the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A CLOSED SAR
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B CLOSED SAR
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C CLOSED SAR

7.2.20 CLOSE the following valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A CLOSED SAR
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B CLOSED SAR
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C CLOSED SAR

7.2.21 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.

AFW-FCV-6416 OPEN MLA SAR

7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm.

FIC-6416 IN AUTO MLA SAR

FIC-6416 AT 600 GPM MLA SAR

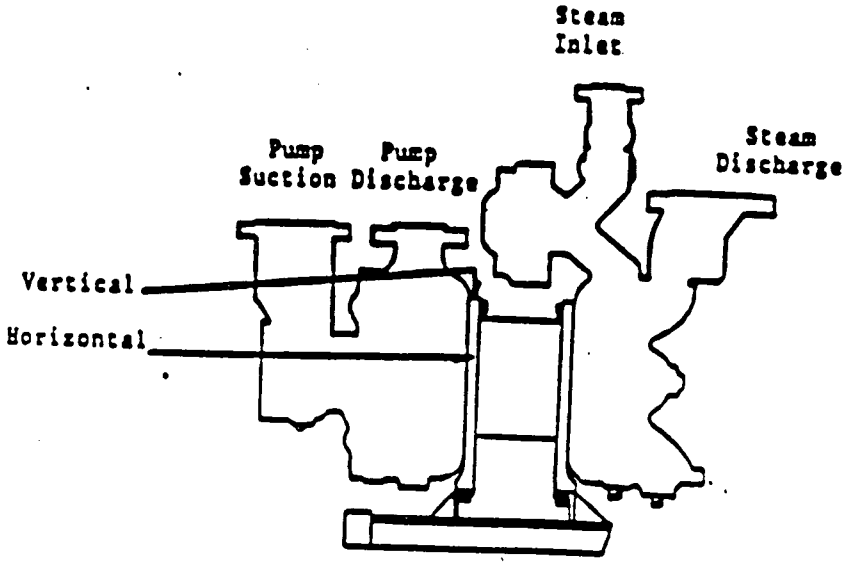
7.2.23 Calculate pump ΔP from the data gathered in Step 7.2.13.

1270 (Discharge Pressure (PI-1426)) − 0 (Suction Pressure (PI-1478)) = 1270 ΔP

VIBRATION DATA

PUMP	DATA			ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	.25	MILS	N/A
	VERTICAL	.4	MILS	N/A

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE

CERTIFICATION AND REVIEW FORM

Scheduled / ~~Unscheduled~~ (Circle one) m: 9-19-88

(If unscheduled, state reason for test and the page numbers included in partial test) GP-005

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Larry D. Smith / [illegible]	9/19/88 9-19-88
	[illegible]	M. S. RADCLIFF	9-19-88
	[illegible]	M Roberdt	9-18-88
	[illegible] / [illegible]	[illegible] / T. D. Schwin	9-19-88 / 9-19-88

Test Complete: Date 9-19-88 Time 0752

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 9/19/88 Time 0820
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory)

Approved by: [illegible] Date 9.20.88
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 9/23/88
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

B. Mulligan (Print) B. Mulligan 2-24-89
Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

D McCall 2-24-89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Stop Watch

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.3 If the differential pressure calculated in Step 7.2.23 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

7.0 PROCEDURE (Continued) INITIALS

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A OPEN ___
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B OPEN ___
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C OPEN ___

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A OPEN ___
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B OPEN ___
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C OPEN ___

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. ___

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9400 RPM ___
SDAFW Pump Discharge Pressure (PI-1426) 1250 psig ___
SDAFW Pump Suction Pressure (PI-1478) 0 psig ___

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

INITIALS VERIFIED BY

7.0 PROCEDURE (Continued)

7.2.14 Record SDAFW Pump vibration on ATTACHMENT 8.1. BM

7.2.15 Record bearing temperature per EST-013. NA

7.2.16 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. BM

7.2.17 Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.

PI-1426 1300 psig FI-6416 660 gpm

Speed 9400 RPM

7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. MA BM

7.2.19 STOP the SDAFW pump by closing the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A CLOSED ___
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B CLOSED ___
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C CLOSED ___

7.2.20 CLOSE the following valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A CLOSED ___
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B CLOSED ___
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C CLOSED ___

7.2.21 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.

AFW-FCV-6416 OPEN ___

7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm.

FIC-6416 IN AUTO ___

FIC-6416 AT 600 GPM ___

7.2.23 Calculate pump ΔP from the data gathered in Step 7.2.13.

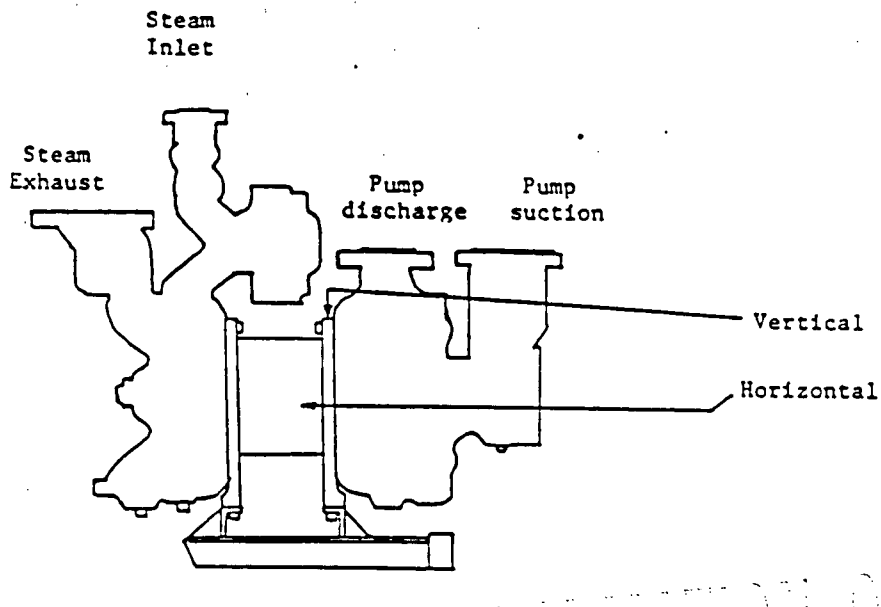
$$\frac{1250}{\text{Discharge Pressure (PI-1426)}} - \frac{0}{\text{Suction Pressure (PI-1478)}} = \frac{1250}{\Delta P}$$

VIBRATION DATA

PUMP	DATA			ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	.2	MILS	N/A
	VERTICAL	.25	MILS	N/A
SDAFW	HORIZONTAL	(1) .1	IN/SEC	N/A
	VERTICAL	(1) .06	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	MJ	M.J. Gardner	2-24-89
	BM	B. Mulligan	2-24-89
	m	mostes	24 Feb 89

Test Complete: Date 2/24/89 Time 1630

Test Satisfactory: Yes / No (Circle one)

Reviewed by: D. McQuill Date 2/24/89 Time 1637
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) TT 88-AIX 41 written for L.O. Press After Regulator (reads 5")

Approved by: [signature] Date 2/28/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 3/3/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

C. Winters (Print) C. Winters 4/15/89

Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

C. Winters 4/15/89

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Calibrated Stop Watch No. HBQ-4 Cal. Date 3-30-89 (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.3 If the differential pressure calculated in Step 7.2.23 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

INITIALS

7.0 PROCEDURE (Continued)

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A — V1-8A OPEN ____
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B — V1-8B OPEN ____
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C — V1-8C OPEN ____

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A — V2-14A OPEN ____
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B — V2-14B OPEN ____
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C — V2-14C OPEN ____

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. ____

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9400 RPM ____

SDAFW Pump Discharge Pressure (PI-1426) 1200 psig ____

SDAFW Pump Suction Pressure (PI-1478) 0 psig ____

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.0 PROCEDURE (Continued) — INITIALS / VERIFIED BY

7.2.14 Record SDAFW Pump vibration on ATTACHMENT 8.1. ____

7.2.15 Record bearing temperature per EST-013. ____

7.2.16 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. ____

7.2.17 Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.

PI-1426 1360 psig FI-6416 625 gpm

Speed 9325 RPM

7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. ____ ____

7.2.19 STOP the SDAFW pump by closing the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A CLOSED ____
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B CLOSED ____
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C CLOSED ____

7.2.20 CLOSE the following valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A CLOSED ____
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B CLOSED ____
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C CLOSED ____

7.2.21 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.
AFW-FCV-6416 OPEN ____ ____

7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm.
FIC-6416 IN AUTO ____ ____
FIC-6416 AT 600 GPM ____ ____

7.2.23 Calculate pump ΔP from the data gathered in Step 7.2.13.

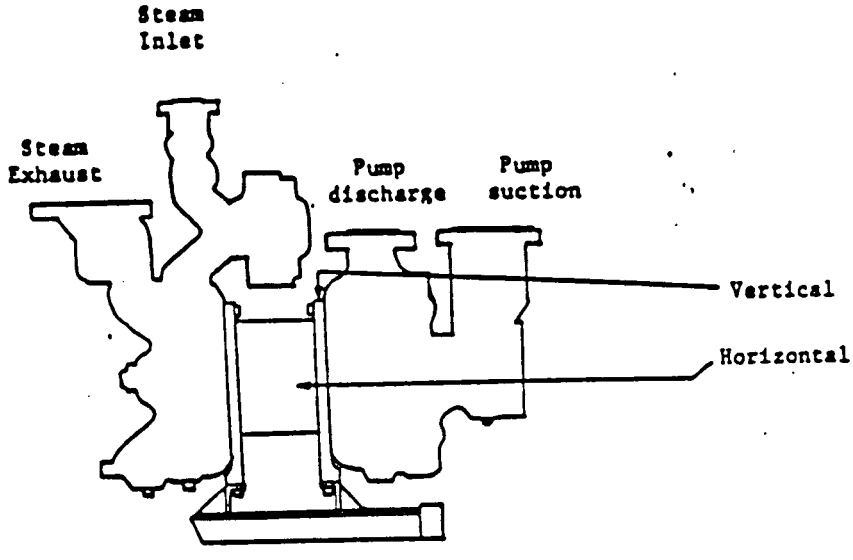
1280 (Discharge Pressure (PI-1426)) − 0 (Suction Pressure (PI-1478)) = 1280 (ΔP)

VIBRATION DATA

PUMP	DATA			ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	.33	MILS	N/A
	VERTICAL	.3	MILS	N/A
SDAFW	HORIZONTAL	(1) .09	IN/SEC	N/A
	VERTICAL	(1) .085	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	J. BARR	4-15-89
	[illegible]	D Billings	4-15-89
	[illegible]	Ben Porvin [illegible]	4-15-89 / 15 APR 89

Test Complete: Date 4-15-89 Time 2100

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 4/4/89 Time 0250
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) AP Step 7.2.25 is an Alert Range NR# 89-AE-KU1

Approved by: [illegible] Date 4/15/89
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 5/4/89
ISI Coordinator

FOR INFORMATION ONLY

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Calibrated Stop Watch, No. 11BL-4 Cal. Date 3/30/89 (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.3 If the differential pressure calculated in Step 7.2.23 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

7.0 **PROCEDURE** (Continued)

INITIALS

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A

V1-8A OPEN ___

2. S/G "B" Steam Supply to SDAFW Pump, V1-8B

V1-8B OPEN ___

3. S/G "C" Steam Supply to SDAFW Pump, V1-8C

V1-8C OPEN ___

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A

V2-14A OPEN ___

2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B

V2-14B OPEN ___

3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C

V2-14C OPEN ___

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. ___

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9450 RPM ___

SDAFW Pump Discharge Pressure (PI-1426) 1300 psig ___

SDAFW Pump Suction Pressure (PI-1478) 40 psig ___

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.0 PROCEDURE (Continued)

INITIALS VERIFIED BY

7.2.14 Record SDAFW Pump vibration on ATTACHMENT 8.1. _____

7.2.15 Record bearing temperature per EST-013. N/A

7.2.16 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. _____

7.2.17 Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.

PI-1426 ~~1400~~ 1380 @ 5:16 psig FI-6416 645 gpm

Speed 9400 RPM

7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. _____

7.2.19 STOP the SDAFW pump by closing the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A CLOSED _____
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B CLOSED _____
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C CLOSED _____

7.2.20 CLOSE the following valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A CLOSED _____
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B CLOSED _____
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C CLOSED _____

7.2.21 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.

AFW-FCV-6416 OPEN _____

7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm.

FIC-6416 IN AUTO _____

FIC-6416 AT 600 GPM _____

7.2.23 Calculate pump ΔP from the data gathered in Step 7.2.13.

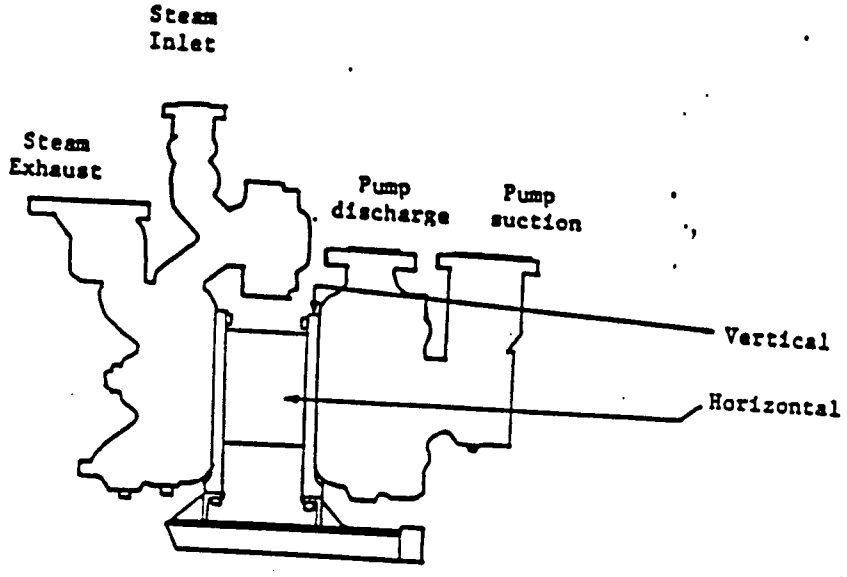
1300 (Discharge Pressure (PI-1426)) − 40 (Suction Pressure (PI-1478)) = 1300 ΔP

VIBRATION DATA

PUMP	DATA			ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	.35	MILS	N/A
	VERTICAL	.3	MILS	N/A
SDAFW	HORIZONTAL	(1) .095	IN/SEC	N/A
	VERTICAL	(1) .15	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	DAN AKERS	5/16/89
	[illegible]	STEVE BIEDENBACH	5/16/89
	[illegible]	K CARWIN	5/16/89
	[illegible]	C McINTEER	5/16/89

Has H.A. Vincent 5/16/89

Test Complete: Date 5/16/89 Time 2330

Test Satisfactory: Yes / No (Circle one)

Reviewed by: C McIntee
Unit 2 - Shift Foreman
Date 5/16/89 Time 2330

Comments: (Required if results were unsatisfactory) DP IN THE REQUIRED RETURN RANGE, WHERE WATER-AFFECT. REPLACED SPARE PUMP INOPERABLE

Approved by: [signature]
Unit 2 - Operating Supervisor
Date 5/18/89

Reviewed by: W McCutchen
ISI Coordinator
Date 5/19/89

3.0 PREREQUISITES (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

Steve Biedenbach (Print) _____ 5-17-89
Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

_____ 5/17/89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Calibrated Stop Watch No. HBN-4 Cal. Date 3/30/89 (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.3 If the differential pressure calculated in Step 7.2.23 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

7.0 PROCEDURE (Continued)

INITIALS

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A — V1-8A OPEN ___
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B — V1-8B OPEN ___
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C — V1-8C OPEN ___

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A — V2-14A OPEN ___
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B — V2-14B OPEN ___
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C — V2-14C OPEN ___

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. ___

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9250 RPM ___
SDAFW Pump Discharge Pressure (PI-1426) 1280 psig ___
SDAFW Pump Suction Pressure (PI-1478) <0 psig ___

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.0 PROCEDURE (Continued)

		INITIALS	VERIFIED BY
7.2.14	Record SDAFW Pump vibration on ATTACHMENT 8.1.	B	
7.2.15	Record bearing temperature per EST-013.	N/A	
7.2.16	CLOSE AFW-17, SDAFW Pump Recirculation Isolation.	B	
7.2.17	Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.		
	PI-1426 1340 psig FI-6416 645 gpm		
	Speed 9400 RPM		
7.2.18	OPEN AFW-17, SDAFW Pump Recirculation Isolation.	B	
7.2.19	STOP the SDAFW pump by closing the following valves:		
	1. S/G "A" Steam Supply to SDAFW Pump, V1-8A V1-8A CLOSED	B	
	2. S/G "B" Steam Supply to SDAFW Pump, V1-8B V1-8B CLOSED	B	
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C V1-8C CLOSED	B	
7.2.20	CLOSE the following valves:		
	1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A V2-14A CLOSED	B	
	2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B V2-14B CLOSED	B	
	3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C V2-14C CLOSED	B	
7.2.21	FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL. AFW-FCV-6416 OPEN	B	[illegible]
7.2.22	Return FIC-6416 to AUTO mode and set at 600 gpm. FIC-6416 IN AUTO	B	[illegible]
	FIC-6416 AT 600 GPM	B	[illegible]
7.2.23	Calculate pump ΔP from the data gathered in Step 7.2.13.		

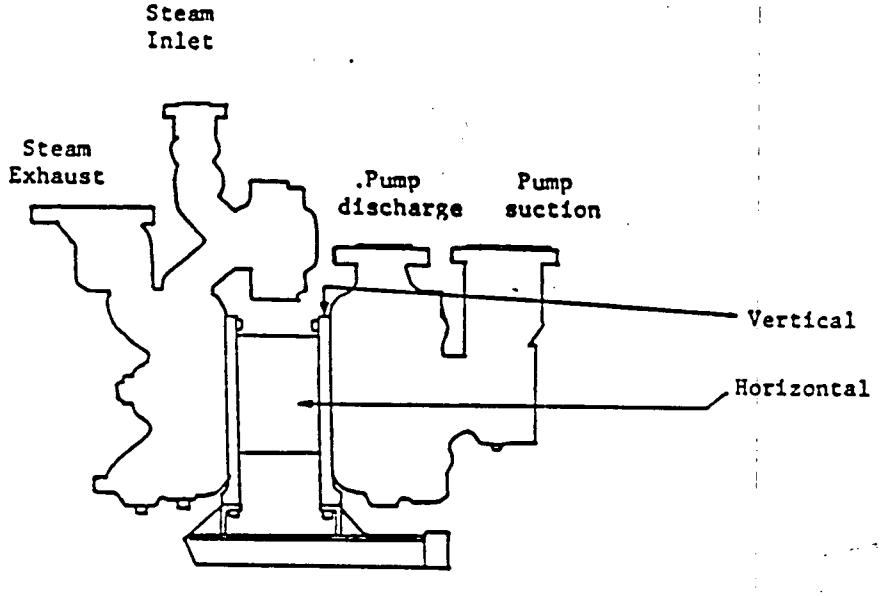
$$\frac{1280}{\text{Discharge Pressure (PI-1426)}} - \frac{20}{\text{Suction Pressure (PI-1478)}} = \frac{1280}{\Delta P}$$

VIBRATION DATA

PUMP	DATA			ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	.38	MILS	N/A
	VERTICAL	.3	MILS	N/A
SDAFW	HORIZONTAL	(1) .12	IN/SEC	N/A
	VERTICAL	(1) .1	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) All pages - Place South Pump B13 After calibration of P1-426.

Test Performed by	Initials	Name (Print)	Date
	[illegible]	Steve Rudolbach	5-17-89
	[illegible]	K Orkwin	5/17/89
	[illegible]	H.A. Wingate	5/17/89
	[illegible]	D Akers	5/17/89

Test Complete: Date 5/17/89 Time 0115

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 5/17/89 Time 0115

Comments: (Required if results were unsatisfactory)

Approved by: [signature]
Unit 2 - Operating Supervisor Date 5/18/89

Reviewed by: [signature]
ISI Coordinator Date 5/19/89

3.0 PREREQUISITES (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

D. McCaskill (Print) D. McCaskill 6/14/89
Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

D. McCaskill 6/14/89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Calibrated Stop Watch No. H62-3 Cal. Date 3-30-87 (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.3 If the differential pressure calculated in Step 7.2.23 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

7.0 PROCEDURE (Continued) INITIALS

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A OPEN MA
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B OPEN MA
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C OPEN MA

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A OPEN MA
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B OPEN MA
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C OPEN MA

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. MA

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9800 RPM MA
SDAFW Pump Discharge Pressure (PI-1426) 1300 psig MA
SDAFW Pump Suction Pressure (PI-1478) 0 psig MA

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.0 PROCEDURE (Continued) — INITIALS VERIFIED BY

7.2.14 Record SDAFW Pump vibration on ATTACHMENT 8.1. ___

7.2.15 Record bearing temperature per EST-013. N/A ___

7.2.16 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. ___

7.2.17 Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.

PI-1426 1340 psig FI-6416 645 gpm

Speed 9810 RPM

7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. ___

7.2.19 STOP the SDAFW pump by closing the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A CLOSED ___
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B CLOSED ___
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C CLOSED ___

7.2.20 CLOSE the following valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A CLOSED ___
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B CLOSED ___
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C CLOSED ___

7.2.21 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.
AFW-FCV-6416 OPEN ___

7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm.
FIC-6416 IN AUTO ___
FIC-6416 AT 600 GPM ___

7.2.23 Calculate pump ΔP from the data gathered in Step 7.2.13.

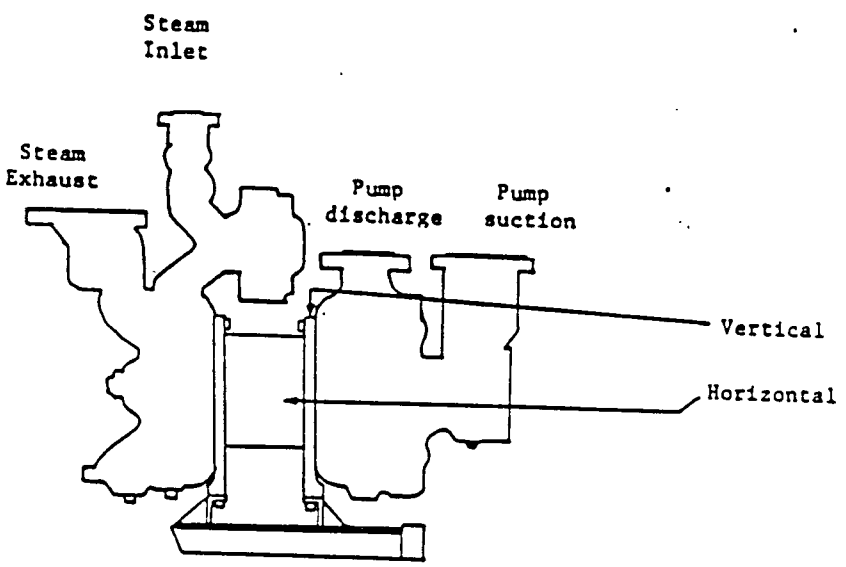
$$\underset{\text{Discharge Pressure (PI-1426)}}{1300} - \underset{\text{Suction Pressure (PI-1478)}}{0} = \underset{\Delta P}{1300}$$

VIBRATION DATA

PUMP	DATA			ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	.5	MILS	N/A
	VERTICAL	.5	MILS	N/A
SDAFW	HORIZONTAL	(1) .1	IN/SEC	N/A
	VERTICAL	(1) .14	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test): Scheduled due to increased frequency

	Initials	Name (Print)	Date
Test Performed by	MJR	M. J. RADCLIFF	6-14-89
	BCW	B. C. WALDSMITH	6-14-89
	KS	KONA SMITH	6/14/89
	MK	M.K. CURSE	6-14-89

Test Complete: Date 6-14-89 Time 2225

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 6/14/89 Time 2235
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) C EST-013 WAS PERFORMED ON 1-26-89 AND IS AN ANNUAL TEST. THIS OST WAS PERFORMED TO MEASURE ΔP WHICH WAS IN THE ALERT RANGE AT LAST TESTING. WR# 89-AFWH1 Recently PI1426 Calibration. WR# 89-AFWE1 - SINGLE pump in Required Action Range and inoperable.

Approved by: [signature] Date 6/16/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 6/19/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

Ben Parvin (Print) Ben Parvin 6-15-89

Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

C M Smith 6/15/89

Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Calibrated Stop Watch No. NA Cal. Date NA (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1162.5 ≤1275 psig	Low ≥1125, <1162.5 psig High >1275, ≤1287.5 psig	<1125, >1287.5 psig

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.1.3 If the differential pressure calculated in Step 7.2.23 falls within the ALERT RANGE of Step 6.1, the frequency of testing shall be revised to monthly until the cause of the deviation is determined and corrected and either of the existing reference values reverified or a new set established per IWP-3111 (ASME Section XI).

INITIALS

7.0 PROCEDURE (Continued)

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A OPEN JP
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B OPEN JP
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C OPEN JP

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A OPEN JP
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B OPEN JP
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C OPEN JP

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. JP

7.2.13 Record the following data after 5 minutes of operation at 600 gpm:

Shaft RPM 9550 RPM MA

SDAFW Pump Discharge Pressure (PI-1426) 1290 psig MA

SDAFW Pump Suction Pressure (PI-1478) <0 psig MA

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.0 PROCEDURE (Continued) INITIALS VERIFIED BY

7.2.14 Record SDAFW Pump vibration on ATTACHMENT 8.1. NA ①

7.2.15 Record bearing temperature per EST-013. NA ①

7.2.16 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. NA ①

7.2.17 Allow the SDAFW pump discharge to stabilize and record the indicated discharge pressure, flow and speed.

PI-1426 ~~880~~ 1290 psig FI-6416 600 gpm

Speed 9550 RPM

7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. NA ① NA ①

① SEE COMMENTS

7.2.19 STOP the SDAFW pump by closing the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A CLOSED AB
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B CLOSED AB
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C CLOSED AB

7.2.20 CLOSE the following valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A CLOSED AB
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B CLOSED AB
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C CLOSED AB

7.2.21 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.

AFW-FCV-6416 OPEN AB MA

7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm.

FIC-6416 IN AUTO AB MA

FIC-6416 AT 600 GPM AB MA

7.2.23 Calculate pump ΔP from the data gathered in Step 7.2.13.

$$\frac{1290}{\text{Discharge Pressure (PI-1426)}} - \frac{<6}{\text{Suction Pressure (PI-1478)}} = \frac{>1290}{\Delta P}$$

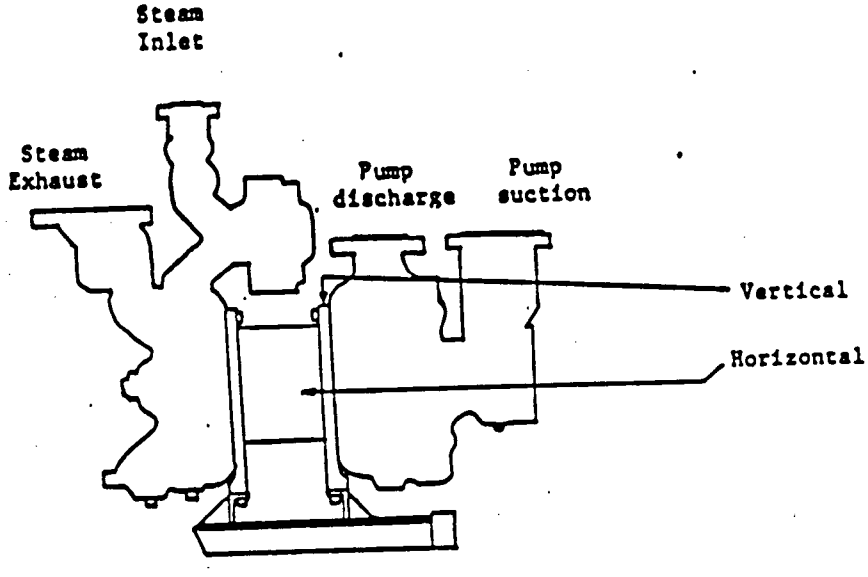
VIBRATION DATA

PUMP		DATA		ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	① NA	MILS	N/A
	VERTICAL	① NA	MILS	N/A
SDAFW	HORIZONTAL	(1) ① NA	IN/SEC	N/A
	VERTICAL	(1) ① NA	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

① SEE COMMENTS

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE

CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Performed to test SD AFW Pump after repair of PI-1426 Discharge Pressure gage (CALIBRATION) ALL PAGES INCLUDED

	Initials	Name (Print)	Date
Test Performed by	MG	M. GANN	6/15/89
	[illegible]	D Billings	6-15-89
	CW	CWinters	6/15/89

Test Complete: Date 6/15/89 Time 1615

Test Satisfactory: Yes / No (Circle one)

Reviewed by: C Winters Date 6/15/89 Time 1620
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) Pump still in Required Action Range WRSS-AFNI,

① SDAFW Pump Run to verify proper ΔP only, no other data required. NA on steps not [illegible] per OMM015 Sect 5.2.2. [illegible] 6/15/89

Approved by: [illegible] Date 7/4/89
Unit 2 - Operating Supervisor

Reviewed by: W McCutcheon Date 7/6/89
ISI Coordinator

3.0 **PREREQUISITES** (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

E A Werner (Print) _____ 6-16-89
Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

_____ 6/16/89
Shift Foreman Date

4.0 **PRECAUTIONS AND LIMITATIONS**

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 5 minutes while feeding the S/G's before any pump or vibration data is recorded. Maintain feed mode while obtaining data. This 5 minute requirement will satisfy the ISI Code.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 SPECIAL TOOLS AND EQUIPMENT

5.1 Calibrated Stop Watch No. HAR-3 Cal. Date 3-30-89 (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1247 ≤1366 psig	Low ≥1206 <1247 psig High >1366 ≤1380 psig	<1206 >1380 psig
Vibration	SDAFW Pump	≤1 MILS	>1 ≤1.5 MILS	>1.5 MILS

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 or the vibration measured is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

7.0 PROCEDURE (Continued)

INITIALS

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A

V1-8A OPEN WB

2. S/G "B" Steam Supply to SDAFW Pump, V1-8B

V1-8B OPEN WB

3. S/G "C" Steam Supply to SDAFW Pump, V1-8C

V1-8C OPEN WB

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A

V2-14A OPEN WB

2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B

V2-14B OPEN WB

3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C

V2-14C OPEN WB

****

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

****

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. WB

7.2.13 Record the following data in the S/G feed mode at 600 gpm.

SDAFW Pump Discharge Pressure (PI-1426) 1340 psig FM

SDAFW Pump Suction Pressure (PI-1478-1) 0 psig FM

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.2.14 CLOSE AFW-17, SDAFW Pump Recirculation Isolation. FM

7.0	PROCEDURE (Continued)	INITIALS	VERIFIED BY
7.2.15	Slowly open AFW-FCV-6416 by adjusting FIC-6416 in manual and set for 645 gpm.	WS	
7.2.16	Record SDAFW Pump vibration on ATTACHMENT 8.1 after five minutes of pump operation at 645 gpm.	WS	
7.2.17	Maintaining flow at 645 gpm, record the indicated discharge pressure, suction pressure, flow and speed. PI-1426 1390 psig, FI-6416 645 gpm, PI-1478-1 0, Speed 9520 RPM		
7.2.18	OPEN AFW-17, SDAFW Pump Recirculation Isolation.	FOY	[illegible]
7.2.19	STOP the SDAFW pump by closing the following valves:		
	1. S/G "A" Steam Supply to SDAFW Pump, V1-8A V1-8A CLOSED	WS	
	2. S/G "B" Steam Supply to SDAFW Pump, V1-8B V1-8B CLOSED	WS	
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C V1-8C CLOSED	WS	
7.2.20	CLOSE the following valves:		
	1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A V2-14A CLOSED	WS	
	2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B V2-14B CLOSED	WS	
	3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C V2-14C CLOSED	WS	
7.2.21	FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL. AFW-FCV-6416 OPEN	WS	[illegible]
7.2.22	Return FIC-6416 to AUTO mode and set at 600 gpm. FIC-6416 IN AUTO	WS	[illegible]
	FIC-6416 AT 600 GPM	WS	[illegible]
7.2.23	Calculate pump ΔP from the data gathered in Step 7.2.17.		

$$\underset{\text{Discharge Pressure (PI-1426)}}{1390} - \underset{\text{Suction Pressure (PI-1478-1)}}{0} = \underset{\Delta P}{1390}$$

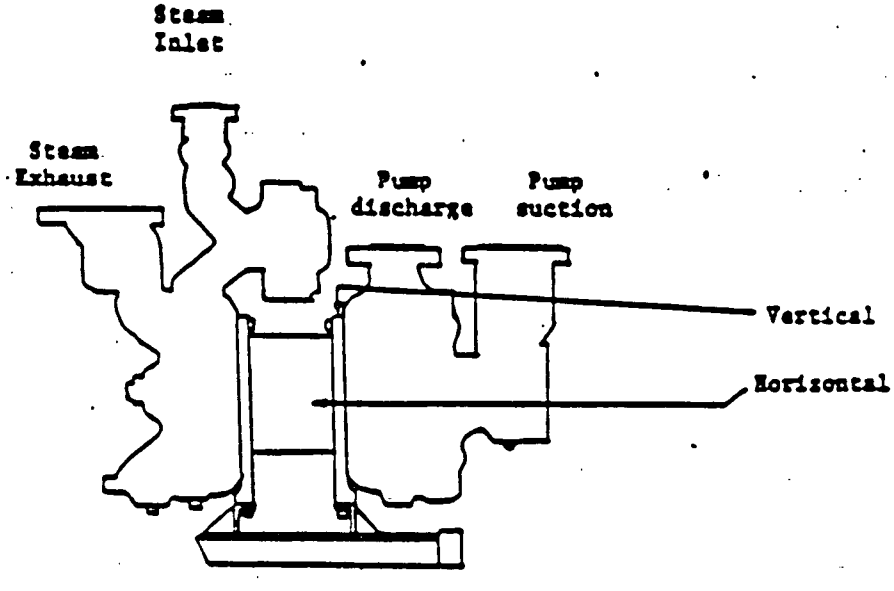
INFO ONLY

*VIBRATION DATA

PUMP	DATA			ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	1.5	MILS	≤1 MILS
	VERTICAL	2.0	MILS	≤1 MILS
SDAFW	HORIZONTAL	(1) .2	IN/SEC	N/A
	VERTICAL	(1) .14	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.
*NOTE: SDAFW pump vibrations (displacement and velocity) should only be taken after 5 continuous minutes of feeding the S/G's at 645 gpm, maintaining this feed mode until all vibration readings are obtained.

VIBRATION DATA POINTS



SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled (Unscheduled) (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) All pages included to place SDAFW B15

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Jim [illegible]	6-16-89
	[illegible]	F.B. Schwien	6-16-89
	[illegible]	M. Gann	6/16/89

Test Complete: Date 6-16-89 Time 1750

Test Satisfactory: Yes / (No) (Circle one)

Reviewed by: [illegible] Date 6/16/89 Time 1843
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) Vibrations and pump AP were both in the action required range. The cause is under investigation WR #89-AFWI1 AWR #89 AFXWI

Approved by: [illegible] Date 7/6/89
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 7/6/89
ISI Coordinator

3.0 PREREQUISITES (Continued)

3.5 This revision is the latest revision available and has been verified against the Revision Status List.

David Kenney (Print) _____ 6-16-89
Name Signature Date

3.6 The Shift Foreman has given his permission to conduct this test.

_____ 6-16-89
Shift Foreman Date

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.

4.2 Ensure the Automatic Feedwater Control System is functioning properly while performing this test.

4.3 The Steam Driven Pump shall be run for a minimum of 5 minutes while feeding the S/G's before any pump or vibration data is recorded. Maintain feed mode while obtaining data. This 5 minute requirement will satisfy the ISI Code.

4.4 Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

4.5 Ensure that the Condensate Storage Tank chemistry is within required specifications prior to feeding the Steam Generators.

4.6 Closely monitor steam generator level indicators to ensure the desired level is maintained during the test.

4.7 Reactor Power and Turbine/Generator output should be closely monitored during performance of this OST since the colder feedwater may affect power and output.

5.0 **SPECIAL TOOLS AND EQUIPMENT**

5.1 Calibrated Stop Watch No. 3 Cal. Date 3/11/87 (Within 12 mo.)

5.2 RPM Indicator

5.3 Two-way Radios

5.4 Vibration Detector with magnetic probe

5.5 Pyrometer

5.6 EST-013

6.0 **ACCEPTANCE CRITERIA**

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure	SDAFW Pump	≥1247 ≤1366 psig	Low ≥1206 <1247 psig High >1366 ≤1380 psig	<1206 >1380 psig
Vibration	SDAFW Pump	≤1 MILS	>1 ≤1.5 MILS	>1.5 MILS

6.1.1 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.1.2 If the differential pressure calculated in Step 7.2.23 or the vibration measured is greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

7.0 PROCEDURE (Continued) INITIALS

7.2.10 START the SDAFW pump by opening the following valves:

1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
   V1-8A OPEN SW
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
   V1-8B OPEN SW
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
   V1-8C OPEN SW

7.2.11 OPEN the following auxiliary feedwater supply valves:

1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
   V2-14A OPEN SW
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
   V2-14B OPEN SW
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
   V2-14C OPEN SW

CAUTION

CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.

7.2.12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm. SW

7.2.13 Record the following data in the S/G feed mode at 600 gpm.

SDAFW Pump Discharge Pressure (PI-1426) 1345 psig
SDAFW Pump Suction Pressure (PI-1478-1) <0 psig

NOTE

Step 7.2.13 confirms the opening of check valve AFW-84.

7.2.14 CLOSE AFW-17, SDAFW Pump Recirculation Isolation.

7.0 PROCEDURE (Continued) — INITIALS VERIFIED BY

7.2.15 Slowly open AFW-FCV-6416 by adjusting FIC-6416 in manual and set for 645 gpm. SKW

7.2.16 Record SDAFW Pump vibration on ATTACHMENT 8.1 after five minutes of pump operation at 645 gpm. f

7.2.17 Maintaining flow at 645 gpm, record the indicated discharge pressure, suction pressure, flow and speed.
PI-1426 1400 psig, FI-6416 640 gpm,
PI-1478-1 ≤0, Speed 9600 RPM

7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. m f

7.2.19 STOP the SDAFW pump by closing the following valves:
1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
V1-8A CLOSED SKW
2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
V1-8B CLOSED SKW
3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
V1-8C CLOSED SKW

7.2.20 CLOSE the following valves:
1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A — V2-14A CLOSED SKW
2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B — V2-14B CLOSED SKW
3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C — V2-14C CLOSED SKW

7.2.21 FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.
AFW-FCV-6416 OPEN SKW f

7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm.
FIC-6416 IN AUTO SKW f
FIC-6416 AT 600 GPM SKW f

7.2.23 Calculate pump ΔP from the data gathered in Step 7.2.17.

1400 (Discharge Pressure (PI-1426)) − 0 (Suction Pressure (PI-1478-1)) = 1400 ΔP (1)

Vibrations taken when Pump Recirc Valve (AFW-17) was opened and flow stable. JM

	Mils	Velocity
Horizontal	0.6	0.05
Vertical	0.5	0.05

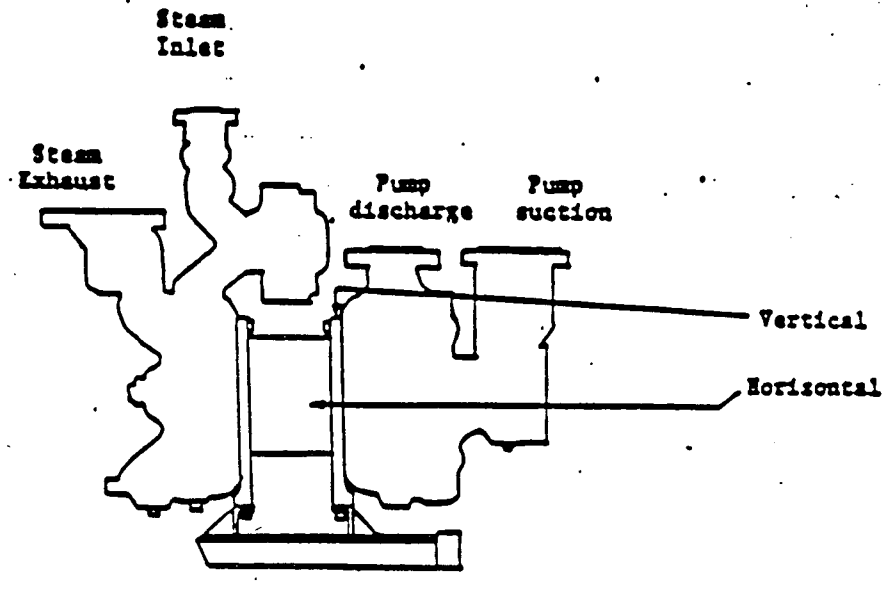
ATTACHMENT 8.1
Page 1 of 1

***VIBRATION DATA**

PUMP	DATA				ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL		2.0	MILS	≤1 MILS
	VERTICAL		8.2	MILS	≤1 MILS
TDAFW	HORIZONTAL	(1)	.15	IN/SEC	N/A
	VERTICAL	(1)	.18	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.
*NOTE: SDAFW pump vibrations (displacement and velocity) should only be taken after 5 continuous minutes of feeding the S/G's at 645 gpm, maintaining this feed mode until all vibration readings are obtained.

VIBRATION DATA POINTS



2940

Proprietary Information ONLY

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / (Unscheduled) (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Retest Done as part of Maintenance trouble Shooting, All pages included.

	Initials	Name (Print)	Date
Test Performed by	[illegible]	E Bizette	6/16/89
	[illegible]	TE White	6/16/89
	[illegible]	M Rebandt	6-16-89
	[illegible]	L.D. Moore	6-16-89

Test Complete: Date 6/16/89 Time 2340

Test Satisfactory: Yes / (No) (Circle one)

Reviewed by: [illegible] Date 6-17-89 Time 0152
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) ① SDAFW Pump still inoperable due to high vibrations. - Work Requests 89-AFWT 1 AFX 2 1 and 89-AFXW1 have been submitted 6-17-89 1800 6/15/89 This test is accepted IAW OMM-015. See attached sheet. [illegible]

Approved by: [illegible] Date 7/6/89
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 7/6/89
ISI Coordinator

FROM: I46026 --VMRSCS DATE AND TIME 06/17/89 17:41:13
TO: I24145 --VMRSCS

SUBJECT: SDAFW PUMP OPERABILITY (OST-202 AND OST-206)

BASED ON MY REVIEW OF THE SDAFW PUMP DATA FROM 6/16/89 AND 6/17/89, THE CONDITION OF THE PUMP IS CONSISTANT WITH ITS CONDITION OVER THE PAST YEAR AND NO OPERABILITY CONCERNS EXIST.
DATA FROM OST-206 SINCE 3/10/88 CORRECTED FOR DIFFERENCES IN SPEED HAS AVERAGED SLIGHTLY ABOVE THE PUMP'S SHOP CURVE. THE LAST DATA REVEALS THE PUMP TO BE 2.4% ABOVE THE CURVE, THEREFORE DEMONSTRATING ITS ABILITY TO PERFORM ITS INTENDED FUNCTION. THIS PERFORMANCE VALUE IS ESSENTIALLY THE SAME AS MEASURED ON 3/10/88 AND 5/17/89. PER DISCUSSIONS WITH PACIFIC PUMP, NO MECHANICAL PROBLEM COULD CAUSE A ELEVATED DISCHARGE PRESSURE. ONLY A REDUCED FLOW OR A HIGHER SPEED COULD CAUSE THE HIGHER TDH. THE ACCURACY OF THE RECENT DATA WAS CHECKED USING ADDITIONAL TEST GAUGES AND FLOW MEASURING EQUIPMENT AND CHECKING THE TACH ON PLANT EQUIPMENT OF KNOWN SPEEDS. NO PROBLEMS WERE FOUND WITH THE INSTRUMENTATION. PACIFIC PUMP WAS ALSO CONSULTED CONCERNING THE HIGHER VIBRATIONS OBSERVED WHILE THE PUMP WAS FEEDING THE S/G'S WITH THE RECIRC. CLOSED. PACIFIC PUMP STATED THAT VIBRATION DATA USED TO DETERMINE OPERABILITY SHOULD BE TAKEN IN A MODE OF OPERATION THAT THE PUMP IS REQUIRED TO OPERATE. SINCE THE PUMP IS PROCEDURALLY RESTRICTED FROM OPERATING WITH THE RECIRC. CLOSED,THIS VIBRATION DATA IS NOT AN OPERABILITY CONCERN SINCE IN THE NORMAL MODE(RECIRC. OPENED) THE VIBRATION DATA IS ACCEPTABLE.
FOR THESE REASONS OST-206 COMPLETED 2340 ON 6/16/89 AND OST-202 COMPLETED 0346 ON 6/17/89 SHOULD BE ACCEPTED AS SATISFACTORY.
BOTH OST-202 AND 206 ACCEPTANCE CRITERIA WILL BE REVISED PRIOR TO THEIR NEXT USE TO ALLOW A MORE ACCURATE DETERMINATION OF PUMP OPERABILITY.

RICK DAYTON 6/17/89

CC: E80659
CC: I89970
CC: I87036
CC: I63470

16216

1.0 PURPOSE

1.1 To verify mechanical performance and assess operational readiness of components to fulfill their required safeguard functions. This test will assess the operation of the motor driven auxiliary feedwater pumps by measuring flow and differential pressure in accordance with Section XI ASME Code. Check Valves AFW-40, AFW-41, AFW-68, AFW-69, and AFW-70 will also be tested for forward flow.

2.0 REFERENCES

2.1 ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.

2.2 Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air Evacuation

2.3 OP-402, Auxiliary Feedwater System

3.0 PREREQUISITES

3.1 Only one auxiliary feedwater pump shall be tested at a time.

3.2 The AFW System is aligned per OP-402, ATTACHMENT 9.1.

3.3 The Reactor Coolant System is at cold shutdown (≤200°F).

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

W.E STOVER (Print) _____ 1-30-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 1-30-88

Shift Foreman Date

2412 21162

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	B	≥1057, ≤1159 psig	Low ≥1023, <1057 psig High >1159, ≤1170 psig	<1023, >1170 psig

6.2. Check valves shall exhibit a change of position as required by the data sheet.

6.3 If a check valve fails to exhibit the required change of valve position by this testing, then declare the valve inoperable. The condition shall be corrected prior to startup. A retest showing acceptable operation shall be run before the valve is returned to service.

6.4 All test data shall be compared with the acceptance criteria contained in this procedure within 96 hours after completion of a test.

6.5 The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OMM-015, Operations Surveillance Testing.

6.6 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.7 If the deviations fall within the ALERT RANGE of Step 6.1, the condition shall be evaluated prior to startup.

6.8 If the deviations fall within the REQUIRED ACTION RANGE of 6.1, the pump shall be declared inoperable and not returned to service until the condition has been corrected.

6.9 The corrective action shall be considered completed when a satisfactory inservice test has been conducted in accordance with IWP-3111 (ASME Section XI) or an analysis is performed that demonstrates that the condition does not impair pump operability and that the pump will still fulfill its function.

PUMP AND VALVE DATA SHEET

REF. STEP NO.	PARAMETER		PUMP TESTED A	PUMP TESTED B	ACCEPTANCE CRITERIA	
7.2.8 or 7.3.8	Disch. Press. PSIG	PI-1424	1200	N/A	N/A	
		PI-1425	N/A	1160	N/A	
	Suct. Press. PSIG	PI-1479	5	N/A	N/A	
		PI-1480	N/A	5.5	N/A	
7.2.9	RTGB Flow (Sonic Meter)	PI-1425A	55	N/A	N/A	
7.2.15		PI-1425B	54	N/A	N/A	
7.2.21		PI-1425C	50	N/A	N/A	
7.2.32 or 7.3.19	* Pump ΔP PSID		1195	1154.5	A Pump ≥1111, ≤1219 psig	B Pump ≥1057, ≤1159 psig

* Pump ΔP = (Disch. Press.) - (Suct. Press.)

REF. STEP NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
7.2.7	AFW-40	[illegible]
7.3.7	AFW-41	[illegible]
7.2.7	AFW-68	[illegible]
7.2.14	AFW-69	[illegible]
7.2.20	AFW-70	[illegible]

**Operability of check valves AFW-40 and AFW-41 OPENING is verified by obtaining a flowrate of 325 GPM through its respective AFW pump. Operability of check valves AFW-68, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

*LR-SI-AB1X1

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by:	Initials	Name (Print)	Date
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Test Complete: Date 2/1/88 Time 1130

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 2-1-88 Time 1734
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) [illegible] 2-1-88
[illegible]
88-ABIX-1 submitted on FI-142 [illegible]
No flaws indicated

Approved by: [signature] Date 2-9-88
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 2/18/88
ISI Coordinator

1.0 PURPOSE

1.1 To verify mechanical performance and assess operational readiness of components to fulfill their required safeguard functions. This test will assess the operation of the motor driven auxiliary feedwater pumps by measuring flow and differential pressure in accordance with Section XI ASME Code. Check Valves AFW-40, AFW-41, AFW-68, AFW-69, and AFW-70 will also be tested for forward flow.

2.0 REFERENCES

2.1 ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.

2.2 Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air Evacuation

2.3 OP-402, Auxiliary Feedwater System

2.4 EST-013, Auxiliary Feedwater Pump Bearing Temperature Test

3.0 PREREQUISITES

3.1 Only one auxiliary feedwater pump shall be tested at a time.

3.2 The AFW System is aligned per OP-402, ATTACHMENT 9.1.

3.3 The Reactor Coolant System is at cold shutdown (≤200°F).

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

B Mulligan (Print) B. Mulligan 9-2-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 9-3-88

Date

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	B	≥1057, ≤1159 psig	Low ≥1023, <1057 psig High >1159, ≤1170 psig	<1023, >1170 psig

6.2 Acceptance criteria for vibration will be established after initial performance of this test.

6.3 Check valves shall exhibit a change of position as required by the data sheet.

6.4 If a check valve fails to exhibit the required change of valve position by this testing, then declare the valve inoperable. The condition shall be corrected prior to startup. A retest showing acceptable operation shall be run before the valve is returned to service.

6.5 All test data shall be analyzed within 96 hours after completion of a test.

6.6 The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OMM-015, Operations Surveillance Testing.

6.7 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.8 If the deviations fall within the ALERT RANGE of Step 6.1, the condition shall be evaluated prior to startup.

6.9 If the deviations fall within the REQUIRED ACTION RANGE of 6.1, the pump shall be declared inoperable and not returned to service until the condition has been corrected.

6.10 The corrective action shall be considered completed when a satisfactory inservice test has been conducted in accordance with IWP-3111 (ASME Section XI) or an analysis is performed that demonstrates that the condition does not impair pump operability and that the pump will still fulfill its function.

PUMP AND VALVE DATA SHEET

REF. STEP NO.	PARAMETER		PUMP TESTED A	PUMP TESTED B	ACCEPTANCE CRITERIA	
7.2.8 or 7.3.8	Disch. Press. PSIG	PI-1424	1200	N/A	N/A	
		PI-1425	N/A	1190	N/A	
	Suct. Press. PSIG	PI-1479	225	N/A	N/A	
		PI-1480	N/A	1.5	N/A	
7.2.9	RTGB Flow (Sonic Meter) %	FI-1425A	36	N/A	N/A	
7.2.17		FI-1425B	30	N/A	N/A	
7.2.23		FI-1425C	40	N/A	N/A	
7.2.34 or 7.3.21	* Pump ΔP PSID		1192.75	1188.5	A Pump ≥1111, ≤1219 psig	B Pump ≥1057, ≤1159 psig
7.2.9 or 7.3.9	Vibration, Mils	Horizontal	.7	.56	N/A	
		Vertical	.16	.13	N/A	

* Pump ΔP = (Disch. Press.) - (Suct. Press.)

REF. STEP NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
7.2.7	AFW-40	BM
7.3.7	AFW-41	BM
7.2.7	AFW-68	BM
7.2.16	AFW-69	BM
7.2.22	AFW-70	BM

**Operability of check valves AFW-40 and AFW-41 OPENING is verified by obtaining a flowrate of 325 GPM through its respective AFW pump. Operability of check valves AFW-68, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) Low During Cold Shutdown As Required (All Pages 1-16)

	Initials	Name (Print)	Date
Test Performed by	RDM	R. D. Moore	9-3-88
	[illegible]	[illegible]	2 Sept 88
	[illegible]	[illegible]	3-Sep-88
	BM	B. Mulligan	9-3-88

Test Complete: Date 9-3-88 Time 0447

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 9-3-88 Time 0510
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) U. Ground - 816 251 5251 9-3-88
"B" AFW Pump AP in Required Action Range (High AP)
Pump has already declared out of service
on 8 30 88 due to AP being high on OST 201
W.R. 88-A1741 was originally generated for AP problem.

Approved by: [illegible] Date 9-10-88
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 9/30/88
ISI Coordinator

1.0 **PURPOSE**

1.1 To verify mechanical performance and assess operational readiness of components to fulfill their required safeguard functions. This test will assess the operation of the motor driven auxiliary feedwater pumps by measuring flow and differential pressure in accordance with Section XI ASME Code. Check Valves AFW-40, AFW-41, AFW-68, AFW-69, and AFW-70 will also be tested for forward flow.

2.0 **REFERENCES**

2.1 ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.

2.2 Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air Evacuation

2.3 OP-402, Auxiliary Feedwater System

2.4 EST-013, Auxiliary Feedwater Pump Bearing Temperature Test

3.0 **PREREQUISITES**

3.1 Only one auxiliary feedwater pump shall be tested at a time.

3.2 The AFW System is aligned per OP-402, ATTACHMENT 9.1.

3.3 The Reactor Coolant System is at cold shutdown (≤200°F).

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

H A Conger (Print) H A Conger 4/13/92

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

Shift Foreman 4/13/92

Date

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	B	≥1105, ≤1212 psig	Low ≥1070, <1105 psig High >1212, ≤1224 psig	<1070, >1224 psig

6.2 Acceptance criteria for vibration will be established after initial performance of this test.

6.3 Check valves shall exhibit a change of position as required by the data sheet.

6.4 If a check valve fails to exhibit the required change of valve position by this testing, then declare the valve inoperable. The condition shall be corrected prior to startup. A retest showing acceptable operation shall be run before the valve is returned to service.

6.5 All test data shall be analyzed within 96 hours after completion of a test.

6.6 The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OHM-015, Operations Surveillance Testing.

6.7 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.8 If the deviations fall within the ALERT RANGE of Step 6.1, the condition shall be evaluated prior to startup.

6.9 If the deviations fall within the REQUIRED ACTION RANGE of 6.1, the pump shall be declared inoperable and not returned to service until the condition has been corrected.

6.10 The corrective action shall be considered completed when a satisfactory inservice test has been conducted in accordance with IWP-3111 (ASME Section XI) or an analysis is performed that demonstrates that the condition does not impair pump operability and that the pump will still fulfill its function.

PUMP AND VALVE DATA SHEET

REF. STEP NO.	PARAMETER		PUMP TESTED A	PUMP TESTED B	ACCEPTANCE CRITERIA	
7.2.8 or 7.3.8	Disch. Press. PSIG	PI-1424	1212	N/A	N/A	
		PI-1425	N/A	1175	N/A	
	Suct. Press. PSIG	PI-1479	23	N/A	N/A	
		PI-1480	N/A	10	N/A	
7.2.9	RTGB Flow (Sonic Meter) %	FI-1425A	34	N/A	N/A	
7.2.17		FI-1425B	[illegible]	N/A	N/A	
7.2.23		FI-1425C	4	N/A	N/A	
7.2.34 or 7.3.21	* Pump ΔP PSID		1217	1174	A Pump ≥1111, ≤1219 psig	B Pump ≥1105, ≤1212 psig
7.2.9 or 7.3.9	Vibration, Mils	Horizontal	.22	.36	N/A	
		Vertical	.18	.14	N/A	

* Pump ΔP = (Disch. Press.) - (Suct. Press.)

REF. STEP NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
7.2.7	AFW-40	[illegible]
7.3.7	AFW-41	[illegible]
7.2.7	AFW-68	[illegible]
7.2.16	AFW-69	[illegible]
7.2.22	AFW-70	[illegible]

**Operability of check valves AFW-40 and AFW-41 OPENING is verified by obtaining a flowrate of 325 GPM through its respective AFW pump. Operability of check valves AFW-68, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	H.A. WINGER	9/10/88
	[illegible]	L.V. CUTRIGHT	9-10-88
	[illegible]	David A. Cook	9/10/88
	[illegible]	[illegible]	9/10/88 9-10-88
	[illegible]	L. WINGARD	9-10-88

Test Complete: Date 9-10-88 Time 1050

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [illegible] Date 9-10-88 Time 1115
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) _____

Approved by: [illegible] Date 9-10-88
Unit 2 - Operating Supervisor

Reviewed by: [illegible] Date 9/10/88
ISI Coordinator

1.0 PURPOSE

1.1 To verify mechanical performance and assess operational readiness of components to fulfill their required safeguard functions. This test will assess the operation of the motor driven auxiliary feedwater pumps by measuring flow and differential pressure in accordance with Section XI ASME Code. Check Valves AFW-40, AFW-41, AFW-68, AFW-69, and AFW-70 will also be tested for forward flow.

2.0 REFERENCES

2.1 ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.

2.2 Engineering Flow Diagram, C-190197, Feedwater, Condensate, and Air Evacuation

2.3 OP-402, Auxiliary Feedwater System

2.4 EST-013, Auxiliary Feedwater Pump Bearing Temperature Test

3.0 PREREQUISITES

3.1 Only one auxiliary feedwater pump shall be tested at a time.

3.2 The AFW System is aligned per OP-402, ATTACHMENT 9.1.

3.3 The Reactor Coolant System is at cold shutdown (≤200°F).

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Ralph C. Dewey (Print) Ralph C. Dewey 10-17-88

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

[illegible] 10-17-88

Shift Foreman Date

2635 1485

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	B	≥1105, ≤1212 psig	Low ≥1070, <1105 psig High >1212, ≤1224 psig	<1070, >1224 psig

6.2 Acceptance criteria for vibration will be established after initial performance of this test.

6.3 Check valves shall exhibit a change of position as required by the data sheet.

6.4 If a check valve fails to exhibit the required change of valve position by this testing, then declare the valve inoperable. The condition shall be corrected prior to startup. A retest showing acceptable operation shall be run before the valve is returned to service.

6.5 All test data shall be analyzed within 96 hours after completion of a test.

6.6 The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OMM-015, Operations Surveillance Testing.

6.7 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

6.8 If the deviations fall within the ALERT RANGE of Step 6.1, the condition shall be evaluated prior to startup.

6.9 If the deviations fall within the REQUIRED ACTION RANGE of 6.1, the pump shall be declared inoperable and not returned to service until the condition has been corrected.

6.10 The corrective action shall be considered completed when a satisfactory inservice test has been conducted in accordance with IWP-3111 (ASME Section XI) or an analysis is performed that demonstrates that the condition does not impair pump operability and that the pump will still fulfill its function.

PUMP AND VALVE DATA SHEET

REF. STEP NO.	PARAMETER	PUMP TESTED	A	B	ACCEPTANCE CRITERIA	
7.2.8 or 7.3.8	Disch. Press. PSIG	PI-1424	1190	N/A	N/A	
		PI-1425	N/A	1185	N/A	
	Suct. Press. PSIG	PI-1479	3	N/A	N/A	
		PI-1480	N/A	5	N/A	
7.2.9	RTGB Flow (Sonic Meter) %	FI-1425A	37	N/A	N/A	
7.2.17		FI-1425B	36	N/A	N/A	
7.2.23		FI-1425C	39	N/A	N/A	
7.2.34 or 7.3.21	* Pump ΔP PSID		1187 ~~1190~~	1180	A Pump ≥1111, ≤1219 psig	B Pump ≥1105, ≤1212 psig
7.2.9 or 7.3.9	Vibration, Mils	Horizontal	.3	.32	N/A	
		Vertical	.15	.15	N/A	

* Pump ΔP = (Disch. Press.) - (Suct. Press.)

REF. STEP NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
7.2.7	AFW-40	[illegible]
7.3.7	AFW-41	[illegible]
7.2.7	AFW-68	[illegible]
7.2.16	AFW-69	[illegible]
7.2.22	AFW-70	[illegible]

**Operability of check valves AFW-40 and AFW-41 OPENING is verified by obtaining a flowrate of 325 GPM through its respective AFW pump. Operability of check valves AFW-68, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

Test Performed by	Initials	Name (Print)	Date
	MSM	Michael S. Moore	10-17-88
	[illegible]	Ralph C. Downing	10-17-88
	[illegible]	R. Hinley	10-17-88

Test Complete: Date 10-17-88 Time 1205

Test Satisfactory: Yes / No (Circle one)

Reviewed by: _____
Unit 2 - Shift Foreman

Date 10/17/88 Time 1520

Comments: (Required if results were unsatisfactory) _____

Approved by: _____
Unit 2 - Operating Supervisor

Date 10-18-88

Reviewed by: _____
ISI Coordinator

Date 10/20/88

OST-207 Rev. 6

1.0 PURPOSE

1.1 To verify mechanical performance and assess operational readiness of components to fulfill their required safeguard functions. This test will assess the operation of the motor driven auxiliary feedwater pumps by measuring flow and differential pressure in accordance with Section XI ASME Code. Check Valves AFW-40, AFW-41, AFW-68, AFW-69, and AFW-70 will also be tested for forward flow.

2.0 REFERENCES

2.1 ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.

2.2 Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air Evacuation

2.3 OP-402, Auxiliary Feedwater System

2.4 EST-013, Auxiliary Feedwater Pump Bearing Temperature Test

3.0 PREREQUISITES

3.1 Only one auxiliary feedwater pump shall be tested at a time.

3.2 The AFW System is aligned per OP-402, ATTACHMENT 9.1.

3.3 The Reactor Coolant System is at cold shutdown (≤200°F).

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

C BUNNELL (Print) _____ 1/25/89
Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 1/25/89
Shift Foreman Date

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	B	≥1105, ≤1212 psig	Low ≥1070, <1105 psig High >1212, ≤1224 psig	<1070, >1224 psig
Vibration Amplitude (Mils)	A	≤1	>1 ≤1.5	>1.5
	B	≤1	>1 ≤1.5	>1.5

6.2 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.3 Pump Data taken shall be compared to the appropriate baseline data. Each value shall be categorized into one of the ranges as indicated in Step 6.1.

6.4 Check valves shall exhibit a change of position as required by the data sheet.

6.5 If a check valve fails to exhibit the required change of valve position by this testing, then declare the valve inoperable. The condition shall be corrected prior to startup. A retest showing acceptable operation shall be run before the valve is returned to service.

6.6 All test data shall be analyzed within 96 hours after completion of a test.

6.7 The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OMM-015, Operations Surveillance Testing.

6.8 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

PUMP AND VALVE DATA SHEET

REF. STEP NO.	PARAMETER		PUMP TESTED A	PUMP TESTED B	ACCEPTANCE CRITERIA	
7.2.8 or 7.3.8	Disch. Press. PSIG	PI-1424	1220	N/A	N/A	
		PI-1425	N/A	1200	N/A	
	Suct. Press. PSIG	PI-1479	5.5	N/A	N/A	
		PI-1480	N/A	6.5	N/A	
7.2.11	RTGB Flow GPM	FI-1425A	365	N/A	N/A	
7.2.17		FI-1425B	375	N/A	N/A	
7.2.23		FI-1425C	375	N/A	N/A	
7.2.34 or 7.3.21	* Pump ΔP PSID		1214.5	1193.5	A Pump ≥1111, ≤1219 psig	B Pump ≥1105, ≤1212 psig
7.2.9 or 7.3.9	Vibration, Mils	Horizontal	.36	.3	≤1	
		Vertical	.12	.32	≤1	

* Pump ΔP = (Disch. Press.) - (Suct. Press.)

REF. STEP NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
7.2.7	AFW-40	*
7.3.7	AFW-41	ECW
7.2.7	AFW-68	*
7.2.16	AFW-69	*
7.2.22	AFW-70	*

**Operability of check valves AFW-40 and AFW-41 OPENING is verified by obtaining a flowrate of 325 GPM through its respective AFW pump. Operability of check valves AFW-68, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) DONE PRIOR TO HEAT-UP
ALL PAGES (1-17)

	Initials	Name (Print)	Date
Test Performed by	[illegible]	Steve Atlee	1-25-89
	[illegible] / TC	C Williams / Rob Smith	1/25/89 / 1/25/89
	[illegible] / BM	G Taylor / D Mulligan	1-25-89 / 1-25-89
	[illegible] / BCW	Kerrigan / BCW / Aldrich	1/25/89

Test Complete: Date 1-25-89 Time 2130

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature]
Unit 2 - Shift Foreman Date 1-25-89 Time 2157

Comments: (Required if results were unsatisfactory)

Approved by: [signature]
Unit 2 - Operating Supervisor Date 1-26-89

Reviewed by: [signature]
ISI Coordinator Date 1/30/89

1.0 PURPOSE

1.1 To verify mechanical performance and assess operational readiness of components to fulfill their required safeguard functions. This test will assess the operation of the motor driven auxiliary feedwater pumps by measuring flow and differential pressure in accordance with Section XI ASME Code. Check Valves AFW-40, AFW-41, AFW-68, AFW-69, and AFW-70 will also be tested for forward flow.

2.0 REFERENCES

2.1 ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.

2.2 Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air Evacuation

2.3 OP-402, Auxiliary Feedwater System

2.4 EST-013, Auxiliary Feedwater Pump Bearing Temperature Test

3.0 PREREQUISITES

3.1 Only one auxiliary feedwater pump shall be tested at a time.

3.2 The AFW System is aligned per OP-402, ATTACHMENT 9.1.

3.3 The Reactor Coolant System is at cold shutdown (≤200°F).

3.4 This revision is the latest revision available and has been verified against the Revision Status List.

W.E. STOVER (Print) _____ 4-10-89

Name Signature Date

3.5 The Shift Foreman has given his permission to conduct this test.

_____ 4-10-89

Shift Foreman Date

6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	B	≥1105, ≤1212 psig	Low ≥1070, <1105 psig High >1212, ≤1224 psig	<1070, >1224 psig
Vibration Amplitude (Mils)	A	≤1	>1 ≤1.5	>1.5
	B	≤1	>1 ≤1.5	>1.5

6.2 If pump fails to start and achieve its rated speed upon the first attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

6.3 Pump Data taken shall be compared to the appropriate baseline data. Each value shall be categorized into one of the ranges as indicated in Step 6.1.

6.4 Check valves shall exhibit a change of position as required by the data sheet.

6.5 If a check valve fails to exhibit the required change of valve position by this testing, then declare the valve inoperable. The condition shall be corrected prior to startup. A retest showing acceptable operation shall be run before the valve is returned to service.

6.6 All test data shall be analyzed within 96 hours after completion of a test.

6.7 The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OMM-015, Operations Surveillance Testing.

6.8 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

PUMP AND VALVE DATA SHEET

REF. STEP NO.	PARAMETER		PUMP TESTED A	PUMP TESTED B	ACCEPTANCE CRITERIA	
7.2.8 or 7.3.8	Disch. Press. PSIG	PI-1424	1210	N/A	N/A	
		PI-1425	N/A	1195	N/A	
	Suct. Press. PSIG	PI-1479	3.5	N/A	N/A	
		PI-1480	N/A	3.2	N/A	
7.2.11	RTCB Flow GPM	FI-1425A	345	N/A	N/A	
7.2.17		FI-1425B	335	N/A	N/A	
7.2.23		FI-1425C	330	N/A	N/A	
7.2.34 or 7.3.21	* Pump ΔP PSID		1265	1191.8	A Pump ≥1111, ≤1219 psig	B Pump ≥1105, ≤1212 psig
7.2.9 or 7.3.9	Vibration, Mils	Horizontal	.35	.5	≤1	
		Vertical	.15	.3	≤1	

* Pump ΔP = (Disch. Press.) - (Suct. Press.)

REF. STEP NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
7.2.7	AFW-40	[illegible]
7.3.7	AFW-41	[illegible]
7.2.7	AFW-68	[illegible]
7.2.16	AFW-69	[illegible]
7.2.22	AFW-70	[illegible]

**Operability of check valves AFW-40 and AFW-41 OPENING is verified by obtaining a flowrate of 325 GPM through its respective AFW pump. Operability of check valves AFW-68, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

SURVEILLANCE TEST PROCEDURE
CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed by	[illegible]	F Legette	4/11/89
	[illegible]	TEWhite	4/11/89
	[illegible]	HCFletcher	4-11-89

Test Complete: Date 4/11/89 Time 0630

Test Satisfactory: Yes / No (Circle one)

Reviewed by: [signature] Date 4/11/89 Time 0630
Unit 2 - Shift Foreman

Comments: (Required if results were unsatisfactory) EST-013 MDAFW Portion Done 1-26-89 EST-013 NOT REQUIRED PER CONVERSATION WITH STAN PRUITT. 4-10-89

Approved by: [signature] Date 5/2/89
Unit 2 - Operating Supervisor

Reviewed by: [signature] Date 5/4/89
ISI Coordinator

Attachment 18

"A" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	TDH 1/20/88 ~~88.8~~ 98.8	TDH 1/20/88 ~~87.4~~ 97.4
2	98.8	97.5
4	98.9	97.4
6	98.9	97.5
8	98.8	97.5
10	98.8	97.5
12	98.8	97.5
14	98.9	97.5
16	98.7	97.4
18	98.7	97.6
20	98.8	97.6
22	98.7	97.5
24	98.6	97.6
26	98.8	97.5
28	98.7	97.4
30	98.8	97.6
32		
34		
36		
38		

"B" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME:	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	NA	NA
2		
4		
6		
8		
10		
12		
14		
16		
18		
20		
22		
24		
26		
28		
30		
32		
34		
36		
38		

STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME:	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	N/A
2	
4	
6	
8	
10	
12	
14	
16	
18	
20	
22	
24	
26	
28	
30	
32	
34	
36	
38	

CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed By:	TDH	T. D. Howatt	1/20/88

Test Complete: Date: NA Time: NA

Test Satisfactory: Yes / No (Circle one)

Reviewed By: _____ Date: 1/20/88
Shift Foreman

Reviewed By: _____ Date: _____
ISI Coordinator

Comments: (Required if results were unsatisfactory) TEST IS TO BE RESCHEDULED TO LATER DATE, DUE TO REQUIREMENT TO FEED THE STEAM GENERATORS DURING THIS TEST DUE TO THE PLANT BEING SHUTDOWN

Approved By: _____ Date: _____
Engineering Supervisor - Performance

"A" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME: 0020	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	64.9	62.1
2	71.3	69.2
4	75.9	70.2
6	83.4	75.8
8	86.0	78.0
10	88.7	78.5
12	90.5	79.1
14	92.7	81.7
16	97.4	82.5
18	92.5	80.0
20	95.9	83.8
22	96.7	79.6
24	97.1	85.3
26	98.3	82.4
28	96.8	83.2
30	97.3	80.9
32	N/A	N/A
34	↓	↓
36		
38		

"B" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME: 0101	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	65.2	64.6
2	65.8	63.5
4	71.3	66.6
6	73.5	70.8
8	77.8	73.2
10	79.0	74.6
12	81.6	74.2
14	83.7	76.5
16	81.6	77.2
18	82.8	77.5
20	85.3	77.6
22	83.1	77.9
24	83.6	76.9
26	85.7	76.2
28	85.2	80.1
30	88.4	80.4
32	N/A	N/A
34	↓	↓
36	↓	↓
38	↓	↓

CERTIFICATION AND REVIEW FORM

Scheduled/Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed By:	MK	MIKE KIRK	17 FEB 88
	RM	Robert O. MOSER	2-17-88

Test Complete: Date: 2-17-88 Time: 0500

Test Satisfactory: Yes / No (Circle one)

Reviewed By: _____ Date: 2-17-88
Shift Foreman

Reviewed By: W. Bob Cutchen Date: 3/3/88
ISI Coordinator

Comments: (Required if results were unsatisfactory) * UNIT IN COLD S/D
STM DRIVEN PUMP CANNOT BE TESTED
** MDAFW PUMPS BEARING temperatures did NOT stabilize during the 30 MINUTES RUN ON RECIRC.

Approved By: _____ Date: _____
Engineering Supervisor - Performance

STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: 1701	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	126
2	128.5
4	128.7
6	129
8	129
10	130
12	129.8
14	132
16	132.1
18	133.6
20	N/A
22	
24	
26	
28	
30	
32	
34	
36	
38	

CERTIFICATION AND REVIEW FORM

4-19-88

Scheduled/~~Unscheduled~~ (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed By:	[illegible]	Paul M. Ouchock	4-19-88
	[illegible]	T.E. White	4/19/88

Test Complete: Date: 4/19/88 Time: 1745

Test Satisfactory: Yes / No (Circle one)

Reviewed By: [signature] Date: 4-19-88
Shift Foreman

Reviewed By: [signature] Date: 4/22/88
ISI Coordinator

Comments: (Required if results were unsatisfactory) did not pass since temps were never stable enough to be accepted. also OST-204 was run concurrently, so this may have some effect on the EST. WR 88-AESH1 was generated to clean the Oil Cooler

Approved By: _____ Date: _____
Engineering Supervisor - Performance

STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: 2120	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	119
2	125
4	122
6	123
8	122
10	121
12	121
14	122
16	125
18	123
20	123
22	125
24	120
26	123
28	122
30	122
32	N/A
34	
36	
38	

CERTIFICATION AND REVIEW FORM

Scheduled/Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed By:	[illegible]	M. Rebendt	5-17-88
	[illegible]	PM Duchock	5-17-88

Test Complete: Date: 5-17-88 Time: 22'21

Test Satisfactory: Yes / ~~No~~ (Circle one) 6/3/88

Reviewed By: [illegible] Date: 5/17/88
Shift Foreman

Reviewed By: [illegible] Date: 6/3/88
ISI Coordinator

Comments: (Required if results were unsatisfactory) ~~DID NOT MEET ACCEPTANCE CRITERIA PER 6-S.~~ 6/3/88

Approved By: _____ Date: _____
Engineering Supervisor - Performance

AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
TEST DATA SHEET

Temperature Measuring Device:

Type	Serial Number	Calibration Date
CONTACT PYROMETER	CCHBR 16016	11-4-87

		"A" Pump	"B" Pump	Steam Driven "C" Pump
Stabilized Temperatures:	Bearing Number 1	108.4	99.2	N/A
	Bearing Number 2	102.8	94.9	

Test Comments (as applicable):

"A" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	109	100
2	111.7	100.7
4	110.4	103.1
6	107.0	99.2
8	~~105.~~ 9-1-11 105.5	103.1
10	107.2	104.6
12	111.6	102.4
14	107.4	104.8
16	108.8	105.4
18	107.2	101.7
20	110.8	103.5
22	106.5	97.1
24	108.2	100.4
26	106.6	106.3
28	106.6	105.2
30	109.7	107.3
32		
34		
36		
38		

"B" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	~~93.9~~ 93.9	88.1
2	11.8	91.2
4	96.0	91.7
6	95.3	91.7
8	95.2	94.8
10	100	92.2
12	94.8	92.3
14	102.4	92.5
16	96.1	95.6
18	98.5	94.6
20	102.7	98.6
22	99.5	98.7
24	105.4	95.2
26	106.8	100.1
28	102.2 ~~89.3~~	95.5
30	100.9	98.9
32		
34		
36		
38		

CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) ALL PAGES USED IN CONJUNCTION WITH OST-207.

Test Performed By:	Initials	Name (Print)	Date
	RDM	R. D. MOSER	9-3-88
	WES	W. E. STOVER	9-3-88

Test Complete: Date: 9-3-88 Time: 0447

Test Satisfactory: Yes / No (Circle one)

Reviewed By: _____ Date: 9-3-88
Shift Foreman

Reviewed By: _____ Date: 9/20/88
ISI Coordinator

Comments: (Required if results were unsatisfactory)

BEARING No. 2 OF "A" PUMP DID NOT STABILIZE AS REQUIRED. THIS TEST WAS RE-RUN ON 9/19/88 WITH SATISFACTORY RESULTS.

Approved By: _____ Date: _____
Engineering Supervisor - Performance

AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
TEST DATA SHEET

Temperature Measuring Device:

Type	Serial Number	Calibration Date
Type K Thermocouple	CCH BR 16043	8/16/83

		"A" Pump	"B" Pump	Steam Driven "C" Pump
Stabilized Temperatures:	Bearing Number 1	112	100.7	105
	Bearing Number 2	106.7	94.1	

Test Comments (as applicable): Stm. Driven temps at 2, 12 & 22. (102°, 104°, 104°)

"A" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME: 0907	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	105.2	95.6
2	107.5	96.5
4	107.6	97.5
6	107.9	98.0
8	107.5	98.0
10	107.7	98.0
12	108.7	98.3
14	109.1	98.9
16	109.4	100.5
18	110.1	100.0
20	109.9	100.3
22	110.7	100.5
24	110.2	100.0
26	110.9	100.7
28	111.4	100.5
30	111.1	100.8
32	112.1	100.7
34	112.0	100.7
36		
38		

"B" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: 0445	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	96.1	93.1
2	96.5	93.5
4	97.4	94.1
6	96.5	94.2
8	99.6	94.4
10	100.3	94.5
12	100.5	94.4
14	100.6	94.5
16	100.3	94.2
18	100.5	94.4
20	100.2	94.1
22	100.1	93.8
24	100.3	94.1
26	100.2	94.5
28	100.3	94.4
30	100.9	93.8
32	100.7	94.1
34		
36		
38		

STEAM DRIVEN AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	~~114~~ 5-15-88
2	107
4	98
6	103
8	95
10	99
12	104
14	106
16	93
18	102
20	99
22	104
24	109
26	100
28	106
30	104
32	110
34	100
36	107
38	103
	105

CERTIFICATION AND REVIEW FORM

Scheduled/Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed By:	RAH	RL Hale	9/10/88

Test Complete: Date: 9/10/88 Time: 0820

Test Satisfactory: Yes / No (Circle one)

Reviewed By: _____ Date: 9/10/88
Shift Foreman

Reviewed By: _____ Date: _____
ISI Coordinator

Comments: (Required if results were unsatisfactory) _____

Approved By: _____ Date: _____
Engineering Supervisor - Performance

"A" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME: 1734	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	82.0	75
2	82.5	76.5
4	83.0	78.0
6	84.5	78.0
8	85.0	80.5
10	85.5	80.7
12	85.5	81.2
14	85.5	82.0
16	85.7	82.7
18	85.7	82.7
20	85.7	81.0
22	86.0	81.5
24	87.5	81.5
26	88.0	81.5
28	88.0	81.4
30	88.0	81.3
32		
34		
36		
38		

"B" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	2020 TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	79.8	73
2	79.0	74.2
4	79.4	73.1
6	79.6	74.1
8	78.9	73.1
10	79.5	73.5
12	80.1	73.3
14	79.8	73.5
16	80.0	73.7
18	80.2	74.0
20	82.	73.7
22	78.4	72.9
24	81.0	73.9
26	81.6	73.7
28	81.5	73.6
30	80.7	73.1
32		
34		
36		
38		

CERTIFICATION AND REVIEW FORM

Scheduled/Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed By:	KD	K DARWIN	1/25/89
	SAA	Steve Athee	1-25-89
	CW	CW WINTERS	1/25/89
	BM	Brendon Mulligan	1/25/89

Test Complete: Date: 1/26/89 Time: 1420

Test Satisfactory: Yes / No (Circle one)

Reviewed By: CWWinters Date: 1/26/89
Shift Foreman

Reviewed By: _____ Date: _____
ISI Coordinator

Comments: (Required if results were unsatisfactory)

* SDAFW PUMP WILL BE PERFORMED IN CONJUNCTION WITH OST 202 WHEN PLANT CONDITIONS PERMIT. PLANT IS PRESENTLY e COLD S/D. ALL DATA ON MDAFW PUMPS WAS SATISFACTORY

Approved By: _____ Date: _____
Engineering Supervisor - Performance

AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
TEST DATA SHEET

Temperature Measuring Device:

Type	Serial Number	Calibration Date
PY ROMEIN	CCHBR04314	1/17/89

		"A" Pump	"B" Pump	Steam Driven "C" Pump
Stabilized Temperatures:	Bearing Number 1	76	71	NA
	Bearing Number 2	85	76	

Test Comments (as applicable): _____

"A" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: 2230	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	74	80
2	75	82
4	75	82
6	75	83
8	76	84
10	76	85
12	76	83
14	76	85
16	76	82
18	75	85
20	77	85
22	77	83
24	78	84
26	78	84
28	78	85
30	78	85
32		
34		
36		
38		

"B" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: 2313	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	71	72
2	71	73
4	70	72
6	70	73
8	70	74
10	~~74~~ 71	76
12	71	74
14	71	75
16	72	75
18	73	78
20	74	78
22	73	78
24	74	80
26	73	81
28	74	79
30	73	78
32		
34		
36		
38		

STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: N/A	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	
2	
4	
6	
8	
10	
12	
14	
16	
18	
20	
22	
24	
26	
28	
30	
32	
34	
36	
38	

CERTIFICATION AND REVIEW FORM

Scheduled/Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) SDAFW Pump NOT DONE, PLANT IN COLD S/D.

	Initials	Name (Print)	Date
Test Performed By:	FBS	F. B. SCHWIER	2-21-89
	SMA	Steve Atlee	2-22-89

Test Complete: Date: 2/22/89 Time: 0610

Test Satisfactory: Yes / No (Circle one)

Reviewed By: C M Wrate Date: 2/22/89
Shift Foreman

Reviewed By: W A McCutcheon Date: 2/23/89
ISI Coordinator

Comments: (Required if results were unsatisfactory)

Approved By: _____ Date: _____
Engineering Supervisor - Performance

AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
TEST DATA SHEET

Temperature Measuring Device:

TYPE K THERMOCOUPLE	CCHBR16016	10-06-88
Type	Serial Number	Calibration Date

Stabilized Temperatures:	"A" Pump	"B" Pump	Steam Driven "C" Pump
Bearing Number 1	*	*	*
Bearing Number 2	*	*	

Test Comments (as applicable): *TEMPERATURE STABILIZATION DID NOT OCCUR

"A" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	77.4	76.5
2	86.8	80.8
4	90.0	82.0
6	95.0	83.0
8	95.3	86.2
10	95.8	85.5
12	96.8	88.7
14	98.3	88.0
16	99.2	89.7
18	99.3	90.7
20	99.4	91.2
22	99.3	91.4
24	99.4	91.5
26	99.5	91.9
28	99.7	91.9
30	99.9	91.5
32		
34		
36		
38		

"B" AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	78.9	77.8
2	81.5	78.7
4	82.7	79.1
6	83.8	80.3
8	83.8	80.2
10	84.0	80.3
12	84.8	80.5
14	85.7	80.7
16	86.1	81.1
18	88.3	82.8
20	88.1	83.5
22	88.5	83.8
24	88.8	84.0
26	89.2	84.3
28	90.0	84.3
30	90.2	84.5
32		
34		
36		
38		

STEAM DRIVEN AUXILIARY FEEDWATER PUMP
BEARING TEMPERATURE
DATA SHEET

START TIME:	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	117.8
2	108.9
4	110.4
6	111.3
8	109.6
10	112.9
12	111.2
14	110.4
16	114.0
18	109.4
20	112.1
22	109.5
24	109.5
26	110.2
28	109.8
30	111.2
32	
34	
36	
38	

CERTIFICATION AND REVIEW FORM

Scheduled/Unscheduled (Circle one)

(If unscheduled, state reason for test and the page numbers included in partial test) _____

	Initials	Name (Print)	Date
Test Performed By:	MM	MW Kirk	22MAR89

Test Complete: Date: 22MAR89 Time: 0335

Test Satisfactory: Yes / No (Circle one)

Reviewed By: D. McCall Date: 3/22/89
Shift Foreman

Reviewed By: W B McCutcheon Date: 3/23/89
ISI Coordinator

Comments: (Required if results were unsatisfactory) Temperatures did not stabilize DUE TO 30 MINUTE RUNTIME LIMITATION. HOWEVER, A STABILIZING TREND WAS EXHIBITED. THE PUMPS ARE CONSIDERED ACCEPTABLE FOR CONTINUED OPERATION.

Approved By: _____ Date: _____
Engineering Supervisor - Performance

Attachment 19

11. 10/ /88
12. / /
13. / /
14. / /
15. / /
16. / /
17. / /
18. / /

SYSTEM MSS VALVE NUMBER 0008A
TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	8.5	7.	03/22/89	8.7	13.	10/04/88	8.2
2.	07/18/89	8.5	8.	02/24/89	8.3	14.	09/07/88	8.2
3.	06/20/89	8.2	9.	02/10/89	8.1	15.	09/19/88	8.4
4.	05/17/89	8.4	10.	01/22/89	8.2	16.	08/29/88	7.0
5.	04/19/89	8.1	11.	10/19/88	8.5	17.	08/17/88	8.3
6.	04/08/89	8.4	12.	10/06/88	4.0	18.	07/20/88	8.2

NUM	DATE	NOTES
1.	08/16/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	04/08/89	NO ENTRY
7.	03/22/89	NO ENTRY
8.	02/24/89	NO ENTRY
9.	02/10/89	NO ENTRY
10.	01/22/89	NO ENTRY
11.	10/19/88	NO ENTRY
12.	10/06/88	LCTR NO. 88-1074
13.	10/04/88	NO ENTRY
14.	09/07/88	NO ENTRY
15.	09/19/88	NO ENTRY
16.	08/29/88	NO ENTRY
17.	08/17/88	NO ENTRY
18.	07/20/88	NO ENTRY

4. [illegible] NO ENTRY
5. 03/15/86
6. 03/07/86
7. / /
8. / /
9. / /
10. / /
11. / /
12. / /
13. / /
14. / /
15. / /
16. / /
17. / /
18. / /

SYSTEM MSS VALVE NUMBER 0008A
TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	10/19/88	8.5	7.	08/17/88	8.3	13.	04/07/88	8.2
2.	10/06/88	4.0	8.	07/20/88	8.2	14.	03/10/88	8.0
3.	10/04/88	8.2	9.	07/20/88	8.0	15.	01/20/88	8.2
4.	09/07/88	8.2	10.	06/17/88	8.4	16.	03/15/88	8.5
5.	09/19/88	8.4	11.	05/17/88	8.4	17.	02/01/88	8.5
6.	08/29/88	7.0	12.	04/18/88	8.2	18.	01/20/88	8.6

NUM	DATE	NOTES
1.	10/19/88	NO ENTRY
2.	10/06/88	LCTR NO. 88-1074
3.	10/04/88	NO ENTRY
4.	09/07/88	NO ENTRY
5.	09/19/88	NO ENTRY
6.	08/29/88	NO ENTRY
7.	08/17/88	NO ENTRY
8.	07/20/88	NO ENTRY
9.	07/20/88	NO ENTRY
10.	06/17/88	NO ENTRY
11.	05/17/88	NO ENTRY
12.	04/18/88	LCTR NO. 88-513
13.	04/07/88	LCTR NO. 88-488
14.	03/10/88	NO ENTRY
15.	01/20/88	NO ENTRY
16.	03/15/88	NO ENTRY
17.	02/01/88	NO ENTRY
18.	01/20/88	NO ENTRY

17. / /
18. / /

SYSTEM MSS VALVE NUMBER 0008A
TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/10/88	8.0	7.	11/11/87	7.0	13.	07/22/87	8.2
2.	01/20/88	8.2	8.	12/15/87	8.1	14.	06/17/87	8.0
3.	03/15/88	8.5	9.	11/18/87	8.8	15.	06/14/87	8.4
4.	02/01/88	8.5	10.	10/21/87	8.4	16.	06/07/87	8.1
5.	01/20/88	8.6	11.	09/15/87	8.2	17.	05/10/87	8.2
6.	01/05/88	8.9	12.	08/19/87	8.6	18.	05/10/87	8.2

NUM	DATE	NOTES
1.	03/10/88	NO ENTRY
2.	01/20/88	NO ENTRY
3.	03/15/88	NO ENTRY
4.	02/01/88	NO ENTRY
5.	01/20/88	NO ENTRY
6.	01/05/88	LCTR NO. 88-11
7.	11/11/87	LCTR NO. 87-1370
8.	12/15/87	NO ENTRY
9.	11/18/87	NO ENTRY
10.	10/21/87	NO ENTRY
11.	09/15/87	NO ENTRY
12.	08/19/87	NO ENTRY
13.	07/22/87	NO ENTRY
14.	06/17/87	NO ENTRY
15.	/14/87	NO ENTRY
16.	/07/87	NO ENTRY
17.	05/10/87	NO ENTRY
18.	05/10/87	NO ENTRY

12/88 VALVE PERFORMANCE SYSTEM 14:34:06

STEM MSS VALVE NUMBER 0008B

EST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
	3/10/88	7.5	7.	11/11/87	7.6	13.	08/19/87	7.7
2.	01/20/88	7.3	8.	12/15/87	7.4	14.	05/29/87	7.3
3.	03/15/88	7.9	9.	11/18/87	7.7	15.	07/22/87	7.3
4.	02/01/88	7.9	10.	10/21/87	8.2	16.	06/17/87	7.6
5.	01/20/88	7.8	11.	09/18/87	7.5	17.	06/14/87	7.5
6.	01/05/88	8.2	12.	09/15/87	7.6	18.	06/07/87	7.0

NUM	DATE	NOTES
1.	03/10/88	NO ENTRY
2.	01/20/88	NO ENTRY
3.	03/15/88	NO ENTRY
4.	02/01/88	NO ENTRY
5.	01/20/88	NO ENTRY
6.	01/05/88	LCTR NO. 88-11
7.	11/11/87	LCTR NO. 87-1370
8.	12/15/87	NO ENTRY
9.	11/18/87	NO ENTRY
10.	10/21/87	NO ENTRY
11.	09/18/87	LCTR NO. 87-1228
12.	09/15/87	NO ENTRY
13.	08/19/87	NO ENTRY
14.	05/29/87	LCTR NO. 87-797
15.	07/22/87	NO ENTRY
16.	06/17/87	NO ENTRY
17.	06/14/87	NO ENTRY
18.	06/07/87	NO ENTRY

SYS M MSS VALVE NUMBER 0008C

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/10/88	8.5	7.	11/11/87	8.2	13.	07/22/87	8.1
2.	01/20/88	8.1	8.	12/15/87	8.1	14.	06/17/87	8.0
3.	03/15/88	8.5	9.	11/18/87	8.6	15.	06/14/87	8.3
4.	02/01/88	8.3	10.	10/21/87	8.1	16.	06/07/87	8.0
5.	01/20/88	8.7	11.	09/15/87	8.1	17.	05/10/87	8.5
6.	01/05/88	8.5	12.	08/19/87	8.8	18.	05/10/87	8.5

NUM	DATE	NOTES
1.	03/10/88	NO ENTRY
2.	01/20/88	NO ENTRY
3.	03/15/88	NO ENTRY
4.	02/01/88	NO ENTRY
5.	01/20/88	NO ENTRY
6.	01/05/88	LCTR NO. 88-11
7.	11/11/87	LCTR NO. 87-1370
8.	12/15/87	NO ENTRY
9.	11/18/87	NO ENTRY
0.	10/21/87	NO ENTRY
1.	09/15/87	NO ENTRY
2.	08/19/87	NO ENTRY
3.	07/22/87	NO ENTRY
4.	06/17/87	NO ENTRY
5.	14/87	NO ENTRY
6.	07/87	NO ENTRY
7.	05/10/87	LCTR NO. 87-499,87-651
8.	05/10/87	NO ENTRY

/13/89 VALVE PERFORMANCE SYSTEM 13:25:08

YSTEM MSS VALVE NUMBER 0008B

TES MODE: OPEN

NU	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	10/19/88	7.6	7.	08/17/88	7.5	13.	04/07/88	7.6
2.	10/06/88	4.1	8.	07/20/88	7.2	14.	03/10/88	7.5
3.	10/04/88	7.7	9.	07/20/88	7.3	15.	01/20/88	7.3
4.	09/07/88	7.7	10.	06/17/88	8.0	16.	03/15/88	7.9
5.	09/19/88	7.5	11.	05/17/88	7.5	17.	02/01/88	7.9
6.	08/29/88	7.4	12.	04/18/88	6.8	18.	01/20/88	7.8

NUM	DATE	NOTES
1.	10/19/88	NO ENTRY
2.	10/06/88	LCTR NO. 88-1074
3.	10/04/88	NO ENTRY
4.	09/07/88	NO ENTRY
5.	09/19/88	NO ENTRY
6.	08/29/88	NO ENTRY
7.	08/17/88	NO ENTRY
8.	07/20/88	NO ENTRY
9.	07/20/88	NO ENTRY
10.	06/17/88	NO ENTRY
11.	05/17/88	NO ENTRY
12.	04/18/88	LCTR NO. 88-513
13.	04/07/88	LCTR NO. 88-488
14.	03/10/88	NO ENTRY
15.	01/20/88	NO ENTRY
16.	03/15/88	NO ENTRY
17.	02/01/88	NO ENTRY
18.	01/20/88	NO ENTRY

SYSTEM MSS VALVE NUMBER 0008C

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	10/19/88	8.3	7.	08/17/88	8.4	13.	04/07/88	8.4
2.	10/06/88	4.0	8.	07/20/88	6.1	14.	03/10/88	8.5
3.	10/04/88	8.1	9.	07/20/88	8.0	15.	01/20/88	8.1
4.	09/07/88	8.4	10.	06/17/88	8.2	16.	03/15/88	8.5
5.	09/19/88	8.1	11.	05/17/88	8.9	17.	02/01/88	8.3
6.	08/29/88	7.6	12.	04/18/88	8.1	18.	01/20/88	8.7

NUM	DATE	NOTES
1.	10/19/88	NO ENTRY
2.	10/06/88	LCTR NO. 88-1074
3.	10/04/88	NO ENTRY
4.	09/07/88	NO ENTRY
5.	09/19/88	NO ENTRY
6.	08/29/88	NO ENTRY
7.	08/17/88	NO ENTRY
8.	07/20/88	NO ENTRY
9.	07/20/88	NO ENTRY
10.	06/17/88	NO ENTRY
11.	05/17/88	NO ENTRY
12.	04/18/88	LCTR NO. 88-513
13.	04/07/88	LCTR NO. 88-488
14.	03/10/88	NO ENTRY
15.	/20/88	NO ENTRY
16.	03/15/88	NO ENTRY
17.	02/01/88	NO ENTRY
18.	01/20/88	NO ENTRY

08/23/89 VALVE PERFORMANCE SYSTEM 11:19:43

SYSTEM MSS VALVE NUMBER 0008B

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	7.3	7.	03/22/89	7.7	13.	10/04/88	7.7
2.	07/18/89	7.6	8.	02/24/89	7.7	14.	09/07/88	7.7
3.	06/20/89	7.5	9.	02/10/89	7.4	15.	09/19/88	7.5
4.	05/17/89	8.2	10.	01/22/89	7.6	16.	08/29/88	7.4
5.	04/19/89	7.4	11.	10/19/88	7.6	17.	08/17/88	7.5
6.	04/08/89	7.6	12.	10/06/88	4.1	18.	07/20/88	7.2

NUM	DATE	NOTES
1.	08/16/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	04/08/89	NO ENTRY
7.	03/22/89	NO ENTRY
8.	02/24/89	NO ENTRY
9.	02/10/89	NO ENTRY
10.	01/22/89	NO ENTRY
11.	10/19/88	NO ENTRY
12.	10/06/88	LCTR NO. 88-1074
13.	10/04/88	NO ENTRY
14.	09/07/88	NO ENTRY
15.	09/19/88	NO ENTRY
16.	08/29/88	NO ENTRY
17.	08/17/88	NO ENTRY
18.	07/20/88	NO ENTRY

SYSTEM MSS VALVE NUMBER 0008C

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	8.3	7.	03/22/89	8.3	13.	10/04/88	8.1
2.	07/18/89	8.3	8.	02/24/89	8.3	14.	09/07/88	8.4
3.	06/20/89	8.1	9.	02/10/89	8.2	15.	09/19/88	8.1
4.	05/17/89	8.3	10.	01/22/89	8.5	16.	08/29/88	7.6
5.	04/19/89	8.3	11.	10/19/88	8.3	17.	08/17/88	8.4
6.	04/08/89	8.3	12.	10/06/88	4.0	18.	07/20/88	6.1

NUM	DATE	NOTES
1.	08/16/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	04/08/89	NO ENTRY
7.	03/22/89	NO ENTRY
8.	02/24/89	NO ENTRY
9.	02/10/89	NO ENTRY
10.	01/22/89	NO ENTRY
11.	10/19/88	NO ENTRY
12.	10/06/88	LCTR NO. 88-1074
13.	10/04/88	NO ENTRY
14.	09/07/88	NO ENTRY
15.	09/19/88	NO ENTRY
16.	08/29/88	NO ENTRY
17.	08/17/88	NO ENTRY
18.	07/20/88	NO ENTRY

17.	/ /		0.0
18.	/ /		0.0

NUM	DATE	NOTES
1.	01/21/88	NO ENTRY
2.	05/17/87	NO ENTRY
3.	05/27/87	LCTR NO. 87-700
4.	03/11/86	
5.	01/09/85	
6.	/ /	
7.	/ /	
8.	/ /	
9.	/ /	
10.	/ /	
11.	/ /	
12.	/ /	
13.	/ /	
14.	/ /	
15.	/ /	
16.	/ /	
17.	/ /	
18.	/ /	

SYSTEM FWS VALVE NUMBER 0014A
TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/10/88	19.5	7.	12/10/87	19.0	13.	09/15/87	19.2
2.	01/20/88	19.3	8.	12/15/87	19.2	14.	08/19/87	19.7
3.	03/16/88	19.0	9.	11/10/87	19.7	15.	07/07/87	18.8
4.	03/08/88	20.0	10.	11/18/87	19.9	16.	07/22/87	19.1
5.	02/01/88	20.8	11.	10/08/87	19.8	17.	06/17/87	19.3
6.	01/20/88	18.2	12.	10/21/87	19.3	18.	06/14/87	19.7

NUM	DATE	NOTES
1.	03/10/88	NO ENTRY
2.	01/20/88	NO ENTRY
3.	03/16/88	NO ENTRY
4.	03/08/88	LCTR NO. 88-375
5.	02/01/88	NO ENTRY
6.	01/20/88	NO ENTRY
7.	12/10/87	LCTR NO. 87-1467
8.	12/15/87	NO ENTRY
9.	11/10/87	LCTR NO. 87-1360
10.	11/18/87	NO ENTRY
11.	10/08/87	LCTR NO. 87-1265
12.	10/21/87	NO ENTRY
13.	09/15/87	NO ENTRY
14.	08/19/87	NO ENTRY
15.	07/07/87	LCTR NO.87-959
16.	07/22/87	NO ENTRY
17.	06/17/87	NO ENTRY
18.	06/14/87	NO ENTRY

	/ /	60.8	10.	/ /	0.0	16.	/ /	0.0
	/11/86	63.0	11.	/ /	0.0	17.	/ /	0.0
6.	01/09/85	62.1	12.	/ /	0.0	18.	/ /	0.0

UM	DATE	NOTES
1.	09/02/88	NO ENTRY
2.	01/31/88	NO ENTRY
3.	05/17/87	NO ENTRY
4.	05/27/87	LCTR NO. 87-700
5.	03/11/86	
6.	01/09/85	
7.	/ /	
8.	/ /	
9.	/ /	
0.	/ /	
1.	/ /	
2.	/ /	
3.	/ /	
4.	/ /	
5.	/ /	
6.	/ /	
7.	/ /	
8.	/ /	

YSTEM FWS VALVE NUMBER 0014A
EST MODE: OPEN

UM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	10/19/88	20.0	7.	06/17/88	19.6	13.	03/16/88	19.0
2.	09/07/88	19.4	8.	05/17/88	19.2	14.	03/08/88	20.0
3.	09/19/88	19.5	9.	04/18/88	19.1	15.	02/01/88	20.8
4.	08/17/88	19.4	10.	04/08/88	19.5	16.	01/20/88	18.2
5.	07/20/88	19.6	11.	03/10/88	19.5	17.	12/10/87	19.0
6.	07/20/88	19.4	12.	01/20/88	19.3	18.	12/15/87	19.2

UM	DATE	NOTES
1.	10/19/88	NO ENTRY
2.	09/07/88	NO ENTRY
3.	09/19/88	NO ENTRY
4.	08/17/88	NO ENTRY
5.	07/20/88	NO ENTRY
6.	07/20/88	NO ENTRY
7.	06/17/88	NO ENTRY
8.	05/17/88	NO ENTRY
9.	04/18/88	LCTR NO. 88-513
0.	04/08/88	LCTR NO. 88-495
1.	03/10/88	NO ENTRY
2.	01/20/88	NO ENTRY
3.	03/16/88	NO ENTRY
4.	03/08/88	LCTR NO. 88-375
5.	/01/88	NO ENTRY
6.	20/88	NO ENTRY
7.	12/10/87	LCTR NO. 87-1467
8.	12/15/87	NO ENTRY

3.	01/31/88	NO ENTRY
4.	05/17/87	NO ENTRY
5.	05/27/87	LCTR NO. 87-700
6.	03/11/86	
7.	01/09/85	
8.	/ /	
9.	/ /	
10.	/ /	
11.	/ /	
12.	/ /	
13.	/ /	
14.	/ /	
15.	/ /	
16.	/ /	
17.	/ /	
18.	/ /	

S[illegible]M FWS VALVE NUMBER 0014A
TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	20.6	7.	04/19/89	20.7	13.	01/22/89	19.6
2.	07/18/89	20.8	8.	04/08/89	20.8	14.	10/19/88	20.0
3.	07/07/89	20.5	9.	03/22/89	20.9	15.	09/07/88	19.4
4.	06/20/89	20.7	10.	02/10/89	19.8	16.	09/19/88	19.5
5.	05/19/89	20.8	11.	02/15/89	20.6	17.	08/17/88	19.4
6.	05/17/89	21.3	12.	02/06/89	19.4	18.	07/20/88	19.6

NUM	DATE	NOTES
1.	08/16/89	
2.	07/18/89	N/A
3.	07/07/89	LCTR NO.89-0394
4.	06/20/89	NO ENTRY
5.	05/19/89	LCTR NO.89-0269
6.	05/17/89	NO ENTRY
7.	04/19/89	NO ENTRY
8.	04/08/89	NO ENTRY
9.	03/22/89	NO ENTRY
10.	02/10/89	NO ENTRY
11.	02/15/89	LCTR NO. 88F-773
12.	02/06/89	NO ENTRY
13.	01/22/89	NO ENTRY
14.	10/19/88	NO ENTRY
15.	09/07/88	NO ENTRY
16.	09/19/88	NO ENTRY
17.	08/17/88	NO ENTRY
18.	07/20/88	NO ENTRY

/12/88 VALVE PERFORMANCE SYSTEM 13:57:43

YSTEM FWS VALVE NUMBER 0014B

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/10/88	20.5	7.	11/10/87	20.5	13.	06/17/87	20.2
2.	01/20/88	19.6	8.	11/18/87	19.9	14.	06/14/87	20.9
3.	03/16/88	20.6	9.	10/21/87	20.3	15.	06/07/87	20.2
4.	02/01/88	20.6	10.	09/15/87	20.3	16.	05/10/87	20.5
5.	01/20/88	20.5	11.	08/19/87	20.6	17.	05/10/87	20.5
6.	12/15/87	19.8	12.	07/22/87	20.2	18.	03/27/87	20.7

NUM	DATE	NOTES
1.	03/10/88	NO ENTRY
2.	01/20/88	NO ENTRY
3.	03/16/88	NO ENTRY
4.	02/01/88	NO ENTRY
5.	01/20/88	NO ENTRY
6.	12/15/87	NO ENTRY
7.	11/10/87	LCTR NO. 87-1360
8.	11/18/87	NO ENTRY
9.	10/21/87	NO ENTRY
10.	09/15/87	NO ENTRY
11.	08/19/87	NO ENTRY
12.	07/22/87	NO ENTRY
13.	06/17/87	NO ENTRY
14.	06/14/87	NO ENTRY
15.	06/07/87	NO ENTRY
16.	05/10/87	LCTR NO. 87-536
17.	05/10/87	NO ENTRY
18.	03/27/87	NO ENTRY

SYSTEM FWS VALVE NUMBER 0014C

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/10/88	19.0	7.	11/10/87	20.8	13.	06/17/87	20.1
2.	01/20/88	20.5	8.	11/18/87	20.0	14.	06/14/87	20.5
3.	03/16/88	20.6	9.	10/21/87	21.3	15.	06/07/87	20.0
4.	02/01/88	19.8	10.	09/15/87	20.4	16.	05/10/87	20.5
5.	01/20/88	21.0	11.	08/19/87	20.8	17.	05/10/87	20.5
6.	12/15/87	20.5	12.	07/22/87	20.3	18.	03/27/87	21.1

NUM	DATE	NOTES
1.	03/10/88	NO ENTRY
2.	01/20/88	NO ENTRY
3.	03/16/88	NO ENTRY
4.	02/01/88	NO ENTRY
5.	01/20/88	NO ENTRY
6.	12/15/87	NO ENTRY
7.	11/10/87	LCTR NO. 87-1360
8.	11/18/87	NO ENTRY
9.	10/21/87	NO ENTRY
10.	09/15/87	NO ENTRY
11.	08/19/87	NO ENTRY
12.	07/22/87	NO ENTRY
13.	06/17/87	NO ENTRY
14.	06/14/87	NO ENTRY
15.	/07/87	NO ENTRY
16.	/10/87	NO ENTRY
17.	05/10/87	NO ENTRY
18.	03/27/87	NO ENTRY

/89 VALVE PERFORMANCE SYSTEM 12:57:38

EM FWS VALVE NUMBER 0014B

T MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	0/19/88	20.0	7.	06/17/88	20.4	13.	03/16/88	20.6
2.	09/07/88	19.9	8.	05/17/88	20.1	14.	02/01/88	20.6
3.	09/19/88	20.6	9.	04/18/88	19.4	15.	01/20/88	20.5
4.	08/17/88	20.3	10.	04/08/88	20.4	16.	12/15/87	19.8
5.	07/20/88	20.4	11.	03/10/88	20.5	17.	11/10/87	20.5
6.	07/20/88	20.3	12.	01/20/88	19.6	18.	11/18/87	19.9

NUM	DATE	NOTES
1.	10/19/88	NO ENTRY
2.	09/07/88	NO ENTRY
3.	09/19/88	NO ENTRY
4.	08/17/88	NO ENTRY
5.	07/20/88	NO ENTRY
6.	07/20/88	NO ENTRY
7.	06/17/88	NO ENTRY
8.	05/17/88	NO ENTRY
9.	04/18/88	LCTR NO. 88-513
10.	04/08/88	LCTR NO. 88-495
11.	03/10/88	NO ENTRY
12.	01/20/88	NO ENTRY
13.	03/16/88	NO ENTRY
14.	02/01/88	NO ENTRY
15.	01/20/88	NO ENTRY
16.	12/15/87	NO ENTRY
17.	11/10/87	LCTR NO. 87-1360
18.	11/18/87	NO ENTRY

SY FWS VALVE NUMBER 0014C

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	10/19/88	20.3	7.	07/20/88	19.4	13.	01/20/88	20.5
2.	10/04/88	20.4	8.	06/17/88	20.4	14.	03/16/88	20.6
3.	09/07/88	20.0	9.	05/17/88	19.9	15.	02/01/88	19.8
4.	09/19/88	20.7	10.	04/18/88	19.9	16.	01/20/88	21.0
5.	08/17/88	20.5	11.	04/08/88	20.5	17.	12/15/87	20.5
6.	07/20/88	20.6	12.	03/10/88	19.0	18.	11/10/87	20.8

NUM	DATE	NOTES
1.	10/19/88	NO ENTRY
2.	10/04/88	NO ENTRY
3.	09/07/88	NO ENTRY
4.	09/19/88	NO ENTRY
5.	08/17/88	NO ENTRY
6.	07/20/88	NO ENTRY
7.	07/20/88	NO ENTRY
8.	06/17/88	NO ENTRY
9.	05/17/88	NO ENTRY
0.	04/18/88	LCTR NO. 88-513
1.	04/08/88	LCTR NO. 88-495
2.	03/10/88	NO ENTRY
3.	01/20/88	NO ENTRY
4.	03/16/88	NO ENTRY
5.	/01/88	NO ENTRY
6.	20/88	NO ENTRY
7.	12/15/87	NO ENTRY
8.	11/10/87	LCTR NO. 87-1360

/89 VALVE PERFORMANCE SYSTEM 10:50:13

TEM FWS VALVE NUMBER 0014B

ST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	20.5	7.	03/22/89	20.9	13.	01/22/89	21.3
2.	07/18/89	20.8	8.	02/13/89	20.9	14.	10/19/88	20.0
3.	06/20/89	20.7	9.	02/12/89	20.9	15.	09/07/88	19.9
4.	05/17/89	20.7	10.	02/10/89	20.6	16.	09/19/88	20.6
5.	04/19/89	20.5	11.	02/07/89	20.7	17.	08/17/88	20.3
6.	04/08/89	20.9	12.	02/06/89	20.5	18.	07/20/88	20.4

NUM	DATE	NOTES
1.	08/16/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	04/08/89	NO ENTRY
7.	03/22/89	NO ENTRY
8.	02/13/89	LCTR NO. 88F-758
9.	02/12/89	LCTR NO. 88F-739
10.	02/10/89	NO ENTRY
11.	02/07/89	LCTR NO. 88F-719
12.	02/06/89	LCTR NO.88F-709
13.	01/22/89	NO ENTRY
14.	10/19/88	NO ENTRY
15.	09/07/88	NO ENTRY
16.	09/19/88	NO ENTRY
17.	08/17/88	NO ENTRY
18.	07/20/88	NO ENTRY

S M FWS VALVE NUMBER 0014C

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	20.6	7.	03/22/89	20.8	13.	10/04/88	20.4
2.	07/18/89	20.7	8.	02/10/89	20.8	14.	09/07/88	20.0
3.	06/20/89	20.2	9.	02/15/89	20.6	15.	09/19/88	20.7
4.	05/17/89	20.9	10.	02/06/89	20.2	16.	08/17/88	20.5
5.	04/19/89	20.4	11.	01/22/89	20.7	17.	07/20/88	20.6
6.	04/08/89	20.8	12.	10/19/88	20.3	18.	07/20/88	19.4

NUM	DATE	NOTES
1.	08/16/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	04/08/89	NO ENTRY
7.	03/22/89	NO ENTRY
8.	02/10/89	NO ENTRY
9.	02/15/89	LCTR NO. 88F-773
10.	02/06/89	NO ENTRY
11.	01/22/89	NO ENTRY
12.	10/19/88	NO ENTRY
13.	10/04/88	NO ENTRY
14.	09/07/88	NO ENTRY
15.	9/19/88	NO ENTRY
16.	8/17/88	NO ENTRY
17.	07/20/88	NO ENTRY
18.	07/20/88	NO ENTRY

/12/88 VALVE PERFORMANCE SYSTEM 13:58:14

YSTEM FWS VALVE NUMBER 0016A

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/16/88	19.4	7.	10/27/87	19.2	13.	05/20/87	18.6
2.	02/17/88	19.4	8.	10/20/87	19.2	14.	03/18/87	19.4
3.	01/20/88	19.5	9.	09/16/87	19.2	15.	02/17/87	19.5
4.	12/16/87	19.2	10.	08/18/87	19.6	16.	01/26/87	19.2
5.	11/12/87	19.4	11.	07/22/87	18.9	17.	01/21/87	19.0
6.	11/17/87	20.0	12.	06/17/87	19.0	18.	12/17/86	18.0

NUM	DATE	NOTES
1.	03/16/88	NO ENTRY
2.	02/17/88	NO ENTRY
3.	01/20/88	NO ENTRY
4.	12/16/87	NO ENTRY
5.	11/12/87	LCTR NO. 87-1383
6.	11/17/87	NO ENTRY
7.	10/27/87	LCTR NO. 87-1308
8.	10/20/87	NO ENTRY
9.	09/16/87	NO ENTRY
10.	08/18/87	NO ENTRY
11.	07/22/87	NO ENTRY
12.	06/17/87	NO ENTRY
13.	05/20/87	NO ENTRY
14.	03/18/87	NO ENTRY
15.	02/17/87	NO ENTRY
16.	01/26/87	LCTR NO. 87-74, FILE NO. 3065.CMH
17.	01/21/87	NO ENTRY
18.	12/17/86	NO ENTRY

SYSTEM FWS VALVE NUMBER 0016B

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/16/88	21.7	7.	11/17/87	21.8	13.	06/17/87	21.3
2.	02/17/88	21.5	8.	10/20/87	21.5	14.	05/20/87	21.1
3.	01/20/88	22.0	9.	09/16/87	21.4	15.	03/18/87	21.8
4.	12/16/87	21.4	10.	08/18/87	21.7	16.	02/17/87	22.7
5.	11/10/87	21.5	11.	07/22/87	21.2	17.	01/21/87	21.2
6.	11/10/87	22.0	12.	06/26/87	22.0	18.	12/17/86	20.0

NUM	DATE	NOTES
1.	03/16/88	NO ENTRY
2.	02/17/88	NO ENTRY
3.	01/20/88	NO ENTRY
4.	12/16/87	NO ENTRY
5.	11/10/87	LCTR NO. 87-1384
6.	11/10/87	LCTR NO. 87-1372
7.	11/17/87	NO ENTRY
8.	10/20/87	NO ENTRY
9.	09/16/87	NO ENTRY
0.	08/18/87	NO ENTRY
1.	07/22/87	NO ENTRY
2.	06/26/87	LCTR NO. 87-938
3.	06/17/87	NO ENTRY
4.	05/20/87	NO ENTRY
5.	18/87	NO ENTRY
6.	17/87	NO ENTRY
7.	01/21/87	NO ENTRY
8.	12/17/86	NO ENTRY

/89 VALVE PERFORMANCE SYSTEM 12:58:08

EM FWS VALVE NUMBER 0016A

T MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	/15/88	20.2	7.	08/30/88	19.8	13.	05/14/88	20.0
2.	10/17/88	19.9	8.	08/16/88	20.0	14.	04/19/88	20.0
3.	09/21/88	20.2	9.	07/21/88	19.7	15.	04/15/88	19.5
4.	09/16/88	20.3	10.	06/17/88	20.0	16.	04/11/88	18.0
5.	09/15/88	20.0	11.	05/24/88	19.9	17.	03/16/88	19.4
6.	09/02/88	20.3	12.	05/18/88	20.0	18.	02/17/88	19.4

NUM	DATE	NOTES
1.	11/15/88	NO ENTRY
2.	10/17/88	NO ENTRY
3.	09/21/88	NO ENTRY
4.	09/16/88	NO ENTRY
5.	09/15/88	LCTR NO. 88-996
6.	09/02/88	LCTR NO. 88-888
7.	08/30/88	LCTR NO. 88-856
8.	08/16/88	NO ENTRY
9.	07/21/88	NO ENTRY
10.	06/17/88	NO ENTRY
11.	05/24/88	LCTR NO. 88-634
12.	05/18/88	NO ENTRY
13.	05/14/88	LCTR NO. 88-612
14.	04/19/88	NO ENTRY
15.	04/15/88	LCTR NO. 88-509
16.	04/11/88	LCTR NO. 88-496
17.	03/16/88	NO ENTRY
18.	02/17/88	NO ENTRY

SY M FWS VALVE NUMBER 0016B

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	11/15/88	21.2	7.	06/17/88	21.0	13.	02/17/88	21.5
2.	10/17/88	20.7	8.	05/24/88	21.0	14.	01/20/88	22.0
3.	09/21/88	20.9	9.	05/18/88	21.0	15.	12/16/87	21.4
4.	09/16/88	21.0	10.	04/19/88	20.5	16.	11/10/87	21.5
5.	08/16/88	21.2	11.	04/12/88	21.0	17.	11/10/87	22.0
6.	07/21/88	21.0	12.	03/16/88	21.7	18.	11/17/87	21.8

NUM	DATE	NOTES
1.	11/15/88	NO ENTRY
2.	10/17/88	NO ENTRY
3.	09/21/88	NO ENTRY
4.	09/16/88	NO ENTRY
5.	08/16/88	NO ENTRY
6.	07/21/88	NO ENTRY
7.	06/17/88	NO ENTRY
8.	05/24/88	LCTR NO. 88-635
9.	05/18/88	NO ENTRY
10.	04/19/88	NO ENTRY
11.	04/12/88	LCTR NO. 88-497
12.	03/16/88	NO ENTRY
13.	02/17/88	NO ENTRY
14.	01/20/88	NO ENTRY
15.	/16/87	NO ENTRY
16.	/10/87	LCTR NO. 87-1384
17.	11/10/87	LCTR NO. 87-1372
18.	11/17/87	NO ENTRY

3/89 VALVE PERFORMANCE SYSTEM 10:50:43

TEM FWS VALVE NUMBER 0016A

ST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
	8/15/89	20.8	7.	03/21/89	20.8	13.	09/21/88	20.2
2.	07/18/89	21.2	8.	02/21/89	20.9	14.	09/16/88	20.3
3.	06/20/89	20.6	9.	01/27/89	21.9	15.	09/15/88	20.0
4.	05/17/89	20.8	10.	01/25/89	20.7	16.	09/02/88	20.3
5.	04/19/89	20.8	11.	11/15/88	20.2	17.	08/30/88	19.8
6.	03/22/89	20.3	12.	10/17/88	19.9	18.	08/16/88	20.0

NUM	DATE	NOTES
1.	08/15/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	03/22/89	LCTR NO. 89-90
7.	03/21/89	NO ENTRY
8.	02/21/89	NO ENTRY
9.	01/27/89	LCTR NO. 88F-608
10.	01/25/89	NO ENTRY
11.	11/15/88	NO ENTRY
12.	10/17/88	NO ENTRY
13.	09/21/88	NO ENTRY
14.	09/16/88	NO ENTRY
15.	09/15/88	LCTR NO. 88-996
16.	09/02/88	LCTR NO. 88-888
17.	08/30/88	LCTR NO. 88-856
18.	08/16/88	NO ENTRY

SY FWS VALVE NUMBER 0016B

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/15/89	21.2	7.	02/21/89	21.5	13.	09/16/88	21.0
2.	07/18/89	21.2	8.	01/27/89	21.2	14.	08/16/88	21.2
3.	06/20/89	21.0	9.	01/25/89	20.7	15.	07/21/88	21.0
4.	05/17/89	21.2	10.	11/15/88	21.2	16.	06/17/88	21.0
5.	04/19/89	21.3	11.	10/17/88	20.7	17.	05/24/88	21.0
6.	03/21/89	21.3	12.	09/21/88	20.9	18.	05/18/88	21.0

NUM	DATE	NOTES
1.	08/15/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	03/21/89	NO ENTRY
7.	02/21/89	NO ENTRY
8.	01/27/89	LCTR NO. 88F-620
9.	01/25/89	NO ENTRY
10.	11/15/88	NO ENTRY
11.	10/17/88	NO ENTRY
12.	09/21/88	NO ENTRY
13.	09/16/88	NO ENTRY
14.	08/16/88	NO ENTRY
15.	/21/88	NO ENTRY
16.	17/88	NO ENTRY
17.	/24/88	LCTR NO. 88-635
18.	05/18/88	NO ENTRY

/12/88 VALVE PERFORMANCE SYSTEM 13:58:45

YSTEM FWS VALVE NUMBER 0016C

T MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/16/88	20.3	7.	10/20/87	20.1	13.	03/18/87	20.1
2.	02/17/88	19.5	8.	09/16/87	19.8	14.	02/17/87	20.2
3.	01/20/88	20.1	9.	08/18/87	20.2	15.	01/21/87	19.5
4.	11/13/87	18.5	10.	07/22/87	19.7	16.	12/17/86	20.0
5.	12/16/87	19.9	11.	06/17/87	19.8	17.	11/18/86	20.1
6.	11/17/87	20.3	12.	05/20/87	19.4	18.	10/21/86	20.1

NUM	DATE	NOTES
1.	03/16/88	NO ENTRY
2.	02/17/88	NO ENTRY
3.	01/20/88	NO ENTRY
4.	11/13/87	LCTR NO, 87-1358
5.	12/16/87	NO ENTRY
6.	11/17/87	NO ENTRY
7.	10/20/87	NO ENTRY
8.	09/16/87	NO ENTRY
9.	08/18/87	NO ENTRY
10.	07/22/87	NO ENTRY
11.	06/17/87	NO ENTRY
12.	05/20/87	NO ENTRY
13.	03/18/87	NO ENTRY
14.	02/17/87	NO ENTRY
15.	01/21/87	NO ENTRY
16.	12/17/86	NO ENTRY
17.	11/18/86	NO ENTRY
18.	10/21/86	NO ENTRY

SYSTEM FWS VALVE NUMBER 0020A

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/16/88	21.9	7.	09/16/87	21.8	13.	02/17/87	21.9
2.	02/17/88	22.0	8.	08/18/87	22.0	14.	01/21/87	21.0
3.	01/22/88	22.0	9.	07/22/87	22.0	15.	12/17/86	21.0
4.	12/16/87	22.5	10.	06/17/87	19.8	16.	11/18/86	21.8
[illegible]	[illegible]	[illegible]	11.	05/20/87	[illegible]	17.	10/21/86	[illegible]

3/89 VALVE PERFORMANCE SYSTEM 12:58:38

TEM FWS VALVE NUMBER 0016C

MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	11/15/88	21.4	7.	07/21/88	21.0	13.	02/17/88	19.5
2.	10/17/88	21.1	8.	06/17/88	21.3	14.	01/20/88	20.1
3.	09/21/88	21.1	9.	05/18/88	21.4	15.	11/13/87	18.5
4.	09/16/88	21.3	10.	04/19/88	21.5	16.	12/16/87	19.9
5.	09/15/88	20.8	11.	04/13/88	21.4	17.	11/17/87	20.3
6.	08/16/88	21.6	12.	03/16/88	20.3	18.	10/20/87	20.1

NUM	DATE	NOTES
1.	11/15/88	NO ENTRY
2.	10/17/88	NO ENTRY
3.	09/21/88	NO ENTRY
4.	09/16/88	NO ENTRY
5.	09/15/88	LCTR NO. 88-999
6.	08/16/88	NO ENTRY
7.	07/21/88	NO ENTRY
8.	06/17/88	NO ENTRY
9.	05/18/88	NO ENTRY
10.	04/19/88	NO ENTRY
11.	04/13/88	LCTR NO. 88-498
12.	03/16/88	NO ENTRY
13.	02/17/88	NO ENTRY
14.	01/20/88	NO ENTRY
15.	11/13/87	LCTR NO, 87-1358
16.	12/16/87	NO ENTRY
17.	11/17/87	NO ENTRY
18.	10/20/87	NO ENTRY

SYSTEM FWS VALVE NUMBER 0020A

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	11/15/88	22.0	7.	07/21/88	22.0	13.	01/22/88	22.0
2.	10/17/88	21.8	8.	06/17/88	21.9	14.	12/16/87	22.5
3.	09/21/88	21.9	9.	05/18/88	22.0	15.	11/17/87	21.9
4.	09/16/88	21.9	10.	04/19/88	21.0	16.	10/20/87	22.0
5.	08/30/88	21.9	11.	03/16/88	21.9	17.	09/16/87	21.8
6.	08/16/88	20.2	12.	02/17/88	22.0	18.	08/18/87	22.0

NUM	DATE	NOTES
1.	11/15/88	NO ENTRY

3/89 VALVE PERFORMANCE SYSTEM 10:51:13

TEM FWS VALVE NUMBER 0016C

T MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	8/15/89	21.3	7.	02/21/89	21.4	13.	09/21/88	21.1
2.	07/18/89	21.4	8.	01/27/89	21.2	14.	09/16/88	21.3
3.	06/20/89	21.2	9.	01/28/89	21.1	15.	09/15/88	20.8
4.	05/17/89	21.2	10.	01/25/89	20.9	16.	08/16/88	21.6
5.	04/19/89	21.1	11.	11/15/88	21.4	17.	07/21/88	21.0
6.	03/21/89	21.0	12.	10/17/88	21.1	18.	06/17/88	21.3

NUM	DATE	NOTES
1.	08/15/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	NO ENTRY
6.	03/21/89	NO ENTRY
7.	02/21/89	NO ENTRY
8.	01/27/89	LCTR NO. 88F-619
9.	01/28/89	LCTR NO. 88F-623
10.	01/25/89	NO ENTRY
11.	11/15/88	NO ENTRY
12.	10/17/88	NO ENTRY
13.	09/21/88	NO ENTRY
14.	09/16/88	NO ENTRY
15.	09/15/88	LCTR NO. 88-999
16.	08/16/88	NO ENTRY
17.	07/21/88	NO ENTRY
18.	06/17/88	NO ENTRY

YSTEM FWS VALVE NUMBER 0020A

EST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/15/89	21.4	7.	02/21/89	22.1	13.	08/10/8[illegible]	[illegible]
2.	07/18/89	22.1	8.	01/25/89	22.1	[illegible]	[illegible]	[illegible]
3.	06/20/89	21.9	9.	11/15/8[illegible]	[illegible]			
4.	05/17/89	21.9	10.	[illegible]				
5.	04/19/89	22.1						
[illegible]	[illegible]	[illegible]						

10/05/89 VALVE PERFORMANCE SYSTEM 09:28:47

SYSTEM FWS VALVE NUMBER 01424

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	8.7	7.	03/21/89	9.2	13.	/ /	0.0
2.	07/18/89	8.9	8.	02/22/89	9.5	14.	/ /	0.0
3.	06/20/89	8.4	9.	/ /	0.0	15.	/ /	0.0
4.	05/17/89	9.0	10.	/ /	0.0	16.	/ /	0.0
5.	04/19/89	9.3	11.	/ /	0.0	17.	/ /	0.0
6.	04/19/89	10.0	12.	/ /	0.0	18.	/ /	0.0

NUM	DATE	NOTES
1.	08/16/89	
2.	07/18/89	N/A
3.	06/20/89	NO ENTRY
4.	05/17/89	NO ENTRY
5.	04/19/89	LCTR NO. 89-189
6.	04/19/89	NO ENTRY
7.	03/21/89	NO ENTRY
8.	02/22/89	NO ENTRY
9.	/ /	
10.	/ /	
11.	/ /	
12.	/ /	
13.	/ /	
14.	/ /	
15.	/ /	
16.	/ /	
17.	/ /	
18.	/ /	

10/05/89 VALVE PERFORMANCE SYSTEM 09:30:02

SYSTEM FWS VALVE NUMBER 01425

TEST MODE: OPEN

NUM	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	8.5	7.	04/19/89	9.4	13.	/ /	0.0
2.	08/16/89	10.3	8.	03/21/89	9.4	14.	/ /	0.0
3.	07/18/89	8.9	9.	02/22/89	9.3	15.	/ /	0.0
4.	06/20/89	9.1	10.	02/13/89	9.2	16.	/ /	0.0
5.	05/17/89	9.3	11.	/ /	0.0	17.	/ /	0.0
6.	04/19/89	9.5	12.	/ /	0.0	18.	/ /	0.0

NUM	DATE	NOTES
1.	08/16/89	LCTR NO.89-0474 WR 89-AHJQ1
2.	08/16/89	WR 89-AHSQ1 REPLACED ACTUATOR
3.	07/18/89	N/A
4.	06/20/89	NO ENTRY
5.	05/17/89	NO ENTRY
6.	04/19/89	LCTR NO. 89-189
7.	04/19/89	NO ENTRY
8.	03/21/89	NO ENTRY
9.	02/22/89	NO ENTRY
10.	02/13/89	NO ENTRY
11.	/ /	
12.	/ /	
13.	/ /	
14.	/ /	
15.	/ /	
16.	/ /	
17.	/ /	
18.	/ /	

Attachment 20

10-25-89

File: 3065

AUXILIARY FEEDWATER PUMP MOTORS A AND B

ROTOR BAR FAILURE ISSUE

BACKGROUND:

The A and B Auxiliary Feedwater Pump Motors have been in commercial service since March 1971 to August of this year. The motors are 350 HP, 460 VAC, Model ABDP, Frame 509 US, Style No. 68F93823 and were manufactured by Westinghouse Electric Company.

FAILURE HISTORY: A MOTOR

9-8-71 Motor failure was experienced due to broken rotor bars. Motor was repaired by Westinghouse in warranty, and no motor repair report is available.

3-15-77 Motor was removed from service due to sparks being observed coming out of motor air vents while being started. Motor was inspected by General Electric Motor Shop and 5 broken rotor bars were found. The 5 broken rotor bars were replaced and silver soldered to the end ring. The motor report does not specify what method was used to install and fasten the rotor bars in the rotor. The motor was assembled, tested, and returned.

6-4-79 Motor failure was experienced due to broken rotor bars. The motor was inspected by General Electric Motor Shop, and the motor report states that a number of rotor bars were cracked and broken loose from the end rings. The motor report states that all rotor bars were cleaned and rewelded to the end rings. The motor was assembled, tested, and returned.

4-17-80 Motor was removed from service due to sparks being observed coming out of the motor air vents when the motor was started and while it was running. The motor was inspected by General Electric Motor Shop, and the motor report states that a number of rotor bars were cracked and broken loose from the end rings. The motor report states that all rotor bars were cleaned and rewelded to the end rings. The motor was assembled, tested and returned.

7-24-81 Motor was removed from service due to sparks being observed coming out of the motor air vents when the motor was started and while it was running. The motor was inspected by Westinghouse Electric Motor Shop, and the motor report states that the rotor shows open rotor bars. The motor report stated that the motor was rebarred as per Westinghouse Drawing 644C707, but does not specify what method was used to fasten the new rotor bars in the rotor. The motor was assembled, tested, and returned.

8-25-81 Motor was removed from service due to Plant Maintenance concerns that the motor was not functioning properly. The motor was inspected by Westinghouse Electric Motor Shop, and the motor report states that the inspection showed no defects of any motor components. The rotor was rebalanced and the motor was assembled, tested, and returned.

3-16-88 Plant Operations reported that they had observed sparks coming out of the motor air vents during a start. Plant I&C observed the motor during 5 starts and no sparks were seen. The motor was left in service.

8-24-89 Plant I&C reported that they had observed sparks coming out of the motor air vents during a start. The motor was inspected by Westinghouse Electric Motor Shop, and the motor report states that the growler test and visual test indicated three open rotor bars. The motor report states that the motor was rebarred using an approved process which included swaging. The motor was assembled, tested, and returned.

Failure History: B Motor

4-18-80 Motor was removed from service for inspection due to the rotor bar problems with "A" motor. The motor was inspected by General Electric Motor Shop, and the motor report does not indicate any rotor bar problems or repairs to rotor bars. The motor was assembled, tested, and returned.

8-12-81 Motor was removed from service for inspection due to rotor bar problems with "A" motor. The motor was inspected by Westinghouse Electric Motor Shop, and the motor report states that the rotor laminations were found to be loose. The motor report states that the laminations were tightened, but no method of tightening was specified. The motor was assembled, tested, and returned.

8-24-89 Motor was removed from service for inspection due to rotor bar problems with "A" motor. The motor was inspected by Westinghouse Motor Shop, and the motor report states that the growler test and visual test indicated no open rotor bars. The motor report states that the rotor surface was rough and the rotor was egg shaped. The rotor surface was machined, and the rotor to stator air gap is addressed in EE-89-090. The motor was assembled, tested, and returned.

Discussion: A Motor

The plant first experienced rotor bar failure in the motor in 1971. The motor was repaired in warranty by Westinghouse. No further rotor bar problems were experienced until 1977. The motor was repaired in 1977, 1979, and 1980 by General Electric after rotor bar problems were experienced.

Again in 1981, the motor experienced rotor bar problems and was repaired by Westinghouse. No further rotor bar problems were experienced with this motor until 1989 until it again was found to have cracked rotor bars.

From a review of the General Electric and Westinghouse motor reports, it can not be determined what method was used to attach the rotor bars into the rotor until 1989 when they were swaged.

Discussion: B Motor

This motor was first inspected in 1980 by General Electric and no rotor bar problems were found. The motor was inspected again in 1981 by Westinghouse and the rotor bars were tightened. The rotor bars in this motor appear to have been staked in the rotor in 1981. This statement is based on information provided by Westinghouse during the 1989 motor inspection.

Unique Application:

A. The Auxiliary Feedwater System is a standby safety system that is designed to be used in the event that normal feedwater is not available; however, the system is used in addition as follows:

   1. To fill steam generators for wet layup while plant is in cold shutdown.

   2. To maintain steam generator proper levels while plant is in hot shutdown and main feedwater is not available due to improper water chemistry.

B. Pump motors are started under full load conditions.

C. Motors are started more frequently than normal industry practices for other applications.

   1. A motor gets more starts than B motor due to RTGB design.

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Conclusion:

Based on the history of usage of the Auxiliary Feedwater System and the Westinghouse response to the rotor bar cracking issue, the most probable root cause for the rotor bar cracking is motor starting in excess of the frequency anticipated in the plant fluid system design.

It is anticipated that this conclusion will be substantiated and finalized by future motor inspections.

In addition, the A motor bars have been swaged and the B motor rotor bars have been staked, which Westinghouse states in their response, should eliminate the mechanism which may potentially result in rotor bar cracking.

WR/JO 89-AIJC1 PRI/TYPE/WCC 2 /20/D UNIT 2 SKILL TS SYSTEM 3065
WORK IN PROGRESS REQ'R DAYTON, RICK A INITIATED 09/09/89 06:49
EQUIP PMP-PUMP
LOCATION- GROUND FLOOR, TURBINE BUILDING
COMPONENT- PROVIDE ENGINEERING COVERAGE FROM 9/15/89 THROUGH END OF JOB FOR AFW REPAIR AND REINSTALLATION OF "A" AND "B" MDAFW PUMPS AND MOTORS AND THE SDAFW PUMP. CONTACT CHIP MOON PRIOR TO 9/15/89 TO GET A TURNOVER ON THE NECESSARY WORK. WORK SHIFT SHOULD CORRESPOND TO MAINTENANCE'S (POSSIBLY 10 HR. D/S). PROVIDE WRITTEN TURNOVER BACK TO CHIP MOON ON TUESDAY 9/19/89.

WR/JO 89-AJGS1 PRI/TYPE/WCC 3 /20/D UNIT 2 SKILL EL SYSTEM 3065
WORK IN PROGRESS REQ'R JERNIGAN JR, C INITIATED 10/11/89 07:56
EQUIP PMP-PUMP
LOCATION-1ST FLOOR TURB. BLD.
COMPONENT-STEAM DRIVEN AUX.FEED WATER PUMP .ELECT.DISCONNECT THE STAND-BY OIL PUMP FOR MECH.REPAIRS.

WR/JO 89-AFGM2 PRI/TYPE/WCC 3 /21/D UNIT 2 SKILL EL SYSTEM 3065
WORK IN PROGRESS REQ'R WALKUP, WILLIA INITIATED 09/06/89 07:29
EQUIP PMP-PUMP
LOCATION- 1ST LEVEL OF TURBINE BLDG-BY AUX. BOILERS
COMPONENT- STEAM DRIVEN AUX. FEEDWATER PUMP---PER TECH SUPPORT'S RECOMMENDATION AS A PREVENTIVE MAINTENANCE MEASURE, AND TO ENSURE CONTINUED RELIABILITY, THE PUMP NEEDS A COMPLETE OVERHAUL DURING THE 1990 REFUELING.
**NEED PLANNER TO CONTACT VENDOR FOR A WRITTEN RECOMMENDATION AS TO THE RECOMMENDED PUMP INTERNAL INSPECTION INTERVAL, INITATE THIS LETTER THRU OUR PLANT PLP-038 VENDOR RECOMMENDATION PROGRAM AND ENSURE A PM IS SETUP FOR FUTURE INSPECTIONS.-EVERETT

WR/JO 89-AFGM1 PRI/TYPE/WCC 3 /50/D UNIT 2 SKILL ME SYSTEM 3065
WORK IN PROGRESS REQ'R LEAR, LEWIS E INITIATED 05/22/89 10:58
EQUIP PMP-PUMP
LOCATION- 1ST LEVEL OF TURBINE BLDG-BY AUX. BOILERS
COMPONENT- STEAM DRIVEN AUX. FEEDWATER PUMP---PER TECH SUPPORT'S RECOMMENDATION AS A PREVENTIVE MAINTENANCE MEASURE, AND TO ENSURE CONTINUED RELIABILITY, THE PUMP NEEDS A COMPLETE OVERHAUL DURING THE 1990 REFUELING.
**NEED PLANNER TO CONTACT VENDOR FOR A WRITTEN RECOMMENDATION AS TO THE RECOMMENDED PUMP INTERNAL INSPECTION INTERVAL, INITATE THIS LETTER THRU OUR PLANT PLP-038 VENDOR RECOMMENDATION PROGRAM AND ENSURE A PM IS SETUP FOR FUTURE INSPECTIONS.-EVERETT

WR/JO 89-AJCM1 PRI/TYPE/WCC 4 /31/A UNIT 2 SKILL TS SYSTEM 3065
WORK IN PROGRESS REQ'R DAYTON, RICK A INITIATED 10/05/89 08:53
EQUIP PMP-PUMP
LOCATION- FIRST FLOOR OF TURBINE BLDG.
COMPONENT- MDAFW AND SDAFW PUMP AND VALVE OST DATA.
NEED TREND GRAPHS DEVELOPED FOR THE PAST TWO YEARS OF OST-201, 202, 206, AND 207 DATA. DATA TO BE TRENDED ARE PUMP DELTA-P, VIBRATION, AND VALVE STROKE TIMES.

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

89-AIMK1
LOCATION- TURBINE BLDG AROUND MOTOR AND STEAM DRIVEN AFW PUMPS
COMPONENT- SUPPORT CALIBRATION AND INSTALLATION OF TEST GAUGES FOR PERFORMANCE OF AFW SUCTION PIPING REPLACEMENT MOD (M-1018) ACCEPTANCE TEST. THE ACCEPTANCE TEST PROCEDURE DETAILS THE NUMBER AND RANGE OF THE TEST GAUGES AND WHERE THEY ARE TO BE INSTALLED. CONTACT DARRYL GARDNER OR CHIP MOON FOR DETAILS.

89-AJCM1 4 /31/A 2 TS 3065
WORK IN PROGRESS REQ'R DAYTON, RICK A INITIATED 10/05/89 08:53
EQUIP PMP-PUMP
LOCATION- FIRST FLOOR OF TURBINE BLDG.
COMPONENT- MDAFW AND SDAFW PUMP AND VALVE OST DATA.
NEED TREND GRAPHS DEVELOPED FOR THE PAST TWO YEARS OF OST-201, 202, 206, AND 207 DATA. DATA TO BE TRENDED ARE PUMP DELTA-P, VIBRATION, AND VALVE STROKE TIMES.

89-AHQA1 3 /20/A 2 ME 3065
PLANNED, NOT SCHEDULED REQ'R WALDSMITH, BRY INITIATED 08/11/89 20:36
EQUIP PMP-AUX FEEDWATER PUMP A
LOCATION- TURB. BLDG. 1ST LEVEL; AFW PUMP ROOM
COMPONENT-THE SHAFT SEAL ON THE MOTOR END OF "A" M.D. AFW PUMP HAS A SMALL CONTINOUS LEAK ABOUT THE SIZE OF A PENCLE LEAD. PLEASE INVESTIGATE AND CORRECT AS SOON AS POSSIBLE. FOUND WHILE DOING NORMAL SHIFT ROUNDS.

89-AJIL1 3 /22/A 2 EL 3065
PLANNED, NOT REVIEWED REQ'R MCINNIS, JAMES INITIATED 10/13/89 09:37
EQUIP PMP-STEAM DRIVEN AUXILARY FEEDWATER PUMP
LOCATION-TURB BLDG LEVEL-1 --AT SDAFW PMP
COMPONENT-THERMOCOUPLE WIRING FOR THE RADIAL AND THRUST BEARINGS-NEEDS TO BE LABELED-TYPE WIRE;BEARING ID

89-AJIK1 3 /21/A 2 ME 3065
PLANNED, NOT REVIEWED REQ'R MCINNIS, JAMES INITIATED 10/13/89 09:30
EQUIP PMP-STEAM DRIVEN AUXILARY FEEDWATER PUMP
LOCATION-TURB BLDG LEVEL -1--AT SDAFW PMP
COMPONENT-SDAFW PMP SUCTION STRAINER -- INSTALL AND REMOVE AS PER SCHEDULING

82-ACPQ1 4 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/18/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1FF/02/82 RQSTR - PATE
COMPONENT - STEAM DRVN PUMP *SYSTEM - AFW
LOW OIL IN CRANKCASE CHG - H12Z33 53060 SHOP - Z33

82-ACZZ1 5 /50/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/08/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 2HO/01/82 RQSTR - SMITH
COMPONENT - A PUMP *SYSTEM - AFW
EXCESSIVE SEAL LEAKAGE CHG - H12Z33 53060 SHOP - Z33

82-AECR1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/16/82 12:00
EQUIP PMP-PUMP

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

82-AECR1
LOCATION - **WOTR CONVERSION** WOTR - 4UJ/01/82 RQSTR - ALLEN
COMPONENT - A PUMP *SYSTEM - AFW
INBOARD PACKING LEAKS CHG - H12Z33 53060 SHOP - Z33

82-AEJE1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/17/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 5NG/01/82 RQSTR - THIBODEA
COMPONENT - A PUMP *SYSTEM - AFW
EXCESSIVE SEAL LEAKAGE AT INBD SEAL CHG - H12Z33 53060 SHOP - Z33

82-AEPW1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/02/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 6DN/01/82 RQSTR - KYSER
COMPONENT - STM DRVN PMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AESE1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/16/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 6IT/02/82 RQSTR - SMITH
COMPONENT - STM DRVN PUMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AEYW1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/31/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 6TJ/01/82 RQSTR - SMITH
COMPONENT - STM DRVN PMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AEZY1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 09/06/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 6WO/01/82 RQSTR - PRITCHAR
COMPONENT - A PUMP *SYSTEM - AFW
EXCESSIVE SEAL LEAKAGE OUTBD CHG - H12Z33 53060 SHOP - Z33

82-AFBR1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 09/16/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 7BY/01/82 RQSTR - THIBODEA
COMPONENT - STM DRVN PMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AFEG1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 09/30/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 7IZ/01/82 RQSTR - HALEY
COMPONENT - STM DRVN PMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AFIX1 3 /20/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/20/82 12:00
EQUIP PMP-PUMP

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

82-AFIX1
LOCATION - **WOTR CONVERSION** WOTR - 7WJ/01/82 RQSTR - JOHNSON
COMPONENT - STM DRVN PMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AFNE1 1A/21/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/16/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 8LM/01/82 RQSTR - JOHNSON
COMPONENT - STM DRVN PMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AFNQ1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/19/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 8MS/01/82 RQSTR - JOHNSON
COMPONENT - STM DRVN PUMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-AFRG1 5 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/06/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 8WK/01/82 RQSTR - GRIGGS
COMPONENT - VALVE AFW 20 *SYSTEM - FW
HAS LEK AROUND PLUG IN SIDE OF STUFF CHG - H12Z33 53060 SHOP - Z33

82-AFTR1 1 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/23/82 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 9DA/01/82 RQSTR - JOHNSON
COMPONENT - STM DRVN PUMP *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

83-AAER1 4 /10/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/05/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - BF4/01/83 RQSTR - BURRISS
COMPONENT - SDAFW PUMP *SYSTEM - AFW
AUX OIL PUMP TRIPS BKR ON THERMAL OVERLO CHG - H12Z32 53060 SHOP - Z32

83-ADQJ1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1AZ/01/83 RQSTR - MCINNIS
COMPONENT - STM DRVN PMP *SYSTEM - AFW
ADD OIL AS NEEDED FOR MONTH OF JAN 83 CHG - H12Z33 53060 SHOP - Z33

83-ADTS1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/19/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1KS/01/83 RQSTR - WALKUP
COMPONENT - STM DRVN PMP *SYSTEM - AFW
INSTALL TARP AROUND PUMP CHG - H12Z33 53060 SHOP - Z33

83-ADTX1 2 /10/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/19/83 12:00
EQUIP PMP-PUMP

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

83-ADTX1
LOCATION - **WOTR CONVERSION** WOTR - 1LG/01/83 RQSTR - OATES
COMPONENT - STM DRVN PMP *SYSTEM - AFW
OVERSPEED TRIP TRIPS TO EARLY CHG - H12Z33 53060 SHOP - Z33

83-ADTY1 2 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/20/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1LH/01/83 RQSTR - JERNIGAN
COMPONENT - STM DRVN PMP *SYSTEM - AFW
MECHANICAL TRIP WORKING INCORRECTLY CHG - H12Z33 53060 SHOP - Z33

83-ADYY1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 02/09/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1VP/01/83 RQSTR - WALKUP
COMPONENT - STM DRVN PMP *SYSTEM - AFW
ADD OIL AS NEEDED FOR MONTH OF FEB 83 CHG - H12Z33 53060 SHOP - Z33

83-AECC1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 2DA/01/83 RQSTR - MCINNIS
COMPONENT - STEAM DRIVEN PUMP *SYSTEM - AFW
ADD OIL AS NEEDED CHG - H12Z33 53060 SHOP - Z33

83-AELG1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/30/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 2WT/01/83 RQSTR - MCINNIS
COMPONENT - SDAFW PUMP *SYSTEM - AFW
LOW OIL LEVEL CHG - H12Z33 53060 SHOP - Z33

83-AEUR1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/22/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 3KW/01/83 RQSTR - JERNIGAN
COMPONENT - A AUX FW PUMP *SYSTEM - AUX FW
OIL NEEDS TO BE CHANGED CHG - H12Z33 53060 SHOP - Z33

83-AEYH1 4 /20/F 2 IN 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/30/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 3RH/01/83 RQSTR - OATES
COMPONENT - PUMP *SYSTEM - AFW
REINSULATE FLANGE ON AFW PUMP CHG - H12Z33 53060 SHOP - Z33

83-AFFT1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/20/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 4EP/01/83 RQSTR - CUTRIGHT
COMPONENT - A AUX FW PUMP *SYSTEM - AFW
HAS EXCESSIVE PACKING LEAK CHG - H12Z33 53060 SHOP - Z33

83-AFHM1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

83-AFHM1
LOCATION - **WOTR CONVERSION** WOTR - 4HO/01/83 RQSTR - NA
COMPONENT - SDAW PUMP *SYSTEM - AFW
ADD OIL FOR ONE MONTH CHG - H12Z33 53060 SHOP - Z33

83-AFJH1 3 /21/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/30/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 4KO/01/83 RQSTR - PRICE
COMPONENT - SDAFW PUMP *SYSTEM - AFW
OIL LOW IN SDAFW PUMP CHG - H12Z33 53060 SHOP - Z33

83-AFTZ1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 5BB/01/83 RQSTR - WALKUP
COMPONENT - SDAFW PUMP *SYSTEM - AFW
ADD OIL AS NEEDED TO SDAFW PUMP CHG - H12Z33 53060 SHOP - Z33

83-AGCD1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 5OU/01/83 RQSTR - JOHNSON
COMPONENT - SDAFW PUMP *SYSTEM - AFW
ADD OIL TO SDAFW FOR 1 MONTH CHG - H12Z33 53060 SHOP - Z33

83-AGDC1 3 /20/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/01/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 5QJ/01/83 RQSTR - CUTRIGHT
COMPONENT - STEAM DRIVEN FEED WATER PUMP *SYSTEM - AFW
SDFW PUMP NEEDS OIL ADDED CHG - H12Z33 53060 SHOP - Z33

83-AGKB1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 6FQ/01/83 RQSTR - WALKUP
COMPONENT - SDAFW PUMP *SYSTEM - AF
ADD OIL AS NEEDED TO THE SDAFW PMP FOR 1 CHG - H12Z33 53060 SHOP - Z33

83-AGUG1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 6UI/01/83 RQSTR - JOHNSON
COMPONENT - SDAFW PUMP *SYSTEM - AFW
ADD OIL AS NEEDED TO SDAFW PMP FOR 1 MON CHG - H12Z33 53060 SHOP - Z33

83-AGZN1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/18/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 7DP/01/83 RQSTR - LEAR
COMPONENT - B AUX FW PUMP *SYSTEM - AX FW
PUMP BRG OIL IS OUT OF SPECS AND NEEDS T CHG - H12Z33 53060 SHOP - Z33

83-AHAN1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/24/83 12:00
EQUIP PMP-PUMP

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

83-AHAN1
LOCATION - **WOTR CONVERSION** WOTR - 7GF/01/83 RQSTR - DARWIN
COMPONENT - A AFW PUMP *SYSTEM - AFW
EXCESSIVE PACKING LEAK CHG - H12Z33 53060 SHOP - Z33

83-AHEB1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 7MT/01/83 RQSTR - NA
COMPONENT - SDAFW PUMP *SYSTEM - AF
ADD OIL AS NEEDED TO SDAFW CHG - H12Z33 53060 SHOP - Z33

83-AHIK1 3 /20/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/15/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 7UV/01/83 RQSTR - NORRIS
COMPONENT - STEAM DRIVEN AFW PUMP *SYSTEM - AUX FW
PUMP OIL LEVEL IS LOW CHG - H12Z33 53060 SHOP - Z33

83-AHNA1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/30/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 8CW/01/83 RQSTR - TALBERT
COMPONENT - A&B MOTOR DRIVEN PUMP *SYSTEM - AF
LOW IN PUMPS CHG - H12Z33 53060 SHOP - Z33

83-AHPI1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/05/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 8FB/01/83 RQSTR - HALEY
COMPONENT - B AFW PUMP *SYSTEM - AX FW
PUMP IS LOW IN OIL DUE TO TUBING LEAK CHG - H12Z33 53060 SHOP - Z33

83-AHTM1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 8NF/01/83 RQSTR - JERNIGAN
COMPONENT - STEAM DRIVEN AX FW PUMP *SYSTEM - AX FW
OIL NEEDS TO BE ADDED TO PUMP CHG - H12Z33 53060 SHOP - Z33

84-ACHF1 1A/23/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/13/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - NM1/01/84 RQSTR - BOWEN
COMPONENT - E R 26 *SYSTEM - AFW
MM PERFORM REFUELING RTE E R 26 MDAFW TE CHG - H12Z32 53060 SHOP - Z32

84-ADAU1 4 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/24/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - SQ7/01/84 RQSTR - RATTERER
COMPONENT - AUX FW PUMP B *SYSTEM - AFW
RELAY AFW ON AUX PANEL CC DID NOT PICKUP CHG - H12Z32 53060 SHOP - Z32

84-ADAZ1 4 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/24/84 12:00
EQUIP PMP-PUMP

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

84-ADAZ1
LOCATION - **WOTR CONVERSION** WOTR - SR7/01/84 RQSTR - RITTER
COMPONENT - AUX FW PUMP B *SYSTEM - AFW
TIME DELAY RELAY 2 IS SET WRONG FOUND DU CHG - H12Z32 53060 SHOP - Z32

84-AEET1 3 /21/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/03/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1AY/01/84 RQSTR - HORTON
COMPONENT - AFW SD PMP *SYSTEM - AFW
ADD OIL AS NEEDED CHG - H12Z33 53060 SHOP - Z33

84-AEFU1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/07/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1DH/01/84 RQSTR - HALEY
COMPONENT - AFW DRAIN TRAP *SYSTEM - AFW
STEAM LEAKAGE CHG - H12Z33 53060 SHOP - Z33

84-AEGF1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/10/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1DS/01/84 RQSTR - TERFETIL
COMPONENT - SD AFW WARMUP LINE Y STRAINER *SYSTEM - AFW
STRAINER LEAKAGE CHG - H12Z33 53060 SHOP - Z33

84-AEHD1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/11/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1FT/01/84 RQSTR - JOHNSON
COMPONENT - A AFP *SYSTEM - AF
PACKING LEAK CHG - H12Z33 53060 SHOP - Z33

84-AELH1 5 /50/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/17/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1OJ/01/84 RQSTR - BACOTE
COMPONENT - STM DRV FD WTR PMP STM NOZZLE *SYSTEM - AUX F
STM NOZZLE LEAKING CHG - H12Z33 53060 SHOP - Z33

84-AEXX1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 02/14/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 2II/01/84 RQSTR - MELTON
COMPONENT - B AFW PUMP *SYSTEM - CVCS
OIL LEAK FROM O B OIL SEAL CHG - H12Z33 53060 SHOP - Z33

84-AFKU1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/02/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 3HV/01/84 RQSTR - CUTRIGHT
COMPONENT - AFW PUMP STEAM DRIVEN *SYSTEM - FW
STEAM TRAP DOES NOT WORK CHG - H12Z33 53060 SHOP - Z33

84-AFRD1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/19/84 12:00
EQUIP PMP-PUMP

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

84-AFRD1
LOCATION - **WOTR CONVERSION** WOTR - 3SL/01/84 RQSTR - DAMPIER
COMPONENT - SDAFW PUMP INLET STEAMTRAP *SYSTEM - AX FW
IDENTIFY STEAM TRAP CHG - H12Z33 53060 SHOP - Z33

84-AGMF1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/07/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 5MC/01/84 RQSTR - GRUDGE
COMPONENT - "A" AFW PUMP *SYSTEM - AFW
PUMP NEEDS OIL IN MTR END OF PMP INSPECT CHG - H12Z33 53060 SHOP - Z33

84-AGSI1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/14/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 5ZO/01/84 RQSTR - MCINNIS
COMPONENT - A AUX FW PUMP *SYSTEM - AFW
OIL SYSTEM NEEDS FLUSHING CHG - H12Z33 53060 SHOP - Z33

84-AIAD1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/23/84 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 8FN/01/84 RQSTR - WALDSMIT
COMPONENT - A AFW PUMP INBOARD PKG LEAKS *SYSTEM - AFW
PACKING LEAK CHG - H12Z33 53060 SHOP - Z33

85-ACLH1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/18/85 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - HHJ/01/85 RQSTR - CARR
COMPONENT - "A" AFN PUMP OIL SIGHTGLASS *SYSTEM - AUX FW
SIGHTGLASS BROKEN CHG - H12Z33 53060 SHOP - Z33
CO 041486

85-AEBT1 1A/20/F 2 ET 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/18/85 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - MUE/01/85 RQSTR - KNIGHT
COMPONENT - SDAFW PUMP *SYSTEM - AUX FW
PUMP DISH PRESS WILL NOT PASS OST 201 CHG - H12Z32 53060 SHOP - Z32

85-AGJY1 4 /20/F 2 MW 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/20/85 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - UMD/01/85 RQSTR - LEAR
COMPONENT - SDAFW PUMP STEAM TRAP *SYSTEM - AUX FW
DRN FOR STM TRAP WILL NOT CONTAIN DISCHA CHG - H12Z33 53060 SHOP - Z33
CO 041886

85-AHNC1 5 /23/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/25/85 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - YQD/01/85 RQSTR - WATTS
COMPONENT - E-R-26 *SYSTEM - AUX FW

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

85-AHNC1
MM PERFORM MST 202 MOTOR DRIVEN AUX FEED CHG - H12Z32 520 SHOP - Z32
RW 031386

85-AIEW1 4 /20/F 2 IN 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/16/85 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 1LR/01/85 RQSTR - JOHNSON
COMPONENT - PUMPS *SYSTEM - AFW
BOTH SKIDS ON MTR DRVN AFW PUMPS NEED PA CHG - H12K09 53060 SHOP - Z33

85-AIZQ1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 02/25/85 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 2WN/01/85 RQSTR - JOHNSON
COMPONENT - A AFW PUMP *SYSTEM - AFW
OUTBOARD BEARING DRAIN BASIN IS CLOGGED CHG - H12Z33 53060 SHOP - Z33

85-AJAU1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/11/85 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - 2ZJ/01/85 RQSTR - TAYLOR
COMPONENT - STRAINER *SYSTEM - MS
STEAM LEAK CHG - H12Z33 53060 SHOP - Z33

86-ABJJ1 3 /20/F 2 ET 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/18/86 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - HCJ/01/86 RQSTR - HELD
COMPONENT - STEAM DRIVEN AUX FEED PUMP *SYSTEM - AUX FW
NEED TO INVESTIGATE INTERACTION SDAFP WI CHG - H12Z32 53060 SHOP - Z32
MG 071886

86-ACGW1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/16/86 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - MBF/01/86 RQSTR - SMITH
COMPONENT - STARAINER *SYSTEM - AUX FW
LEAKS AT CAP CHG - H12Z33 53056 SHOP - Z33
CO 041886

86-ACMW1 4 /20/F 2 IN 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/17/86 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - NKF/01/86 RQSTR - GRANT
COMPONENT - STEAM TRAP *SYSTEM - AUX FW
INSULATION NEEDS TO BE REMOVED CHG - H12Z33 K09 53060 SHOP - Z33
DN 041786

86-AEXU1 3 /20/F 2 ET 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/20/86 12:00
EQUIP PMP-PUMP
LOCATION - **WOTR CONVERSION** WOTR - YLG/01/86 RQSTR - UNK
COMPONENT - SDAFWP *SYSTEM - AUX FW

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

86-AEXU1
PUMP TRIPPED ON OVERSPEED WHILE PERFORMI CHG - H12Z32 53060 SHOP - Z32
MG 052186

86-ANMS1 5 /50/N 2 EL 3065
COMPLETED AND APPROVED REQ'R WATTS, WILLIAM INITIATED 12/02/86 09:46
EQUIP PMP-PUMP
LOCATION-
COMPONENT- PERFORM REFUELING MOTOR DRIVEN AUX. FEEDWATER SYSTEMS TEST MST-202

86-ANXI1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R CLOUSE, MARK K INITIATED 12/05/86 23:44
EQUIP PMP-PUMP
LOCATION- AUX. FEED PUMP ROOM
COMPONENT- 'B' MOTOR DRIVEN AUXILIARY FEED PUMP
THE PROTECTIVE COVER FOR 'B' AUX. FEED PUMP SHAFT COUPLING IS LOOSE,DUE
TO MISSING MOUNTING BOLTS.

87-AAGW1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R GRANT, CLARENC INITIATED 01/07/87 10:43
EQUIP PMP-PUMP
LOCATION- SDAFWP
COMPONENT- STEAM TRAP ON WARM UP LINE LEAKS BY

87-AFND1 5 /50/N 2 ME 3065
COMPLETED AND APPROVED REQ'R PRICE, DAVID E INITIATED 04/30/87 06:24
EQUIP PMP-PUMP
LOCATION-AUX. FEED PUMP ROOM
COMPONENT- A AUX. FEED WATER PUMP.
PUMP AND MOTOR NEED TO BE ALIGNED. IT WAS FOUND TO BE OUT OF ALIGNMENT
WHILE PERFORMING PM M-3R-9.

87-AIGA1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R WALKUP, WILLIA INITIATED 06/14/87 13:50
EQUIP PMP-PUMP
LOCATION- TUR1-H13-0
COMPONENT- STEAM DRIVEN AUX. FEEDWATER PUMP GOVERNOR, DOES NOT
OPERATE PROPERLY.

88-AADN1 1 /20/D 2 ME 3065
COMPLETED AND APPROVED REQ'R ROBANDT, MARK INITIATED 01/05/88 08:56
EQUIP PMP-PUMP
LOCATION- 1ST LEVEL, TURBINE BLDG.
COMPONENT- THE WOODWARD GOVENER IS LEAKING OIL OUT OF THE BASE. THERE IS NOT
ANY OIL LEVEL VISABLE IN THE SIGHT GLASS. REPAIR AS NECESSARY.

88-ADNZ1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R JONES, MICHAEL INITIATED 03/16/88 06:01
EQUIP PMP-PUMP
LOCATION- MOTOR DRIVEN AFW PUMP ROOM
COMPONENT- "A" MDAFW PUMP. A FEW SMALL BURNING SPARKS WERE OBSERVED TO
BE FLYING FROM THE MOTOR VENT, EAST SIDE AND REAR OF MOTOR,
WHEN THE PUMP WAS STARTED FOR OST-201 ON 3-16-88. A SLIGHT
BURNT SMELL WAS NOTICED BUT WENT AWAY WITHIN 10-15 SECONDS.

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

88-ADNZ1
SUSPECT DUST MIGHT HAVE BEEN CAUSE OF PROBLEM. PLEASE CHECK
OUT CONDITION OF MOTOR

88-AEFM1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R JOHNSON, CORBE INITIATED 04/04/88 14:10
EQUIP PMP-PUMP
LOCATION- AUX. FEED WATER PUMP ROOM
COMPONENT- "A" AUX. FEED PUMP AND MOTOR
NEED TO CHANGE ALL BOLTS IN PUMP AND MOTOR BASE THAT IS NOT GRADE 5
OR BETTER. GRADE 5 WILL HAVE THREE MARKS ON HEAD.

88-AEFN1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R JOHNSON, CORBE INITIATED 04/04/88 14:15
EQUIP PMP-PUMP
LOCATION- AUX. FEED WATER PUMP ROOM
COMPONENT- "B" AUX. FEED WATER PUMP
NEED TO REPLACE ALL BOLTS IN PUMP AND MOTOR BASE THAT IS NOT GRADE
5 OR BETTER. GRADE 5 WILL HAVE THREE MARKS ON HEAD.

88-AFBP1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R DOUGLAS, JAMES INITIATED 04/30/88 11:02
EQUIP PMP-PUMP
LOCATION- GROUND LEVEL TURBINE BUILDING.
COMPONENT- STEAM DRIVEN AUXILIARY FEEDWATER PUMP IS LOW IN OIL.

88-AKFW1 3 /20/D 2 ME 3065
COMPLETED AND APPROVED REQ'R SMITH, LARRY D INITIATED 09/30/88 05:11
EQUIP PMP-PUMP
LOCATION-WEST OF STM DRIVEN AFW PUMP
COMPONENT-STM DRIVEN AFW PUMP WARMUP LINE STM TRAP HAS A STM LEAK FROM
IT'S FLANGE

89-AEKJ1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R PARVIN, BENJAM INITIATED 04/16/89 14:06
EQUIP PMP-PUMP
LOCATION- NEAR "A"MAIN FEED PUMP
COMPONENT- PUMP DELTA-P WAS IN THE ALERT RANGE ON OST-206.

89-AHXL1 3 /50/D 2 ME 3065
COMPLETED AND APPROVED REQ'R LEAR, LEWIS E INITIATED 08/23/89 09:22
EQUIP PMP-AUX FEEDWATER PUMP A
LOCATION- 1ST LEVEL TURB BLDG--AFW PMP ROOM
COMPONENT- "A" AFWP--NEED TO DISASSEMBLE/INSPECT INTERNALS/RENEW PARTS AS
NEEDED/REASSEMBLE. ALSO, NEED TO OBTAIN A WRITTEN VENDOR RECOMMENDATION AS
TO THEIR RECOMMENDED PUMP INTERNAL INSPECTION INTERVAL FOR OUR PUMPS AND
ENTER THIS RECOMMENDATION INTO THE PLANT PLP-038 VENDOR RECOMMENDATION PROGRAM
SO A PM CAN BE SETUP.

89-AJII1 3 /21/D 2 ME 3065
COMPLETED AND APPROVED REQ'R MCINNIS, JAMES INITIATED 10/13/89 09:14
EQUIP PMP-AUX FEEDWATER PUMP A
LOCATION- AFW PMP ROOM
COMPONENT-A-AFW PMP SUCTION STRAINER- INSTALL AND REMOVE SUCTION STRAINER AS

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP PMP-PUMP ID

89-AJII1
PER SCHELUDING.

88-AEUI1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R SMITH, VIRGINI INITIATED 04/22/88 12:34
EQUIP PMP-AUX FEEDWATER PUMP B
EDB-LOC: AUX FW PUMP ROOM
COMPONENT- SIGHT GLASS FOR "B" AFW PUMP BEARING RESERVOIR NEEDS TO HAVE GLASS REPLACED. TOP OF SIGHT GLASS IS BROKEN AND JAGGED. THIS NEEDS TO BE CORRECTED.

89-ABFQ1 3 /50/D 2 ME 3065
COMPLETED AND APPROVED REQ'R WALKUP, WILLIA INITIATED 01/24/89 15:27
EQUIP PMP-AUX FEEDWATER PUMP B
LOCATION- AUX. FEEDWATER ROOM
COMPONENT-"B" MOTOR DRIVEN AUX. FEEDWATER PUMP, ADJUST THE PACKING GLANDS TO ELIMINATE LEAKAGE.

89-AHXL2 3 /50/A 2 ME 3065
COMPLETED AND APPROVED REQ'R LEAR, LEWIS E INITIATED 08/23/89 09:29
EQUIP PMP-AUX FEEDWATER PUMP B
LOCATION- 1ST LEVEL TURB BLDG--AFW PMP ROOM
COMPONENT- "B" AFWP--NEED TO DISASSEMBLE/INSPECT INTERNALS/RENEW PARTS AS NEEDED/REASSEMBLE. ALSO, NEED TO OBTAIN A WRITTEN VENDOR RECOMMENDATION AS TO THEIR RECOMMENDED PUMP INTERNAL INSPECTION INTERVAL FOR OUR PUMPS AND ENTER THIS RECOMMENDATION INTO THE PLANT PLP-038 VENDOR RECOMMENDATION PROGRAM SO A PM CAN BE SETUP.

89-AJIJ1 3 /21/D 2 ME 3065
COMPLETED AND APPROVED REQ'R MCINNIS, JAMES INITIATED 10/13/89 09:23
EQUIP PMP-AUX FEEDWATER PUMP B
LOCATION-AFW PMP ROOM
COMPONENT- MDAFW PMP SUCTION STRAINER --INSTALL AND REMOVE SUCTION STRAINER AS PER SCHEDULING.

87-AGZS1 3 /20/N 2 ME 3065
COMPLETED AND APPROVED REQ'R BIEDENBACH, ST INITIATED 05/25/87 20:29
EQUIP PMP-
EDB-LOC: AUX FW PUMP ROOM
COMPONENT-B-AFW PUMP HAS LOW OIL LEVEL IN SIGHTGLASS ON THE THRUST BEARING.

88-ACUF1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R HOCUTT, TILMON INITIATED 03/01/88 13:34
EQUIP PMP-
EDB-LOC: AUX FW PUMP ROOM , NORTH END OF PUMP NEAR OIL SIGHT GLASS.
COMPONENT- SMALL OIL LEAK , PLEASE INVESTIGATE AND REPAIR.

WR/JO 89-AIGR1 PRI/TYPE/WCC 3 /30/A UNIT 2 SKILL EL SYSTEM 3065
WORK IN PROGRESS REQ'R WILLIAMSON, RO INITIATED 09/06/89 07:29
EQUIP MTR-MOTORS
LOCATION- MEZZANINE LEVEL
COMPONENT- AFW VALVES V2-14A,B,C, V2-16A,B,C, AND V1-8A,B,C.
ASSIST NED DESIGNERS IN AS-BUILTING OF THESE VALVES.

WR/JO 89-AHZF1 PRI/TYPE/WCC 3 /20/D UNIT 2 SKILL EL SYSTEM 3065
WORK IN PROGRESS REQ'R HUNTLEY, JOHN INITIATED 08/24/89 08:18
EQUIP MTR-A AUX FEEDWATER PUMP MOTOR
EDB-LOC: TUR1-I25-1
COMPONENT- SPARKS WERE NOTICED COMING FROM A AFW PUMP MOTOR.
MECH. WR # 89-AHZF2

WR/JO 82-AACT1 PRI/TYPE/WCC 3 /20/F UNIT 2 SKILL EL SYSTEM 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/02/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - AY2/01/82 RQSTR - SCARBORO
COMPONENT - B PUMP MOTOR *SYSTEM - AFW
DID NOT START ON PT 2.1 CHG - H12Z32 53060 SHOP - Z32

WR/JO 82-ABAN1 PRI/TYPE/WCC 3 /10/F UNIT 2 SKILL ET SYSTEM 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 09/20/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - KH6/01/82 RQSTR - STEELE
COMPONENT - STM DRVN PMP *SYSTEM - AFW
STARTS WITH NO VALID SIGNAL, GET DC GROU CHG - H12Z32 53060 SHOP - Z32

WR/JO 82-ABPY1 PRI/TYPE/WCC 5 /20/F UNIT 2 SKILL EL SYSTEM 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/10/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - RC5/01/82 RQSTR - GRAHAM
COMPONENT - A&B PUMP BREAKERS *SYSTEM - AFW
CALIBRATE AS PER MI 3, PM 6, PAGES 10&21 CHG - H12Z32 53060 SHOP - Z32

WR/JO 82-ACAL1 PRI/TYPE/WCC 4 /10/F UNIT 2 SKILL EL SYSTEM 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/18/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - VP3/01/82 RQSTR - WINDHAM
COMPONENT - A PUMP MOTOR *SYSTEM - AFW
GROUNDED CHG - H12Z32 53060 SHOP - Z32

WR/JO 82-ACJJ1 PRI/TYPE/WCC 5 /23/F UNIT 2 SKILL EL SYSTEM 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/09/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - YW4/01/82 RQSTR - NA
COMPONENT - STM DRVN PUMP *SYSTEM - AFW
MM PERFORM PT 6.3 4KV UV TEST CHG - H12Z32 53060 SHOP - Z32

WR/JO 82-ACMX1 PRI/TYPE/WCC 4 /20/F UNIT 2 SKILL ME SYSTEM 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - 1BA/01/82 RQSTR - PATE
COMPONENT - B PUMP MOTOR *SYSTEM - AFW

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP MTR-MOTORS ID

82-ACMX1
INBOARD BRG LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-ACNM1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/11/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - 1CX/01/82 RQSTR - PATE
COMPONENT - STEAM DRVN FMP GOVERNOR *SYSTEM - AFW
LOW ON OIL CHG - H12Z33 53060 SHOP - Z33

82-ACUI1 4 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 02/18/82 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - 1WI/01/82 RQSTR - PATE
COMPONENT - B PUMP MOTOR *SYSTEM - AFW
INBOARD BEARING OIL LOW CHG - H12Z33 53060 SHOP - Z33

83-AAER1 3 /20/F 2 ET 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/25/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - BH8/01/83 RQSTR - SNAVELY
COMPONENT - S/D AUX FWP *SYSTEM - AFW
STEAM DRIVEN AFW PUMP TRIPS WHEN ATTEMPT CHG - H12Z32 53060 SHOP - Z32

83-AAKQ1 3 /10/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/26/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - CX4/01/83 RQSTR - JONES
COMPONENT - S/D AFW PUMP AUX OIL PUMP *SYSTEM - RTGB
S/D AFW PUMP AUX OIL PUMP TRIPPING OFF CHG - H12Z32 53060 SHOP - Z32

83-AANF1 3 /10/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/28/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - DK6/01/83 RQSTR - WINDHAM
COMPONENT - VALVE V2-14B *SYSTEM - AFW
DISCONNECT & RECONNECT VALVE WIRING FOR CHG - H12Z32 53060 SHOP - Z32

83-AATD1 3 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/01/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - EY4/01/83 RQSTR - PARVIN
COMPONENT - SDAFWP AUX OIL PUMP *SYSTEM - FW
AUX OIL PUMP TRIPPED ON THERMAL OVERLOAD CHG - H12Z32 53060 SHOP - Z32

83-AAYG1 2 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/20/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - GF3/01/83 RQSTR - JONES
COMPONENT - B AFW PUMP *SYSTEM - AFW
TEST & INSPECT BKR FOR B AFW PMP CHG - H12Z32 53060 SHOP - Z32

83-ABHJ1 4 /10/F 2 PA 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/18/83 12:00
EQUIP MTR-MOTORS

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP MTR-MOTORS ID

83-AHHS1
LOCATION - **WOTR CONVERSION** WOTR - JA1/01/83 RQSTR - WIGGINS
COMPONENT - SDAFP SPEED CONTROL *SYSTEM - AFW
SPEED OF SDAFP COULD NOT BE ADJUSTED TO CHG - H12Z32 53060 SHOP - Z32

83-AEJD1 3 /21/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/14/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - 2FA/01/83 RQSTR - JOHNSON
COMPONENT - A MOTOR *SYSTEM - AFW
LOW ON OIL AT INBD BEARING CHG - H12Z33 53060 SHOP - Z33

83-AETT1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/25/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - 3KP/01/83 RQSTR - JERNIGAN
COMPONENT - B AUX FW PUMP MOTOR *SYSTEM - AUX FW
OIL NEEDS CHANGING CHG - H12Z33 53060 SHOP - Z33

83-AEUE1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/22/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - 3KZ/01/83 RQSTR - JERNIGAN
COMPONENT - A AUX FW PUMP MOTOR *SYSTEM - AUX FW
OIL NEEDS TO BE CHANGED CHG - H12Z33 53060 SHOP - Z33

83-AHHS1 3 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/07/83 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - 7TW/01/83 RQSTR - SHANE
COMPONENT - A AFW PUMP TEMPERATURE GAUGE *SYSTEM - AFW
LEAKING OIL CHG - H12Z33 53060 SHOP - Z33

84-AACS1 3 /20/F 2 I 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 02/03/84 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - AR2/01/84 RQSTR - WINGERT
COMPONENT - PSL 1993 FSH 1993 *SYSTEM - AFW
SENSING LINE IS CRIMPED AND LEAKING CHG - H12Z32 53060 SHOP - Z32

84-AAJS1 4 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/07/84 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - CD9/01/84 RQSTR - BYRON
COMPONENT - SDAFW OIL PUMP *SYSTEM - AFW
MOTOR CONTROLLER STARTED CYCLING RAPIDLY CHG - H12Z32 53060 SHOP - Z32

84-AAZR1 3 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/10/84 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - FN8/01/84 RQSTR - BURRISS
COMPONENT - A&B AFW PUMPS *SYSTEM - AUX FW
TRIPPED ON LOW PRESSURE WILL NOT RESTART CHG - H12Z32 53060 SHOP - Z32

84-ACGU1 2 /40/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/14/84 12:00
EQUIP MTR-MOTORS

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP MTR-MOTORS ID

84-ACGU1
LOCATION - **WOTR CONVERSION** WOTR - NI4/01/84 RQSTR - COPLEY
COMPONENT - RDX ON AUX PANEL CC *SYSTEM - RELAY
SPRING HOLDING CONTACT ON TOP ROW OF REL CHG - H12Z32 53060 SHOP - Z32

84-ADFR1 4 /20/F 2 ET 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 09/12/84 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - TZ6/01/84 RQSTR - NORRIS
COMPONENT - B TRAIN DEFEAT LIGHT *SYSTEM - AFW
DEFEAT LIGHT DOES NOT WORK CHG - H12Z32 53060 SHOP - Z32

84-ADKL1 4 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/14/84 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - VQ8/01/84 RQSTR - WINDHAM
COMPONENT - A MTR DRVN FW PMP BKR CUBICLE *SYSTEM - AUX FW
HAS A BENT CELL INTERLOCK CHG - H12Z32 53060 SHOP - Z32

84-ADPS1-2 1A/23/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/29/84 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - WT1/01/84 RQSTR - BOWEN
COMPONENT - MST 201 *SYSTEM - AFW
PERFORM REFUELING MST 201 4KV U/V TES CHG - H12Z32 53060 SHOP - Z32

84-ADQN1 2 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/31/84 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - WZ4/01/84 RQSTR - JOHNSON
COMPONENT - AFW MOTORS *SYSTEM - AFW
NEED TO CHECK MOTORS AFTER CONSTRUCTION CHG - H12Z32 53060 SHOP - Z32

85-ABQT1 3 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/26/85 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - FAA/01/85 RQSTR - COPLEY
COMPONENT - AFW PUMP MOTORS *SYSTEM - AFWS
NEED TO OBTAIN STRIP CHART CURRENT DATA CHG - H12Z32 53060 SHOP - Z32

85-ACBR1 3 /20/F 2 ET 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/21/85 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - GF3/01/85 RQSTR - TAYLOR
COMPONENT - STM DRVN AFW PUMP *SYSTEM - AUX FW
DID NOT PASS OST 201 CHG - H12Z32 53060 SHOP - Z32

85-AHPK1 5 /23/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/25/85 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - YUD/01/85 RQSTR - WATTS
COMPONENT - E-R-30 *SYSTEM - AUX FW
MM PERFORM MST 201 4KV UNDERVOLTAGE TEST CHG - H12Z32 520 SHOP - Z32
MG 031386

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP MTR-MOTORS ID

86-ABIT1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/28/86 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - GYH/01/86 RQSTR - WEAVER
COMPONENT - SD AUX PUMP CONTROL CABINET *SYSTEM - AUX FW
LATCH BROKEN AND HINGE PULLED LOOSE CHG - H12Z33 53060 SHOP - Z33
MB 061186

86-ABZJ1 3 /10/F 2 I 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/16/86 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - KQF/01/86 RQSTR - BYRON
COMPONENT - SDAFW PUMP *SYSTEM - AUX FW
TRIPPED 3 TIMES WHILE OPENING V1-8A CHG - H12Z32 53060 SHOP - Z32
NL 041686

86-ACUM1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/13/86 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - OUG/01/86 RQSTR - MORRIS
COMPONENT - OIL LEVEL GAUGES *SYSTEM - AUX FW
GAUGES LEAK CHG - H12Z33 53060 SHOP - Z33
CO 052286

86-ADTZ1 2 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/06/86 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - TII/01/86 RQSTR - JONES
COMPONENT - STEAM DRIVEN AFW PUMP *SYSTEM - AFW
DIFFICULT TO RESET THE OVERSPEED TRIP CHG - H12Z33 53060 SHOP - Z33
RC 071786

86-AEYE1 3 /20/F 2 I 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/16/86 12:00
EQUIP MTR-MOTORS
LOCATION - **WOTR CONVERSION** WOTR - YMI/01/86 RQSTR - METTS
COMPONENT - STEAM DRIVEN AUX FW PUMP *SYSTEM - AUX FW
TRIPPING ON OVERSPEED CHG - H12Z32 53060 SHOP - Z32
NL 071686

86-AJCC1 5 /50/A 2 ME 3065
COMPLETED AND APPROVED REQ'R JERNIGAN JR, C INITIATED 10/28/86 15:56
EQUIP MTR-MOTORS
LOCATION-1 ST LEVEL TURB. BUILDING
COMPONENT-STEAM DRIVEN AUX. FW PUMP ---REMOVE GOV. FOR INSP.

86-ANMI1 5 /50/N 2 EL 3065
COMPLETED AND APPROVED REQ'R WATTS, WILLIAM INITIATED 12/02/86 09:48
EQUIP MTR-MOTORS
LOCATION-
COMPONENT- PERFORM REFUELING 4KV UNDERVOLTAGE TEST OF AUTO START SDAFW MST-201

87-AGSH1 4 /20/N 2 ME 3065
COMPLETED AND APPROVED REQ'R FALES, MICHAEL INITIATED 05/20/87 14:13
EQUIP MTR-MOTORS

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP MTR-MOTORS ID

87-AGSH1
LOCATION- AUXILIARY FEED WATER PUMP ROOM
COMPONENT- "A" AFW PUMP MOTOR SUPPORT BASE.
NUTS WERE WELDED ON BASE TO ALLOW JACKING OF MOTOR FOR ALIGNMENT TO PUMP.
THESE NUTS ARE TO BE REMOVED.

87-AGSI1 4 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R FALES, MICHAEL INITIATED 05/20/87 14:16
EQUIP MTR-MOTORS
LOCATION- AUXILIARY FEEDWATER PUMP ROOM.
COMPONENT-MOTOR DRIVEN AFW PUMP MOTOR BASE.
NUTS USED TO MAKE CORRECTION ON ALIGNMENT,HAD TO BE REMOVED BY GRINDING. NEED T
O RE-PAINT BASE PER PAINT CODE.

87-AHTB1 3 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R GANN, MICHAEL INITIATED 06/07/87 03:52
EQUIP MTR-MOTORS
LOCATION-BY FLASH TANK
COMPONENT-THE GOVERNOR ON THE STEAM DRIVEN AFW PUMP HAS A LEAK AT THE FLANGE
WHERE IT BOLTS TO THE PUMP.

87-ANBB1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R WATTS, WILLIAM INITIATED 09/15/87 09:34
EQUIP MTR-MOTORS
LOCATION- AUX. FW PUMP ROOM
COMPONENT- PECHERHEAD FOR "B" AUX. FW PUMP HAS WRUNG OFF SCREWS IN COVER

87-ANBC1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R WATTS, WILLIAM INITIATED 09/15/87 09:37
EQUIP MTR-MOTORS
LOCATION- AUX. FW PUMP ROOM
COMPONENT- LEADS FOR "A" AUX. FW PUMP NEED TO BE RE-TAPPED

88-AAST1 4 /20/A 2 ME 3065
COMPLETED AND APPROVED REQ'R TALBERT, DAVID INITIATED 01/19/88 13:22
EQUIP MTR-MOTORS
LOCATION- STEAM DRIVEN AUX FEEDWATER PUMP,NORTH SIDE
COMPONENT-SDAFW PUMP DRAIN BASIN IS STOPED UP AND NEEDS UNCLOGGING

88-AHLZ1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R BILLINGS, DANN INITIATED 07/20/88 03:59
EQUIP MTR-MOTORS
LOCATION- SDAFP
COMPONENT- DURING PERFOMANCE OF OST-202 PUMP DISCHARGE AND STEAM PRESSURE
D/P INDICATED LOW.UPON RECHECK OF ORIGINAL OST ,D/P WAS STILL INDICATING
LOW .APPROX VALUES WERE 30# FOR 1ST RUN AND 200# FOR 2ND RUN BOTH WERE BELOW
REQUIRED 310# OR GREATER.REQUEST TROUBLESHOOT AND REPAIR AS NECESSARY.

89-ACWE1 3 /21/A 2 EL 3065
COMPLETED AND APPROVED REQ'R PRITCHARD, JOS INITIATED 02/24/89 16:29
EQUIP MTR-MOTORS
LOCATION-GRD FLOOR TURBINE BLDG
COMPONENT-CONTROLLER WILL NOT LET PUMP PUMP 600 GPM. INVESTIGATE AND REPAIR.

89-AHZF2 3 /50/D 2 ME 3065
COMPLETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 08/24/89 15:02
EQUIP MTR-A AUX FEEDWATER PUMP MOTOR

SYSTEM 3065-AUXILIARY FEEDWATER
EQUIP MTR-MOTORS ID

89-AHZF2
EDB-LOC: TUR1-I25-1
COMPONENT- SPARKS WERE NOTICED COMING FROM A AFW PUMP MOTOR.
****
MOTOR WILL REQUIRE REMOVAL AFTER ELECTRICAL DISCONNECT AND INSTALLATION AFTER INSPECTION/REFURBISHMENT.
I&C WR #89-AHZF1.

89-AIPZ1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 09/19/89 06:56
EQUIP MTR-A AUX FEEDWATER PUMP MOTOR
EDB-LOC: AUX1-I25-1
COMPONENT- "A" AUXILIARY FEEDWATER PUMP MOTOR. BRIDGE AND MEGGER "A" AUX. FW PUMP MOTOR FOR RECIEPT INSPECTION AND BASE LINE DATA AT RETURN OF MOTOR FROM WESTINGHOUSE (SPARTANBURG).

89-AHZQ1 3 /20/D 2 EL 3065
COMPLETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 08/24/89 15:39
EQUIP MTR-B AUX FEEDWATER PUMP MOTOR
EDB-LOC: TURB 1 I24 1'
COMPONENT- B AUX FEEDWATER PUMP MOTOR. DISCONNECT AND RECONNECT PUMP MOTOR TO FACILITATE MOTOR INSPECTION/REFUBISHMENT.

89-AHZQ2 3 /50/D 2 ME 3065
COMPLETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 08/24/89 15:56
EQUIP MTR-B AUX FEEDWATER PUMP MOTOR
EDB-LOC: TURB 1 I24 1'
COMPONENT- B AUX FEEDWATER PUMP MOTOR. DISCONNECT AND RECONNECT PUMP MOTOR TO FACILITATE MOTOR INSPECTION/REFUBISHMENT.
****
MOTOR REQUIRES REMOVAL FOR INSPECTION/REFUBISHMENT AND INSTALLATION AFTER COMPLETION OF INSPECTION.
I&C WR # 89-AHZQ1.

89-AINL1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 09/18/89 09:11
EQUIP MTR-B AUX FEEDWATER PUMP MOTOR
EDB-LOC: TURB 1 I24 1'
COMPONENT- "B" AUXILIARY FEEDWATER PUMP MOTOR. BRIDGE AND MEGGER "B" AUX.FW MOTOR PRIOR INSTALLATION.

89-AJER1 3 /20/A 2 EL 3065
COMPLETED AND APPROVED REQ'R BARRY, JAMES H INITIATED 10/06/89 15:04
EQUIP MTR-B AUX FEEDWATER PUMP MOTOR
EDB-LOC: TURB 1 I24 1'
COMPONENT- "B" AFW PUMP MOTOR WAS SPRAYED WITH WATER, REQUEST I&C INSPECT FOR DAMAGE.

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