# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

#### REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8911170022 DOC.DATE: 89/11/10 NOTARIZED: NO DOCKET # FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261

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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 Washington, DC

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,

Manager

Nuclear Licensin's Section

LIL/cn (4687NED)

Attachments

cc: Mr. S. D. Ebneter

Mr. L. Garner (NRC - HBR)
Mr. R. Lo

Mr. R. Lo

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#### 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

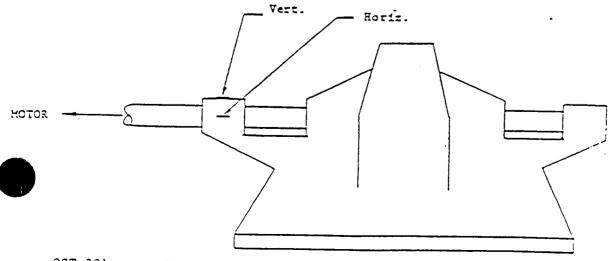
ATTACHMENT 3.1
Page 1 of 1

## MDAFW PUMP DATA

REF. STEP	PARAMETER		PUMP TESTED		ACCEPTANCE CRITERIA	
					"A"	11811
7.2.9 or	Disch. Press.	"A" - PI-1424			N/A	N.' A.
7.3.9	PSIG	"B" - PI-1425			N/A	N.' 4
	Vibration,*	Horiz.		'\	≤1.0	1.6
	MILS	Vert.			≤1.0	1.C
	Suct. Press.	"A" - PI-1479		N/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A		N/A	24.9
	Oil Press. to l	Regulator, PSIG			N/A	N/A
	Oil Temp from (	Cooler. °F			N/A 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 AP			N/A	≥1333 ≤1462	ľ/Α
7.3.10	PSIG, (1)	·	N/A		N/A	≥1340 ≤1470

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

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



OST-201

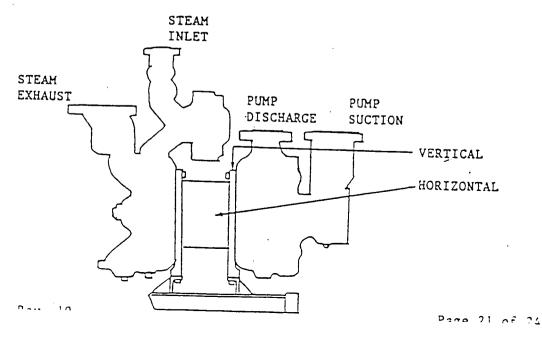
Rev. 23

#### SDAFW PUMP DATA

REF. STEP	PARA	METER		<del></del>	
NO.	1 micro	.ILILK			ACCEPTANCE
7.2.18.2	Disch Pro	ess. PI-1426		DATA	CRITERIA
	PSIG	ess. FI-1426			,N/A
7.2.18.2	Steam Inle	35 D			
	PI-1357-2	rress.			N/A
7.2.18.2	Pump Turk	PS16 -			_ [
7.2.19	Food to Se	ine Speed, RI	PM		N/A
	(Disabassa	eam ΔP, PSI,	,		≥310
	(Discharge	Pressure P	[-1426] -		İ
7.2.21	(Sceam Ini	et Pressure	PI-1357-2)		
7.2.22.1	rump lurbi	ne Speed,			N/A
7.2.23	RPM		As Left		(2)
1.2.23	meader Pre	ss PI-1421E	3,		N/A
	PSIG			· .	
	Oil Press	to Regulato	r, PSIG		N/A
	Oil Press	from Regula	tor, PSIG		N/A
	Oil Temp	to Cooler, °	E		N/A
	Oil Temp.	from Cooler,	°F		N/A
	Cooling Wa	ter Outlet T	emp.		N/A
	Vibration	Horizontal			≤3.0
	Mils*	Vertical			≤1.4
		Horizontal	· · · · · · · · · · · · · · · · · · ·	(1)	N/A
	in/sec*	Vertical		(1)	N/A
	Disch. Pre	ss. PI-1426.			N/A
	PSIG (Reg.	Isolated)			N/A
	Pump Suct.	Press. PI-1	478.		<del> </del>
	PSIG		· - <b>,</b>		≥2.0
7.2.24	Pump AP, PS	SI,			>1/10
[	Disch. Pres	s. PI-1426	(Reg. Isolated)-		≥1412
	Pump Suct.	Press. PI-1	478		≤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 8.1 Page 1 of 2

### PUMP AND VALVE DATA SHEET

REF. STEP	PARAMETER		PUMP T	ESTED	1 ACCI	EPTANCE
NO.			A	B		TERIA
7.2.8	Disch. Press.	PI-1424		N/A		I/A
or	PSIG	PI-1425	N/A			I/A
7.3.8	Suct. Press.	PI-1479		N/A		/A
	PSIG	PI-1480	N/A			7/A
7.2.10	RTGB Flow	FI-1425A		N/A		/A
7.2.16	GPM	FI-1425B		N/A		/A
7.2.22		FI-1425C		N/A		/A
7.2.33	* Pump ΔP				A Pump	B Pump
or	PSID				≥1111,	≥1105.
7.3.20						,  ≤1212 psig
7.2.9	Vibration,	Horizontal			<u> </u>	
or	Mils					•
7.3.9		Vertical				

<sup>\*</sup> Pump ΔP = (Disch. Press.) ~ (Suct. Press.)

REF. STEP	CHECK VALVE	** VERIFICATION OPEN
NO.		(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 8.1 Page 1 of 1

Pump Speed	AS FOUND _	RPP.
•		
-	AS LEFT	RPM

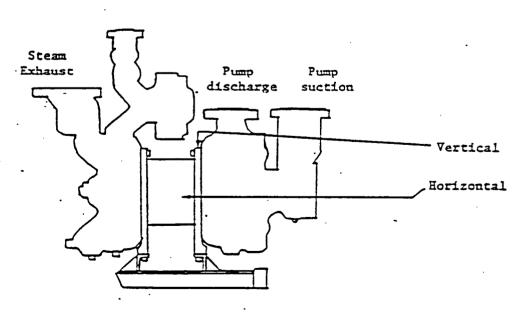
#### **\*VIBRATION DATA**

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







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

Ð

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

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





# 6.0 ACCEPTANCE CRITERIA (Continued)

# 6.1.2.1 STEAM DRIVEN AUXILIARY FEEDWATER PUMP ALLOWABLE RANGES OF TEST QUANTITIES

Parameter	Acceptable	Alert	Day / LA
	(1)	(1)	Required Action (1)
	_	(*)	(1)
Suction Pressure		-	
(PSIG) (2)	≥2.0	<2.0	<2.0
ΔP (PSID) at	-	- Jan 21266	
(2)	and	Low ≥1366	<1366
9400 RPM (3)	≤1548.	<1412	or.
	21340	High >1548	>1563
		≤1563	
Speed (RPM)	≤9550	-	
(4)		>9550	>9600
	and	or	or
	≥9400	<9400	<9400
ibration Amplitude	Horiz. ≤3.0	·	
(Mils)	10112. 53.0	Horiz. >3.0	Horiz. >4.5
	V 41 4	≤4.5	
	Vert. ≤1.4	Vert. >1.4	Vert. >2.1
and the same and t		≤2.1	
eed-Steam AP (PSID)	≥310	1212	
,	2510	<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).

# 6.0 ACCEPTANCE CRITERIA

6.1

PARAMETER	PUMP	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219	RANGE <1075, >1231 psig
· .	В	≥1105, ≤1212 psig	≤1231 psig Low ≥1070, <1105 psig High >1212,	<1070, >1224 psig
Vibration Amplitude (Mils)	A	≤l	≤1224 psig >1 ≤1.5	>1.5
pump fails to	В	≤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 about

- 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.

OST-207 Rev. 8



5.0	SPECIAL TOOI	LS AND	EQUIPMEN
7.0	SPECIAL TOOL	22 WMD	EQUIPMEN

- 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	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.





Company Correspondence

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

100 0 2 989

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. UFSAR Section 15.1 Increase in Heat Removal by the Secondary System
  - 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. UFSAR Section 15.2 Decrease in Heat Removal by the Secondary System
  - 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

Memorandum to R. A. Dayton Attachment 9 to Serial: RNPD/89-3480 Serial: RNPD/89-3124 Page 2 of 2

Page 2

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:1ht

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

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300 300 500 U.S. GALLONS PER MINUTE @ 100 MPS UNINTINGTON PARK C

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7.3 | 1

CUBTOMER CAROLINA POWER   IGHT    120 70 1005     BTEAM: INLET P.B.I.G., QUALITY 350 FTT EXHAUST 0-15 P.B.I.G.  OPERATION BASED ON HAVING 23 FT. LIQUID HEAD ABOVE VAPOR PRESSURE NOT INCLUDED IN CURVE.	PERFORMANCE CURVE NUMBER 7-33632  JDB NUMBER NY 434107  ITEM NUMBER  BIZE PUMP AXS STAGES /  BIZE TURBINE 3X/2 STAGES 2 ROW  TYPE TBA-16 R.P.M. 9400  DATE 11-20-68 BY AMS
10 3400  HEAD CAPACT  10 3400  11 10 3400  12 10 2800  30 10 10 20 300 400 500 6	Andrews was was a second of 1

## AFW SURVEILLANCE TEST INSTRUMENTATION

	<u>C</u>	ALIBRATED INSTRUMENT	CALIBRATED	ACCU:	RACY
*	1.	PI-1479-1			
*	2.	PI-1480-1	-	<u>+</u> 2%	
	3.	PI-1478-1	•	<u>+</u> 2% +2%	
*	4.	PI-1424	-	<u>-</u> ∠% <u>+</u> 2%	
	5.	PI-1425	_	<u>-</u> 2%	
	6.	PI-1426	_	_2 % <u>+</u> 2 %	
	7.	HANDHELD VIBRAMETER mdl.		<u>.</u> 5%	
	8.	STOP WATCH	-	<u>-</u> 0.05	SAC
	9.	PI-1357-2		_0.03 _2%	sec.
*	10.		_		
	11.			_2 %	
	12.			-2%	
*	13.	CONTACT PYROMETER (OPS. HA	NDHELD) -	-5%	
	14.	F1-1425A		-2%	
	15.	:005	-	-2%	
	16.			2%	
	17.		_	4.2%	
	18.	=		0.5%	
	19.	· · · · · · · · · · · · · · · · · · ·		4.2%	
	20.	— · — ·		0.5%	
	21.			0.5%	
	22.	::::5	-	0.5%	
	23.		_	0.5%	
	24.	:::::::::::::::::::::::::::::::::::		1%	
	25.	21235	+	1%	
	26.	:200	<u>+</u>	1%	
	27.		<u>+</u>	2%	
	28.		+	2%	
	29. 30.	FI-1426C	<del>+</del>	2%	
	30. 31.	FT-1426A	<u>+</u>	0.5%	
	32.	FT-1426B	<u>+</u>	0.5%	
	32. 33.	FT-1426C	<u>+</u>	0.5%	
	34.	FY-1426A	<u>+</u>	1%	
	35.	FY-1426B	<u>+</u>	1%	
	36.	FY-1426C	<u>+</u>	1%	
	37.	FCV-6416 V/P	<u>+</u> .	4.2%	
•	J / .	FT-6416	+	0.5%	

<sup>\*</sup> These instruments are used for pump performance determination

# DATA FOR MOTOR DRIVEN AFW PUMP A (OST-201) PAGE 1 OF 1

DATE OF TI	EST FLOW	D		MOL I OF I
	<u> PLOW</u>	DELTA-P	HORIZONTAL <u>VIBRATION</u>	VERTICAL VIBRATION
				<u> </u>
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)

PAGE 1 OF 2

DATE OF TE	<u>FLOW</u>	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)

PAGE 2 OF 2

DATE OF TES	ST 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)

PAGE 1 OF 2

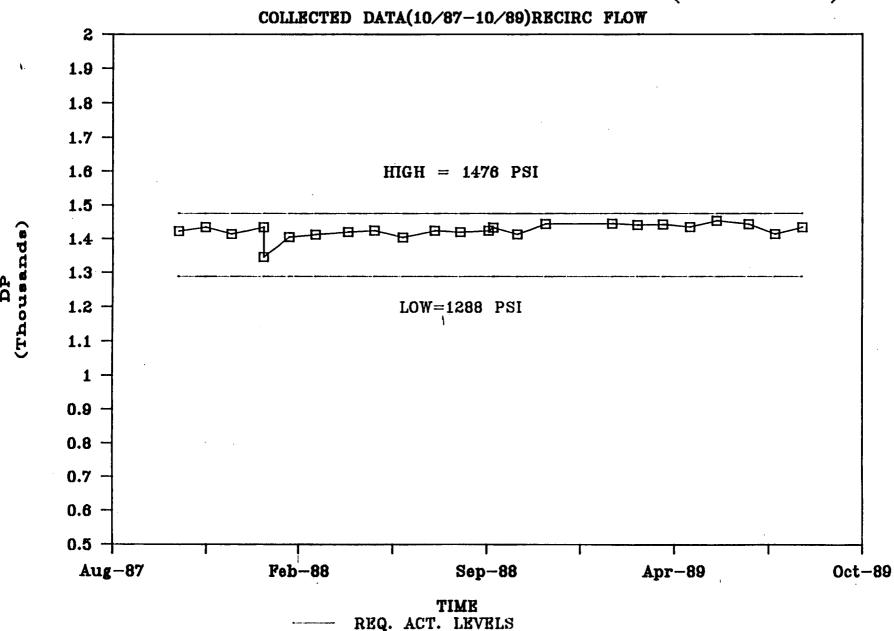
)	DATE OF TE	<u>FLOW</u>	DELTA-P	HORIZONTAL <u>VIBRATION</u>	VERTICAL VIBRATION
	10/21/87	NOT APPLICABLE	1476.0	0.9	0.5
	11/18/87	NOT APPLICABLE	1477.5	0.7	0.4
	12/15/87	NOT APPLICABLE	1517.0	1.0	0.5
	1/05/88	NOT APPLICABLE	1547.5	0.5	0.6
	1/20/88	NOT APPLICABLE	1548.0	0.7	0.6
	3/10/88	NOT APPLICABLE	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
		NOT APPLICABLE	1546.5	2.2	0.9
		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)

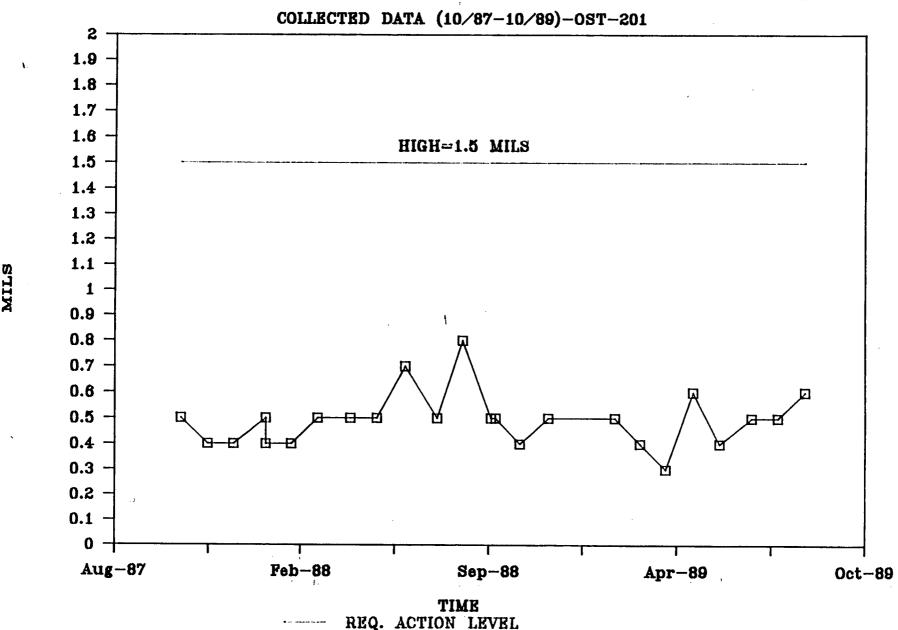
PAGE 2 OF 2

DATE OF TES	<u>FLOW</u>	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

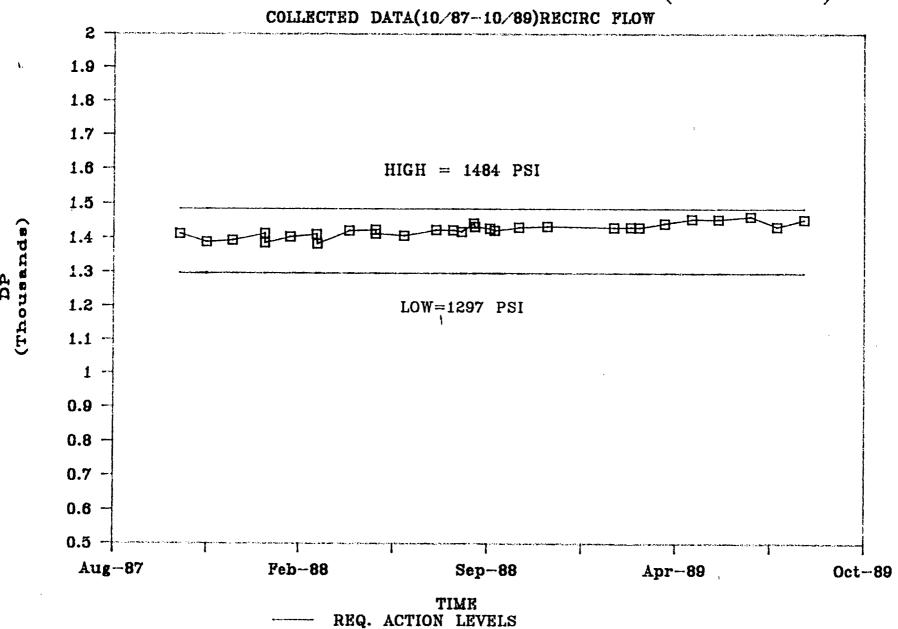
# MOTOR DRIVEN AFW PUMP "A" (OST-201)



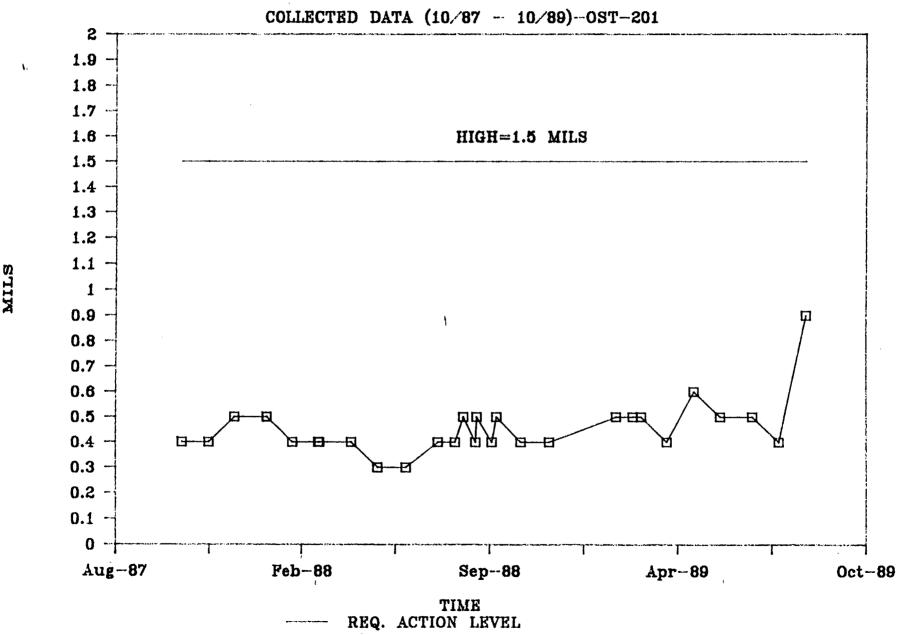
# MOTOR DRIVEN AFW PUMP "A" VIBS. DATA



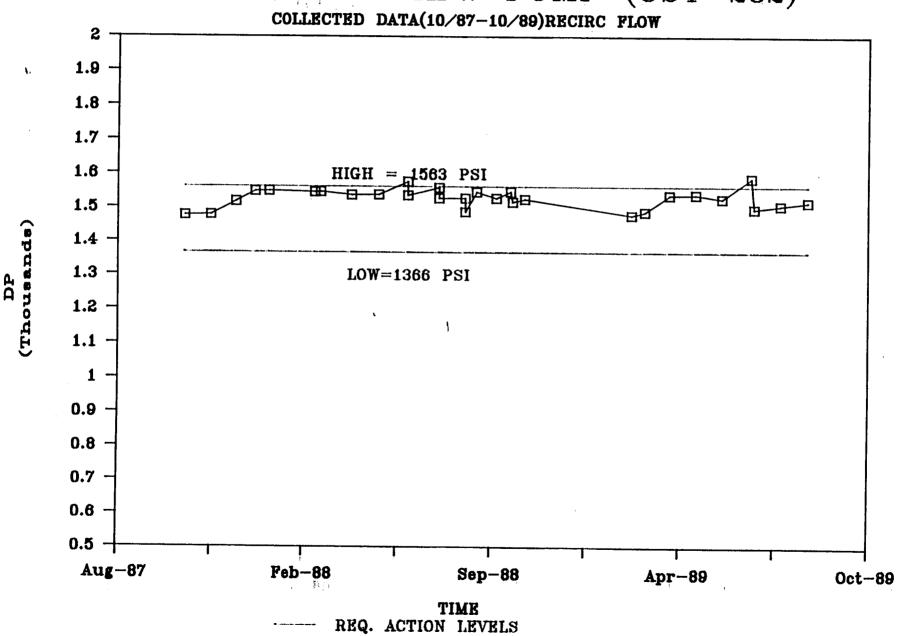
# MOTOR DRIVEN AFW PUMP "B" (OST-201)



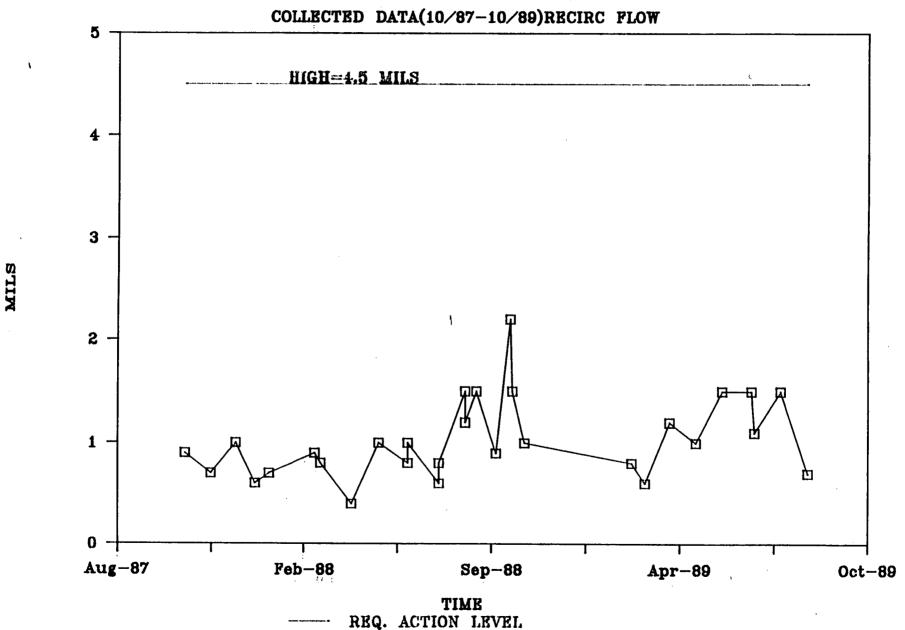
## MOTOR DRIVEN AFW PUMP "B" VIBS. DATA



# STEAM DRIVEN AFW PUMP (OST-202)



# STEAM DRIVEN AFW PUMP VIBS DATA-OST-202



2.0	REFERENCES	
2.1	Technical Specification 4.8.1, 4.8.3, 4. Item 33	8.4 and Table 4.1-1,
2.2	ASME Section XI, Subsections IWP and IWV Addenda	, 1977 Edition, Summer 1978
2.3	OP-402 Auxiliary Feedwater	
2.4	Engineering flow diagrams:	
2.4.1	G-190197, Feedwater, Condensate and Air 1	
2.4.2	G-190199, Service and Cooling Water Syste	
3.0	PREREQUISITES	
3.1	The AFW system components can be tested of power operation when the system is aligne accordance with OP-402, Auxiliary Feedwat	d for standby operation in
3.2	Only one Auxiliary Feed Pump should be te	sted at a time with the
3.3	remaining two pumps on automatic standby.  Where necessary, establish communications the RTGB, the operator at the valves to b  Pumps.	between the operator at
3.4	This revision is the latest revision avai	
	Name (Print) Sign	nature Date
3.5	The Shift Foreman has given his permission	n to conduct this test.
	Bull tot	10 30.87
	Shift Foreman	70 20 87 x

OST-201

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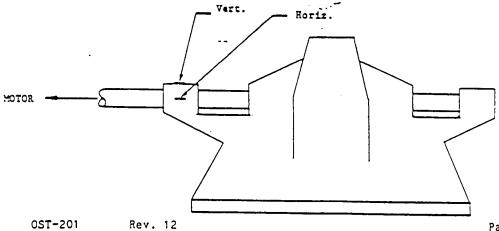
REF. STEP	PARAMET	ER	PUMP '	TESTED	ACCEPT CRITE	
			,		"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424	1430	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1420	N/A	N/A
	Vibration,*	Horiz.	0.5	0,4	\$1.0	≦1.0
	MILS	Vert.	C. 2	C, 29	≤1.0	≦1.0
	Suct. Press.	"A" - PI-1479	8.0	N/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	8,4	N/A	≥4.0
İ	Oil Press. to	Regulator, PSIG	30	15	N/A	N/A
1	Oil Temp. to (		106	100	N/A	N/A
	Oil Temp from		90	94	N/A	N/A
	Oil Sump. Temp		104	90	N/A	N/#
		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 AP		1422	N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)		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)

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



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### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

partial test)		
Test Performed by	Name (Print)  CO WINTELS  STEVE CHOONSON  LU, CUTRIGHT  L. DARNIN	
Test Complete: Date	7 Time 2250	
Paris de la Sala		·
Reviewed by: Unit 2 - Shift	Date 12.20.	<u> </u>
	roreman	<u> </u>
Unit 2 - Shift	roreman	o i im
Unit 2 - Shift	roreman	<u> </u>
Unit 2 - Shift Comments: (Required if results w	vere unsatisfactory)	

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`	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
	2.3	OP-402 Auxiliary Feedwater
	2.4	Engineering flow diagrams:
~•	2.4.1	G-190197, Feedwater, Condensate and Air Evacuation
C 1	2.4.2	G-190199, Service and Cooling Water System
77	3.0	PREREQUISITES
10	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.
<b>*</b> **	3.2	Only one Auxiliary Feed Pump should be tested at a time with the
₩ ;;	3.3	Where necessary, establish communications between the operator at the RTGB, the operator at the valves to be stroked.
	3.4	This revision is the latest revision available and has been verified against the Revision Status List.
	3.5	Name  (Print)  Signature  Date  The Shift Foreman has given his permission to conduct this test.
		Shift Foreman 37
		Date

OST-201 Rev. 15

Page 5 of 23

#### MDAFW PUMP DATA

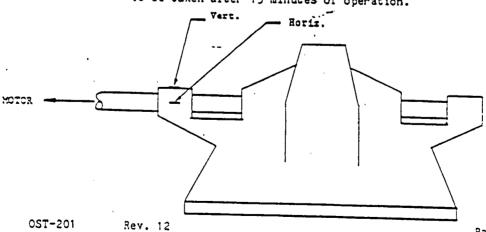
REF. STEP	PARAMET	ER	PUMP "A"	TESTED	ACCEP1 CRITE	
					"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424	140	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1395	N/A	N/A
	Vibration,*	Horiz.	240	.38	≤1.0	≦1.0
	MILS	Vert.	1011-65	.25	≤1.0	≦1.0
•	Suct. Press.	"A" - PI-1479	6.2	N/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	6.5	N/A	≥4.0
	Oil Press. to	Regulator, PSIG	30	15	N/A	N/A
·	Oil Temp. to C	ooler, °F	109	104	N/A	N/A
	Oil Temp from	Cooler, °F	100	93	N/A	N/A
	Oil Sump. Temp	, °F	77	ری میسینین	N/A	N/A
	Cooling Water	Outlet, °F TI-1636	フロ	5172	N/A	N/A
	Header Press.,	PSIG PI-1421A	1425	1460	N/A	N/A
7.2.9	Pump AP		1433,8	N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)		N/A	/388.5	N/A	≧1296 ≦1421

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "A" = (PI-1424) - (PI-1479)

"B" = (PI-1425) - (PI-1480)

33 53 53

# \*To be taken after 15 minutes of operation.



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ATTACHMENT 8.3 Page 1 of 1

#### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

		,		
Test Performed	Initials by 16	Stuce Name  Jim Bucca  Rich Burn		11-11-11-11-11-11-11-11-11-11-11-11-11-
	BCW	B. C. NAL	12 51114	11-1 15 N.
Test Complete:	Date 11-18-57	Time 0410	<del></del>	
Test Satisfacto	ory Yes No (C.	ircle one)		
Reviewed by: _	Unit 2 - Shift	9	11-18-8 Date <u>CS4S</u>	Time
Comments: (Req	uired if results s	vere unsatisfacto	ry)	
	<del>-</del>			
	······································			

	2.0	REFERENCES
	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33
<b>-</b> .	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda
	2.3	OP-402 Auxiliary Feedwater
<u></u>	2.4	Engineering flow diagrams:
, to	2.4.1	G-190197, Feedwater, Condensate and Air Evacuation
တ	2.4.2	G-190199, Service and Cooling Water System
0	3.0	PREREQUISITES
	3.1	The AFW system components can be tested during hot shutdown or
`		power operation when the everemic alimate
		power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.
В В	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	
	3.4	This revision is the latest revision available and has been verified against the Revision Status List.
		BRYAN AMALDSMITH (Print) Brown A. Maldomith 15 Dec 87 Name Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
		Shift Foreman /2-45-87

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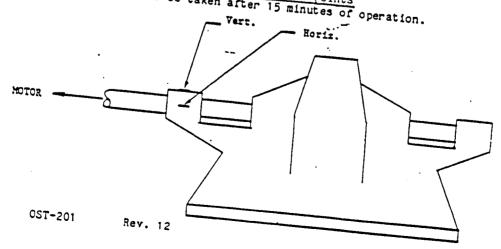
ATTACHMENT 8.1 Page 1 of 1

### MDAFW PUMP DATA

REF. S'	TEP PARAM	ETER				
		s de la company	PUM "A	120150	ACC	EPTANC
7.2.8				"   "B"	CRI	TERIA
or	Disch. Press	"A" - PI-1424			"A"	"E
7.3.8	PSIG		1421	0 0	N/A	N/
	Vibration,*	"B" - PI-1425	0	1400	<del></del>	<del></del>
- 1	- 1	Horiz.	110		<del></del>	N/
1	MILS	Vert.	1.42	-57	≤1.0	≤1.0
•	Suct. Press.	"A" - PI-1479	.24	.30	\$1.0	≤1.0
	PSIG		6.5	N/A	≥4.0	N/A
	017 0-	"B" - PI-1480	N/A	1,2		N/A
1	Oil Press. to F	Regulator, PSIG	30	6.8	N/A	≥4.0
	Ull Temp Con	0.101	102	14.	N/A	N/A
	Oil Sump. Temp,	• F	1 92 7	85	N/A	N/A
L			1 92	86	N/A N/A	N/A
7.2.9		PSIG PI-1421A	72	68	N/A	N/A
	Pump AP		1440	1450 1	N/A	N/A
7.3.9	PSIG, (1)		1413,5	N/A	21333	N/A
			N/A		<b>≤1462</b>	_
C=1		mp ΔP = (Diach	1	1393.2	N/A	≥1296 ≤1421

Calculations: (1) Pump  $\Delta P = (Disch. Press) = (Suct. Press)$   $^{mAn} = (PI-1424) - (PI-1479)$   $^{mBn} = (PI-1425) - (PI-1480)$ 

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



ATTACHMENT 8.3 Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

partial test)	, state reason for t	est and the page num	bers included i
•			
<del></del>			
	i Mariana ya wasa. <mark>Initials</mark>		
Test Performed	<del>7 /                                   </del>	B. C. Mame (Print	FI SMITH 15)
	TOH	70 Hout	12/16
	Jal	John Leon	12.16
	AA-	AFHAley.	12-1
Trans Carrell and		,	
rest Complete:	Date 13/10/87 Ti	me <u>0221</u>	
Test Satisfactor	ry: Yes / No (Circl	(e one)	
en in	1	•	
Reviewed by:	- OL		/2-/6-87 Time
	Unit 2 - Shift Fo	reman	
Comments: (Rec			
Commenca: (YEd)	uired if results were	unsatisfactory)	·
Approved by			/
Approved by:	Unit 2 - Operating	Date Date Date Date Date Date Date Date	:e <u>/</u> 2-23-

		·
	2.0	REFERENCES
	2.1	Tankai da da da
		Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, Item 33
		rem JJ
	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
•		Addenda'
•	2.3	OP=602 Au=:1: P
		OP-402 Auxiliary Feedwater
	2.4	Engineering flow diagrams:
Ó	2.4.1	G-190197, Feedwater, Condensate and Air Evacuation
₩;	. 2.4.2	G-190199, Service and Cooling Water System
· <b>_</b>	3.0	•
0	3.0	PREREQUISITES
	3.1	The AFW system components can be seen to
		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.
<b>6</b> 49-49	3.2	Only one Auxiliary Food Dung about
<b>10</b>		Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.
77	3.3	Where necessary, establish communications between the operator at
C:		the RTGB, the operator at the valves to be stroked, and the MDAFW
•	2 /	rumps.
•	3.4	This revision is the latest revision available and has been
		verified against the Revision Status List.
		(Princ) / 1/0/18
		Name Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
		10 6 0 1

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Page 5 of 23

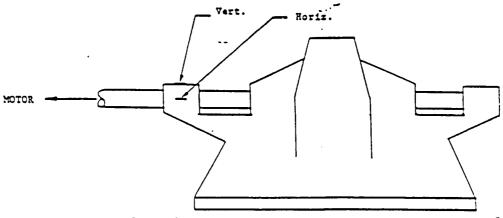
#### MDAFW PUMP DATA

REF. STEP	PARAMET	ER	PUMP T	ESTED	ACCEPTANCE CRITERIA	
110.				- T	"A"	"B"
7.2.8	Disch. Press.	"A" - PI-1424	1350	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1390	N/A	N/A
	Vibration,*	Horiz.	.40	, 50	≤1.0	<b>£1.0</b>
	MILS	Vert.	. 24	122	≦1.0	<b>≦</b> 1.0
	Suct. Press.	"A" - PI-1479	4.7	N/A	≥4.0	N/A
•	PSIG	"B" - PI-1480	N/A	4.5	N/A	24.0
	Oil Press. to	30	15	N/A	N/A	
	Oil Temp. to Cooler, °F		106	95	N/A	N/A
į	Oil Temp from	95	80	N/A	N/A	
	Oil Sump. Tem	9.5	77	N/A	N/A	
	Cooling Water	60	60	N/A	N/A	
	Header Press., PSIG PI-1421A		1500	1450	N/A	N/A
7.2.9	.2.9 Pump AP		1345.3	N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)	N/A	1385.5	N/A	≥1296 ≤1421	

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "A" = (PI-1424) - (PI-1479)

"B" = (PI-1425) - (PI-1480)

# \*To be taken after 15 minutes of operation.



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ATTACHMENT 8.3
Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

(If unscheduled partial test)	i, state reason for	test and the pag	e numbers incl	uded in
Test Performed	Initials by Tolt  SSA	Name ( T. D. H.		Date 1/20/88 4/20/88
Test Complete:	1-24/6 Date A	0700 Time W A	1-27-88	
Test Satisfacto	ry: Yes No (Cir	rcle one)		
Reviewed by:	Unit 2 - Shift	Foreman Da	ite <u> </u>	Time the
stent time  of test, 7	of test, AF  YOF FEED.	was NOT	open at	PDOF
Approved by:	Unit 2 - Operatin	M	Date Z	- 11.88
leviewed by: (	World Coordina	e		

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Page 23 of 23

2.1 Technical Specification 4.3.1, 4.3.3, 4.8.4 and Table 4.1-1,  Item 33  2.2 ASME Section XI, Subsections CWP 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 at	
2.4 Engineering flow diagrams:  2.4.1 G-190197, Feedwater, Condenses	
2.4 Engineering flow diagrams:  2.4.1 G-190197, Feedwater, Condenses	
2.4.1 G-190197, Feedwater, Condenses	
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 about 1	
where necessary, establish com-	
the RTGB, the operator at the valves to be stroked, and the MDAFW.  3.4 This revision is the latest revision available and has been verified against the Revision Status List.	
Mame (Print) When I wond I want of Date	
The Shift Foreman has given his permission to conduct this test.  Shift Foreman  Date	

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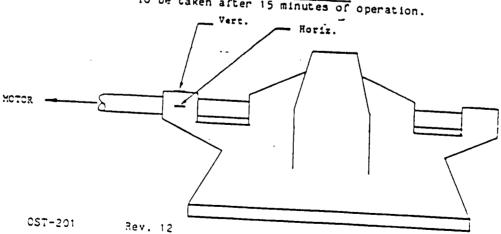
### MDAFW PUMP DATA

REF. STEP	PARAMET	TER	PUMP		Ţ <del></del>	
			"A"	TESTED	ACCEP CRIT	TANCE ERIA
7.2.8	Disch. Press.				"A"	"B"
or 7 3 0		"A" - PI-1424	1440	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1/20	N/A	<del></del>
	Vibration,*	Horiz.	<del></del>	<del> </del>	N/A	N/A
	MILS		1.75	.45	≦1.0	≤1.0
		Vert.	1,2	./	≤1.0	≤1.0
	Suct. Press.	"A" - PI-1479	6-12	N/A	24.0	
	PSIG	"B" - PI-1480		1		N/A
Ì	Oil Press		N/A	6.6	N/A	24.0
	Trans. to Co	Regulator, PSIG	31	15	N/A	N/A
}	Oll Temp from (	Cooler es	152	92	N/A	N/A
ł	Oil Sump. Temp.	, °F	2.2	71	N/A	N/A
f	Header Press.,	Outlet, °F TI-1636	<1,	37	N/A N/A	N/A
.2.9		PSIG PI-1421A	1470	1760	N/A	N/A
•2.9	Pump AP		17-1-1	N/A		
3.9	PSIG, (1)	9	14236		≥1333 ≤1462	N/A
			N/A	11/3.7	N/A	2129
			)	1	1	<b>\$1421</b>

0 2 2

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

# \*To be taken after 15 minutes of operation.



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ATTACHMENT 8.3 Page 1 of 1

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### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

District Control

Sin Court Down 1-2	/	REVIEW FORM
(If unscheduled, state reason for test and the page numbers included in partial test)  Initials   (	Scheduled / Unscheduled (Circle one)	
Test Performed by    Initials   Name (Print)		
Test Performed by    Initials   Name (Print)		partial and the control of the contr
Test Performed by    Initials   Name (Print)		and the page numbers included in
Test Complete: Date / C. M. Circle one)  Reviewed by:  Unit 2 - Shift Foreman  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)		
Test Complete: Date / C. M. Circle one)  Reviewed by:  Unit 2 - Shift Foreman  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)		
Test Complete: Date / C. M. Circle one)  Reviewed by:  Unit 2 - Shift Foreman  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Date (-70 - 8)  Approved by:  Unit 2 - Operating School Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)  Date (-70 - 8)		Initial
Test Complete: Date / 2011 Time / FTS  Test Satisfactory: Yes / No (Circle one)  Reviewed by:	,	lest Performed by Oal
Test Complete: Date / L		(1) " LOO
Test Complete: Date / 2011 Time /FSS  Test Satisfactory: Yes / No (Circle one)  Reviewed by:		210(7)
Test Complete: Date / Long Time / FJS  Test Satisfactory: Yes / No (Circle one)  Reviewed by:		The comment of the co
Test Satisfactory: Yes No (Circle one)  Reviewed by:  Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory)  All My March (March 1964)  Approved by:  Unit 2 - Operating Section Date 1-27-8		1/10/15
Test Satisfactory: Yes No (Circle one)  Reviewed by:  Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory)  All 1944 has a charactery  Approved by:  Unit 2 - Operating Service  Date 1-72-8		Time /FJS
Reviewed by:  Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory)  So-Blica()  All 1944 All  Unit 2 - Operating Survey  Date 1-22-8		Test Satisfactory
Approved by:  Unit 2 - Operating Service (In the Minute of Marine of Marine)  Note: The control of the control		No (Circle one)
Approved by:  Unit 2 - Operating Service (In the Minute of Marine of Marine)  Note: The control of the control	R	eviewed by:
Approved by:  Unit 2 - Operating Service (In the Minute of Marine of Marine)  Note: The control of the control		Unit 2 - Shift Form Date (-70 -87 -: /4
Approved by:  Unit 2 - Operating Service (In the Minute of Marine of Marine)  Note: The control of the control		Toreman Time //t
Approved by:  Unit 2 - Operating Service Date 1-27- 8	C	omments: (Required if results were up and /// #
Approved by:  Unit 2 - Operating Service Date 1-27- 8	-	1311 1425 C - Dala 18 Blice (1)
Approved by:  Unit 2 - Operating Service Date 1-27- 8	-	At 1944 has milded inopenable
Unit 2 - Operating Sur		
Unit 2 - Operating Sur		
Reviewed by: 4160 (C. To buch Date 1/22/53	Ар	proved by:
Reviewed by: 41806 C. To have Date 421/13		Unit 2 - Operating Supervisor Date /- 26 - 5
ISI Coordinator Date 1/31/33	_	2 object 21305
ISI Coordinator Date 1/20/53	Rev	newed by: 41806 Cuto back
		ISI Coordinator Date 1/2:/53
OST-201 Rev. 17	05=	201

	그는 그는 일하다는 전화하는 한 학생들은 한 경기에 되고 있다. 교학들은 한 전환 시간 한 경험을 만난 수가 없다고 하는 학교 가운데
2.0	
*.0	REFERENCES
2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
	Item 33
	·
2.2	ASVP Contra me
	ASHE 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	
2.4.2	G-190197, Feedwater, Condensate and Air Evacuation
4.4.4	G-190199, Service and Cooling Water System
3.0	PREREQUISITES
	•
3.1	The AFN everes seemen
	The AFW system components can be tested during hot shutdown or
	power operation when the system is aligned for standby assuration to
	accordance with OP-402, Auxiliary Feedwater.
3.2	Only one Auxiliary Feed Pump should be tested at a time with the
	remaining two serves on servers be tested at a time with the
.3	remaining two pumps on automatic standby.
	Where necessary, establish communications between the operator at
	the RICE, the operator at the valves to be stroked, and the MDAPY
	· and ·
.4	This revision is the latest revision available and has been
	verified against the Revision Status List.
	Land
	Wil Busine - Wilking
	Print // 17FERS
	Algnature Date
.5	The Shift Foremen has given his permission to wonduct this test.
	harming to sonduct this test.
	$\mathcal{M}$
	Shift Foreman . Date

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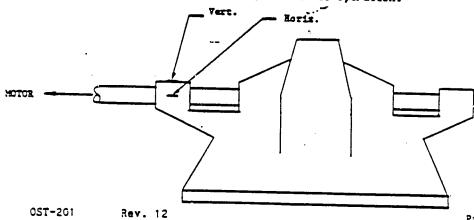
rage 3 of 23

#### MDAFW PUMP DATA

REF. STEP	PARAMETER		PUMP TESTED		ACCEPTANCE	
NO.		"A"	"8"	CRITERIA		
					"Ā"	"B"
7.2.8 or	Disch. Press. "A" - PI-1424		1410	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1410	N/A	N/A
	Vibration,*	Horiz.	.4	.38	≨1.0	≦1.0
	HILS	Vert.	,25	.19	≤1.0	<b>≦</b> 1.0
	Suct. Press.	"A" - PI-1479	6	H/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	6.5	N/A	≥4.0
	Oil Press. to	30	15	N/A	N/A	
	Oil Temp. to C	75	90	N/A	N/A	
	Oil Temp from	80	77	N/A	N/A	
	Oil Sump. Temp	80	20	N/A	N/A	
-	Cooling Water	56	56	N/A	N/A	
~	Header Press.,	1400	1490	N/A	N/A	
7.2.9			1404	N/A	≥1333 ≤1462	N/A
7.3.9			N/A		N/A	≥1296
				1403.5	j	≦1 421

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



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ATTACHMENT 8.3 Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

(If unscheduled, state reason for test and the page numbers included in partial test)  Initials  Initials  Mama (Print)  Date  May (Supples 175688  May (Aux (Downey 2-1)-88
Test Performed by H Majourers 17,688  My May Kink 17,688  My LAUN (. Downey 2-/)-88
Test Complete: Date 2-17-86 Time 0318  Test Satisfactory: Yes / No (Circle one)
Reviewed by: Unit 2 - Shift Foreman Date Z-17-88 Time 0 Cot
Comments: (Required if results were unsatisfactory) STEP 7.3.15 AMT-1425C  88-ACCO, WOLK LEGUEST Suphritled - Flow in dicat  NOFERSON C 03/8 has
Approved by: Date Z-18-88 Unit 2 - Operating Supervisor
Reviewed by: WANCCulchese Date 3/3/88  ISI Coordinator

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	2.0	REFERENCES		
	2.1	Technical Specification 4.8.1, 4.8.3, 4 Item 33	.8.4 and Table 4.	1-1,
	2.2	ASME Section XI, Subsections IWP and IW Addenda	V, 1977 Edition,	Summer 1978
	2.3	OP-402 Auxiliary Feedwater		
a	2.4	Engineering flow diagrams:		
•	2.4.1	G-190197, Feedwater, Condensate and Air	Evacuation	
<del>-</del>	2.4.2	G-190199, Service and Cooling Water Sys	t em	
$\Rightarrow$	3.0	PREREQUISITES		
	3.1	The AFW system components can be tested power operation when the system is align accordance with OP-402, Auxiliary Feedward	ned for standby o	
ss च	3.2	Only one Auxiliary Feed Pump should be remaining two pumps on automatic standb		with the
<i>7</i> 1	3.3	Where necessary, establish communication the RTGB, the operator at the valves to Pumps.	ns between the op	
	3.4	This revision is the latest revision averified against the Revision Status Li	_	een
		<u>Milones</u> (Print) 7	naces	3-15.88
		Name S	gnature	Date
	3.5	The Shift Foreman has given his permiss	ion to conduct th	is test.
		Sland	3-/1	-88-
		Shift Foreman	Da	te

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#### MDAFW PUMP DATA

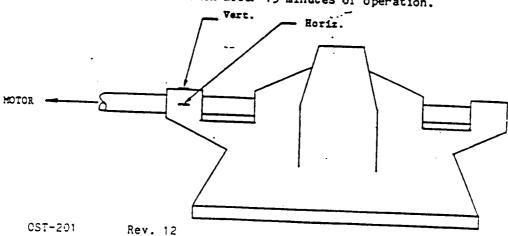
REF. STEP	PARAMETER		PUMP TESTED		ACCEPTANCE	
			"A"	"B"	CRITERIA	
	<del></del>	<del>                                     </del>			"A"	"B"
7.2.8 or	Disch. Press	"A" - PI-1424	1420	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1420	N/A	N/A
	Vibration,*	Horiz.	0.5	0.4	≨1.0	≤1.0
	MILS	Vert.	0,2	0,2	<b>\$1.0</b>	≤1.0
	Suct. Press.	"A" - PI-1479	8.5	N/A	<b>≥4.</b> 0	N/A
ļ	PSIG	"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 C	coler, °F	104	95	N/A	N/A
	Oil Temp from Cooler, °F Oil Sump. Temp, °F		93	89	N/A	N/A
			90	80	N/A	N/A
	Headen Press	Outlet, °F TI-1636	61	6.3	N/A	N/A
	Header Press.,	PSIG PI-1421A	1420	1490	N/A	N/A
7.2.9	Pump AP		1411,5	N/A	≥1333 ≤1462	N/A
-3.7	PSIG, (1)		N/A	1410.8	N/A	≥1296 ≤1421

0; 0

4 55 0

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

# \*To be taken after 15 minutes of operation.



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ATTACHMENT 8.3 Page 1 of 1

### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

(If unscheduled, partial test)	state reason for	test and the	e page numbers in	cluded in
Test Performed by	Initials  my BGW 74	B. C.W.	me (Print) QUES PLDSMITH SMITH	Date 3-16-88 16MAR88 3/16/88
Test Complete: Da	te <u>3/16/88</u> T	ime <u>633</u> 6	0	***************************************
Test Satisfactory:  Reviewed by:	(,2 11		Date 3-16-88	Time <u>0410</u>
Comments: (Require	d if results were	unsatisfact	cory)	
Approved by: Uni	t 2 - Operating	Supervisor	Date <u></u> 3	-27-88
Reviewed by: YW				

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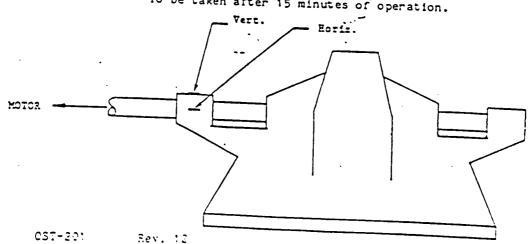
Page 23 of 23

<b>(</b>	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				
8 4	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation 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.				
8 8	3.2	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.				
2	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.  Coch Columny (Print)  Name  Signature  Date				
	3.5	The Shift Foreman has given his permission to conduct this test.  Shift Foreman  Date				
		Date				

		MDAFY PUMP DA				-
REF. STEP.	PARAMETER		PUMP TESTED		ACCEPTANCE CRITERIA	
					"A"	PRIA PRI
7.2.8 or 7.3.8	Disch. Press.		1.125	0	N/A	N/A
1.3.0	PSIG	"B" - PI-1425	0	1424	N/A	N/A
•	Vibration,*	Horiz.	0.5	0.42	≤1.0	≤1.0
	MILS	Vert.	0.15	0.2	<b>≤1.0</b>	\$1.0
	Suct. Press.	"A" - PI-1479	5.8	N/A	<b>≥</b> 4.0	N/A
	PSIG	"B" - PI-1480	N/A	8.25	N/A	≥4.0
	Oil Press. to	Regulator, PSIG	30	16	N/A	N/A
İ	Oil Temp. to Co	poler, or	113	108	N/A	NZA
ł	Oil Sump. Temp	coter, of	104	90	N/A	N/A
	Cooling Water	Outlet, °F TI-1636	100	90	N/A:	- N/A
1	Header Press.,	PSIC DI-1836	٠٦/	7.2	N/A	N/A
.2.9		1010 F1-1421A	1425	1490	N/A	N/A
.3.9	Pump ΔP PSIG, (1)		1419.2	N/A	≥1333 ≤1462	N/A
			. N/A	1420.8	N/A	≥1296 ≤1421

 $\odot$ 

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



Page 20 of 23

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

				_
Test Performed b	Initials y	K. OKWIN	RANGE Demy	<u>Date</u> 4/19/88
	(A) Sima.	$\frac{M}{M}$	C/C Stree A+1	La 4-19-58
	તેશ્વ	TEWhite.		4/19/88
		M. Roband		4-20-55
7:7 Test Complete:	J 1-5 1/19-88	Time //25		
			-	
Test Satisfactor	ry: Yes / No (Cir	ccle one)		
Reviewed by:	BAT		ate 1/2,8	8 Time /2/
	Unit 2 - Shift			T Till C
Comments: (Requ	ired if results w	ere unsatisfactor	y)	

	2.0	REFERENCES
	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1.
	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978.
:	<b>2. F</b>	OP-407 Auxiliary Feedwarer
0 4	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, Service and Cooling Water System  PREREQUISITES
n 0	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.
5 50 70 70	3.2	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.  Where necessary, establish communications between the operator at the RTCB, the operator at the valves to be stroked, and the MDAFW Pumps.  This revision is the latest revision available and has been verified against the Revision of the stroked.
	3.5	Name (Print) Jank Plandi 5-17-98  Signature Date  The Shift Foreman has given his permission to conduct the
		Shift Foreman Date

OST-201 Rev. 15

### MDAFW PUMP DATA

REF. STER	FARAMETER		Diagram			
7.0.0			PUMP		ACCEPTANCE CRITERIA	
7.2.8 or	Disch. Press	"A" - PI-1424			"A"	"B"
7.3.8	PSIG	"B" - PI-1425	1430	C	N/A	N/A
	Vibration,*	Horiz.	0	1430	N/A	N/A
	MILS	Vert.	0.5	0.35	<b>\$1.0</b>	≦1.0
	Suct. Press.	"A" - PI-1479	0.24	0.22	≦1.0	≦1.0
l	PSIG	"8" - PI-1480	6,5	N/A	≥4.0	N/A
ļ	Oil Press. to	P	N/A	12.75	N/A	≥4.0
	Oil Temp from	Cooling of	130	15	N/A	N/A
Ļ		9.5	105		N/A	N/A
-	COOTING Maton	COTTINE Water Co.		100	N/A	N/A
1	Header Press.,	PSIC DY 11-1636	31	98	N/A	N/A
		. 010 PI-1421A		-57	N/A	N/A
]	Ришр ДР		1440	1475	N/A	N/A
3.9	PSIG, (1)		14235 N/A	N/A	≥1333 ≤1462	N/A
			1 1	1423.25	N/A	≥1296 ≤1421

LO S 3 0

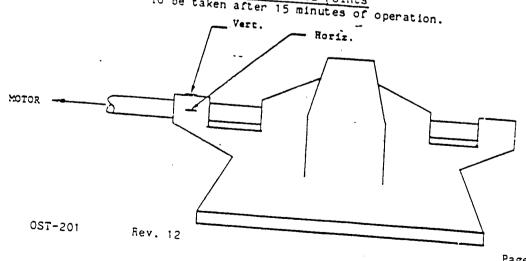
L 7 LO

Ċ

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "A" = (PI-1424) - (PI-1479)

"B" = (PI-1425) - (PI-1480)

# \*To be taken after 15 minutes of operation.



## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

partial test;	led, state reason for )			luded
Test Performe	Initials do by Diff.	Mame M. Pobox F. PAKININ		5-
	<u>dew</u>	TEXOL: te		5/1
Test Complete:	: Date 5/18/08	Time OZW		
	tory: (Yes / No (Cir		<del></del>	
Reviewed by: _	Unit 2 - Shift	Foreman	Date <u>5/18/88</u>	Time
GIND PM GILGESTH SEEWA # S	equired if results we  Alter Rowie - 1  Amether to the  REFERENCE for AC  SE AFLUI TO CALL	LEPTANIE FOR F	BI KE-PAN ON OST WAS ACCED. UMP DP IN P	RD A. VERT
Approved by:	Unit 2 - Operating	Supervisor	Date	Z (/-
Reviewed by:		424	Date <u>6/16</u>	<u> 188</u>

	2.0	REFERENCES
	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
·.	2.3	OP-402 Auxiliary Feedwater
120	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, Service and Cooling Water System
9	3.0	PREREQUISITES
0 3	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 Food D
<u>م</u> ت	3.3	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.  Where necessary, establish communications between the operator at the RTCB, the operator at the valves to be stand
2 23	3.4	the RTGB, the operator at the valves to be scroked, and the MDAFW This revision is the latest revision available and has been verified against the Revision Status List.
		Name (Print) Jim The State
	3.5	The Shift Foreman has given his permission to conduct this test.  Shift Foreman  Date
		Dace

OST-201 Rev. 15

REF. STEP	PARAMET	TER	PUMP "A"	TESTED	ACCEPT	
			] " <b>A</b> "	"B"	CRITERIA	
2 0 0					"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424	N/A	C	N/A	N/A
7.3.8	PSIG	"B" - PI-1425		1420	N/A	N/A
	Vibration,*	Horiz.		0 .35	≤1.0	≦1.0
	MILS	Vert.		0 . 22		<b>≤1.0</b>
	Suct. Press.	"A" - PI-1479	1 1/	N/A	<u>/</u> € ≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	7.0	N/A	≥4.0
	Oil Press. to	Regulator, PSIG	N/4	15		
•	Oil Temp. to C	coler °F	14,7,24		N/A	N/A
	Oil Temp from	Cooler of	<del> </del> -	:111	N/A	N/A
	Oil Sump. Temp, °F		<del>  </del>	:100	N/A	N/A
1	Cooling Water Outlet, °F TI-1636		<del>  </del>	96	N/A	N/A
Ī	Header Press.,	PSIG PT-1/214	<del>  </del>	62	N/A	N/A
		AISPI-14 DIG		1475	N/A	N/A
7.2.9	Pump ΔP PSIG, (1)	·	V	N/A	21333 ≤1462	N/A
		i	N/A	1413	N/A	≥129 ≤142

3

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7.3 A

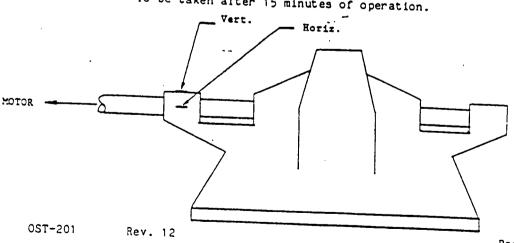
Ç:

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "A" = (PI-1424) - (PI-1479)

"B" = (PI-1425) - (PI-1480)

Scale.

\*To be taken after 15 minutes of operation.



## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

partial test)	fl-1-10, 13-15, 19 BP	-20 23 Kene	T & MANI	v pr
Test Performed	by July	Name (Pr Tewhite M Robin	int)	Dat 5/18/5; 5-16
	Date <u>3/18/85</u> Ti			
	Muntes Unit 2 - Shift Fo	Dat	e <u>5/18/48</u>	Time <u>/</u>
Comments: (Re ON & MD. MECT RANGE	equired if results were New Kimp No Vinch	e unsatisfactory g RimP DP. P.	THIS 057 Exicus DP	was fi was in
Approved by:	Unit 2 - Operating	terz Supervisor	Date	- 24-5
Reviewed by:	WMOC. T		Date <u>(e/</u>	16 188

OST-201 Rev. 17

Page 23 of 23

P.39 of 39

	2.0	REFERENCES
	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
**************************************	2.3	OP-402 Auxiliary Feedwater
M	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, Service and Cooling Water System
4 6	3.0	PREREQUISITES
0	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.
2568	3.2	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.  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) J. Hecutt 6/17/88  Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.  Shift Foreman  Description:
		Date

REF. STE	PARAME	TER	PUMF			
			"A"		CRI	PTANCE TERIA
7.2.8 or	Disch. Press	"A" - PI-1424	W 10		"A"	"B"
7.3.8	PSIG	"B" - PI-1425	1410	10	N/A	N/A
	Vibration,*	Horiz.	10	1415	N/A	N/A
	MILS	Vert.	1.65	+	≤1.0	≦1.0
	Suct. Press.	"A" - PI-1479	1.40	.30	\$1.0	≦1.0
	PSIG	"B" - PI-1480	7.0	N/A	≥4.0	N/A
	Oil Press. to P	Daniel I	N/A	8.0	N/A	≥4.0
	Oil Temp from 6	oler, or	29	15	N/A	N/A
		0.00	1.10	104	N/A N/A	N/A N/A
	Header Press.,	utlet, °F TI-1636 PSIG PI-14214	110 36	36	N/A N/A	N/A
2.9	Ришр ДР		. 1400	1450	N/A	N/A N/A
3.9	PSIG, (1)		1403	N/A	≥1333 ≤1462	N/A
			N/A	1407	N/A	≥1296 ≤1421

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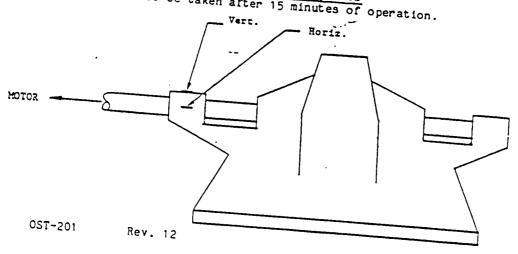
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c:

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "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

(If unsche	duled, state reason f	or test and the page numbers in	ncluded in
Test Perfor	Initials  med by TDH  (4)	Name (Print) T.D. Hocutt L.J. CUTR K. HT  144 WINGON	- Introd
Test Complet	ctory: Yes / No (Ci	Time	
	Unit 2 - Shift	<i>h (</i>	
Comments: (E	Required if results we	ere unsatisfactory)	
		Pare unsatisfactory)  Date  Supervisor	

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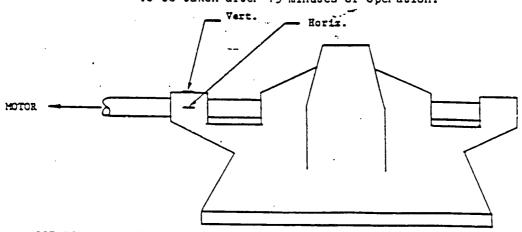
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100		•
	2.0	REFERENCES
	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
	••	Item 33 Tem 33
	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
	2.3	OP-402 Auxiliary Feedwater
ias Lati	2.4	Engineering 51
0 34 5 4 5	2.4.1	Engineering flow diagrams:
0	2.4.2	G-190197, Feedwater, Condensate and Air Evacuation
ို တ		G-190199, Service and Cooling Water System
ហ	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 Purp charter
· 9	3.3	Where necessary, establish and
्र		the RTGB, the operator at the valves to be stroked, and the MDAFW
`\	3.4	Pumps. Pumps.
	•••	This revision is the latest revision available and has been verified against the Revision Status List.
		DAN AVERS ON
		Name (Print) Con 7/19/38
	3.5	The Shift Foreman has given his permission to conduct this test.
		Shift Foreman 7/19/88
		Date
		•

REF. STEP	r A RAMET	FARAMETER		ESTED "B"	ACCEPTANCE CRITERIA	
				ا جدار	"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424 .	480	140	N/A	N/A
7.3.8	PSIG	"B" - PI-1425 O	-11/30	1430	N/A	N/A
	Vibration,*	Horiz.	.50	0.37	≦1.0	<b>≦1.</b> 0
	MILS	Vert.	.07	1.25	≦1.0	<b>≦</b> 1.0
	Suct. Press.	"A" - PI-1479	6.3	N/A	≥4.0	N/A
	PSIG	"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		./34	117	N/A	N/A
	Oil Temp from Cooler, °F		118	110	N/A	N/A
	Oil Sump. Temp, °F		119	1/0	N/A	N/A
Į	Cooling Water	94	96	N/A	N/A	
	Header Press.	PSIG PI-1421A	1430	1480	N/A	N/A
7.2.9	Pump AP		1423-7	N/A	≥1333 ·≤1462	N/A
7.3.9	PSIG, (1)		N/A	1423:2	N/A	≥1296 ≤1421

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

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



OST-201 Rev. 12

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CI

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	Scheduled / Unscheduled (Circle one)
Çefi ( Cust o	(If unscheduled, state reason for test and the page numbers included in
•	
0 5 8 7	Initials   I.A. W. Week   7/21/58   Name (Print)   Date     David A. Cook   7/19/8     David A. Cook   7/19/8     David A. Cook   7/19/8     David A. Cook   7/21/88     David A. Cook   7/21/88
	Test Complete: Date 7-21-88 Time 115
	Test Satisfactory: Yes / No (Circle one)
6   6	Reviewed by:  Unit 2 - Shift Foreman  Date 7/21/88 Time 7/15
~	Comments: (Required if results was
in a conse	ON'S PURP DISCHARGE GALE IN ALERT RANGE WROTE WRT 88-AGEN!
	The ost class test A+B M/O AFW Con F1-1426A BIS. V2-26A Sich tim reinfiel after gachin at intend. CCTA #15
	Approved by: Date
	Reviewed by: WANCCutcheox 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
स्त्र <u>।</u>	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, Service and Cooling Water System
10	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.
7	3.2	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.
2 h 0	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
	3.5	The Shift Foreman has given his permission to conduct this test.
. •		Shift Foreman Date

REF. STEP NO.	PARAME	TER	PUMP	TESTED	ACCEP	TANCE
		•	"A"	"B"	CRITERIA	
7.2.8					"A"	"B"
or	Disch. Press	"A" - PI-1424	NA	<i>E</i> :	N/A	N/A
7.3.8	PSIG	"B" - PI-1425		0	N/A	
	Vibration,*	Horiz.	1/1	1430		N/A
	MILS	Vert.	NA	1.4	≤1.0	≦1.0
	Suct. B.		NA	,23	≤1.0	≦1.0
	Suct. Press.	"A" - PI-1479	NA	N/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	7.3	N/A	≥4.0
	Oil Press. to	Regulator, PSIG	NA	15	N/A	
j	Oil Temp. to C	Cooler, or	MA	116	N/A	N/A N/A
	Oil Sump. Temp	cooler, or	MA	106	N/A	N/A
Ī	Cooling Water	Outlet, °F TI-1636	1/2	104	N/A	N/A
Ī	Header Press.	PSIG PI-1421A	NA	uru	N/A	N/A
.2.9		. 510 11 1421X	MA	1480	N/A	N/A
•3.9	Pump ΔP PSIG, (1)	·	NA	N/A	≥1333 ≤1462	N/A
			N/A	1422.7	H/A	≥129 ≤142

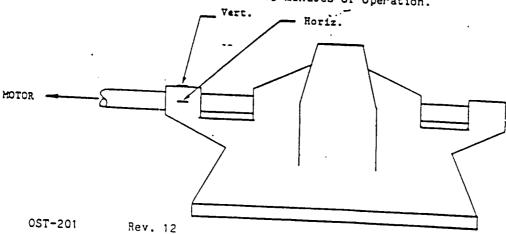
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(;)

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

## \*To be taken after 15 minutes of operation.



## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	B pump in THE REAT RANGE (p.
Test Performed	Eltholes 8/
Test Complete:	Date \$ -8-88 Time 155-8
Test Satisfactor	y: Yes / No (Circle one)
Reviewed by:	
Comments: (Requi	ired if results were unsatisfactory) BAFW Motor
	( ) 2 W C 12
Approved by:	Unit 2 - Operating Supervisor Date 8.10 88

OST-201

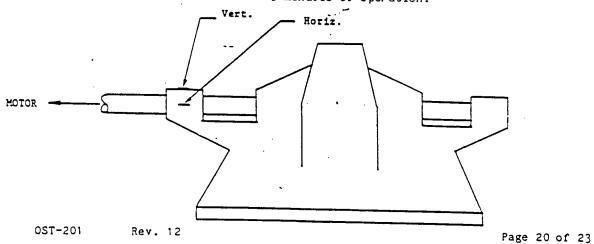
REF. STEP	PARAMET	ER	PUMP T	ESTED "B"	ACCEPTANCE CRITERIA	
		4	8/1688		"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424	\$.1425	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1425	N/A	N/A
	Vibration,*	Horiz.	.85	,52	≤1.0	≤1.0
	MILS	Vert.	. 30	,35	<b>\$1.0</b>	<u>≤</u> 1.0
	Suct. Press.	"A" - PI-1479	5.9	N/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	6.7	N/A	≥4.0
	Oil Press. to	30	15	N/A	N/A	
	Oil Temp. to C	120	115	N/A	N/A	
•	Oil Temp from	1.10	1.05	N/A	N/A	
	Oil Sump. Temp	1/2	106	N/A	N/A	
		Outlet, °F TI-1636	98	45	N/A	N/A
	neader Press.,	PSIG PI-1421A	1425	1475	N/A :	N/A
7.2.9	Pump AP	•	1419.1	N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)		N/A	1418,3	N/A	≥1296 ≤1421

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

 $\circ$ :

c:

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



#### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	16-	1/2 (1)		<del></del>
Test Performed	Initials  by W8	11.A. W.II Name 12. E = (1). CUTRIGH	STOJER	<u> </u>
	70H	J.D. H. L. SHANE DAN AKE	ocult	- <u>*</u> - <u>-</u>
Test Complete:	Date 8/17/18	Time 000 )	<del></del>	عق -
Test Satisfacto	ory: Yes / No (C	ircle one)		;
Reviewed by:	Unit 2 - Shift	t Foreman	Date <u>8/17/</u>	Tir
Comments: (Req	quired if results :	were unsatisfacto	ry)	

OST-201 Rev. 17

y Y	• •	
시 : 	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
3)		Item 33
્રે ક	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
, a •		Addenda
	2.3	OP-402 Auxiliary Feedwater
Ž	~~~	or for Maximary reedwater
જ જે	2.4	Engineering flow diagrams:
Į.	C:2.4.1	G-190197, Feedwater, Condensate and Air Evacuation
d	m 2.4.2	G-190199, Service and Cooling Water System
4		
$^{1}L$	3.0	PREREQUISITES
	0	
Ρ	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
T	ru	remaining two pumps on automatic standby.
. <b>Ц</b>	<b>9</b> 3.3	Where necessary, establish communications between the operator at
•	7	the RTGB, the operator at the valves to be stroked, and the MDAFW
C		Pumps.
·	3.4	This revision is the latest revision available and has been
		verified against the Revision Status List.
		Bick Burnell (Print State 18 15 for
		Name Signature Date
		A
	3.5	The Shift Foreman has given his permission to conduct this test.
		XX
		8-70.85

REFERENCES

REF. STEP	PARAMET	TER	PUMP	TESTED	400500	LANCE
NO.		·	"A"	"B"	ACCEP? CRITE	
					"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424	دام	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	1	1450	N/A	N/A
	Vibration,*	Horiz.		0.21	<b>\$1.0</b>	≤1.0
	MILS	Vert.		0.3	≦1.0	<b>≦</b> 1.0
	Suct. Press.	"A" - PI-1479		N/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	6.9	N/A	≥4.C
	Oil Press. to	Regulator, PSIG	l Nh	15	N/A	N/A
•	Oil Temp to Cooler, °F Oil Temp from Cooler, °F Oil Sump. Temp, °F Cooling Water Outlet, °F TI-1636			116	N/A	N/A
				106	N/A	N/A
-				105	N/A	N/A
	Header Press	Outlet, of TI-1636		05	N/A	N/A
		PSIG PI-1421A	1 - 1	1470	N/A	N/A
7.2.9	Pump AP			N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)		N/A		N/A	≥129
	•			1443.1	·" ^	£129 ≤142

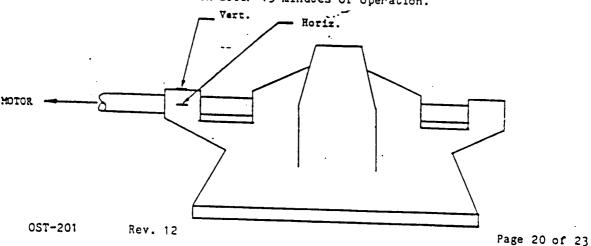
Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "A" = (PI-1424) - (PI-1479)

"B" = (PI-1425) - (PI-1480)

S

2 5

\*To be taken after 15 minutes of operation.



Page 23 of 23

# SURVEILLANCE TEST PROCEDURE . CERTIFICATION AND REVIEW FORM

	lis ost	Run Due 7	O B Jan	D Zeine in	18(1)
	Test Performed	Initials by Our  A-	Rick Bur-	e (Print)	- <u>F/sec</u> - <u>\$ - 3</u>
	Cest Complete:	Date 5:30-98			
		ry: Yes /No (Ci			
F	eviewed by:	Unit 2 - Shift	Foreman	Date 5-30-5	_ Time
	B Afw  WAS FIR	nired if results we  De (IARE) 00°  ST TIME 05T  HESSURE	ere unsatisfacto	ory)	
Αį	proved by:	Unit 2 - Operation	ه Supervisor	Date	7-5
		West Continu	al.	Date9/a	5/8:8

		,
	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
	2.3	OP-402 Auxiliary Feedwater
	2.4	Engineering flow diagrams:
~	2.4.1	G-190107 Factors:
<b>.</b> .	2.4.2	G-190197, Feedwater, Condensate and Air Evacuation
īU		G-190199, Service and Cooling Water System
(-)	3.0	DREDEGUZATOR
C		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 Population
• :		Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.
	3.3	- remps on automatic grandh.
		Where necessary, establish communications between the operator at
•		the RTGB, the operator at the valves to be stroked, and the MDAFW
	3.4	
		This revision is the latest revision available and has been
		verified against the Revision Status List.
		Kolustic III
		Name (Print) / 1/1/55
		Signature
	3.5	The Shift Same
		The Shift Foreman has given his permission to conduct this test.
		Shift Foreman 8-31-80
		Date

OST-201

Rev. 15

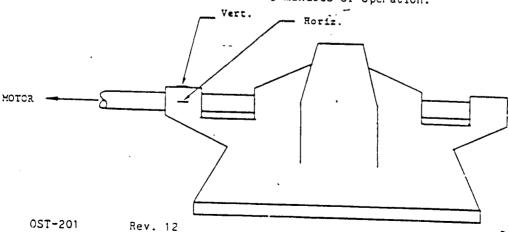
Page 5 of 23

REF. STEP	PARAMET	ER	PUMP	TESTED	ACCEPTANCE CRITERIA	
			^	""		
7.00					"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424	NIL	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425		1440	N/A	N/A
	Vibration,*	Horiz.		.45	≦1.0	≦1.0
	MILS	Vert.		-32	\$1.0	≤1.0
	Suct. Press.	"A" - PI-1479		N/A	≥4.0	N/A
	PSIG	"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 C	coler, °F	-	116	N/A	N/A
	Oil Temp from Oil Sump. Temp	Cooler, or		136	N/A	N/A
	Cooling Water	0111101 05 05		107	N/A	N/A
	Header Press	Outlet, °F TI-1636 PSIG PI-1421A	<del>                                     </del>	44	N/A	N/A
	110000. 77 000.,	7310 P1-1421A		1405	N/A ·	N/A
7.2.9	Pump AP			N/A	21333	N/A
7.3.9	PSIG, (1)		N/A	<del> </del>	≦1462	
			11/ 1	1432.7	N/A	≥1296 ≤1421

:: :::

> Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "A" = (PI-1424) - (PI-1479) "B" = (PI-1425) - (PI-1480)

## \*To be taken after 15 minutes of operation.



#### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

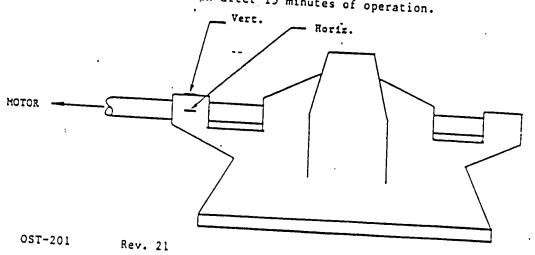
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Test Performed by A Role Concernity  A Concernity  A DENTITY	Da 3 - 3 1 3 1 5,
Test Complete: Date Y-3/-88 Time 11255	÷
Test Satisfactory: Res / No (Circle one)	;
Reviewed by: Date	31-88 Time
Unit 2 Shift Foreman	
Reviewed by:  Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory) 1/1/2  V-2TING THE NEW DISPOSED THE PRESSURE GIVE TE-192  Run 05T-201 SHOWED THE DY IN THE REGULARIS ACTIONS  AT 2100, THIS 05T-21 (NTEX OUTTING GIVE) SHOWS THE ACERT KANCE (WHEXE IT GIVES BETELE-	S. THE TREET
Comments: (Required if results were unsatisfactory) 1/11/2  VENTING THE NEW DISPINATE PRESSURE GIVE TE-14:  KUN 05T-201 SHOWED THE OF IN THE PEGUNKED ACTION  AT 2100, THIS 05T-21 (ATTEX CURTING CHOCK) SHOWS	S. THE TREET ON TO BE SUM S-30-88

OST-201 Rev. 17

	2.0	REFERENCES
	2.1	Tachnical 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
	2.3	OP-402 Auxiliary Feedwater
0 3	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, Service and Cooling Water System
	3.0	PREREQUISITES
C)	3.1	The AFW system components can be tested during hot shutdown or colors.  From power operation when the system is aligned for standby operation in accordance with OP-402, Auxiliary Feedwater.
(m	3.2	Only one Auxiliary Feed Pump should be tested at a time with the
77 -0 -1:	3.3	remaining two pumps on automatic standby.  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.  Grea Torice (Print) Inco fails 9.888  Name / Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test. $9 - 1/3 - 88$
		Shift Foreman Pate

REF. STE	PARAME	TER	PUME	TESTED	ACCE	PTANCE
			"A"		L CRI1	TERIA
7.2.8 or	Disch. Press	. "A" - PI-1424	a managan	t Bakara	''A''	"B"
7.3.8	PSIC		* 1430	0.	N/A	N/A
	Vibration,*	"B" - PI-1425	0	1435	N/A	N/A
		As the first three first	.54		≤1.0	1.0
	MILS	Vert.	.22	.28	≤1.0	1.0
	Suct. Press.	"A" - PI-1479	6.6	N/A	≥4.0	
	PSIC	"B" - PI-1480	N/A	1	· · · · · · · · · · · · · · · · · · ·	N/A
	Oil Press. to	Regulator, PSIG	00	7.1	·N/A	≥4.0
			30	15	N/A	N/A
	Oil Temp from Oil Sump. Temp	Cooler, °F	108	109	N/A	N/A
· 1	Cooling Ware	• F		96	N/A	N/A
	Header Press	Outlet, °F TI-1636	80	84	N/A	N/A
		PSIG PI-1421A			N/A	N/A
.2.9	Pump AP		1425	1450	N/A	N/A
.3.9	PSIC, (1)		1423.4	N/A	≥1333 ≤1462	N/A
			N/A	1427.9	N/A	≥1340
			į l	1401.1		≤1470

# <u>Vibration Data Points</u> \*To be taken after 15 minutes of operation.



#### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	scheduled Circle of			-
(If unscheduled	, state reason for	test and the page	numbers incl	luded in
partial test)	Performed d	ne to main	Henence	Completed
caring out	are and to	C.P-002,		<del></del>
	Initials	Name (P	rint)	Date
Test Performed	by St. TE.	Gier Toyle	~	9-16-58
	18	KonA SM	1714	9/16/88
	- 1-co	K. C. JUAL	U. 11 - 12	316 460
			<del></del>	
Test Complete:	Date 9-115-88	Time 1400		
	<u></u>		•	
Test Satisfacto	ory: Yes / No (Cir	cle one)		
Reviewed by:	Unit 2 - Shift	Da	te 9-16-80	Time 14/5
	onic 2 - Shire	Foreman		
Comments: (Pag	uiand if manufacture			
John (Ked	uired if results we	re unsatisfactory	)	<del></del>
	·			
	<b>\</b>			
Approved by:	Unit 2 - Operation	o Cuarania	Date	179 12
	onic 2 - Operatin	g supervisor		
Reviewed hv:	LUSALO Cutak	(	- 4/	la lac
	ISI Coordina	tor .	Date <u>9//</u> 3	23/38

OST-201 Rev. 17

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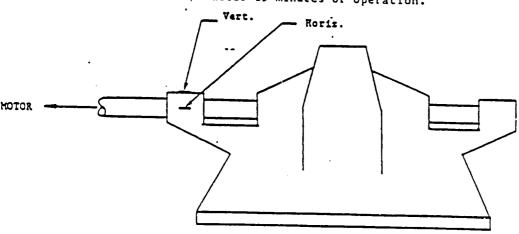
2.0	REFERENCES
2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1, from 33
2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
2.3	OP-402 Auxiliary Feedwater
2.4	Engineering flow diagrams:
2.4.1	G-190197, Feedwater, Condensate and Air Evacuation
2.4.2	G-190199, Service 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 MDAGE
3.4	Pumps.  This revision is the latest revision available and has been verified against the Revision Status List.
	Name (Print) Thout 9/20/88  Signature Date
3.5	The Shift Foreman has given his permission to conduct this test.
	19
	Shift Foreman Date

REF. STEP	PARAMETER		PUMP TESTED		ACCEPTANCE CRITERIA		
			•			"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424		1440	0	N/A	N/A
7.3.8	PSIC	"B" - PI-1425		0	1430	N/A	N/A
	Vibration,*	Horiz.	म्पूर	15372	.45	≤1.0	1.0
	MILS	Vann	10H	.2 2*	,51	≤1.0	1.0
i	Suct. Press.	"A" - PI-1479		7.2	N/A	≥4.0	N/A
	PSIG	"8" - PI-1480		N/A	7.9	N/A	≥4.0
	Oil Press. to	Regulator, PSIG		30	14	N/A	N/A
	Oil Temp. to C	ooler, F		115	110	N/A	N/A
i	Oil Temp from	Cooler, F		103	98	N/A	N/A
	Oil Sump. Temp	, F		104	49	N/A	N/A
	Cooling Water	Outlet, F TI-16	36	29	90	N/A	N/A
	Header Press.,	PSIG PI-1421A		1430	1460	N/A	N/A
7.2.9	Pump AP			1432.8	N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)			N/A	1422.1	N/A	≥1340 ≤1470

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$ "A" = (PI-1424) - (PI-1479)

"3" = (PI-1425) - (PI-1480)

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



OST-201

Rev. 21

#### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Test Performed	by ToH	T. D. H W. CUTRIGH	(Print)	9-3 9-3
Test Complete:	Date 912188	Time 0322	·	
Test Satisfact	ory: Yes / No (Cir	cle one)		
Reviewed by:	LOX Sen	D	ate <u>9/21/88</u>	Time
	Unit 2 - Shift	tor aman		
	Unit 2 - Shift quired if results we	re unsatisfactor	у)	
		re unsatisfactor	у)	
Comments: (Red				

OST-201 Rev. 17

	2.0	REFERENCES
	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
	2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
	2.3	OP-402 Auxiliary Feedwater
4 3 0	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, Service and Cooling Water System
	3.1	PREREQUISITES  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 Feedwards
Ln	3.2	
6 5	3.3	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.  Where necessary, establish communications between the operator at the RTCB, the operator at the valves to be at the operator.
Q	3.4	the RTCB, the operator at the valves to be stroked, and the MDAFW  Pumps.  This revision is the latest revision available and has been verified against the Revision Status List.
		Name (Print) Colored (Print) Signature Date
:	3.5	The Shift Foreman has given his permission to conduct this test.    10-11-88   Date

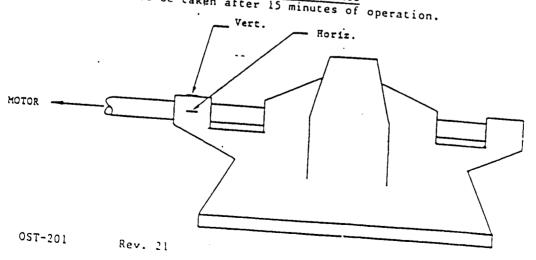
REF. STE	PARAM	ETER			-	
			PUME "A"	TESTED	ACCE	PTANCE TERIA
7.2.8 or	Disch. Press	"A" - PI-1424			"A"	"B"
7.3.8	PSIC	"B" - PI-1425	1420	0	N/A	N/A
	Vibration,*	Horiz.	10	1440	N/A	N/A
	MILS	Vert.	1,38	.4	<1.0	1.0
	Suct. Press.	"A" - PI-1479	1.2	1,2	≤1.0	1.0
	PSIG	"B" - PI-1480	12	N/A	≥4.0	N/A
	Oil Press. to	0 -	N/A	8.4	N/A	≥4.0
	Oil Temp from	Cooler, F	700	15	N/A	N/A
	Cooling Water	, °F	90	90	N/A N/A	N/A N/A
	Header Press.,	PSIG PI-1421A	73	90 78	N/A N/A	N/A N/A
2.9	Pump AP		1425	1460	N/A	N/A
3.9	PSIC, (1)		14/3	N/A	≥1333 ≤1462	N/A
<u>-</u>			N/A	1431,4	N/A	≥1340 ≤1470

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# \*To be taken after 15 minutes of operation.



# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

partial	heduled, state reason for test and the page numbers included in
Test Perf	Initials  Ormed by  Ormed
Test Compl	ete: Date 10-17-96 Time 1205
Reviewed by	factory: Yes / No (Circle one)  The state of the state of the state one)  Unit 2 - Shift Foreman  Date 10/12/83 Time 15/1
Comments: FOR More	(Required if results were unsatisfactory) A' ma arw fun
oproved by:	Unit 2 - Operating Supervisor  Date 10:18:35
viewed by:	ISI Coordinator Date 10/20/88

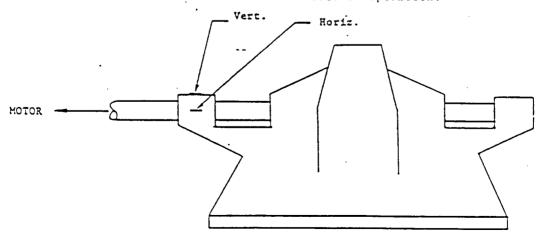
OST-201

Rev. 17

ľ	2.0	REFERENCES
	2.1	Tuchnical 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
7 8	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, Service and Cooling Water System
~	3.0	PREREQUISITES
0	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.
2707	3.2	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.  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.
		MUJONES (Print) Mysser 11-15-88  Name Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
		Shift Foreman Date

REF. STEP	PARAMETER		PUMP TESTED		ACCEPTANCE CRITERIA	
		•	n		"A"	"B"
7.2.8 or	Disch. Press.	"A" - PI-1424	1450	0	N/A	N/A
7.3.8	PSIG	"B" - PI-1425	0	1440	N/A	N/A
	Vibration,*	Horiz.	0.45	0,38	≤1.0	1.0
	MILS	Vert.	0.30	0,20	≤1.0	1.0
	Suct. Press.	"A" - PI-1479	6.20	N/A	≥4.0	N/A
<b>&gt;</b>	PSIG	"B" - PI-1480	N/A	6.25	N/A	≥4.0
<b>.</b>		Regulator, PSIG	30	15	N/A	N/A
	Oil Temp. to C	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		1443.80	N/A	≥1333 ≤1462	N/A
7.3.9	PSIG, (1)		N/A		N/A	≥1340
				1433,75		≤1470

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



OST-201 Rev. 21

#### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Test Performed by M/BCW	Name (Print)  MUUONES  11-  B. C. WALDSMITH  16 N  D. Morrison  11/1
Test Complete: Date 11/16/88	Time _03/5_
Test Satisfactory: Yes/ No (Ci	rcle one)
Reviewed by:  Unit 2 - Shift	Date 11/11/88 Time Foreman
	ere unsatisfactory)  A+6 5/6'5

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 V
2.3	OP-402 Auxiliary Feedwater
i Gun	
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 HDAFW Pumps.
3.4	This revision is the latest revision available and has been
3.4	verified against the Revision Status List.
	Martin L. Arnold (Print) Matter L. Chiel 23-Jan-89 Name  Name  Date
. 3.5	The Shift Foreman has given his permission to conduct this test.
	1-23-89

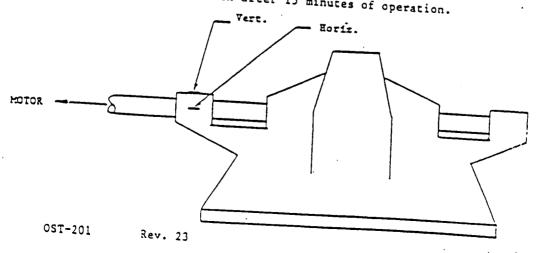
Shift Foreman

Date

NO.	PARAME	IER .	PUME "A"		ACCE	PTANCS CERIA
7.2.9	Disch. Press	. "A" - PI-1424			"A"	"a"
7.3.9	PSIG	"B" - PI-1425	1450	0	N/A	N.'A
	Vibration,*	Horiz.	0	1440	N/A	N/4
•	HILS	Vert.	.45	0.5-2	≤1.0	1.6
	\Suct. Press.		.15.	· 0.2-8	≤1.0	1.0
	PSIG	"A" - PI-1479	5,5	N/A	≥4.0	N/A
		"B" - PI-1480	N/A	9.4	N/A	≥4.0
		Regulator, PSIG	28	17	N/A	Nia
	Oil Temp from (		80	75	N/A	N/A
l	Cooling Water ( Header Press.,	)··· = 1 - = A	75	7 E 3 D	N/A	N/A
.2.10	Pump AP	751G P1-1421A	1440	1470	N/A N/A	N/A N/A
.3.10	PSIG, (1)		14445	N/A	≥1333 ≤1462	P/A
		•	N/A	14301	N/A	≥1340 ≤1470

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct., Press)$  "A" = (PI-1424) - (PI-1479)"B" = (PI-1425) - (PI-1480)

\*To be taken after 15 minutes of operation.



Page 19 of 22

### 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  Initials  Mame (Print)  Date  Diffusion Store Performed by Manage (Print)  Date  Diffusion Store Performed Store Perfor	
(If unscheduled, state reason for test and the page numbers included in partial test)  Initials  Test Performed by Manuer (Print)  Manuer (Print)	
(If unscheduled, state reason for test and the page numbers included in partial test)  Initials  Test Performed by Manuer (Print)  Manuer (Print)	
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Test Performed by managed Managed (Print)  Managed (Print	
Test Performed by managed Managed (Print)  Managed (Print	
Test Performed by managed Managed (Print)  Managed (Print	
Bin / My 11: 10 Pare Date	
Bin / Mortin L. Arno (d/w E. STOWN B. My 11:	
Bin / Mortin L. Arno (d/w E. STOWN B. My 11:	
Bin / Mortin L. Arno (d/w E. STOWN B. My 11:	
Bin / Mortin L. Arno (d/w E. STOWN B. My 11:	
B. My Ilino (d/w E STOWN B. Jan 8	
B. MVIII ANCONIONES 1-23-8	
Grea Taylor AN Common 1-23-8	<i>a</i> /
and leice Taylor	<u>// -</u>
	<u>&gt; 1/2</u>
Test Complete: Date 1/26/25 Time 14/3	
Date //20/25	_ 1/1/23
_lest Satisfactory: (voc)	_
Test Satisfactory: (Yes / No (Circle.one)	
Reviewed by:  Unit 2 - Shift Foreman  Comments: (Required if room)	
Myn.f.	
Unit 2 - Shift Sample 1/24/40	
Time /4/3	
Comments: (Page)	•
thedulred if results were	
Comments: (Required if results were unsatisfactory) (ISEN SIMUATER & HON-	
THOURICH & HON-	4
	,
oproved by:	•
Unit 3	
Unit 2 - Operating Supervisor  Date 1-28-89	
viewed by: Whis 1-0	
ISI Coordinator Date 1/30/85	
/	

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2.0	REFERENCES
2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978
2.3	OP-402 Auxiliary Feedwater
2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation 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 toomed
3.3	Where necessary, establish communications because
3.4	Pumps.  This revision is the latest revision available and has been verified against the Revision Status Line.
	Name (Print) / Signature Date
3.5	The Shift Foreman has given his permission to conduct this test.  2-13-85 Shift Foreman Date

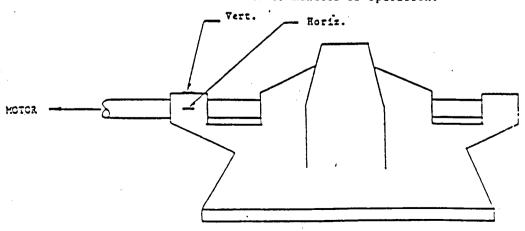
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#### MDAFW PUMP DATA

REF. STEP	PARAMETER			PUMP TESTED		ACCEPTANCS CRITERIA	
K. T. William B.		And the second second	W. E.	State of the	"A"	"a"	
7.2.9 or	Disch. Press.	"A" - PI-1424	NIA	0	N/A #	N.'A	
7.3.9	PSIG	"B" - PI-1425	NIA	1440	N/A	A'.A	
	Vibration,*	Horiz.	NIA	.45	≤1.0	1.6	
	HILS	Vert.	NI	.35	≤1.0	1.C	
in the second se	Suct. Press.	"A" - PI-1479	NIA	N/A	≥4.0	N/A	
	PSIC	"B" - PI-1480	N/A	8.6	N/A	24.0	
	Oil Press. to	NIA	16	N/A	Nin		
	Oil Temp. to C	Me	0.0	N/A	NIA		
	Oil Temp from	Cooler, 'F	1111	72	N/A	N/A	
	Oil Sump. Temp		110	70	N/A	NIA	
	Cooling Water	Outlet, °F TI-1636	CIR	53	N/A	Nin	
	Header Press.,	PSIG PI-1421A	NIA	. 1460	N/A	Ν/Δ.	
7.2.10	Pump AP		NB	N/A	≥1333 ≤1462	P/A	
7.3.10	PSIC, (1)		N/A	1431.4	N/A	71340 ≤1470	

### \*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unsch	eduled (Circle one)
(If unscheduled,	state reason for test and the page numbers included in
partial test)	n DAEN Pump only for de loving BIS IAW
OWP.	(Pg 1-14-122, 18-22-422)
Harada sa San	The state of the s
	Initials Name (Print) Date
Test Performed by	mis mertial Inold 13.F. GE
	BCW B.C. YURLDSMITH IJIAFOT
	The second secon
	the state of the s
Test Complete:	Date 135.189 Time 1755
Test Satisfactor	y: Yes / No (Circle one)
Reviewed by:	Date 2-13-85 Time 1800
	Unit 2 - Shift Foreman
Comments: (Req	uired if results were unsatisfactory)
- Consideration of the d	
<del></del>	
Approved by: _	Date 2/15/85
Approved by.	Unit 2 - Operating Supervisor
	Wille Catchese Date 2/22/89
Keviewed by:	ISI Coordinator

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	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
	2.3	OP-402 Auxiliary Feedwater
•	2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation 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
	3.3	remaining two pumps on automatic standby.  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.
	3.5	The Shift Foreman has given his permission to conduct this test.
		Shift Foreman Date
		·

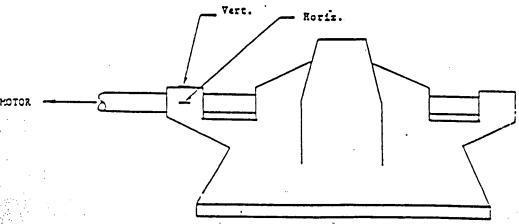
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REF. STEP	PARAMETER		PUMP	TESTED	ACCEPTANCE CRITERIA	
			Section 18		"A"	"a"
7.2.9 or	Disch. Press.	"A" - PI-1424	14.0	HH2-2135	N/A	N.'A
7.3.9	PSIC	"B" - PI-1425	0	Bar 2.21.21	N/A	N/ 3
	Vibration,*	Horiz.	4	.46	≤1.0	1.6
	MILS	Vert.	16.	A 3	≤1.0	1.0
	Suct. Press.	"A" - PI-1479	8.4	N/A	24.0	N/A
	PSIC	"B" - PI-1480	% N/A	5.5	N/A	24.0
	Oil Press. to	29:	12	N/A	Nin	
	Oil Temp. to C	8-5	84	N/A	N/n	
	Oil Temp from	27	ファ	N/A	N/A	
	Oil Sump. Temp	, F	21	つい	N/A	N/A
	Cooling Water	Outlet, 'F TI-1636	56	54	N/A	N/A
	Header Press.,	PSIG PI-1421A	14.0	1425	N/A	N,'A
7.2.10	Pump AP		1445.6	N/A	≥1333	N/A
7.3.10	PSIG, (1)	•		<del></del>	≤1462	
			N/A	1430.	N/A	<pre>&lt;1340 ≤1470</pre>

## \*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unsc	heduled (Circle o	one)	;	
(If unscheduled, partial test)	state reason for	test and the p	eage numbers inc	luded in
•				
Test Performed by	Initials Seea  Imp  Imp  Imp  Imp  Imp  Imp  Imp  Im	Stre A F. B. SC	HWIEN	7.22.08
Test Complete: D	ace <u>2-27-69</u>			
	Yes No (Cir		<del></del>	
Reviewed by:	CMUrate. Unit 2 - Shift	Foreman	Date 2/2/89	_ Time <u>O/w</u>
Comments: (Requi	red if results we	re unsatisfacto	ory) <u>A MOAN</u>	En greed to line
Approved by:	Jnit 2 - Operating	g Supervisor	Date <u>2/</u>	23/85
Reviewed by:	SISI Coordinate	John .	Date 2/2	13/89

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	2.0	REFERENCES
	2.1	Technical Specification 4.8.1, 4.8.3, 4.8.4 and Table 4.1-1,
1. .*•		Item 33
	2.2	ASHE 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
<b>7 6 6</b>	2.4.2	G-190199, Service and Cooling Water System
0	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.
ა ტ	3.2	Only one Auxiliary Feed Pump should be tested at a time with the remaining two pumps on automatic standby.
) N	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) (Print) 21 MARS
		Name Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
		D. 75 Cill 5/2//89
٠.		Shift Foreman Date

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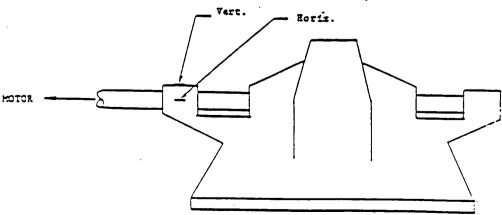
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#### MDAFW PUMP DATA

REF. STEP	PARAMETER		PUMP TESTED		ACCEPTANCE CRITERIA	
					"A"	"A"
7.2.9 or	Disch. Press.	"A" - PI-1424	1450	10 D	N/A	N.'A
7.3.9	PSIG	"B" - PI-1425	0	1450	N/A	N/ 4
!	Vibration,*	Horiz.	,27	,39	≤1.0	. 1.6
:	HILS	Vert.	. 18	, 39	≤1.0	1.C
	Suct. Press.	"A" - PI-1479	7.5	N/A	≥4.0	N/A
	PSIC	"B" - PI-1480	N/A	B. D.	N/A	24.0
	Oil Press, to	Regulator, PSIG	29	15.5	N/A	Nia
	Oil Temp. to C	ooler. F	43	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	Nih
:	Header Press.,	PSIG PI-1421A	1450	1455	N/A	N/A
7.2.10	Pump AP		1442.5	N/A	≥1333 ≤1462	l'/A
7.3.10	PSIG, (1)		N/A	1492	N/A	<1340 \$1470

\*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)	
Circle one)	
(If unscheduled, state reason for test and the page numbers included in partial test)	1
Initials Name (Print)	
Test Performed by MA M. GANN 3/2  M. GANN 3/2  M. GANN 3/2  M. GANN 3/2  M. GANN 3/2	1/19 1/89
Test Complete: Date 3-2/-87 Time 2320  Test Satisfactory: (es) / No (Circle one)	
Reviewed by: Date 3/2/85 Time	035
Comments: (Required if results were unsatisfactory)	·
Unit 2 - Operating Supervisor	
ISI Coordinator Date 4/10/89	

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	2.0	RETERENCES
; ;	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
ထ	2.4	Engineering flow diagrams:
	2.4.1	G-190197, Feedwater, Condensate and Air Evacuation
90	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
<del>?</del> <b>.</b>	3.3	remaining two pumps on automatic standby.  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
	3.5	The Shift Foreman has given his permission to conduct this test.
		10 Mm 4-18-89
		Shift Foreman Date

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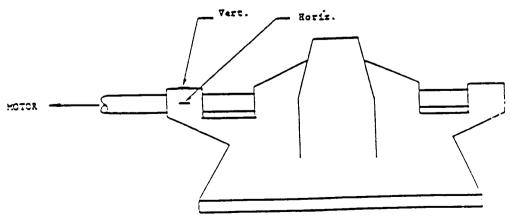
Page 5 of 22

#### MDAEW PUMP DATA

REF. STEP	PARAMETER		PUMP TESTED		ACCEPTANCS	
NO.			"A"	"B"	CRITERIA	
					"A"	"a"
7.2.9	Disch. Press.	"A" - PI-1424	1440	0	N/A	N/A
7.3.9	PSIG	"B" - PI-1425	0	1460	N/A	N. 1.
	Vibration,*	Horiz.	0.4	0.55	≤1.0	1.6
	HILS	Vert.	0.6	0.45	≤1.0	1.0
	Suct. Press.	"A" - PI-1479	5.2	N/A	≥4.0	N/A
	PSIG	"8" - PI-1480	N/A	5.5	N/A	24.0
	Oil Press, to Regulator, PSIG		32	16	N/A	NiA
	Oil Temp. to C		95	44	N/A	N/A
	Oil Temp from	Cooler. F	90	85	N/A	N.a
	Oil Sump. Temp	, *F	40	42	N/A	N/A
	Cooling Water	Outlet, F TI-1636	10€	66	N/A	Nik
	Header Press.	PSIG PI-1421A	1450	1415	N/A	N.'A
7.2.10	Pump AP		1434.8	N/A	≥1333 ≤1462	27/A
7.3.10	PSIC, (1)		N/A	1454.5	N/A	£1340 \$1470

Calculations: (1) Pump  $\Delta P = (Disch. Press) - (Suct. Press)$   $^{11}A^{11} = (PI-1424) - (PI-1479)$   $^{12}B^{11} = (PI-1425) - (PI-1480)$ 

### \*To be taken after 15 minutes of operation.



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#### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled (Circle one)
(If unscheduled, state reason for test and the page numbers included in partial test)
Test Performed by The Mane (Print)  Date  Mane (Print)  Date  M. Roberdt  4-19-89  U.) Cutaiti  4-19-89  Cutaite  Fight  Hetteher  4-4-89
Test Complete: Date 4/14/69 Time 0455
Reviewed by: Unit 2 - Shift Foreman Date 4-19-89 Time 05.2.
Comments: (Required if results were unsatisfactory)
Approved by: Supervisor Date 4/19/89 Unit 2 - Operating Supervisor
Reviewed by: <u>July C. Tolina</u> Date <u>4/24/49</u>

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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 II, Subsections IWP and IWV, 1977 Edition, Summer 1978
2.3	OP-402 Auxiliary Feedwater
2.4	7
2.4.1	Engineering flow diagrams:
2.4.2	G-190197, Feedwater, Condensate and Air Evacuation
4.4.4	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
3.3	remaining two pumps on automatic standby.  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) the Come 5/6/P
. 3.5	The Shift Foreman has given his permission to conduct this test.
	Misinte 3/4/29
	Shift Foreman Dara

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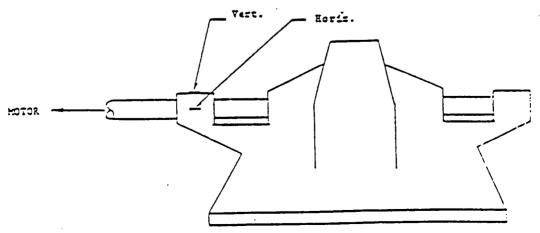
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#### MDAFW PUMP DATA

		**.				
REF. STE	P PARAMET	ER	PIMP 7	TESTED	ACCEPTA CRITER	ī A
		8			"A"	"4"
7.2.9	Disch. Press.	"A" - PI-1424	1460	0	N/A	N/A
7.3.9	PSIG	"B" - PI-1425	0	1461	N/A	И ( )
	Vibration,*	Horiz.	.4	. 5	≤1.0	1.6
	HILS	Vert.	.2.	. 4	≤1.0	1.0
	Suct. Press.	"A" - PI-1479	6.8	N/A	≥4.0	N/A
	PSIC	"B" - PI-1480	N/A	7.3	N/A	24.0
		Regulator, PSIG	29	15	N/A	Nin
	Oil-Temp. to C		102	100	N/A	Nin
	Oil Temp from	Cooler, F	95	43	N/A	N/a
<b>∔.</b> -	Oil Sump. Tem	, 'F'	98	95	N/A	11 A
•	Cooling Water	Outlet, F TI-1636	80	70	i N/A	N/A N/A
	Header Press.	, PSIG PI-1421A	1450	1475	N/A	4. 5.
7.2.10	Pump AP		1453.2	N/A .	≥1333 ≤1462	P/A
7.3.10	PSIG, (1)		N/A	1453.1 1413.7 Com 301	N/A	:340 5:470

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



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## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

If unscheduled, st				ided in
Test Performed by	Initials  (II)  (II)	STOVE PIODI	KERS	5/11/89 5/11/89 5/12/89 5/12/89
Test Complete: Da Test Satisfactory:	Yes y No (Circ	•	<u>-</u> •.	·
Reviewed by:	Om wto. Unit 2 - Shift B	Q	ate <u>5/17/53</u>	Time <u>034</u> 5
Comments: (Requir				
Approved by:	Jnit 2 - Operation	g Supervisor	Date	/19/89
Reviewed by:	W. Suc Cu	Ochem	Date	/31/89

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
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
3.3	remaining two pumps on automatic standby.
	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) Com Chan 6/2/89
	Name Signature Date
3.5	The Shift Foreman has given his permission to conduct this test.
	REFL
	Shift Foreman Date
	Date

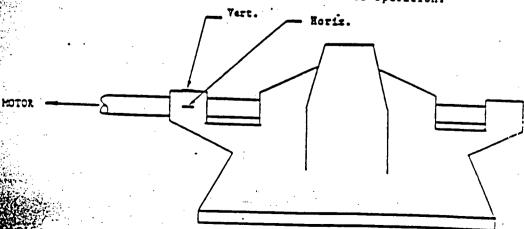
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ATTACHMENT 3:1 Kg.

#### MDAFW PUMP DATA

REF. STEP	PARAMET	ER	PUMP	TESTED 'B"	CRITE	
7.2.9	Disch. Press.	HAD	TO SERVE	1 71	"A"	"8."
OF	1	"A" - PI-1424	1450	14700	N/A :	N/A
7.3.9	PSIC	"B" - PI-1425	0	1470	N/A	N/ 1
	Vibration,*	Horiz.	0.47	341	≤1.0	1.6
	HILS	Vert.	0.21	52	≤1.0	1.0
	Suct. Press.	"A" - PI-1479	23	N/A	24.0	N/A
	PSIC	"B" - PI-1480	₩ N/A	7.6	N/A	24.0
	Oil Press. to F	legularor e perchasia	30	15	M/A	N/A
	Oil Temp. to Co	oler, F	110	-110	N/A	N/A
	Oil Sump. Temp.	Parameter was	(0)	100	N/A	N/a
	Cooling Water C	outlet, F TI-1636	103	101	N/A	N/A
	Header Press.,	PSIG PI=1421A	88	85	N/A	Nik
		1461A 1461	1440	1440	N/A	A'.K
.2.10	Pump AP		1442.7	N/A	≥1333 ≤1462	l'/A
	PSIG, (1)		N/A	1462.4	N/A	<1340 ≤1470

# \*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

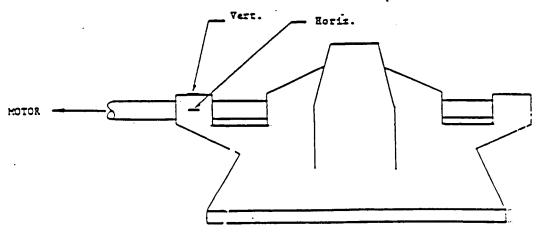
	Initials	Name (Print)	6-20-8
est Performed by	<u> </u>	DAN AKERS	4/20/19
	1/2	STORE PICTON PACT	
	- (Ih	1.A. WINGER	0/20/05
		Date 6-2 Foreman ere unsatisfactory)	•
,			<u> </u>

	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:
္မွ	2.4.1	G-190197, Feedwater, Condensate and Air Evacuation
့ <del>က</del>	2.4.2	G-190199, Service and Cooling Water System
0	3.0	PREREQUISITES
<u>to</u>	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.
9.5	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) June 219-89  Name Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
		Constitute. 1/18/89
ř.		Shift Foreman Date

#### MDAFW PUMP DATA

REF. STEP	P PARAMETER			TESTED ACCEPTA		
			"A"		"A"	, s.,
7.2.9 or	Disch. Press.	"A" - PI-1424	1420	0	N/A	N.'A
7.3.9	PSIG	"B" - PI-1425	Pallan	1440	N/A	N: 4.
	Vibration,*	Horiz.	0.5	.44	≤1.0	1.6
	MILS	Vert.	0.3	.4	≤1.0	1.0
	Suct. Press.	"A" - PI-1479	6.5	N/A	≥4.0	N/A
	PSIG	"B" - PI-1480	N/A	7.2	N/A	24.0
	Oil Press. to	Regulator, PSIG	22	14	N/A	Nia
	Oil ·Temp. to C		110	111	N/A	Nin
	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
		PSIG PI-1421A	1440	700 1450	N/A	N/A
7.2.10	Pump AP	18	14135	N/A /432.8	≥1333 ≤1462	17/A
7.3.10	PSIG, (1)	· 7."	N/A		N/A	-1340
	•	•		1472 4		\$1470

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



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Page 19 of 22

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

David A. Cook 7.	Test Performed by B DB. 11.25 7  BAN DAVIS A. COOLU 7  IM BANA 2  L.T. DAVIS 7  Test Complete: Date 7/18/85 Time 1658  Test Satisfactory: Yes / No (Circle one)  Reviewed by:		state reason for			uded i
Test Complete: Date 7/8/3; Time 1658  Test Satisfactory: Yes / No (Circle one)  Reviewed by:	Test Complete: Date 1/8/85 Time 1058  Test Satisfactory: Yes / No (Circle one)  Reviewed by: One Date 1/16/27 Time Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory)  Approved by: Date 7/2/2	Test Performed b	у	DAVA A	1. Cook	7
Reviewed by: Mr. Date 7/1437 Tim	Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory)  Approved by:   State   Date   7/2/		_	Time		
	Approved by: 15/15th Date 7/2/	Reviewed by:	Carintin Unit 2 - Shif		Date <u>7/13/37</u>	_ Tim
				. 1-1-		
		Approved by: _	Unit 2 - Opera	ting Supervisor		/2/

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Rev. 23

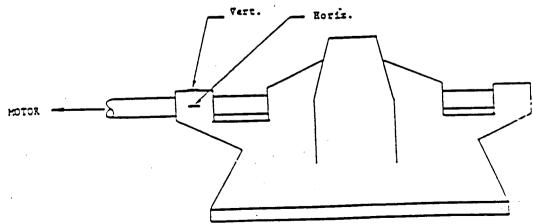
2.0	REFERENCES
2.1	Technical Specification 4.8.1, 4.8.3, 4.3.4 and Table 4.1-1, Item 33
2.2	ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978 Addenda
2.3	OP-402 Auxiliary Feedwater
2.4 2.4.1 2.4.2	Engineering flow diagrams: G-190197, Feedwater, Condensate and Air Evacuation G-190199, 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

ATTACHMENT 2.1

### MDAFW PUMP DATA

REF. STEP	PARAMETE	R	PUMP '	TESTED	ACCEPTANCE CRITERIA	
NO.			^		"A"	''a''
7.2.9	Disch. Press.	"A" - PI-1424	1440	4460	N/A	N/A
or 7.3.9	PSIG	"B" - PI-1425	0	1460	N/A	N/ 1
•	Vibration,*	Horiz.	.6	. 5	≤1.0	1.6
•	HILS	Vert.	.2.	.44	≤1.0	1.C
	Suct. Press.	"A" - PI-1479	6.5	N/A	≥4.0	N/A
	PSIC	"B" - PI-1480	N/A	7.0	N/A	24.0
	Oil Press. to	Regulator, PSIG	ی در	13.5	N/A	Nin
	Oil Temp. to C	coler. F	112	1/2	N/A	N/A
	Oil Temp from	Cooler. F	105	105	i N/A	N/A
	Oil Sump. Tems	) • F	103	108	N/A	N/A
	Cooling Water	Outlet, F TI-1636	70	37	N/A	Nik
	Header Press.	, PSIG PI-1421A	1450	1475	N/A	N,'A
7.2.10	Pump AP		1433.5	N/A	≥1333 ≤1462	P/A
7.3.10	PSIG, (1)		N/A	1453	N/A	≥1340 ≤1470

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



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Rev. 23

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## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unsch	heduled (Circle one)
(If unscheduled, partial test)	state reason for test and the page numbers included in
Test Performed b	Initials Name (Print) Date  y ded Tenhite 415/69  F.A. Schware 8-15-89
	(W W. CUTRIGHT 8-16-89 MM (Modinar) 8/10/39
Test Complete: Test Satisfactor	Date 8-16-89 Time 0245  (Valenti)  Ty: Xea No (Circle one)
	Unit 2 - Shift Foreman
Comments: (Requ	sired if results were unsatisfactory) (CV:405 foilen Smote
TIME OF 10	SCIENTS WAST WAT 29 AHSWI
Approved by:	Unit 2 - Operating Supervisor
Reviewed by:	ISI/ Coordinator  Date 8/25/89

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Rev. 23

Page 22 of 22

- 3.0 PREREQUISITES (Continued)
- This revision is the latest revision available and has been verified against the Revision Status List.

Name Signature Date

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

Britato	10-20-87
Shift Foreman	Date

#### LO 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.

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.
- 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

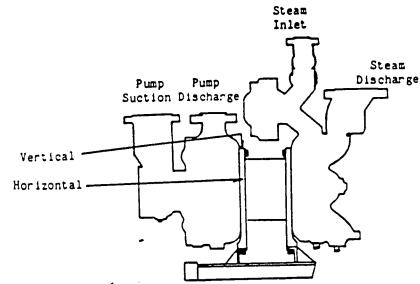
REF. STEP	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.15.2	Disch. Press. PI-1426 PSIG	1300	N/A
7.2.15.2	Steam Inlet Press. PI-1357-2. PSIG	805	N. A
7.2.16	Feed to Steam ΔP, PSI (1)	495	≥310
7.2.18	Pump Turbine Speed, RPM	9410	≦9550 ≥9400
7.2.19	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1480	N/A
ļ	Pump Suct. Press. PI-1478, PSIG	4.0	≥2.0
	Header Press PI-1421B, PSIG	1480	N/A
}	Oil Press to Regulator, PSIG	245 7	N/A
ŀ	Oil Press from Regulator, PSIG	20	N/A
ŀ	Oil Temp to Cooler, °F	145	N/A
ŀ	Oil Temp. from Cooler, °F	130	N/A
1	Cooling Water Outlet Temp.	100	N/A
1	Vibration Horizontal	0.4	\$1.2
	Mils* Vertical	0,5	\$1.0
7.2.20	Pump ΔP, PSI, (2)	1476	≥1412 ≤1548

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

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

#### Vibration Data Points

\*To be taken after 15 minutes of operation.



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Rev. 6

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	Scheduled / "
	Scheduled / Unscheduled (Circle one)
	(If unsched)
	Partial and State reason for test and at
•	(If unscheduled, state reason for test and the page numbers included in
	Test Performed by 12 Name (Print)
<b>C1</b>	Name (Print)  Name (Print)  Date
2	TE 11/17
~	
	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
-	Test Complete: Des Color 10-21-87
	Test Complete: Date 10/21/87 Time 0115
	Tank Carlo
ಥ	Test Satisfactory: Yes / No (Circle one)
C:	Reviews
M	Reviewed by: Sustant
	Unit 2 - Shift Foreman Date 10-21-87 Time 0200
~	
	Comments: (Required if results were upont of
	Comments: (Required if results were unsatisfactory) We- 87 APRY    WRITTEN BR Flow TERMSONIER
	IESTACRATION AS SET WITH FAMILIES OF FT. MILLA ENT. 11 MR SEM
	MAISTRA DE GENERAL FORMANT 115 ATTER 1-1 PLEAST
	Approved
	Unit 2 - Operating Supervisor Date 10-25-87
	Reviewed by:
	- Charles Charles
	ISI Coordinator Date 11/11/87

is caused by turbulence due to voids that were formed and

backleakage past the discharge valve seats. This condition is

3

temporary and will clear.

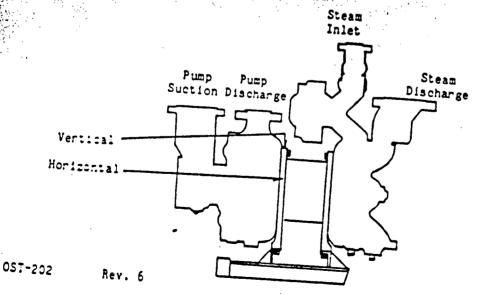
N/A N/A 2310 29550 29400
≥310 ≤9550
£9550
N/A
22.0
N/A
N/A -

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

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

### Vibration Data Points

\*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

partial test)	r test and the page number	s included in
Test Performed by Initials  BW	Nama (Print)  Je Dang  Airk Browll	
Caro	B.C. WALDSMITH MAHLE	18 NOV87
Reviewed by:  Unit 2 - Shift Fo  Comments: (Required if results were	Date <u>11. 5.87</u>	
oproved by: Develop	Date	11-25-87

- 3.0 PREREQUISITES (Continued)
- 3.4 This revision is the latest revision available and has been verified against the Revision Status List.

BRYON 6, WRLDSMITH (Print) Began & Wallsmith 15 Dec 87
Name Signature Date

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

in Shift Foreman 12-15-87

Date

### PRECAUTIONS AND LIMITATIONS

- 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.
- 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.
- 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.

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### SDAFH PUMP DATA

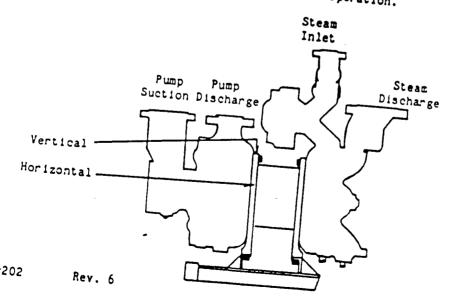
	TOMP D	ATA	_
REF. ST	EP PARAMETER		
7.2.15.	2 Disch, Press Plant	DATA	ACCEPTANCE
7.2.15.			CRITERIA
L	oceam in lat p	1220	N/A
7.2.16	PI-1357-2. PSIG Feed to Steam ΔP.		1
7.2.18	··································	800	N/A
1	Pump Turbine Speed, RPM	420	≥310
7.2.19			
	Disch. Press. PI-1426,	9500	\$9550
	Pump Suct Proces	1520	≥9400 N/A
	PSIG PI-1478,	1300	A
	Header Press PI-1421B, PSIG	3,0	≥2.0
			N/A
	Oil Press to Regulator, PSIG	1530	N/A
	Oil Temp to Connegulator, PSIG	21.5 14h 2 7.9	N/A
	Oil Temp Coasier,	123	N/A
ŀ	Vib water Outlet Temp	104	H/A
.2.20	Mila	79	N/A N/A
·2.20 T	Pump AP, PSI, (2)	1.0	<u>\$1.2</u>
		.54	\$1.0
Oul na 4 -		1517	21412
curations:	(1) Feed to Steep vs		<u>\$1548</u>

Caplculations: (1) Feed to Steam  $\Delta P$  = (Discharge Press) - (Steam Inlet Press)

(2) Pump  $\Delta P$  - [Discharge Press (Reg. Isolated)] - (Suct. Press)

Vibration Data Points

\*To be taken after 15 minutes of operation.



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# 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>57</b>	
<u>_</u>	
ယ <b>ဝ</b>	Test Performed by BOW B.C. WALD SMITH 15 Dec 87  John A. Ceone 15 Dec 87  TOHOGH DAKERS WISKNINGERS
	TOHOWAY DHOWAY DELISKY (12/15/17)
-	'
	Test Complete: Date 12/15-/87 Time 2.250
7	Test Satisfactory: Yes! No (Circle one)
	Reviewed by:  Unit 2 - Shift Foreman  Date /2-/5-17 Time 27/0
	Comments: (Required if results were unsatisfactory)
	Approved by: Date 12-23-87 Unit 2 - Operating Supervisor
	Reviewed by: USS Coordinator Date 13/34/87

3.0	PREREQUISITES	(Continued)
		,,

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

B. MulligAal (Print) B. Mullum 1-5-88
Name Signature Date

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

4.4

#### PRECAUTIONS AND LIMITATIONS

- 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.
  - Ensure the Automatic Feedwater Control System is functioning properly while performing this test.
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Rev. 6

Page 6 c: 24

### SDAFW PUMP DATA

REF. STEP	PARAMETER		
7.2.15.2	Disch. Press. PI-1426	LATA	ACCEPTANCE CRITERIA
7.2.15.2	PSIG Steam Inlet Press.	1230	N/A
7.2.16	Feed to Steam AP	800	N/A
7.2.18	PSI (1) Pump Turbine Speed, RPM	430	≥310
7.2.19	Disch. Press. Planta	4500	≨9550 <b>≥</b> 9400
ł	Pump Suct. Press Plants	1550	N/A
ŀ	Header Press PI-1421B	2.5	22.0
E	C:1 Press to Regulates	1560	N/A
F	G:1 Press from Regulator, PSIG G:1 Temp to Cooler, °F	20	N/A
F	U.I Temp. from Cools	100	N/A N/A
	Cooling Water Outlet Temp. Vibration Horizontal	60	N/A N/A
2.20	Mils* Vertical Pump AP, PSI, (2)	.6	\$1.2 \$1.0
		1547.5	≥1412 ≤1548

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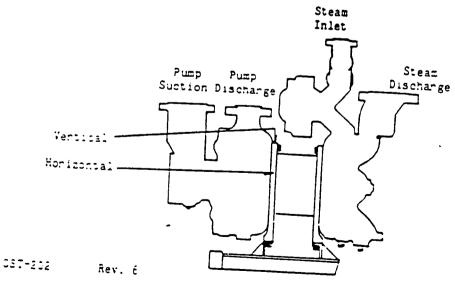
?

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

(2) Pump  $\Delta P$  - [Discharge Press (Reg. Isolated)] - (Suct. Press)

### Vibration Data Points

\*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

-5	
Scheduled / Unscheduled (Circle one)	
(If unscheduled, state reason for test and the page numbers include partial test) $1 + 19 + 19 + 19 + 19 + 19 + 19 + 19 +$	ded in
Test Performed by AR Mark Rohandt  B. Mulligan  Flegette  Test Complete: Date 1/5/88	Date 1-5-88 1-5-88 1/5/88 1-5-88
Test Complete: Date 1/5/88 Time 1545	
Test Satisfactory: Yes / No (Circle one)	
Reviewed by: Swift Foreman Date 1-588 Time	1725
comments: (Required if results were unsatisfactory) Stop 7.2.2  reading for Turk-Aux orl pump reads 5 ps/cs	nessene
Unit 2 - Operating Supervisor  Date 1/19/88	
deviewed by: USNCCutchen Date 1/31/88	

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Rev. 7

P. 33433

- 3.0 PREREQUISITES (Continued)
- This revision is the latest revision available and has been verified against the Revision Status List.

Name (Print) DESlove 1-20 08

Signature Date

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

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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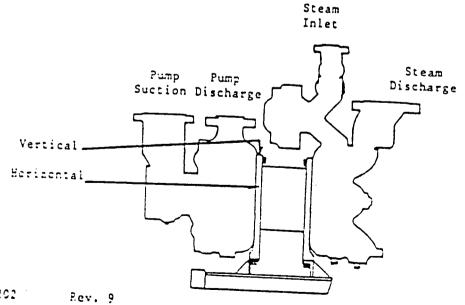
REF. STEP NO.	PARAMETER	<u> </u>	
7.2.16.2	Disch. Press. PI-1426	DATA	ACCEPTANCE CRITERIA
7.2.16.2	Steam Inlet Press	1300	N/A
7.2.17	PI-1357-2. PSIG Feed to Steam AP,	980	N/A
7.2.19	PSI (1) Pump Turbine Speed. As Sound	320	≥310
.2.20	Disch. Press. PI-1426	9500	≤9550 ≥9400
•	PSIG (Reg. Isolated) Pump Suct. Press. PI-1478,	1550	N/A
	PSIG Header Press PI-1421B,	2.0	≥2.0
1	Oil Press to Regulator DSIG	1550	N/A
,	Oil Press from Regulator, PSIG Oil Temp to Cooler, °F	21	N/A N/A
:	Oil Temp. from Cooler, °F Cooling Water Outlet Temp.		N/A N/A
<b>:</b>	Vibration Horizontal Hils* Vertical	25	N/A ≤1.2
2.21	Pump AP, PSI, (2)	.55	≤1.0 ≤1.0 ≥1412
		1548	≤1412 ≤1548

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

(2) Pump  $\Delta P$  - [Discharge Press (Reg. Isolated)] - (Suct. Press) Ç,

Vibration Data Points 57

\*To be taken after 15 minutes of operation. **C**:



# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	Initials	Name (Print)	Date
·Test Performed b	y <u>Wέλ</u>	WE. STUL	<u>/-76-88</u>
	Ep.	Pristic Bown	
		No Kink	
		MO NE	
Test Complete:	Date /-/O TY Time	1610	
Test Satisfacto	ry: Yes No (Circle	one)	
	Yes No (Circle    Init 2 - Shift Forem	Date /- 20 5	3 Time <u>/65</u> 6
Reviewed by:	Unit 2 - Shift Forem	Date 1-2013	nnich god Doggest or
Reviewed by:	Unit 2 - Shift Forem		nnich god Doggest or
Reviewed by:  Comments: (Req	Unit 2 - Shift Forem	Date 1-2013	nnuh god Dockson in

3.0 PREREQUISITES (Continued) 3.4 This revision is the latest revision available and has been verified against the Revision Status List. K. OARWIN (Print) The 5/10/85

Name Signature Date 3.5 The Shift Foreman has given his permission to conduct this test. 3-10-88 4.0 PRECAUTIONS AND LIMITATIONS 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. Ensure the Automatic Feedwater Control System is functioning properly while performing this test. 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

> After the pump has run and is stopped, and the discharge valves closed, flashing of the empty and/or fault lights may occur. This

backleakage past the discharge valve seats. This condition is

is caused by turbulence due to voids that were formed and

1

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4.5

temporary and will clear.

REF. STEP	PARAMETER	1	
NO.		DATA	ACCEPTANCE
7.2.16.2	Disch. Press. PI-1426	DATA	CRITERIA
•	PSIG PARK	1370	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIG	7030	N/A
7.2.17	Feed to Steam AP, PSI (1)	340	≥310
7.2.19	Pump Turbine Speed, As Found	9600	≤9550
7.2.20	I RPM	6530	≥9400
7.2.20	Disch. Press. PI-1426, PSIG (Reg. Isolated)	1550	N/A
•	Pump Suct. Press. PI-1478, PSIG	W	≥2.0
	Header Press PI-1421B, PSIG	1575	N/A
<b>.</b> .	Oil Press to Regulator, PSIG	3/	N/A
	Oil Press from Regulator, PSIG	8	N/A
•	Oil Temp to Cooler, °F	120	N/A
	Oil Temp. from Cooler. °F		N/A
•	Cooling Water Outlet Temp.	63	N/A
	Vibration Horizontal	9	
	Mils* Vertical	<del>                                     </del>	≤1.2
7.2.21	Pump AP, PSI, (2)		≤1.0
	, , , , , , , , , , , , , , , , , , , ,		≥1412
	<u> </u>	15-45	_[ ≤1548

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

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(2) Pump  $\Delta P$  - [Discharge Press (Reg. Isolated)] - (Suct. Press)

2.4

\*To be taken after 15 minutes of operation.

Vibration Data Points

Steam Inlet

Pump Pump Suction Discharge

Vertical Horizontal

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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unschedu			
(If unscheduled, sta	ite reason for test	and the page numbe	rs included in
	15.6.	14 GF-005	1- 24
		<del></del>	
·Test Performed by		Name (Print).  M Ducheck  K-PARWIN  Joe 11 Jan 1910	3-10-80
Test Complete: Date	3-10-88 Time	twhite 7300	3-10-88 3-10-88 3-10-88
Test Satisfactory: Ye	/	.)	
Reviewed by: Unit	2 - Shift Foreman	Date 3-/08	8 Time 2355
Comments: (Required if	results were unsate to reco 5,	isfactory) for	ear genter than
Fine conj en s	1mj-14764 Ca:	511 WK = 88-40	2751 271 28 Fuse Industria Computari
1201821115	N N	orly Pelineer no	is our industrial Companie
Unit 2	- Operating Supervi	Date	3-27-88
eviewed by:	I Coordinator	Date 4	14/55

3

2.4

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

Name (Print) More 3-15-88

Signature Date

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

Shift Foreman Date

### 4.0 PRECAUTIONS AND LIMITATIONS

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- 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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OST-202

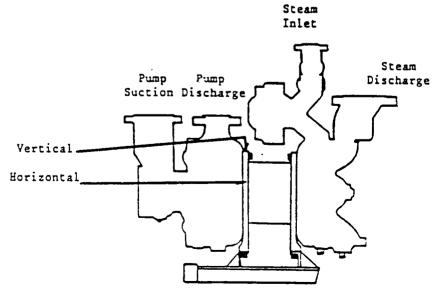
REF. STEP	PARAM	ETER			ACCEPTANCE
NO.				DATA	CRITERIA
7.2.16.2	Disch. Pre	ss. PI-1426	) 	1280	N/A
7.2.16.2	Steam Inle PI-1357-2.			855	N/A
7.2.17	Feed to St PSI (1)	<u> </u>		425	≥310
7.2.19	RPM	ne Speed,	As Left	9550 3-15 <del>6</del> <del>9550</del> 9450	≤9550 ≥9400
7.2.20	PSIG (Reg.	ss. PI-1426 Isolated)	_	1550	N/A
	PSIG	Press. PI-	·	4,5	≥2.0
	Header Pre	ss PI-1421	В,	1550	N/A
	Oil Press	to Regulat	or, PSIG	22	H/A
	Oil Press	from Regul	ator, PSIG	7.5	N/A
		to Cooler,		120 .	N/A
	Oil Temp.	from Cooler	F	100	N/A
		ter Outlet		59	N/A
	Vibration	Horizonta		0.8	≤1.2
	Mils*			0.6	≤1.0
7.2.21	Pump AP, P	SI, (2)		1545.5	≥1412 ≤1548

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

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

### Vibration Data Points

\*To be taken after 15 minutes of operation.



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ATTACHMENT 8.3 Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unsch	neduled (Circle	e one)			
(If unscheduled, partial test)				numbers in	ncluded in
	·				
Test Performed by	Initials  BCW		Name (Pri M V ON MLDSM: Smith	es 174	<u>Date</u> 3-15-88 15Mar88 3/16/68
Test Complete: I	Date 3/11/88				
Test Satisfactory Reviewed by:	A.		Date _	3-/6-88	Time <u>0210</u>
Comments: (Requi	red if results	were unsati	sfactory)		
<del></del>					
Approved by:	Unit 2 - Operat			Date	3-27-88
Reviewed by:	USMO (). ISI Coordi		<del></del>	Date <u>3/</u>	199/88

OST-202

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Rev. 7

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temporary and will clear.

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### SDAFW PUMP DATA

NO. 7.2.16.2	PARAMETER Disch. Press. PI-1426	DATA	ACCEPTANCE CRITERIA
Section 1997	PSIC CONTROL OF ANY ANY ANY ANY ANY ANY ANY ANY ANY ANY	11900	NA
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIC	880	N/A
7.2.17 Mariji (1968)	Feed to Steam AP, PSI (1)	3/0	5312
7.2.19	Pump Turbine Speed, As Found RPM As Left	940	59550
7.2.20	Disch. Press. PI-1426		≥9400 N/A
	PSIC (Reg. Isolated) Pump Suct. Press. PI-1478, PSIC	1540	\$2.0
	Header Press PI-1421B, PSIG	1550	N/A
	Oil Press to Regulator, PSIG Oil Press from Regulator, PSIG	20	N/A
	Oil Temp to Cooler, F	7.5	N/A
	Oil Temp. from Cooler, F	123	N/A
	Cooling Water Outlet Temp.	107	N/A
Ī	Vibration Horizontal	78	N/A
	Mils* Vertical	.38	≤1.2
.2.21	Pump AP, PSI, (2)	, 2.5	≤1.0
		1536.9	≥1412 ≤1548

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

M

(2) Pump  $\Delta P$  - [Discharge Press (Reg. Isolated)] - (Suct. Press)

### Vibration Data Points

\*To be taken after 15 minutes of operation.

Vertical

Horizontal

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ATTACHMENT 8.3

### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled Unscheduled (Circle one)

partial test)	ed; state reason for test and the page numbers included in
	THE RESERVE OF THE PROPERTY OF
	THE RESERVE OF THE PROPERTY OF
	Initials (Name (Print))
Test Performe	Dank A. Cook 4/15/20
	1/12 Winger W/18-68.
Test Complete:	Date 4-18-88 Time 15-45
Test Satisfact	ory Yes / No (Circle one)
Reviewed by: _	28 - 1 - War land
	Unit 2 - Shift Foreman; Date 4/19/35 Time 1525
Comments: (Rec	uired if results were unestication
du to car-	puired if results were unsatisfactory) from con > 30 cm
	After 30 min And
. —————————————————————————————————————	
Approved by:	Unit 2 - Operating Supervisor  Date
Reviewed by:	USNCCtclen_ Date 4/09/88
•	

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P. 24824

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REF. STEP	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, As Found RPM As Left	9450	≤9550 ≥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
√o	Oil Press from Regulator, PSIG	8	N/A
	Oil Temp to Cooler, F	/32	N/A
10	Oil Temp. from Cooler, F	115	N/A
	Cooling Water Outlet Temp.	84	N/A
	Vibration Horizontal	1.0	≤1.2
	Mils* Vertical	0.9	≤1.0
7.2.21	Pump AP, PSI, (2)	1537	≥1412 ≤1548

3

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

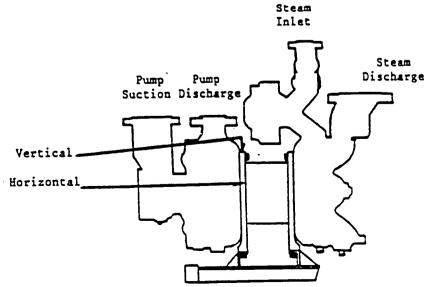
53

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

### Vibration Data Points

\*To be taken after 15 minutes of operation.



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ATTACHMENT 8.3 Page 1 of 1

# 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 Test Perform
Test Complete: Date 5/11/88 Time 2230  Test Satisfactory: Yes Red (Circle one)
Reviewed by:
Comments: (Required if results were unsatisfactory) FT 1426A AND FT 1426C FAULT LITES WILL NOT CHAN LIMOTE WE & ER-AFTYI, DST JOZ WAS SANSHED WITH THE FXLLAND OF THE FAMILY LITES ON FT 1426A & C.
Approved by: Date 5-74-88  Unit 2 - Operating Supervisor
Reviewed by: 415Mc Catcher Date 5/31/88

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3 6 3

2 5 3

Rev. 7

	3.0	PREREQUISITES (Continued)
	3.4	This revision is the latest revision available and has been verified against the Revision Status List.
		Name (Print) J Hecutt 6/17/88  Signature Date
1 2 2 3	3.5	The Shift Foreman has given his permission to conduct this test.  Shift Foreman
8 7	4.0	PRECAUTIONS AND LIMITATIONS
() 0 <b>4</b>	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.
6 3	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.

### PUMP DATA

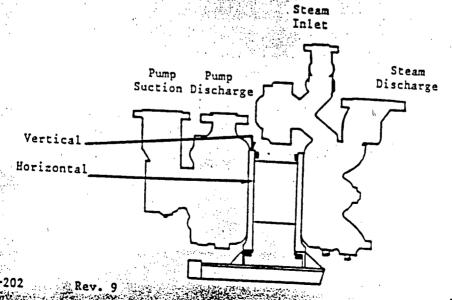
REF. STEP	PARAMETER	THE RESERVE OF THE PARTY OF THE	
7.2.16.2	Disch. Press. PI-1/26	DATA	ACCEPTANCE CRITERIA
7.2.16.2	TOIL TOIL	1200	N/A
etyptika erskitska	Steam Inlet Press. PI-1357-2. PSIG	790	N/A
.2.17 (4) (4) (1) (1) (1) (1) (1)	reed to Steam AP	Alternative Con-	
.2.19	PSI (1) Pump Turbine Speed, As Found RPM	410	≥310
·2·20	RPM As Found As Left	6/12 9420 9470	≤9550
ATTO	PSIG (Reg. Isolated)	1580	≥9400 N/A
	PSIG PI-1421B, PSIG OPPORTUDING	学 4.6	≥2.0
		1350	N/A
	Oil Press to Regulator, PSIG Oil Press from Regulator, PSIG	20 20.00	~ N/A
	Temp "to cooler "F	Service 135 min	-/7-0N/A
	Cooling Water Outlet Temp.	20 mm	N/A N/A
	·	1 4 day 50 10 0 5	N/A
2.21	Mils* Vertical Pump ΔP, PSI, (2)	3,343	≤1.2 ≤1.0
Service and the service of the servi		1571-7546	≥1412
	A CONTROL OF THE PROPERTY OF T		≤1548

... - Ar 6-17-88 Calculations: (1) Feed to Steam AP = (Discharge Press) - (Steam Inlet Press)

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

### Vibration Data Points

\*To be taken after 15 minutes of operation.



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ATTACHMENT 8.3

## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	CERTIFICATION AND REVIEW FORM
£ Scheduled	/ Unscheduled (Gircle one)
	(Circle one)
(II unached	uled, state reason for tear
es de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	uled, state reason for test and the page numbers included in
A State of the sta	included in
Teer Page	Initial
eriorm Pick	ed by variation // Name (Print) Date  11. A. William (Print)
	Company Deliver Different Tourisment Colors
	W. CUTE ILAT
	- Ware 188 / O - 17-88
Complete	6///8 7 Time 1/5//
Test Satisfact	Circle one)
	No (Circle one)
Reviewed by:	-10-10 a
	Unit 2 - Shift Foreman Date 6-17-88 Time 1960
Comments: (Rec	luired to
Prop wis	engineering data while field in ste
3 d 000 1	engineering data dill 30 minutes in order
1900	Lechted with a stem generation
	AME for High Pund AD
Approved by:	
	Unit 2 - Operating Supervisor  Date 6-24-88
Reviewed by:	Ulling
	ISI Coordinary Date Glock
	7,57188

OST-202 Rev. 7

	3.0	PREREQUISITES (Continued)
,	3.4	This revision is the latest revision available and has been verified against the Revision Status List.    Ric   Brine   (Print)
6	3.5	The Shift Foreman has given his permission to conduct this test.    G-17-88     Shift Foreman   Date
3. 7	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.
7 2	4.2	Ensure the Automatic Feedwater Control System is functioning properly while performing this test.
<i>c:</i> 5	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.

### SDATA PUMP DATA THE PERSON NAMED IN THE PARTY.

REF. STEP	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.16.2	PSIC PSIC PI-1426	1270	N/A
7.2.16.2	Steam Inlet Press. PI-1357-2. PSIC	805	N/A
7.2.17	Feed to Steam AP, PSI (1) Steam AP,	<b>3</b> 425	≥310
7.2.19	Pump Turbine Speed, As Found RPM As Left	9100	≤9550 ≥9400
7.2.20	Disch. Press. PI-1426, PSIC (Reg. Isolated)	1540	N/A
	Pump Suct. Press. PI-1478,	14.2	≥2.0
	Header Press PI-1421B,	1560	N/A
Control of the Contro	Oil Press a to Regulator, PSIG week	100 22 mg 28.8 c	N/A
2000 - 10	Oil Press . from Regulator, PSIG :	a 40 7.5 10 60	N/A
	Oil Temp to Cooler, Francisco	Today & Grand Control	N/A
2	Oil Temp. from Cooler, "Fassementalism	122 months	N/A
33/5(	Cooling Water Outlet Temp.	middle 98 or state 1	N/A
ACT OF	Vibration Horizontal		≤1.2
中国特别的一个人	Mils* 學問 Vertical was garen and	8 45 m & 3	≤1.0
7.2.21	Pump AP, PSI, (2)	1535.8	≥1412 ≤1548

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

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

Vibration Data Points

\*To be taken after 15 minutes of operation.

To the second

Steam Inlet Steam Pump Discharge Suction Discharge Vertical. Horizontal

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ATTACHMENT 8.3 Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	AND REVIE	W FORM
Scheduled	nscheduled (Circle one)	_
		•
(If unschedul	ed, state reason for test and the p	
partial test)	Duris 1-17, 21, 22, 24  A/A'S due to Compare and the p	age numbers in .
Service	Professed to place	Shapu,
14.8.2	NA'S 1-17,21,22,24	frist hark in
	MA's due to testing dans	en Ireni
	The state of the s	10 July 202
'Test Performed	Initials Name	(Print)
		Date
	54-	6-17-19
	D 6.11.	6-17-58
		6-17-88
Test Complex.		
- and complete:	Date 6-17-58 Time 2255	
Tear Cast a	7233	<b>-</b> ··
rest Satisfacto	ry: Yes / No (Circle one)	
	One)	
Reviewed by:		
	Unit 2 - Shift Foreman Date	6-17-87 Time 2330
Comments: (Requ	ired if results were unsatisfactory	
C 2/2 (3-	Age 16 de 2	Wishar W
- Nech KEB	INOPERABLE due 1	7 101 1-11/21
Work Lig	wist A DU due to	FALLE LINE
/	1237 A 88-16 QP-1	Suppritted Soft
Approved by:		
	Unit 2 - Operating Supervisor	Date 6-24.88
Reviewed by:	SUKAL A EX	
	ISI Coordinate	Date / /29/28
	ISI Coordinator	(101/08
ST-202 Rev.	7	
v.∈∧.•	/	

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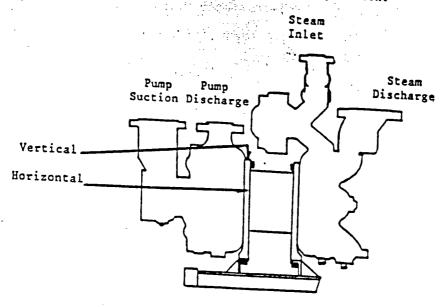
p. 20 of 20

3.0	PRESECULATION
AND THE PARTY OF T	PREREQUISITES (Continued)
200	
3.4	This revision is the latest revision available and has been
	Tevision is the large.
	verified against the Revision Status List.
	the Revision Status
	The state of the s
	PRA
	A.C. FEMAL PRINT PORTA
	RR FEMAL (Print) 2 PC 719-88
100	Signature 7-19-88
3.5	The Shift Foreman has given his permission to conduct this test.
	oreman has given his never
11.17	conduct this
<b>3</b>	Shift Foreman 7-19-29
	-17-E9
Marie 75	Date
4.0	PRECAUTIONS
CONTRACT CONTRACT	PRECAUTIONS AND LIMITATIONS
4.1	Book
O	both of the isolation value
	Water Backup Systems should be closed with the telltale drain valve
	Systems should be closed and Deep Well
	open to prevent the Condensate System from being contaminated with untreated water.
	untreast Valve
	untreated water. System from being contaminated with
4.2	
M Parket	Ensure the Automatic Feedwater Control System is functioning
	properly while performing this test.
O	while performing this took was a functioning
4.3	The ga
<b>Mar</b> i	The Steam Driven Pump shell be
₹Ct	shall nor every to shall be run for a minimum of 1s
	The Steam Driven Pump shall be run for a minimum of 15 minutes, but shall not exceed 30 minutes while on mini-flow recirculation.
	Tow recirculation
4.4	Before testing the Steam Driven Pump, warm up the steam header and
	testing the Steam Driven During
17	turbine shell
	neader and
4.5	After the number of
	one pump has run and is stopped
1	After the pump has run and is stopped, and the discharge valves is caused by turbulence due to voids that the stopped. This
	is caused to the empty and/or fault links
	Taused by turbulence due to main
	is caused by turbulence due to voids that were formed and
	backleakage past the discharge valve seats. This condition is
12	temporary and will clear.
	Stear.

REF. STEP	PARAMETER	V SAN TO SAN	(2) (1) 第 <b>44</b> 	
7.2.16.2	Disch. Press. PI-1426 PSIG	DATA	ACCEPTANCE CRITERIA	7
7.2.16.2	Steam Inler Des	(*780)	N/A	1*
7.2.17	Feed to Steam AB Dor	(810)	N/A	*
.2.19	(Steam Inlet Pressure PI-1357-2)	(30)	≥310	1 1-
.2.20	RPM As Found Header Press PI-14218	9500	≤9550 ≥9400	1
F	Header Press PI-1421B, PSIG Oil Press to Regulator, PSIG Oil Press from Particular PSIG	1670	N/A	
<b>F</b>	Oil Temp to Cooler S.	20	N/A N/A	1.
	Cooling Water Outles To	-11124	N/A N/A	
	Mils* Vo-	mar. 98	N/A ≤1.2	1
	Disch. Press. PI-1426, PSIG (Reg. Isolated) Pump Suct. Press. PI-1478, PSIG	1560	≤1.0 N/A	
2.21	Pump AP. PST	(1.5)	≥2.0	* cs1 :
	Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	1558.5	≥1412 ≤1548	
	1 1470 min 200 200 200 200 200 200 200 200 200 20	1330.3		*

## Vibration Data Points

\*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled (Circle one)

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

The state of the s	
Test Page	
Test Performed by Name (Print)	
17 S 8 A M 1 - 5 - 7 - 70 -	<b>%</b>
1 tcheat	
	78
Test Complete: Dare	n's
lest Complete: Date 7/2/102	1-7-2088
Test Complete: Date 420/13 Time 0300	
Test Satisfactory: Yes / No (Circle one) (6)	
Yes /(No) (Circle and No	•
Reviewed by:	•
- CCT-1	
Reviewed by:  Unit 2 - Shift Foreman  Date 7-20-19 Time 0330	•
Comments: (Required is	
Comments: (Required if results were unsatisfactory) Dip unnanaturik due  to Low Disch find strainlet prass After 1501 Results	
- DISCH And Stor Wilet Open act DIP UNAMAPTORK due	<b>-</b>
to Low Disch find strainlet pass Ather Isol Provided ind then Unisolating Regulator Pressures were unsatisfactory) Dip unamplink due Unisolating Regulator Pressures were 1100 for Disch and then steam in let Pump suction while isolated was 1.5" unisolated and 700;	_
SIGAM IN let Q. SIGAM IN THE WORK WORK 1100 GOD TO STILL THEN	<del>-</del>
Air Par 11 1 Suction while isolated up 1015th and 7751	- NC
Steam in let Pump suction while isolated was 1.5" unisolated was 2.5" unisolated was 3.5" was saled was 3.5" unisolated was 3.5" was saled wa	#
for pump controller and Fl- 102(4) WR's AR-AHIZI	<u>.</u>
Approved by: Selfer and FI- HZCA respectively.	AHMAI
Unit 2 - 0	
Unit 2 - Operating Supervisor Date 7-25.88	
	-
Reviewed by: AlMaCatalore	
ISI Coulded	
ISI Coordinator Date 8/5/88	

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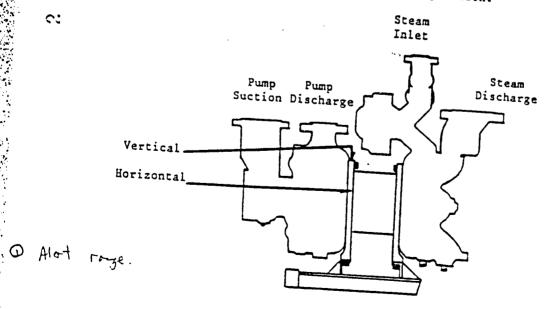
	3.0	PREREQUISITES (Continued)	
	3.4	This revision is the latest revision available and has been verified against the Revision Status List.	
		Name (Print) Signature Date	
	3.5	The Shift Foreman has given his permission to conduct this test.	
~~		Shift Foreman B-16-38 Date	
~	4.0	PRECAUTIONS AND LIMITATIONS	
0	4.1	Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valopen to prevent the Condensate System from being contaminated with untreated water.	
 N	4.2	Ensure the Automatic Feedwater Control System is functioning properly while performing this test.	
.o n:	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.	

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REF. STEP			
	PARAMETER		
7.2.16.2	Disch. Press. PI-1626	DATA	ACCEPTANCE
7.2.16.2	Steam Inler D	1.5.30	CRITERIA N/A
7.2.17	Feed to Steam AP 200	775	N/A
7.2.19	(Steam Inja- Pressure PI-1426) -	755	≥310
7.2.20	Pump Turbine Speed, As Found RPM As Left Header Press PI-1421B,	4300	≤9550
	Oil Press to B	9500 1575	≥9400 N/A
<b> </b>	Oil Press from Regulator, PSIG Oil Temp to Contact PSIG	20 7.2	N/A
	Oil Temp. from Cooler, °F	144	N/A N/A
	Mils* Morizontal	ψ (1.5)	N/A N/A
-	PSIG (Reg. Icelan 126,	.7	≤1.2 ≤1.0 N/A
7.2.21	PSIG Press. PI-1478,	1530	22.0
1.22	Pump AP, PSI, Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	3.0	≥1412
	Pump Suct. Press. PI-1478	1527	≤1548

## Vibration Data Points

\*To be taken after 15 minutes of operation.



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

partial test)		
Initial: Test Performed by	Name (Print)  W.E. Stoke  David A. Coo	Date 8-16-23
	llam D. Hoc.	att 8/17/88
Test Complete: Date 8/17	(b) CLTRIGHT  144. WINGER  168 Time 0205	8-17-8
Test Satisfactory: Yes / No		
Reviewed by: <u>8. M26</u> Unit 2 - S	Date 8/17	/88 Time <u>0215</u>
FT-1426A his a f.	DAFW Prop is in will in the secretary	the alert ron
met.	- The grant precipita	nee crikrist
Approved by: Unit 2 - Or	Deloco Date perating Supervisor	8-26-88
Reviewed by:	Ichen Date	8/17/88

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3.0	PREREQUISITES (Continued)
3.4	This revision is the latest revision available and has been verified against the Revision Status List.    D.F. 5-0.00 (Print)   Signature   Date
3.5	The Shift Foreman has given his permission to conduct this test.    Shift Foreman   B/1/56     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

र्वतिक स्थापिक स्थापिक राजिनाने कार्यान के प्राप्त के प्राप्त के अपने के प्राप्त के प्राप्त के प्राप्त के प्रा

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temporary and will clear.

REF. STEP	PARAMETER		ACCEPTANCE
7.2.16.2	Disch. Press. PI-1426 PSIG	DATA	CRITERIA N/A
7.2.16.2	Steam Inlet Press	1520	
7.2.17	PI-1357-2. PSIG Feed to Steam AP, PSI,	775	N/A
7.2.19	(Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1257 e)	745	≥310
7.2.20	Pump Turbine Speed, As Found RPM As Left	9:00	≤9550
	Header Press PI-1421B, PSIG	1500	≥9400 N/A
}	Oil Press to Regulator, PSIG Oil Press from Regulator, PSIG	1500	N/A
F	Oll lemb to Cooler, of	7.3	N/A
Ė	Oil Temp. from Cooler, *F Cooling Water Outlet Temp.	130	N/A N/A
	Vibration Horizontal	1.2	N/A ≤1.2
	Disch. Press. PI-1426	0.9	≤1.0
}	PSIG (Reg. Isolated) Pump Suct. Press. PI-1478,	1490	N/A
7.2.21	PSIG	20	≥2.0
	Pump AP, 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.

Pump Pump Steam Discharge

Vertical

Horizontal

OST-202

Ci

2.5

Rev. 13

## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

ANALYST	duled, state reason for te st) All PAGES USED To D, (P.1-24)	st and the page numbers RUN SDAFW fuml 10	included
Test Perfor	Initials  med by H	Name (Print)  Mane (Print)  MINICOLUMN  W.E. STOVEL	
Test Complet	e: Date <u>3-17-38</u> Time	MIN KIRK	- <u>8</u> -
Test Satisfa			
	4	one	
Reviewed by:	Unit 2 - Shift Forema	Date 8-17-88	Time /
	Unit 2 - Shift Forema		Time /
			Time /
		satisfactory)	

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. Mulligari 8-29- Name Signature Date	<u>-</u> 88
3.5	The Shift Foreman has given his permission to conduct this test.	
	Shift Foreman 8-29-38.	
	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.	
\$ <b>.5</b>	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.	

OST-202

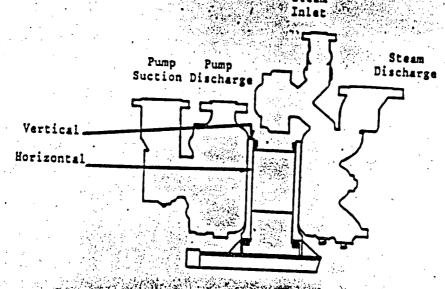
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REF. STE		The species of	ACCEPTANCE
7.2.16.2	Discn. Press. DI-1/26	DATA	CRITERIA
7.2.16.2	Steam Inlet Press.	1500	N/A
7.2.17	Feed to Steam AP DOT	第780 意	N/A
	(Steam Inter page 1977)	721	≥310
7.2.19	(Steam Inlet Pressure PI-1426)  Pump Turbine Speed, and As Found RPM  Header Press PA	91 92 00 918	
.2.20	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7500	) <sup>©</sup> ≤9550 ≥9400
	ULL FIELD PORCHION	1550	N/A
		27	N/A
	Oil Temp. from Cooler	143	N/A N/A
	Vibration Horizont Temp.	96	N/A N/A
		1.500	≤1.2
	PSIG (Reg. Isolated)	\$1550	≤1.0 N/A
Straig!	Por Suct. Press. PI-1478 . Sarreview and		≥2.0
2.21	rumb AP. PST	1.2	र्षात्र अस्ति ।
A. (特别人)	Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	154518	≥1412 ≤1548

# Vibration Data Points

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To be taken after 15 minutes of operation.



ATTACHMENT 8.3 Page 1 of 1

# SURVEILLANCE TEST PROCEDURE

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	2.4	CEI	RTIFICATION AND	D PETTER		
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		10. 图 15. <b>数 15. A. A. A. A.</b>				
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Appr	oved by:		_	7	MATA	Ž .
	Un	wine.	lon.	_	•	
	. 011	it 2 - Operation	ng Supervisor	Date	8-30-88	
			F	· —	<u> </u>	
Revi	ewed by:	11/11/11/11	. 1	•,		
		MANUCCUTC	heon		/ / .	
	•	ISI Coordina	tor	Date _8/-	50/88	
			•		7	

3.0 PREREQUISITES (Continued) 3.4 This revision is the latest revision available and has been verified against the Revision Status List. Name (Print) Putchard 9-18-88 3.5 The Shift Foreman has given his permission to conduct this test. 4.0 FRECAUTIONS 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 Sceam 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

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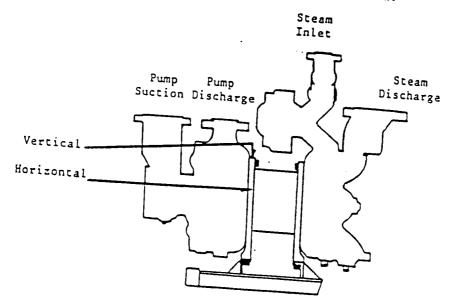
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temporary and will clear.

	SOMEW PUMP DATA		
REF. STE	PARAMETER		
7.2.16.2	Disch. Press. PI-1426	T	ACCEPTANCE
7.2.16.2		DATA	CRITERIA
7.2.17	PI-1357-2 PGTS	1520	N/A
	(Discharge B	970	N/A
7.2.19	(Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2) Pump Turbine Speed	550	≥310
7.2.20	RPM As Found	9550	≤9550
	PSIG P1-1421B,	9226	≥9400
	Oil Press to Regulator, PSIG Oil Press from Regulator, PSIG Oil Temp to Cooler on	1550	N/A
	Oil Temp. f	7	N/A N/A
1	Cooling Water Outlet Temp.	135	N/A N/A
	Mils* Horizontal	.9	N/A
	PSIG (Reg. Ice)	.9	≤1.2 ≤1.0
7 2 2	PSIC Press. PI-1478,	1530	N/A
7.2.21	Pump AP DCT	3.0	≥2.0
	Disch. Press. PI-1426 (Reg. Isolated) - Pump Suct. Press. PI-1478	1527	≥1412
	1.70		≤1548

# Vibration Data Points

\*To be taken after 15 minutes of operation.



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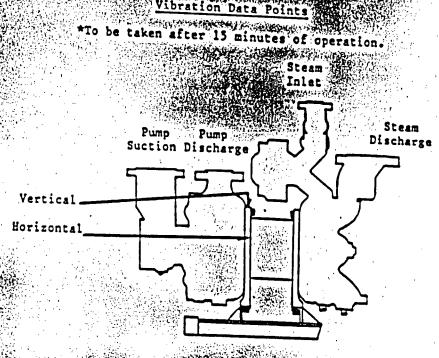
# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Ą.	Scheduled / Unscheduled (Circle one)
	(If unscheduled, state reason for test and the page numbers included in partial test) $\mathcal{R}_{-\infty}$ $\mathcal{S}_{-\infty}$ $\mathcal{C}_{-00}$
• •	Initials
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1	An Block Smith Date 9/19/88
****	100 M. Robon Ht 9/19/89  101 / 102 102 102 102 102 102 102 102 102 102
Ċ	771/2 F. 1 500 1 9/19/97
•	Test Complete: Date 9-15-88 Time 0602
•	Test Satisfactory: (V)
22. 1-3	Reviewed by: Oricle one)  Unit 2 - Shift Foreman  Comments: (Required is
<b>\</b> 0	onit 2 - Shift Foreman Date 7/18/88 Time C. S. /
0:	Comments: (Required if results were unsatisfactory)  Story Davies Line was Run herend 30 minutes will little to
	Approved by:  Unit 2 - Operating Supervisor  Reviewed by:  Unit 2 - Operating Supervisor
	Reviewed by: Who Cutchen Date 9/23/88
	OST-202 Rev. 7

	3.0	PREREQUISITES (CONCINUED) SERVICES SERV
	3.4	This revision is the latest revision available and has been
		verified against the Revision Status List.
		and the second s
ya. Qoʻ		M.S. RADUFF (Print) Molfadelif 10-4-88  Name Signature) Date
		Name Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
<b>V</b>	· · ·	D. M.C. S. 10/4/88
2.2. 2.2.		Shift Foreman Date
-		
œ	4.0	PRECAUTIONS AND LIMITATIONS
9	4.1	Both of the isolation valves on the Service Water and Deep Well
0		Water Backup Systems should be closed with the telltale drain valve
		open to prevent the Condensate System from being contaminated with
		untreated water.
4	•	
(*) <b>5</b> 412	4.2	Ensure the Automatic Feedwater Control System is functioning
က		properly while performing this test.
ហ		
•	4.3	The Steam Driven Pump shall be run for a minimum of 15 minutes, but
લ		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
911 <b>3</b> 00 - 100 -		is caused by turbulence due to voids that were formed and
y. Norw		backleakage past the discharge valve seats. This condition is
		temporary and will clear.

REF. STEP	The state of the s	AND THE PROPERTY OF THE PARTY O	WINE X STATE
7.2.16.2		DATA	ACCEPTANCE
<b>美国东西公司</b>	PSIC PSIC PSIC PSIC PSIC PSIC PSIC PSIC	The sound the sound	CRITERIA NA
7.2.16.2	Steam Inlet Prese Manual Commence	1520	
7.2.17	The state of the s	790	N/A
7.2.19	Feed to Steam AP, PSI, (Discharge Pressure PI-1426) = (Steam Inlet Pressure PI-1357-2)	3320	.≥310
7.2.20 mg	RPH RPH	9450 ment	≤9550 ≥9400
X	Header Press PI-1421B, PSIG Oil Press to Regulator, PSIG	初560架	N/A
	TESS OF LOW RECEIVED BOYO	or 20 atmorphism	WA WARE S
	Oil Temp to Cooler, Fremandementaries	4/38 agrance	N/A N/A
	TARE TOUR TARE	-122-	M/A
PAR SE	TO THE CAULT COTT FOR FAIL	32,2) 300	N/A ≤1.2
19 WAR	Disch. Press. PI-1426	88	≤1.0 ≤1.0
		1550	N/A
AND STATE OF THE S	Pump Suct. Press. PI-1478, PSIG	\$13 (Cath	≥2.0
2.21	Pump AP, PSI, Disch. Press. PI-1426 (Reg. Isolated) — Pump Suct. Press. PI-1426 (Reg. Isolated)	1546.5	30 May 15,000 A
CALPER SE	Pump Suct. Press. PI-1426 (Reg. Isolated) -	1/1/23 -5	≥1412 ≤1548

# Vibration Data Points



Rev. 13

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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Unscheduled (Circle one)	
(If unscheduled) state reason for test and the page numbers incopartial test) 737 321.0.1.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	
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27 D. PADUFF	Date
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CLY//E/	10-4-57
Time 201/2) Sime 201/2) Sime 201/2)	
Test Satisfactory: /Yes /No (Circle one)	
Fro Reviewed by:	
Reviewed by:	lime /245
Comments: (Required if results were unsatisfactors)	
Comments: (Required if results were unsatisfactory) URA 98'-	AKJEI
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The second secon	- n'
Approved by: Delan Date 10 Unit 2 - Operating Supervisor	5-88
Unit 2 - Operating Supervisor	0 00
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ISI Coordinator

OST-202 18 Rev. 7

Page 24 of 24

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

(Print) Signature Date of

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



#### 4.0 WE PRECAUTIONS AND LIMITATIONS

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.

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

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

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

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

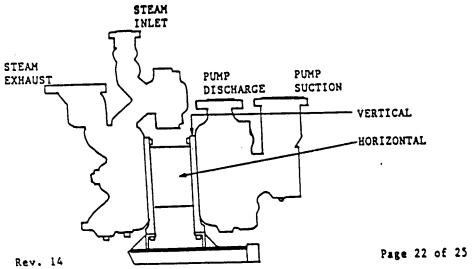
#### SDAFW PUMP DATA

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REF. STEP	PARAME	rer		DATA	ACCEPTANCE CRITERIA
7.2.19.2	Disch. Pres	s. PI-1426		1530	N/A
7.2.19.2		Press.	article Nation	.842	H/A
7.2.20	Feed to Ste	am AP, PSI Pressure P	i-1426) - PI-1357-2)	688	≥310
	Pump Turbin	e Speed.	As Found	9500	≤9550
1.2.22	RPM		As Left.	9500	≥9400
7.2.23	Header Press PI-1421B, PSIG			1500	N/A
}	Oil Press to Regulator, PSIG			31	N/A
	Oil Press from Regulator, PSIG			7.4	N/A
	Oil Temp to Cooler, *F			140	N/A
	Oil Temp to Cooler, F			130	N/A
	Cooling Wa	tos Outlet	Temp.	92	N/A
	Vibration		1	1.9	≤3.0
		Vertical		1.0	≤1.4
	Vibration		al	(1) •17	N/A
	in/eec*	Vertical		(1), 2)	N/A
<del></del>	Disch. Pre	ss. PI-142	6,	1590	N/A
	Pump Suct.	Isolated) Press. PI	-1478,	5.1	≥2.0
	PSIC				≥1412
7.2.24	Pump AP, P	751, 255. PI-142 . Press. PI	6 (Reg. Isolated	1524.6	-1849

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

#### Vibration Data Points

\*To be taken after 15 minutes of operation.



OST-202

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

(If unschedule partial test)	d, state reason for test and the page numbe	rs included in
Test Performed	Initials  Name (Print)  by Alm Almosea  B. Mulligan  mukke	10-19-88
	Date 10-19-88 Time 0179  ry: Yes / No (Circle one)	
Reviewed by:		9-88 Time _062/
Comments: (Requisition of the state of the s	wired if results were unsatisfactory) (com YIII, 11st o 1220ton 1/6 B at 0412 i he you Amr. 1426 B fol FAMILY Not alebl. ON Stop 7.2.	Mark that
pproved by:	Unit 2 - Operating Supervisor	10-27-88
	ISI Coordinator Date	

OST-202

Rev. 14

Page 25 of 25

1476.9

≥1412

≤1548

REF. STER	DATA		
NO. ·	PARAMETER		
7.2.19.2	Dische Press Dr	DATA, /89	ACCEPTANCE
7.2.19.2	Sceam inter D	1235 129	CRITERIA N/A
7.2.20	Feed to Season	970	N/A
7.2.22	(Steam Intersure PI-1426)	320	≥310
.2.23	RPM AS Found	9600	≤9550
-	PSIG Oil Press	1500	≥9400 N/A .
	Oil Press from Regulator, PSIG Oil Temp Co	31	N/A
<u> -</u>	Oil Temp. from Cooler, *F		N/A N/A
_	Vibration Horizontal	90 54 89	N/A N/A
	in/sect	(1) 0.26	≤3.0 ≤1.4
_	PSIG (Reg. I-1426,	(1) 0,19	N/A N/A
.24	PSIG P1-1478,	1480	N/A
	Pump AP, PSI, Disch. Press, Drives	3./	≥2.0

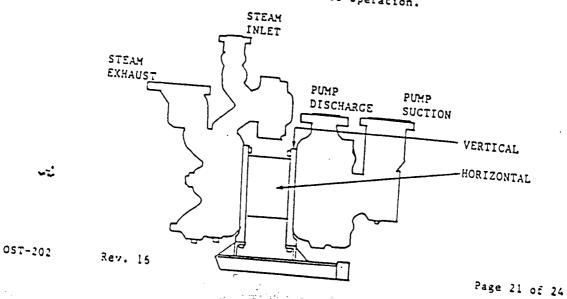
(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Disch. Press. PI-1426 (Reg. Isolated).-

Pump Suct. Press. PI-1478

# 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 partial test)	included in
Test Performed by DAN AKERS  DAN AKERS  D. Mulligan	Date <u> 2/10/19</u> 2-10-89
Martial Aneld	2.10.89
Test Complete: Date 2/10/89 Time 1330	
Test Satisfactory: Yes / No (Circle one)	
Reviewed by:  Unit 2 - Shift Foreman  Date 2-10-8	9 Time 16.55
Comments: (Required if results were unsatisfactory)	
Scholaled per on-005	
Approved by: Date	2/13/89
Reviewed by: Missincouto here Date	
ISI Coordinator	/ /

OST-202 Rev. 16

Page 24 of 24

3.0 PREREQUISITES (Continued)

3.4 This revision is a second of the seco

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

B. Mullig AW (Print) B. Mully Z-24-89

Name Signatury Date

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

Shift Foreman 2-24-69
Date

# 4.0 PRECAUTIONS AND LIMITATIONS

- 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

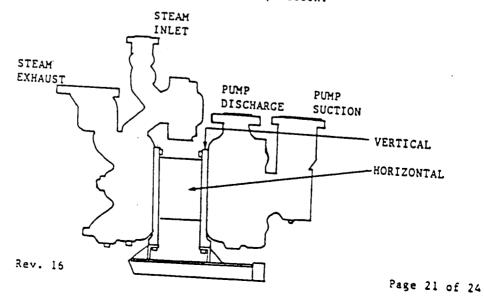
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7.2.19.2	Disch. Pr	ess. PI-14	26	DATA	ACCEPTANCE CRITERIA
7.2.19.2	TF21G	et Press.		1490	N/A
	i Pi-1357-2	Dete			<del></del>
7.2.20	leed to S	Leam AD De	S T	980	N/A
	) \C\SCDATO	e Pragana			≥310
7.2.22				510	
	RPM Turb	ine Speed,	As Found		
.2.23				9400	≤9550
ĺ	PSIG	ess PI-142	18,	9400	≥9400
	Oil Press	to Regula		1500	N/A .
1		ITOM Pac		20	N/A
1.	Oil Temp	to Cooler,	rator, PSIG	8	N/A
Ĺ	Ull lemp.	from Cools	. 6 .	112	N/A
Ĺ	COULING Wa	Ter Ouelan		90	N/A
	Vibration	Horizonta	lemp.	110	N/A
<u> </u>	Mils*	Vertical	1	155	
	Vibration	Horizonta		.6	≤3.0
	in/sec*	Vertical	11	(1) (15	≤1.4
	Disch. Pre	Se DT-1/36		(1) ,15	N/A
L	PSIC (Reg.	1601-6470	,		N/A
Γ	rump Suct.	Press. Pr-	17.70	1490	N/A
	<u></u>		14/0,	2	≥2.0
2.24	Pump AP, PS	SI,		3.5	-4.0
İ	Disch. Pres Pump Suct.	S. DT-1494	(Reg. Isolated)	11965	≥1412

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

OST-202

# Vibration Data Points

\*To be taken after 15 minutes of operation.



## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

OST-202 Rev. 16

Page 24 of 24

PREREQUISITES (Continued) 3.4 This revision is the latest revision available and has been verified against the Revision Status List. Name (Print) Signature The Shift Foreman has given his permission to conduct this test. 3.5 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 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

# SDAFW PUMP DATA

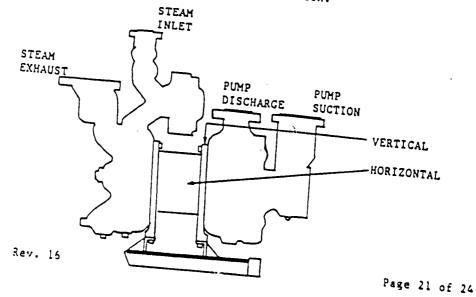
REF. ST	SDAFW PUMP DATA	•	
NO.	FARAMETER		
7.2.19.2	PSIG Press. PI-1426	DATA	ACCEPTANCE CRITERIA
7.2.19.2	Steam Inlet Press. PI-1357-2. PSIG	1480	N/A
7.2.20	(Discharge R AP, PSI,	780	N/A
7.2.22	(Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2) Pump Turbine Speed, As Found	700	≥310
7.2.23	Header Press PI-1421B, PSIG	9400 9400	≤9550 ≥9400
	Oil Press to Regulator, PSIG	1550	N/A .
	Oil Temp to Cooler, F	8	N/A N/A
ĺ	Vibration With Temp.	121	N/A N/A
ľ	Vibration Vertical	78	N/A ≤3.0
•	Disch, Proced	(1) .17	≤1.4 N/A
H		(1).19	N/A N/A
2.24	Pump Suct. Press. PI-1478, PSIG Pump AP, PSI,	1540	
	Discha Press	3.6	≥2.0
7.5	Pump Suct. Press. PI-1478  ion exceeds 0.3 in/see	- 1536.4	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

OST-202

# 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)	
<del>-</del>	
Test Performed by 7x4 M. GHNN 3/22/	_
12 MS PANCIFE 32-22-	<u>×89</u>
AA ALHARY 5-22-	84 89
Test Complete: Date 3/22/87 Time 0505	
Test Satisfactory: Yes / No (Circle one)	•
Reviewed by: O. V. C. Date 3/22/89 Time O	630
Comments: (Required if results were unsatisfactory)  Stopward used for this OST was 4BR = 5.	
Approved by: 608 STEELE by LT Line Date 3-21-89 Unit 2 - Operating Supervisor	
Reviewed by: Wancourter Date 4/10/87	

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- 3.0 PREREQUISITES (Continued)
- 3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Name (Print) 4-18-89

Name Date

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

Shift Foreman 4-18-89
Date

# D 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.

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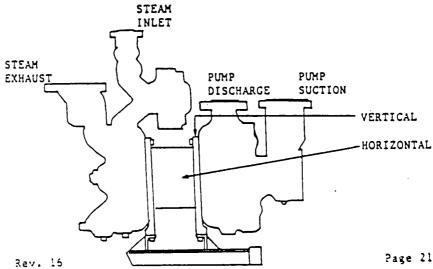
#### SDAEW PUMP DATA

REF. STEP	PARAMETER	DATA	ACCEPTANCE CRITERIA
NO. 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 AP, PSI, (Discharge Pressure PI-1426) - (Steam Inlet Pressure PI-1357-2)	720	≥310
7.2.22	Pump Turbine Speed, As Found RPM As Left	4500 9500	≤9550 ≥9400
7.2.23	Header Press PI-1421B, PSIG	15 40	N/A
1	Oil Press to Regulator, PSIG	22	N/A
ļ	Oil Press from Regulator, PSIG	7.5	N/A
ļ:	Oil Temp to Cooler, F	135	N/A
	Oil Temp. from Cooler, *F	120	N/A
	Cooling Water Outlet Temp.	94	N/A
	Vibration Horizontal	1.0	≤3.0
Ì	Mils* Vertical	0.8	≤1.4
	Vibration Horizontal	(1) 0,22	N/A
4	in/sec* 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. Isolate Pump Suct. Press. PI-1478	ed) - 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.



OST-202

 $\Box$ 

CJ

Page 21 of 24

# 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 $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date $\frac{1}{2}$ Mame (Print) Date
F Legette 4-19-89  Sum Trushite 4/19/99
Test Complete: Date 4/19/69 Time 0220
Test Satisfactory: Yes / No (Circle one)
Reviewed by: Unit 2 - Shift Foreman Date 4-19-89 Time 07.50
Comments: (Required if results were unsatisfactory)
Approved by: Start Date 4/19/89 Unit 2 - Operating Supervisor
Reviewed by: <u>All Mic Cutcher</u> Date <u>Afret/89</u> ISI Coordinator

2		(Confinded)
	3.4	This revision is the latest revision available and has been verified against the Revision Status List.
		Name (Print) Jon 0 5/16/89  Name Signature Date
	3.5	The Shift Foremen has given his permission to conduct this test.
_		Shift Foreman Date
1 2	4.0	PRECAUTIONS AND LIMITATIONS
0	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.
6 8	4.2	Ensure the Automatic Feedwater Control System is functioning properly while performing this test.
. <b>ය</b>	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

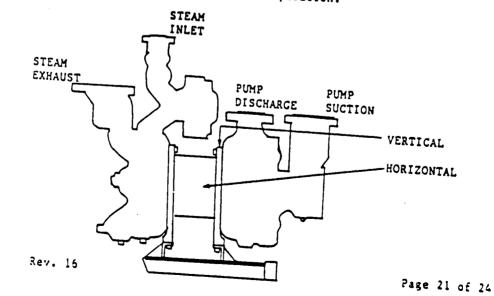
NO.	PARAMI				1 1000
7.2.19.2	Disch. Pres	8. PI-1426		DATA	ACCEPTANCE
7.2.19.2	L P31G	-			CRITERIA
7.2.19.2	Steam Inlet	Press		1530	N/A
1 1 10	F1=133/=2.	Deta	<del>-</del>		· · · · · · · · · · · · · · · · · · ·
7.2.20	reed to Sre	40 AD 000		<i>Z</i> 8.5	N/A
	· · · · · · · · · · · · · · · · · · ·	Dece			
	(Steam Inle	Passure Pi-17	126) -	<u> </u>	≥310
7.2.22	Pump Turbin	Pressure PI-12	1357-2)	745	1
	RPM	AZ	Found	9350	
.2.23	Header Press	As	Left		≤9550
	PSIG	P1-14218,		9475	≥9400
ĺ	0.11			15.75	N/A .
1		o Regulator,	PSIG	21	
ſ		rom Regulator	, PSIG .	7	N/A
ľ				130	N/A
	Cooling Her	om Cooler, F		112	N/A
-	Vibration	Controler, F Coutlet Temp.			N/A
1	V. 1	corizontal		80	N/A
j-	1111	Vertical		4.5	≤3.0
_	: - / . <b></b> -	iorizontal		1) . 2	≤1.4
	Disch	ertical			N/A
- 1	Disch. Press.	PI-1426,		1330	N/A
<u> -</u>	(NEW _ [40] about			1530	N/A
į		ess. PI-1478,		+590P s/17	79
2.24			1	` ' '	≥2.0
	Pump AP, PSI,			3.5	• •
į	Disch. Press	PT-1436 (-			≥1412
	Pump Suct. Pr	ess. Pimican	· isolated)	1526.5	≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

OST-202

# Vibration Data Points

To be taken after 15 minutes of operation.



## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

(If unscheduled, s	tate reason for	test and the	page numbers inc	:luded i
Test Performed by	Initials (B)	LORRIVIA STEVE 8,5	on face	5/1 5/1
Test Complete: Date			2	Sm
Test Satisfactory: (	Yes / No (Circ	:le one)		
Reviewed by:Un	Minter it 2 - Shift Fo	reman Da	: <u>3/17/4</u>	Time O
Comments: (Required	if results were	e unsatisfactor	у)	
pproved by: Unit	2 - Operating	Supervisor	Date 5//	9/89
eviewed by:	McCulo ISI Coordinator	Reen	Date <u>5/24</u>	!/89

- 3.0 PREREQUISITES (Continued)
- 3.4 This revision is the latest revision available and has been verified against the Revision Status List.

Heflefelier (Print) 766ak 6-17-89
Name Signature Date

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

Shift Foreman 6-17-89

# 4.0 \_\_\_ PRECAUTIONS AND LIMITATIONS

ထ

- 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.
- 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.

6

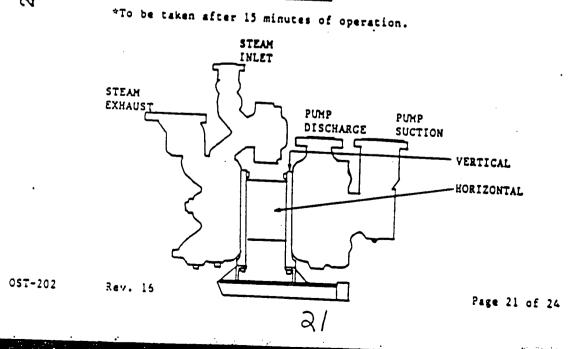
#### SDAFW PUMP DATA

REF. STEP	PARAMETER			
NO. 7.2.19.2	<u>!</u>		DATA	ACCEPTANCE
7.2.19.2	Disch. Press. P.	I-1426	DATA	CRITERIA
7.2.19.2	PSIG		1590	N/A
,	Steam Inlet Pres		1370	
.2.20	PI-1357-2. PSIC		775	N/A
	Feed to Steam Al	P, PSI,		2310
<u></u>	(Discharge Press	ure PI-1426) -		1 2310
.2.22	Pump Turbine Spe	Issure PI-1357-2)	815	
	NEG		9400	≤9550
.2.23	Header Press PI	- Lazia	9450	≥9400
	PSIC	•	1/10	M/A .
l l	Oil Press to Re	gulator, PSIC	1600	
	Ull Press from	Regulaton Deto	20	N/A
9	TIT TEMP TO COO	Ar. P	7.5	N/A
ļ	Ull Temp. from C	00 0=	135	H/A
6	Cooling Water Ou	tiet Temp.	90	N/A
1	Vibration Hori	zontal	7.3	N/A
	Mils* Vert	ical	• 75	\$3.0
	Vibration Hori	zontal	(1),24	≤1.4 N/A
	in/sec* Vert	ical	(1) 12	N/A
1	Disch. Press. PI- PSIG (Reg. Isolat	-1426,		H/A
-	Pump Suce Protein	(ed)	1590	"""
	Pump Suct. Press. PSIG	PI-1478,		≥2.0
2.24	Pump AP, PSI,		. 3.2	
}	Disch. Proce. pr.	-1426 (Reg. Isolated		21412
_ 1	Pump Suct. Press.	(Reg. Isolated	1586.8	\$1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

Vibration Data Points

2



	CERTIFICATION
	CERTIFICATION AND REVIEW FORM
	Scheduled (Circle one)
	one)
	(If unscheduled, state reconst
	(If unscheduled, state reason for test and the page numbers included in
	Mary and on summer included in
	partial test) OST performed on sume pake as part of
	pages included
	74.4
	Test Performed by 15:177 R Home (Print) 6-17-89
	B. M. (Print) Date
	Test Performed by B.M. B. Mulligh 6-17-79
	The settle
	District Control of the control of t
	Test Complete: Date 1-17-89 Time 0346
	Time 0346
	Test Satisfactory: Yes No (Circle one)
	(Circle one)
	Equieved by:
	Unit 2 - Shift Foreman Date 6-17-87 Time 0442.
	Unit 2 - Shift Foreman Date 6-17-87 Time 0442
	The state of the s
	Della de la artica konge. Pua D
R.C.	
# 89-AFX	21 the Deling In the
^/	
	Approved by
	Unit 2 - Operating Supervisor Date 2/4/85
	Reviewed by: Wond OutoRean Date 7/6/89
	ISI Constlucte Chan Days 11/20
	100 100 100 100 100 100 100 100 100 100
	1800 6/17/88 This test are 11 -
	See A HACKED SLEET ACCEPTED TAW OMM-015.
	OST-202 Rev. 16 24 2 1
	Rev. 16
	Page 14 a -
	Page 24 of 24
18.50	The state of the s
	1.1.2.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1 · 1.1.1

3.0 PREREQUISITES (Continued)

This revision is the latest revision available and has been verified against the Revision Status List. MK Coxx (Print) MK Cloud
Signature

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

PRECAUTIONS AND LIMITATIONS

Both of the isolation valves on the Service Water and Deep Well 4.1 Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untrested 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.
- Before testing the Steam Driven Pump, warm up the steam header and 4.4 turbine shell.

## SDAFW PUMP DATA

REF. STE	1	AMETER		
7.2.19.2	Disch. P	ress. PI-1426	DATA	ACCEPTANCE
7.2.19.2	Steam In	les B	1570	N/A
7.2.20	Feed to	PSIG	780	N/A
7.2.22	(Steam In	re Pressure PI-1426) - let Pressure PI-1357-2) ine Speed, As Found	790	≥310
.2.23		As Lefc	9666	£9550
].			3460	≥9400
ŀ	Oil Press		1500	N/A .
<b> -</b>	Oil Press	LION KERU APO- DO-	22	N/A
-	Oil Temp	to Cooler, F	7.5	N/A
-			136	N/A
<i>-</i>	Vib-coi	ter Outlet Temp.	119	N/A
	Mils*	HUTIZONPA)	96	N/A
<u>`</u>			0.8	≤3.0
	in/sec*	Horizontal	1.1	<u> </u>
	Diach	Vertical	(1) ,28	N/A
- 1			(1) .21	N/A
	Pump Sucta	Isolated) Press. PI-1478,	1500	N/A
.24	PSIC	11-1478,		
.24	Pump AP, PS	Ι,	42	≥2.0
	Pump gues	PI-1426 (Reg. Techanic		≥1412
	- Jone Suct.	s. PI-1426 (Reg. Isolated) Press. PI-1478	145.8	≤1548

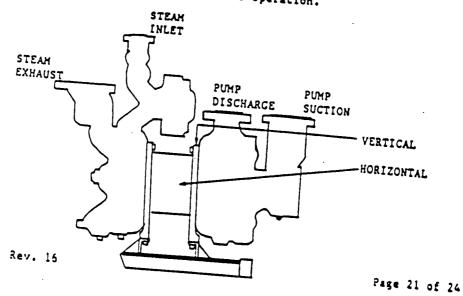
(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

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Vibration Data Points

C 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)
Test Performed by To Mone (Print)  Noon SMITH L/20/89  Mc M.K Curry (April)
RC1 RADIC IVET 6/20/89  270 6.00/EGAND 6-20-89
Test Complete: Date 6-20-69 Time 17.20
Test Satisfactory (Yes) / No (Circle one)
Reviewed by:  Onit 2 - Shift Foreman  Date 1922  Time 6/3-/69
Comments: (Required if results were unsatisfactory) Stis WERE FED AT  YAMOUS FLOW RATES AFTER STAP 7.2.25 For DATA Collection by  SYSTEMS ENDINEES  D Rime SPLEN FOUND & SUD PAM AND 1141 & 9 YOU WHILL IS  WITHIN ACCOUNTS CAPTURE
Systems Entraced.
WIPIN ACHAINNIE CRITTAIN.
Approved by:  Unit 2 - Operating Supervisor  Date 1/1/109
Reviewed by: Which Calchese Date 7/6/89  ISI Coordinator

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#### 3.0 PREREQUISITES (Continued)

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

Name (Print) May C Signature Date

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

<u>7-18-89.</u>
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.

Page 6 of 24

ATTACHMENT 8.

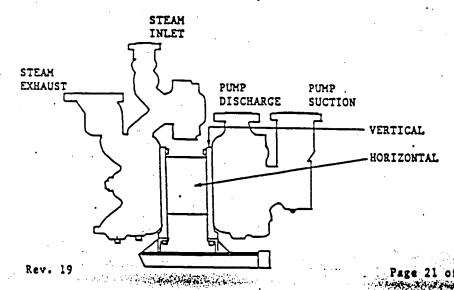
REF. STEP	PARAMETER	DATA	ACCEPTANCE CRITERIA
7.2.18.2	PSIC Press. PI-1426	1500	N/A
7.2.18.2	Steam Inlet Press. PI-1357-2. PSIG	780	N/A
7.2.18.2	Pump Turbine Speed, RPM Commission	9250	N/A
7.2.19	Feed to Steam AP, PSI, (Discharge Pressure PI-1426) - 2002 (Steam Inlet Pressure PI-1357-2)	720	≥310
7.2.21	Pump Turbine Speed. As Found	9330	N/A
7.2.22.1	RPM No Seath Hollery Walker Mar As Left 11	. 9400	(2)
7.2.23	Header Press PI-1421B, PSIC	SHOULT 18	N/A
14.4	Oil Press to Regulator, PSIG	· 21	N/A
	Oil Press from Regulator, PSIG	7.5	N/A
	Oil Temp to Cooler, Francisco	/37	N/A
6.76	Oil Temp. from Cooler, F	120	N/A
	Cooling Water Outlet Temp.	98	N/A
A STATE OF THE STA	Vibration Horizontal	1.5	≤3.0
Total Control	Hils* 18th Vertical meters in interpresentation	08	≤1.4
	- Vibration Horizontal	(1)0-16	N/A
The North	in/sec* Vertical	(1) 0.22 -	N/A
	Disch. Press. PI-1426, PSIC (Reg. Isolated)	1540/300	N/A
	Pump Suct. Press. PI-1478, PSIG	3.6	≥2.0
7.2.24	Pump AP, PSI, Disch. Press. PI-1426 (Reg. Isolated)- Pump Suct. Press. PI-1478	1506.4	≥1412 ≤1548

(1) If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.

0

(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 / Unsch	neduled (Circle	one)		
(If unscheduled, partial test)	state reason for	r test and th	he page numbers	included in
			_	
Test Performed by	Initials  No.  MI  MIA  BCW	MANON MONTH	Couse L Tyey Annold	7-18-89 7-18-89 7-18-89
Test Complete: [	late 7-18-89			
Test Satisfactory	': Yes No (C	ircle one)		
Reviewed by:	Unit 2 - Shift	Foreman	Date 7-18-	89 Time <u>2354</u>
	red if results (14 A B, C) 4	AND VI	-8A,B,C	timed with
Approved by:	Unit 2 - Operati	ing Superviso	Date _	7/19/89
Reviewed by:	ISI Coordin	NC Cuto Re	Date_	2/31/59

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#### 3.0 PREREQUISITES (Continued)

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

Name (Print) White 8-15-89

Name Signature Date

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

Shift Foreman B/15/39,

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

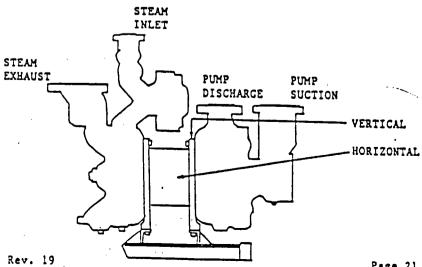
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· · · · · · · · · · · · · · · · · · ·		With the second second second		
REF. STEP NO. 7.2.18.2	PARAM		DATA	ACCEPTANCE CRITERIA
	PSIG	ss. PI-1426	1480	N/A
7.2.18.2	Steam Inle PI-1357-2.	PSIC	780	N/A
7.2.18.2	Pump Turbi	ne Speed, RPM	5250	N/A
7.2.19	(Discharge	Pressure PI-1426)	200	2310
7.2.21	Pump Turbia	ne Speed, As Found	9720	N/A
7.2.22.1	D DM		75-0	(2)
7.2.23	Header Pre: PSIG	AS Leit		N/A
l (	Oil Press	to Regulator, PSIG	1575	N/A
l L	Oil Press	from Regulator, PSIC	1	N/A
	Oil Temp	o Cooler, F	126	N/A
l [	Oil Temp.	rom Cooler, F	118	N/A
	Cooling Wat	er Outlet Temp.	97	N/A
	Vibration	Horizontal	1.2	S3.0
1	_ Hils*	Vertical	1	≤1.4
ſ	Vibration	Horizontal	(1) .22	N/A
		Vertical	(1) . 2	N/A
	Disch. Pre: PSIG (Reg.	18. PI-1426.	1520	N/A
	Pump Suct. PSIG	Press. PI-1478,	7.1	≥2.0
7.2.24	Pump AP, P: Disch. Pres Pump Suct.	SI, ss. PI-1426 (Reg. Isolated)- Press. PI-1478	15-16.1	≥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.

> > राज्या व स्त्रीम् जनराजु<mark>न्द्रात्त्रात्त्र्रात्त्र</mark>्या हो।



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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Test Performed by dru Truckite  To Several Complete: Date Stop Time O245  Test Satisfactory: Yes/ No (Circle one)  Reviewed by: Manual Comments: (Required if results were unsatisfactory)  Approved by: Unit 2 - Operating Supervisor  Unit 2 - Operating Supervisor	partial test)	, state reason for	· -	<del></del>	
Test Performed by Au Trubite  To Salution  Test Complete: Date Stop Time O245  Test Satisfactory: Yes/ No (Circle one)  Reviewed by: Official Date Block Time  Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory)				·	
Test Complete: Date Stolen Time 0245  Test Satisfactory: Yes/ No (Circle one)  Reviewed by: Date Bloks Time Unit 2 - Shift Foreman  Comments: (Required if results were unsatisfactory)	Test Performed (	y du	Trubite	wien	- <u>e</u>
Test Satisfactory: Yes / No (Circle one)  Reviewed by:		(N	<u> W. Cutiz</u>	6rt,	£ 00
Reviewed by:    Open   Date   Blook   Time	Test Complete:	Date 4/6/09	Time _0245		
Reviewed by:    Open   Date   Blook   Time					
Approved by:				: <u>3/10/27</u>	Time
Approved by: SILL 8/12					
	Comments: (Requ	ired if results we	re unsatisfactory	·)	
	Approved by:	Unit 2 - Operation	R Supervisor	Date 8	/17/

#### 3.0 PREREQUISITES (Continued)

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

Name (Print) Wule 8-15-89

Name Signature Date

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

Shift Foreman B/5/39.

#### 4.0 PRECAUTIONS AND LIMITATIONS

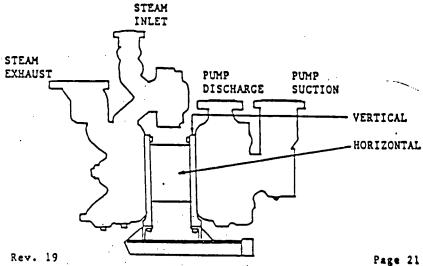
- 4.1 Both of the isolation valves on the Service Water and Deep Well Water Backup Systems should be closed with the telltale drain valve open to prevent the Condensate System from being contaminated with untreated water.
- Ensure the Automatic Feedwater Control System is functioning properly while performing this test.
- 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.
- 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.
- Before testing the Steam Driven Pump, warm up the steam header and turbine shell.

Page 6 of 24

		NAME OF THE PARTY OF THE PARTY.		
REF. STEP	PARAMI		DATA	ACCEPTANCE CRITERIA
7.2.18.2	PSIG	is. PI-1426	1480	N/A
7.2.18.2	Steam Inlea PI-1357-2.	Press.	780	N/A
7.2.18.2	Pump Turbin	ne Speed, RPM	5250	N/A
7.2.19	(Discharge	Pressure PI-1426) - Pressure PI-1357-2)	700	≥310
7.2.21	Pump Turbi	e Speed . As Found	942	N/A
7.2.22.1	RPM	As Left	79-0	(2)
7.2.23	PSIC	18 PI-1421B,	1505.	N/A
· [	Oil Press	to Regulator, PSIG	1.22	N/A
	Oil Press	from Regulator, PSIG		N/A
] [	Oil Temp	to Cooler, Francisco	136	N/A
		from Cooler, F	118	N/A
1		ter Outlet Temp.	97	N/A /
1 1		Horizontal	. 2	≤3.0
1 [	Mils*	Vertical	, 6	≤1.4
		Horizontal	(1) .22	N/A
	in/sec*	Vertical	(1) . Z	N/A
	Disch. Pre PSIG (Reg.	vertical ss. PI-1426, Isolated)	1520	. N/A
	PSIG	Press. PI-1478,	3.1	≥2.0
7.2.24	Pump AP, P			≥1412
		ss. PI-1426 (Reg. Isolated) Press. PI-1478	15-16.1	≤1548

 If vibration exceeds 0.3 in/sec, notify Technical Support-Systems.
 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.



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ATTACHMENT 8.3 Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

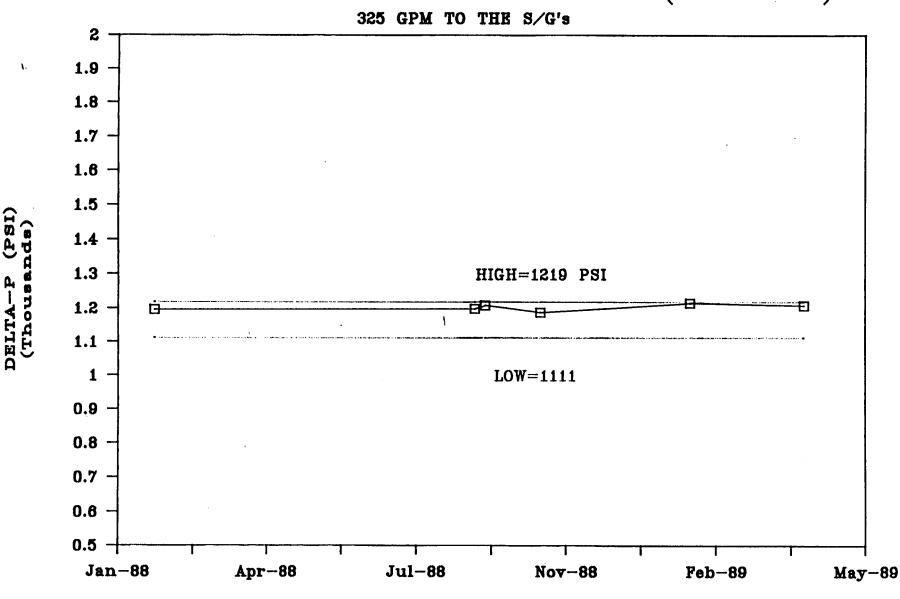
			_	
Test Performed by	37	Name (Pr Trwhite I.s. scua V. Cutt2/6	,ca	- 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2
Test Complete: Date	Time	0245		-
Reviewed by: Unit 2			8/10/ti	Time
Comments: (Required if				
	·			
	Belle			/17,

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Rev. 16

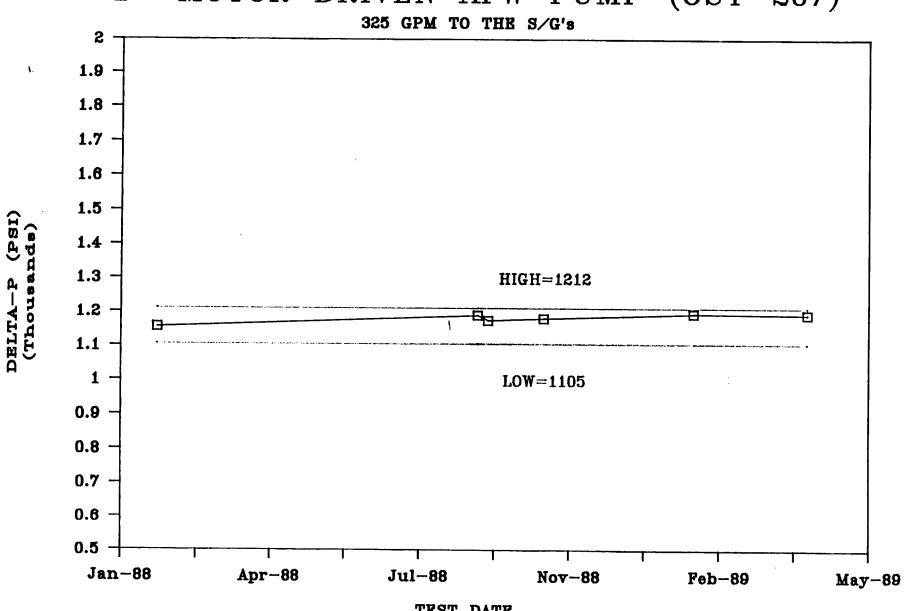
Page 24 of 24

# "A" MOTOR DRIVEN AFW PUMP (OST-207)



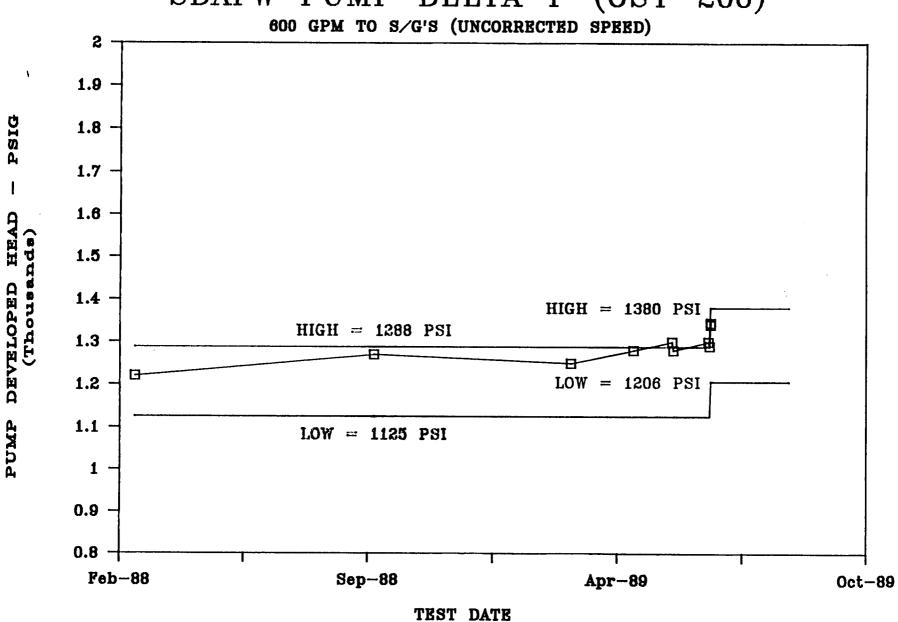
TEST DATE
ACCEPTABLE RANGES

## "B" MOTOR DRIVEN AFW PUMP (OST-207)



TEST DATE
ACCEPTABLE RANGES

## SDAFW PUMP DELTA-P (OST-206)



REQ. ACTION LEVELS

4. 2

	•	
1.0	PURPOSE pendiness	
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  ASME Section XI, Subsections IWP and IWV, 1977 Edition, Summer 1978	
2.1	ASME Section XI. Subsections 2.00 Addenda	
2.2	OP-402 Auxiliary Feedwater  Engineering Flow Diagrams G-190197, Feedwater, Condensate, and Air	
2.3	Engineering Flow Diagrams G-190197, 100000	
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	600 gpm and in auto.	
3.5	This revision is the latest revision available and has been verified against the Revision Status List (Print)  [Print]	-
	Page 4 of	14

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- 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

L

PARAMETER	PUMP	ACCEPTABLE RANGE		REQUIRED ACTION RANGE
Differential Pressure	SDAFW	≥1162.5 ≤1275 psig	Low ≥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.

FOR IRRUMATION ONLY

Page 6 of 14

	PROCEDURE (Continued) INITIALS
7.0	PROCEDURE (Continued) INITIALS
7 2 10	START the SDAFW pump by opening the
7.2.10	following valves:
	1. S/G "A" Steam Supply to SDAFW Pump, VI-SA VI-8A OPEN
	2 S/C "R" Steam Supply to SDAFW Pump. V1-8B
	V1-8B OPEN
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
	V1-8C OPEN D
7.2.11	OPEN the following auxiliary feedwater supply valves:
	1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A
	V2-14A OPEN
ė.	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
*****	ANANANANANANANANANANANANANANANANANANAN
	CAUTION
	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM
	GENERATOR LEVELS TO ENSURE BO 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 9/15 RPM Discharge Pressure (PI-1426) 1220 psig AWR
	SDAFW Pump Discharge Pressure (PI-1426) /220 psig MWK
	SDAFW Pump Suction Pressure (PI-1478) D psig
	HOTE
	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	
1.4.14	Isolation. Zhi	
7.2.15	Allow the SDAFW pump discharge to stabilize	
1.2.23	and record the indicated discharge pressure,	
	flow and speed.	
	PI-1426 13 psig FI-6416 600 gpm	
	Speed _ 9/50 RPM	
7.2.16	OPEN AFW-17, SDAFW Pump Recirculation	
	Isolation.	
7.2.17	STOP the SDAFW pump by closing the following	
	valves:	
	1. S/G "A" Steam Supply to SDAFW Pump, V1-8A	
	VI-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 CLOSED W2-14A CLOSED	
	2. SDAFW Pump Feedwater Discharge to S/G "B",	
	V2-14B CLOSED	
	3. SDAFW Pump Feedwater Discharge to S/G "C",	
	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 ORW	•
7.2.20	Return FIC-6416 to AUTO mode and set at 600 gpm.	
	FIC-6416 IN AUTO OCCU	•
	FIC-6416 AT 600 GPM	-
7.2.21	Calculate pump AP from the data gathered in	
	Step 7.2.13.	
		:
	Discharge Pressure Suction Pressure $\Delta P$	
	Discharge Pressure Suction Pressure (PI-1426) (PI-1478)	
OST-206	Page 12 of	14

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	state reason for test as GP-005 REQUAGES (1-14)	11120	
Test Performed b	Sew -	Name (Print)  M. Auchock  C. DAZWIN  EWhite  Robandt	3-10 3-10 3-10 3-10
	Date 3-10-88 Time  Ty: Res / No (Circle of Land Land Land Land Land Land Land Land	Date 3-10-8	8 Time <u>2</u>
Comments: (Rec	quired if results were un	isatisfactory)	
Approved by:	Unit 2 - Operating St	) Date _	_
Reviewed by:	SISI Coordinator	Date_	3/23/88

Rev. 2

OST-206

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- This revision is the latest revision available and has been This revision ... ... verified against the Revision Status List.
- The Shift Foreman has given his permission to conduct this test.

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# PRECAUTIONS AND LIMITATIONS

5 8 6 1

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

2 9

9 . 2

- Ensure the Automatic Feedwater Control System is functioning properly while performing this test.
- The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.
- Before testing the Steam Driven Pump, warm up the steam header and turbine shell.
- required specifications prior to feeding the Steam Generators. Ensure that the Condensate Storage Tank chemistry is within 4.6

4.5

Closely monitor steam generator lavel indicators to ensure the desired level is maintained during the test. 4.7

monitored during performance of this OST since the colder feedwater Reactor Power and Turbine/Generator output should be closely may affect power and output.

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5.0	SPECIAL	TOOLS	AND E	QUIPMENT

- 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 RANCE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure		≥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, declars 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 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 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).

1.355/ 1.355

Section 7.2 Page 3 of 4

		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, V1-6A	VI-SA OPEN 100
		VI-0X 0122
	2. S/G "B" Steam Supply to SDAFW Pump, V1-8B	WI-RE OPEN : ITA
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C	V1-8C OPEN 1
7.2.11	OPEN the following auxiliary feedwater supply w	41463;
	1. SDAFW Pump Feedwater Discharge to S/G "A",	V2-14A
		V2-14A OPER
	2. SDAFW Pump Feedwater Discharge to S/G "B"	, V2-14B
	•	V2-148 UPER
	3. SDAFW Pump Feedwater Discharge to S/G "C"	, V2-14C
		V2-14C OPEN AT
*****	**************************	****
	CAUTION	
	CLOSELY HOWITOR REACTOR POWER, TURBINE/GENERAL	TOR LOAD, AND STEAR
	CEMERATOR LEVELS TO EMBURE NO ABNORMAL CONDITI	ORR OCCUR EROH
	THE STEAM CENERATORS.	
*****	PEEDING COLD WATER TO THE COLD STREET	*******
7.2.12	SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-641	6 in MANUAL
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	and set for 600 gpm.	144
7.2.13	Record the following data after 5 minutes of	
,,2,,,	alia ah 600 gami	a coa look
	Shaft RPF	9 000 RPM 100
	SDAFW Pump Discharge Pressure (PI-1426)	1270 pais 404
	SDAFW Pump Suction Pressure (PI-1478)	20 psis 112
	NOTE	
	Step 7.2.13 confirms the opening of check va	lve AFW-84.
	neek transmission of the most warmer of	
OST-20		Page 11 of 15
U31-401	•	

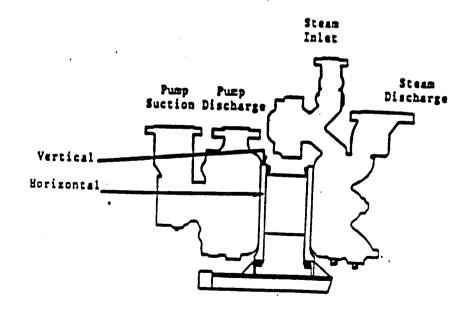
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	THE WAY	
· ·	79	Section 7.2
	•	Page 4 of 4
	7.0	PROCEDURE (Continued)  INITIALS VERIFIED BY
· •		THITTALS VERIFIED BY
•	7.2.14	Record SDAFW Pump vibration on ATTACHMENT 8.1. 101
<b>7.</b> (**)	7.2.15	Record bearing temperature per EST-013.
	7.2.16	CLOSE AFW-17, SDAEW Pump Recirculation
		Isolation.
	7.2.17	Allow the SDAFW pump discharge to stabilize
		and record the indicated discharge pressure,
.t:		flow and speed.
•		PI-1426
'Ċ1		Speed
r:	7.2.18	OPEN AFW-17, SDAFW Pump Recirculation
5.6		Isolation.
•	7.2.19	STOP the SDAFW pump by closing the following
<del>ai.</del> Marie		valves:
		1. S/G "A" Steam Supply to SDAFW Pump, V1-SA
•		·
<b>~</b>		VI-8A CLOSED ONE 2. 8/G "B" Steam Supply to SDAFW Pump, VI-8B
· · · · · · · · · · · · · · · · · · ·		V1-8B CLOSED
<b></b>		V1-8C CLOSED Som
:'0'	7.2.20	CLOSE the following valves:
		1. SDAFW Pump Feedwater Discharge to S/G "A",
***		V2-14A V2-14A CLOSED SEL
	٠,	2. SDAFW Pump Feedwater Discharge to S/G "B",
		V2-14B V2-14B CLOSED
		3. SDAFW Pump Feedwater Discharge to S/G "G",
, 10 (m		V2-14C CLOSED CAS
• •	7.2.21	FULLY OPEN the Steam Driven Flow Control
·		Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.
·		AFW-FCV-6416 OPEN MLA
	7.2.22	Return FIC-6416 to AUTO mode and set at 600 gpm.
* , <del>x</del>		FIC-6416 IN AUTO MIA SAL
- 1		FIC-6416 AT 600 GPM MLA SM
``	7.2.23	Calculate pump AP from the data gathered in
\$		Step 7.2.13.
		4.5.5.3
•		Discharge Pressure Suction Pressure AP
- 1		Discharge Pressure Suction Pressure $\Delta P$ (PI-1426) (PI-1478)
and the second	OST-206	Rev. 7
74 100 - 100		Page 12 of 15

ATTACHMENT 8.1 Page 1 of 1

#### VIBRATION DATA

PUMP		DATA	T	ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	.25	HILS	N/A
	VERTICAL	, 4	HILS	W/A

#### VIBRATION DATA POINTS



ATTACHMENT 8.2 | Page 1 of 1

Page 15 of 15 |

### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

test) G	ed, state reason for test and the page numbers included in partial
Test Performe	Initials  Mame (Print)  Date  Larry O. Sait 5 Taile 9/19/88 9-1  M. S. RADCLIFF 9-19-88  M. Robendt 9-18-88  OHLIFT BUXALLIFE 9-18-18
Test Complete	: Date 9-19-68 Time 0752
Test Satisfac	tory: Yes / No (Circle one)
eviewed by:	Date 9/15/88 Time 0820
	Unit 2 - Shift Foreman  Date 9/15/88 Time 0820  equired if results were unsatisfactory)
	out a - out to temps /
Comments: (R	out a - out to temps /

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Rev. 7

	3.0	PRESCUE
		PREREQUISITES (Continued)
	3.5	This revision is the latest revision available and has been
		verified againstithe Revision Status Lies
		B. Molliga D. (Print) B. M. Du 2-24-89
	AIT!	B. Mollic A Description Status List.  B. Mollic A Description Status L
	3.6	
		The Shift Foremen has given his permission to conduct this test.
		Shift Forenan Date
		Date
	4.0	PRECAUTIONS AND LIDITATIONS
0	4.1	Both of the isolation valves on the Service Water and Deep Well
		sacrup systems should be closed with the cattact.
	7v .	open to prevent the Condensate System from being contaminated with untreated water.
6	4.2	Ensure the Automatic Feedwater Control System is functioning
		properly while performing this test.
. <del>.</del>		
	4.3	The Steam Driven Pump run time shall not exceed 30 minutes while on
		mini-flow recirculation.
	4.4	Before tearing the case of
		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	
	7.0	Closely monitor steam generator level indicators to ensure the
		desired level is maintained during the test.
	4.7	Reactor Power and Tumbing/org
		Reactor Power and Turbine/Generator output should be closely monitored during performance of this own
		monitored during performance of this OST since the colder feedwater may affect power and output.
	«Caran des (1987)	AND MUNAMPER COD LARGER CONTROL
	OST-206	Rev. 7
	West Control	The state of the s

SPECIAL TOOLS AND EQUIPMENT Stop Watch RPM Indicator Two-way Radios 5.3 5.4 Vibration Detector with magnetic probe Pyrometer EST-013 ACCEPTANCE CRITERIA 6.1 REQUIRED ALERT ACCEPTABLE ACTION RANCE PUMP Differential SDAFW ≥1162.5 AGE Low ≥1125,

	Pressure	Pump	≤1275 psig	High	<1162.5 >1275.	psig	<1125,	5 paid
		+ 47.5%			≤1287.	psig		
. 1	If numn fail	le ro era	rt and achie	ve its	rated	speed	upon t	he first

attempt to start it, declare it inoperable and initiate a work request to determine the cause of the problem.

If the differential pressure calculated in Step 7.2.23 is greater 6.1.2 than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

If the differential pressure calculated in Step 7.2.23 falls within 6.1.3 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).

Page 6 of 15

Section 7.2 Page 3 of 4 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 VI-8A OPEN \_ Ju 2. S/G "B" Steam Supply to SDAFW Pump, V1-8B V1-88 OPEN : 16m 3. S/G "C" Steam Supply to SDAFW Pump, V1-8C VI-8C OPEN \_\_\_\_\_ OPEN the following auxiliary feedwater supply valves: 7.2.11 1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A V2-14A OPEN \_dm\_ 2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B V2-14B OPEN 300 3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C V2-14C OPEN → CAUTION CLOSELY MONITOR REACTOR POWER, TURBINE/CENERATOR 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 By SDAFW Pump Discharge Pressure (PI-1426) \_\_\_\_ | 250 psig SDAFW Pump Suction Pressure (PI-1478) \_\_\_\_\_ O psig NOTE Step 7.2.13 confirms the opening of check valve AFW-84.

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Page 4 of 4 INITIALS VERIFIED BY PROCECURE (Continued) Record SDAFW Pump Vibration on ATTACEMENT 8.1. 7.2.14 Record bearing temperature per EST-013. 7.2.15 CLOSE AF#-17, SDAF# Pump Recirculation 7.2.16 Isolation. Allow the SDAFW pump discharge to stabilize 7.2.17 and record the indicated discharge pressure, flow and speed. PI-1426 1300 psig FI-6416 660 874 Speed 9400 IPS OPEN AFW-17, SDAFW Pump Recirculation 7.2.18 Isolation. STOP the SDAFW pump by closing the following 7.2.19 valves: 1. S/G "A" Steam Supply to SDAFW Pomp, VI-8A VI-BA CLOSED \_\_\_\_\_ 5/G "B" Steam Supply to SDAFW Pump, V1-88 VI-83 CLOSED \_\_\_\_\_\_ -: 3. S/G "C" Steam Supply to SDAFN Pump, V1-8C AI-8C CTORED 7-CLOSE the following valves: 7.2.20 1. SDAFW Pump Feedwater Discharge to S/G "A", VZ-14A CLOSED V2-14A SDAFW Pump Feedwater Discharge to S/G "B", W2-143 CLOSED 1-V2-148 3. SDAFW Pump Feedwater Discharge to S/G "C", אב-וור בספבם אי-בה 72-14C FILT OPEN the Steam Driven Flow Control 7.2.21 Taive, AFW-FCV-6416, using FIC-6416 in MANUAL. AFE-FEI-5415 OPEN \_\_\_\_\_\_\_ Return FIC-6416 to AUTO mode and set at 500 grm. FIC-6415 IN AUTO \_ A. 7.2.22 FIC-6416 AT 600 GPM \_\_\_\_\_\_ Calculate pump 12 from the data gatheres in ... 7.2.23 Step 7.2.13. 1250 Suction Pressure (PI-1478)(?:-1426) Page 12 of 15

ATTACHMENT 8.1 Page 1 of 1

#### VIBRATION DATA

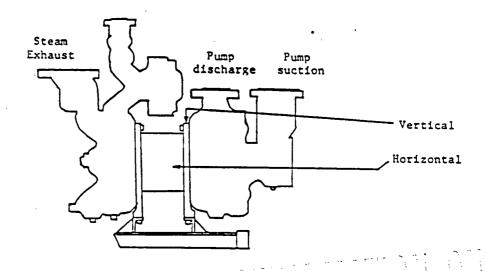
PUMP		DATA	ACCEPTANCE CRITERIA
	HORIZONTAL	HILS HILS	N/A
SDAFW	VERTICAL	12S HILS	N/A
	HORIZONTAL	(1) engage and an analysis of TN/SEC	N/A
SDAFW	VERTICAL	(1) 1,06 IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

#### -

#### VIBRATION DATA POINTS

Steam Inlet



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ATTACEMENT 8.2 | Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

cheduled / Unsc	heduled (Circle one)	•
If unscheduled,	state reason for test and the page numbers	included in partial
est)		
	ातिकारिका <mark>रिकार</mark> अस्ति । सम्बद्धाः । स्टब्स्	•
	17年中,在20世纪中,中国一年中国	1
• .		
	Initials   Bame (Print)	Date
est Performed b	Initials  Manual Manual  Manua	2-24-97
	Bm B. Molkig AN	2-24-89
	m. Kan	24 F-187
•	PIN ITE	<u> </u>
·		
Took Completes	Date 2/24/89 Time 1/630	
rest comprete:	Date <u>-7-7-7-</u> 1132 <u>-75-20</u>	
Test Satistactor	ry: (Yes) / No (Circle one)	
	2 -11	
Reviewed by:	D. M. S. J. Date 2/24/	15 Time 1437
Reviewed by:	Date 2/24/2 Unit 2 - Shift Foreman	15 Time 1437
	Unit 2 - Shift foreman	
Comments: (Requ	uired if results were unsatisfactory)	
Comments: (Requ	uired if results were unsatisfactory)	
Comments: (Requ	Unit 2 - Shift foreman	
Comments: (Requ	uired if results were unsatisfactory)	
. Comments: (Requ	uired if results were unsatisfactory)	
. Comments: (Requ	uired if results were unsatisfactory) IT	88-AIY YI wa
Comments: (Requ	uired if results were unsatisfactory) IT	
Comments: (Requ	uired if results were unsatisfactory) IT	88-AIY YI wa
. Comments: (Requ	wired if results were unsatisfactory) IT  155 After Regulator (184352)  Date	88-AIY YI wa
Comments: (Requ	Unit 2 - Shift foreman  uired if results were unsatisfactory)  The State Regulator (leads 5 to 1)  Unit 2 - Operating Supervisor	88-AIY YI wa

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monitored during performance of this OST since the colder feedwater

and output.

may affect power

**0ST-206** 

Reactor Power and Turbine/Generator output should be closely

Closely monitor steam generator lavel indicators to ensure the

desired layel is maintained during the test.

required specifications prior to feeding the Steam Generators

Ensure that the Condensate Storage Tank chemistry

Before testing the Steam Driven Pump, warm up

curbine shell.

PREREQUISITES (Continued)	This revision is the latest revision available and has been verified against the Revision Status List.  (All MILL) (Print) (PM/PL)  Mane  Signature  Date	The Shift Foreman has given his permission to conduct this test.	PRECAUTIONS AND LIMITATIONS  Both of the isolation valves on the Service Water and Deep Well	Mater Backup Systems should be closed with the telitale drain valve open to prevent the Condensate System from being contaminated with untreated water.	Ensure the Automatic Feedwater Control System is functioning properly while performing this test.	The Steam Driven Pump run time shall not exceed 30 minutes while on mini-flow recirculation.
9.0	3.5	•	0 1.4		7.7	<b>6.</b>
	•		_			

- 5.1 Calibrated Stop Watch No. # Cal. Date 3-71-F5 (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).

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3

Section 7.2 Page 3 of 4

	and the second of the second o	
		INITIALS
7.0	PROCEDURE (Continued)	
	START the SDAFW pump by opening the	-
7.2.10	following valves:	
	A SA ARAFU BURR, VICTA	റ
	1. S/C "A" Steam supply to the	VI-SA OPEN
	2. S/G "B" Steam Supply to SDAFW Pump, V1-88	V1-88 OPEN -
	3. S/G "C" Steam Supply to SDAFW Pump, VI-BC	V1-8C OPEN B
	OPEN the following auxiliary feedwater supply w	alves:
7.2.11	The Danier Discharge to 3/4 A	· · · · · · · · · · · · · · · · · · ·
		17-148 0
	2. SDAFN Pump Feedwater Discharge to S/G "B"	, V2-14B
	<b>L</b>	12-749 41-1
•	3. SDAFW Pump Feedwater Discharge to S/G "C"	, V2-14C
	•	V2-14C OPEN
*****	CAUTION  CLOSELY MONITOR REACTOR POWER, TURBINE/GENERA GENERATOR LEVELS TO ENSURE MO ABNORMAL CONDIT FEEDING COLD WATER TO THE STEAM GENERATORS.	TOR LOAD, AND STEAM
****	LETDING COMP. HATTER THE PROPERTY OF THE PROPE	•,
7.2.1	12 SLOWLY OPEN AFW-FCV-6416 by adjusting FIG-64 and set for 600 spm.	16 in MANUAL
	and following data after 5 minutes of	£ .
7.2.		PM 9400 RPM #
		10'00 0018 16 2
	SDAFW Pump Discharge Pressure (PI-1426 SDAFW Pump Suction Pressure (PI-1478	) O pais B
	. NOTE	
	Step 7.2.13 confirms the opening of check	valve AFW-84.
	208b 1.7.77	ming AMIV
	and the second s	
		A MARIE TO THE REAL PROPERTY.
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Section 7.2

		Page 4 of 4
7.0	PROCEDURE (Continued)	INITIALS VERIFIED BY
• • • •		
7.2.14	Record SDAFW Pump vibration on ATTACHMENT 8.1.	<u></u>
7.2.15	Record bearing temperature per EST-013.	TEST
7.2.16	CLOSE AFW-17, SDAFW Pump Recirculation	
	Isolation.	120
7.2.17	Allow the SDAFW pump discharge to stabilize	
	and record the indicated discharge pressure,	
	flow and speed.	
	PI-1426 <u>/360</u> pais FI-6416 <u>625</u> spm	
	Speed 9325 LPH	•
7.2.18	OPEN AFW-17, SDAFW Pump Recirculation	
	Isolation.	792 m
7.2.19	STOP the SDAFW pump by closing the following	
	valves:	
	1. \$\dagger{G} "A" Steam Supply to SDAFW Pump, VI-SA	
	VI-SA CLOSED	R .
	2. S/G "B" Steam Supply to SDAFW Pump, VI-68	
	V1-8B CLOSED	**
	3. S/G "C" Steam Supply to SDAFW Pump, VI-8C	
~~ <b>~</b>	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"	
1	V2-148 V2-148 CLOSED	• •
	3. SDAFW Pump Feedwater Discharge to S/G "C"	
		· 🔑
7.2.21	V2-14C CLOSED FULLY OPEN the Steam Driven Flow Control	<u> </u>
	Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.	1
•		R cli
7.2.22	AFW-FCV-6416 OPEN	
	Return FIC-6416 to AUTO mode and set at 600 gpc	A //
	FIC-6416 IN AUTO	
7.2.23	FIC-6416 AT 600 GPM	AS AF
/ 12 123	Calculate pump AP from the data gathered in	•
	Step 7.2.13.	
	1280 1:80	0
	Discharge Pressure Suction Pressure AP	
	(PI-1426) (PI-1478)	

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ATTACHMENT 8.1 Page 1 of 1

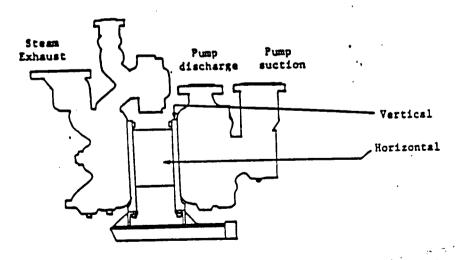
#### VIBRATION DATA

PUHP		DATA		ACCEPTANCE CRITERIA
	HORIZONTAL	. 37	HILS	W/A
SDAFW	VERTICAL	.3	HTLS	W/A
	HORIZONTAL	.09	IN/SEC	W/A
SDAFW	VERTICAL	(1) .085	IN/SEC	W/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

#### VIBRATION DATA POINTS

Steam



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ATTACHMENT 8.2 | Page 1 of 1

## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

If unschedul	nscheduled (Circl	Section 1	page numbers incl	uded in partial
est Performe	d by B	Van DB,/	(Print)  (27)  (1795)	Date 4-15-87 4-15-89 4-15-16
est Satisfac	tory: (100 / No (	Circle one)	•	Time <u>17250</u>
	dequired if results		•	
pproved by:	Unit 2 - Opera	sting Supervisor	Data	119/89
eviewed by:	LUSAICO ISI Coore		Date <u>5/4</u>	1/89
9 <b>5</b> T-206	Rev. 7			Page 15 of 15

5.0 SPECIAL TOOLS AND EQUIPMENT Calibrated Stop Watch No. 1181-1 Cal. Date 3/30/69 (Within 12 mo.) 5.1 5.2 RPM Indicator Two-way Radios 5.4 Vibration Detector with magnetic probe 5.5 Pyrometer EST-013 ACCEPTANCE CRITERIA REQUIRED ACCEPTABLE ALERT PARAMETER ACTION PUMP RANCE RANGE Differential RANCE SDAFW ≥1162.5 Low ≥1125, Pressure Pump ≤1275 psig <1162.5 psig <1125, High >1275, >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.

If the differential pressure calculated in Step 7.2.23 is greater than allowed in 6.1, the instruments involved may be recalibrated

If the differential pressure calculated in Step 7.2.23 falls within

reverified or a new set established per IWP-3111 (ASME Section XI).

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

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6.1.2

6.1.3

and the test rerun.

Section 7.2 Page 3 of 4

		1ge 3 of 4
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, VI-6A	•
	。	
•	2. S/G "B" Steed Supply to China	
	Supply to SDAPA Pump, VI-88	4
	J. S/G "C" Steam Sunting	· [p
	3. S/G "C" Steam Supply to SDAFW Pump, V1-88 OPEN	
7.2.11	OPEN the fattering and the VI-SC OPEN	
_	OPEN the following auxiliary feedwater supply valves:	
	1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A	
	2. SDATH Pome Pandanas At	10
	2. SDAFW Pump Feedwater Discharge to S/G "B", VZ-14B	
•	79-149-0000	m
	3. SDAFW Pump Feedwater Discharge to 8/G "C", V2-14C	
•	V2-14C OPEN	D
*****	•••••	
		*****
	CAUTION	•
	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND	STFAM
	THE RESERVE TO ABBORNAL CONDITIONS OCCUPANT	M
******	THE THE COLD WATER TO THE STRAM CEMERATORS	
	*************************************	*****
7.2.12	•	
7.4.12	SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL	
	and set tot out spm.	<i>I</i> 7
7.2.13	Record the following data after 5 minutes of	
	operation at 600 gpm;	
	Shaft RPM 9950 RPM	0
	SDAFW Pump Discharge Pressure (PI-1426) /200 psig/	<del>(                                    </del>
	SDAFW Pump Suction Pressure (PI-1478) <0 psig	8
	paig	a
	NOTE .	
	Step 7.2.13 confirms the opening of check valve AFW-84.	~ · · ·
	The transfer of cueck Asia Williams	4

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Section 7.2 Page 4 of 4 7.0 PROCEDURE (Continued) INITIALS VERIFIED BY STATE OF THE STATE Record SDAFW Pump vibration on ATTACHMENT 8.1. 7.2.14 7.2.15 Record bearing temperature per EST-013. CLOSE AFW-17, SDAFW Pump Recirculation 7.2.16 Isolation. Allow the SDAFW pump discharge to stabilize 7.2.17 and record the indicated discharge pressure, flow and speed PI-1426 400 paig FI-6416 645 gpm Speed 9400 PPH 7.2.18 OPEN AFW-17, SDAFW Pump Recirculation Isolation. STOP the SDAFW pump by closing the following 7.2.19 valves: S/G "A" Steam Supply to SDAFW Pump, VI-8A VI-SA CLOSED S/G "B" Steam Supply to SDAFW Pump, V1-8B V1-88 CLOSED & S/G "C" Steam Supply to SDAFW Pump, V1-8C VI-8C CLOSED CLOSE the following valves: SDAFW Pump Feedwater Discharge to S/G "A", V2-14A V2-14A CLOSED \_\_\_ 2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B V2-148 CLOSED & SDAFW Pump Feedwater Discharge to S/G "C", V2-14C FULLY OPEN the Steam Driven Flow Control 7.2.21 Valve, AFW-FCV-6416, using FIC-6416 in MANUAL. AFW-FCV-6416 OPEN 2 7.2.22 Return FIC-6416 to AUTO mode and set at 600 gpm. FIC-6416 IN AUTO FIC-6416 AT 600 GPM \_ 67 7.2.23 Calculate pump AP from the data gathered in Step 7.2.13.

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(PI-1426)
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Discharge Pressure

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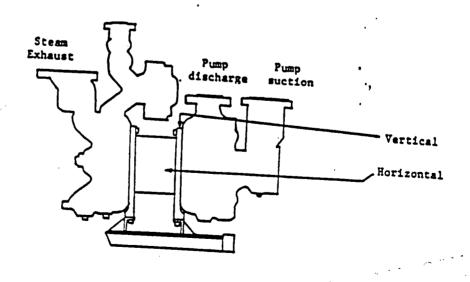
#### VIBRATION DATA

PUMP	DATA		ACCEPTANCE CRITERIA
SDAFW	HORIZONTAL	3C HIL	——— I
	VERTICAL	· 禁事	
DAIW	HORIZONTAL	(1) 3 HILS	
	VERTICAL	(1) ./5 IN/S	

(1) If wibration exceeds 0.3 in/sec. notify Technical Support - Systems.

#### VIBRATION DATA POINTS

Steam Inlet



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ATTACHMENT 8.2 | Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	(If unscheduled, state reason for test and the page numbers included in partest)		
/h 11.	Test Performed by  A CINCLAS STUDENT STEAM BIODONALH  COMMINTERS  Initials  PAN HKELS  5/16/89  COMMINTERS  STUDENTALS  STUDENT  STUENT  STUDENT  S		
	Test Complete: Date 5/16/89 Time 2330		
	Test Satisfactory: Yes /No (Circle one)		
	Reviewed by: Chunta Date 5/16/29 Time 2530		
	Comments: (Required if results were unsatisfactory) Df IN DR RELUCED  NOW Roule was wat 85-Affil allers some Roof inoximate		
	Approved by: Sulfan Date 5/18/89		

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3.0	PREREQUISITES (Continued)
N. A.	
3.5	This revision is the latest revision available and has been
	verified against the Revision Status List
	STEVE BIODONSACH (Print) STIM 5-17-89
	Name Signature Date
3.6	The Shift Foreman has given his permission to conduct this test.
	CM/ntn 5/17/25
2	Conventor 5/17/29 Shift Foreman Date
4.0	PRECAUTIONS AND LIMITATIONS
4.0	
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.
) A(*) 44.2	Ensure the Automatic Feedwater Control System is functioning
<b>)</b>	properly while performing this test.
<b>)</b>	
<b>.</b> 4.3	The Steam Driven Pump run time shall not exceed 30 minutes while on
(marr.)	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.
	red-rice absorranged briot to receive the accommodate account.
4.6	Closely monitor steam generator level indicators to ensure the
4.0	desired level is maintained during the test.
	destred level is maintained during the test.
4.7	Passers Davis and Turking/Commence support should be also by
4.7	Reactor Power and Turbine/Generator output should be closely
	monitored during performance of this OST since the colder feedwater
eta eta Maria eta	may affect power and output.
	, programme to the contract of
WAR CONTRACTOR	Page 5 of 15

- 5.0 SPECIAL TOOLS AND EQUIPMENT
- 5.1 Calibrated Stop Watch, No. HBN 4 Cal. Date 2/30 (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

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PARAMETER Difference	PUMP	ACCEPTABLE RANGE	RANGE	REQUIRED ACTION RANGE
Differential Pressure		Pump ≤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).

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	South Control of the	
		Section 7.2
7.0	PROCESIA	Page 3 of 4
	PROCEDURE (Continued)	INITIALS
7.2.10	START the SDAFW pump by opening the	2007
	following valves:	
	1. S/G "A" Steam Supply to SDAFW	<b>B.</b>
		Wine, 41-84
	2. 8/G "B" Steam Supply to SDAFW I	Pump, VI-8A OPEN
	3. 8/C "c" e-	V1-8B OPEN
	3. S/G "C" Steam Supply to SDAFW p	cump, VI-8C
7.2.11	The following	V1-8C OPEN
9.1	1. SDAPW Pump Feedwater Discharge	er supply valves:
		το 3/G "A", γ2-14A
	2. SDAFW Pump Feedwater Discharge :	V2-14A OPEN
	3. SDAFW Pump Feedwater Discharge t	:0 S/G "C", V2-14C
		V2-14C OPEN
	CAUTION  CLOSELY MONITOR REACTOR POWER, TURBING GENERATOR LEVELS TO ENSURE NO ABNORMAND FEEDING COLD WATER TO THE STEAM GENERA	E/GENERATOR LOAD, AND STEAM L CONDITIONS OCCUR FROM
*****	**************************************	
7.2.12		******
	SLOWLY OPEN AFW-FCV-6416 by adjusting and set for 600 gpm.	FIC-6416 in MANUAL
7.2.13	and set for 600 gpm. Record the following	lo
	Record the following data after 5 minu operation at 600 gpm:	
	SDAFW Pump Disab	ift RPM <u>9250</u> RPM
	TO THE PERSON OF	12.0
	SDAFW Pump Suction Pressure (PI-	1478) <u>40</u> psig
	NOTE .	
	Step 7.2.13 confirms the opening of che	CK VALUE ASTI-O
		ALMENTAL

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A STATE					Section 7.2
	7.0	PROCEDURE (Continued)			Page 4 of 4
				INITIALS	VERIFIED BY
	7.2.14 7.2.15	SUNTER PUMP Vibration of	n ATTACHMENT		
	7.2.15	THE CAMPARATION OF		• 10	
		ATHILL SDAFW Pump Bank	rculation		-
	7.2.17	Allow the SDAFW pump discharge	A CONTRACTOR OF THE PROPERTY O	()	
		flow and speed	arge pressure,		
		PI-1426 /340 PI-6416	100		
		ニューニュー・ RPM 資金施域就算が、	2/3 8pm		
<b>O</b> 35	7.2.18	OPEN AFY-17 CDASS		•	
N.				$\bigcap$	~
io.	7.2.19	STOP the SDAFW pump by closing		<del>  R   </del>	00
	માં કરાયા મુખ્ય	10 10 10 10 10 10 10 10 10 10 10 10 10 1	·		
	Property (1997) Supplementary	1. S/G "A" Steam Supply to SI			
		Soppiy to St	AFW Pump, V1-8A		
	.:	2. S/G "B" Steam Supply as	V1-8A CLOSED	10	
		2. S/G "B" Steam Supply to SD	AFW Pump, V1-8B	. — <del></del>	
			179 An	6	
<b>€</b>		3. S/G "C" Steam Supply to SD	AFW Pump, V1-8C		
C	.2.20	CLOSE the following valves:	V1-8C CLOSED	lo .	
ထ '		1. SDAFW Pump Food			
N	-	1. SDAFW Pump Feedwater Discha V2-14A	erge to S/G "A",		
76 Company	<u>ب</u>		V2-144	h.	• •
		<ol> <li>SDAFW Pump Feedwater Discha V2-14B</li> </ol>	irge to S/G "B",		
		·- •	V2-14B GLASS	D	
\$1 2	العنسد.	<ol> <li>SDAFW Pump Feedwater Discha</li> <li>V2-14C</li> </ol>	rge to S/G "C",		
: -	7.2.21		V2-14C CLOSED	0	
; ,	: 	FULLY OPEN the Steam Driven Flow	A		
	(T) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	Valve, AFW-FCV-6416, using FIC-6	416 in MANUAL.		
	7.2.22	A FtJ.	-COU	6	11
	. <b></b> ;	Return FIC-6416 to AUTO mode and	set at 600 gpm.		7 ***
	•	FIC	-6416 IN AUTO	0	,,
 چما	7.2.23	FTC_L/	16	0	11.
s Por grandi			athered in	<del></del>	/m-
No among		tep 7.2.13.			
	4	1280			
		Discharge Pressure			
3	Section .	(PI-1426) Suction Pre (PI-1478)	ssure AP		

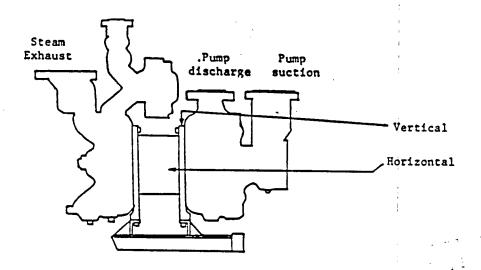
#### VIBRATION DATA

PUMP	i digita	DATA	ACCEPTANCE CRITERIA		
	HORIZONTAL	20 HILS	¥ N/A	•	
SDAFW	VERTICAL.	.3 MILS	家 N/A		
	HORIZONTAL	(1) IN/SEC	Standard N/A		
SDAFW	VERTICAL	(1) ·/ IN/SEC	A/A		

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

#### VIBRATION DATA POINTS

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# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled / Unscheduled (Circle one)

OF FI-ALC.	A CONTRACTOR OF THE PARTY OF TH	ALERT AND AND AND AND AND AND AND AND AND AND	the page numbers  Bis Atria Calib	included in per
	Initials			
st Performed by	() - 1	Store LOAK	Name (Print) Removement	Date 5-17-89
	001		LINGAT	5/17/89
t Complete: Da	te 5/17/93	Time 0//5		5/17/39
t Satisfactoryy				· · · · · · · · · · · · · · · · · · ·

Comments: (Required if results were unsatisfactory)

Approved by: Unit 2 - Operating Supervisor Date 3/18/89

Reviewed by: 
SMC Tchr Date 5/9/89

ISI Coordinator

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Commence of the Commence of th

3.0	PREREQUISITES (Continued)
3.5	This revision is the latest revision available and has been verified against the Revision Status List.  D. Mc(ngkill (Print) D. Mill (14/8)  Name Signature Date
3.6	The Shift Foreman has given his permission to conduct this test.
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 feedwate

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			,	
5.0	SPECIAL	TOOLS	AND	EQUIPMENT

- 5.1 Calibrated Stop Watch No. <u>H62-3</u> Cal. Date <u>3-30-87</u> (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

				REQUIRED
	1	ACCEPTABLE	ALERT	ACTION
PARAMETER	PUMP	RANGE	RANGE	RANGE
Differential	SDAFW	≥1162.5	Low ≥1125,	
Pressure	Pump	≤1275 psig	<1162.5 psig	<1125,
			High >1275,	>1287.5 psig
			≤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).

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Section 7.2 Page 3 of 4

7.0	PROCEDURE (Continued) INITIALS
7.2.10	START the SDAFW pump by opening the
7,000	following valves:
	1 C/C MAH Steem Supply to SDAFW Pump, VI-BA
	VI-8A OPEN MIA
	2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
	V1-8B OPEN 77h
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C V1-8C OPEN M
7.2.11	OPEN the following auxiliary feedwater supply valves:
,,,,,,,	snary Burn Recoverer Discharge to S/G "A", V2-14A
	V2-14A OPEN 197
	2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B
	V2-14B OPEN /1/\textstyle \tag{1.00}
•	3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
	V2-14C OPEN /
*****	*************************
	CAUTION
	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM
	CENERATOR 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
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	Shaft RPM 9800 RPM /
	SDAFW Pump Discharge Pressure (PI-1426) 1300 psig
	SDAFW Pump Suction Pressure (PI-1478) O psig 72
	NOTE .
	Spen 7 2 13 confirms the opening of check valve AFW-84.
	Step 1.2.25 Contract of the second se

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7.0	PROCEDURE (Continued) INITIALS VERI	FIED BY
	ATTACHMENT 8.1.	
7.2.14	Record SDAFW Pump vibration on ATTACHMENT 8.1.  Record bearing temperature per EST-013.	
7.2.15	MECOLA DESIZE COMPANIES.	
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 /340 psis FI-6416 64.5 spm	
	Speed 9810 RPM	
7.2.18	OPEN AFW-17, SDAFW Pump Recirculation	R
	Isolation.	<del>1</del>
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",  V2-1AA V2-1AA CLOSED	
	10 070	
5	2. SDAFW Pump Feedwater Discharge to S/G "B", V2-14B V2-14B CLOSED	
ممذر		
7	3. SDAFW Pump Feedwater Discharge to S/G "C",	
<b>Z</b>	42-140	
7.2.21	FULLY OPEN the Steam Driven Flow Control	
-4 i	Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.  AFW-FCV-6416 OPEN (M)M	BCL
1		
7.2.22	Return FIC-6416 to AUTO mode and set at 600 gpm.	Bau
:	FIC-6416 IN AUTO	Ban
	Return FIC-6416 to AUTO mode and set at 600 gpm.  FIC-6416 IN AUTO  FIC-6416 AT 600 GPM	
7.2.23	in from the data gathered in	
t	Step 7.2.13.	
2	1300 0 1300	
4	Discharge Pressure Suction Pressure AP	
)	(PI-1478)	n 12 of 1

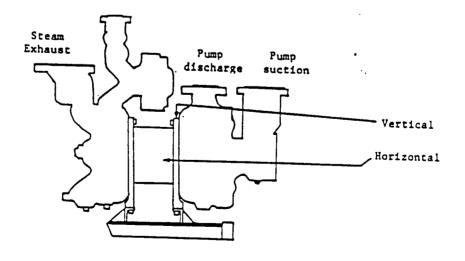
#### VIBRATION DATA

PUMP		DATA		ACCEPTANCE CRITERIA
<b>45.4 </b>	HORIZONTAL	,5	HILS	N/A
SDAFW	VERTICAL	,5	HILS	M/A
874571	HORIZONTAL	(1)	IN/SEC	N/A
SDAFW	VERTICAL	(1) ,/4	IN/SEC	N/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.

#### VIBRATION DATA POINTS

Steam Inlet



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ATTACHMENT 8.2 | Page 1 of 1

# 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). Schooled due to increased frequency
Initials  Name (Print)  Date  M. J. MANLIFF  6-14-29  100
Test Satisfactory: Yes / No (Circle one)  Reviewed by:
Comments: (Required if results were unsatisfactory) ( EST-C/B WAS  [ERRCHE) ON 1-26-89 And 15 AN MARKET TIPE OF
Approved by:  AP NOTE TO INSTRUCT OF THE PROPERTY PROPERT
Reviewed by: WMallatter Date 6/19/89  ISI Coordinator

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			<i>;</i>	·
31	3.0	PREPARITAGE		
		PREREQUISITES (Continued)		
	3.5	This could be a second		
		This revision is the latest revision	n available, and has	been
		The series of th	. 24 //	
		Name (Print)	In Karvi	6-15-1
			Signature	Date
	3.6	The Children		
1 24	•	The Shift Foremen has given his perm	ission to conduct t	his test.
	•	_		
	. :	- CM Inta	6/15/	19
<b>F</b>		sullt foremen	D	ate
	4.0	e Albert e Albert e Albert e Albert e Albert e Albert e Albert e Albert e Albert e Albert e Albert e Albert e		
	710	PRECAUTIONS AND LIMITATIONS		
	4.1			
	714	Both of the isolation valves on the	Bervice Water and Da	en Vall
		be close	1 44 44 44 44 44 44 44 44 44 44 44 44 44	
		second one condensate sales	from being content	desin AffA6
		untreated water.		mared ALLD
		•		•
	4.2	Ensure the Automatic Feedwater Contro	) System is funeria	-1
		properly while performing this test.		ning
<b>.</b>				
<b>V</b> L	4.3	The Steam Driven Pump run time shall	not exceed to minus	
9 5:		mini-flow recirculation.	The excess to Bings	es while on
		/		
•	4.4	Before testing the Steam Driven Pump, turbine shell.	VITT US the second	
		turbine shell.	were op the steam	header and
<b>:</b>				
	4.5	Ensure that the Condensate Storage Tar	Ok chamina	
		required specifications prior to feed	ine the service of the service	hin
			-ng the Steam Genera	ttors.
•	4.6	Closely monitor steam generator level	lm41	
		desired level is maintained during the	indicators to ensur	re the
<b>\</b>		Check the contract that the check th	test.	
<b>1</b>	4.7	Reactor Power and Turbine/Generator or		
<b>X</b>		monitored during performance of the	itput should be clos	sely
<b>6</b>		monitored during performance of this (	ST since the colder	-feedwater "
	te	to prove and output,	<del>-</del>	
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	Contract Value of the	the state of the s		

- 5.1 Calibrated Stop Watch No. A Cal. Date (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

6.1

6.0 ACCEPTANCE CRITERIA

PA	raheter	PUMP	ACCEPTABLE RANGE	ALERT RANGE		REQUIRED ACTION RANGE
1	ferential		≤1275 psig	≥1125, <1162.5 >1275,	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).

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Section 7.2 Page 3 of 4

	INITIALS
7.0	PROCEDURE (Continued)
7.2.10	START the SDAFW pump by opening the
	following valvess the
	1. S/G "A" Steam Supply to SDATW Pump, V1-8A OPEN
	Party Pumpa VI-85
	2. S/G "B" SEAR SUPPLY CO SURVEY V1-88 OPEN AP
	CASUS Supp. VI-8C
7.2.11	OPEN the following auxiliary feedwater supply valves:
	1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A V2-14A OPER
	01-24-2-10 B/G "B", V2-14B
	Y2-148 OF CALL
<i>.</i>	3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C V2-14C OPEN
	<b>∀2-14C OPEN</b> <u>//</u>
*****	CAMPAGE
	POWER. TURBINE/GENERATOR LOAD, AND STEAM
	GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM
•	COLD WATER TO THE STEAM CENERATURS.
*****	FEEDING COLD WALLAND AND AND AND AND AND AND AND AND AND
	SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL
7.2.12	and set for 600 spm.
- 0 13	- A see deligation data after 5 minutes of
7.2.13	
	Shart RPA _/
	SDAFW Pump Discharge Pressure (PI-1426) 1790 psig 24
	SDAFW Pump Suction Pressure (PI-1478) <0 psis MA
	Not <u>e</u>
	Step 7.2.13 confirms the opening of check valve AFW-84.
	areh Ligita anni-

9.00 7

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		ction 7.2
Actor 20	Pa	se 4 of 4
7.0	PROCEDURE (Continued) & INITIALS VE	RIFIED 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 AFV-17, SDAFW Pump Recirculation	. • • • • • • • • • • • • • • • • • • •
	Isolation. Total	
7.2.17	Allow the SDAFW pump discharge to stabilize	
	and record the indicated discharge pressure,	4,
	flow and aneed.	•
	PI-1426 -68-072 pels FI-6416 600 spm  Speed 9550 - RPM	
7.2.18	OPEN AFW-17, SDAFW Pump Recirculation	۸١
(14110	Isolation.	M
7.2.19	STOP the SDAFW pump by closing the following	O SECCOMPLEAD
,,,,,	valvest for the second	() XECOM
	1. S/G "A" Steam Supply to SDAFW Pump, VI-8A	
	VI-8A CLOSED 15	
	2. S/G "B" Steam Supply to SDAFW Pump, V1-8B	•
	VI-88 CLOSED M	
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C	•
·	V1-8C CLOSED	
7.2.20	CLOSE the following valves:	•
. T.	1. SDAFW Pump Feedwater Discharge to S/G "A",	
	V2-14A CLOSED	
*****	2. SDAFW Pump Feedwater Discharge to S/G "B",	
7	V?-14B V2-14B CLOSED	
<i>)</i> ज	3. SDAFW Pump Feedwater Discharge to S/G "C",	
ii 30 a a a	V2-14C	
7.2.21	FULLY OPEN the Steam Driven Flow Control Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.	
• !	AFW-FCV-6416, dating FIC-6416 TH PARIOLE.	74 A
7.2.22	Return FIC-6416 to AUTO mode and set at 600 gpm.	
	FIC-6416 IN AUTO	X1 <sup>2</sup>
	FIC-6416 AT 600 GPM /	n4
7.2.23	Calculate pump AP from the data gathered in	
	Step 7.2.13.	
	•	
	1290 < 6 >1290	
	Discharge Pressure Suction Pressure AP	

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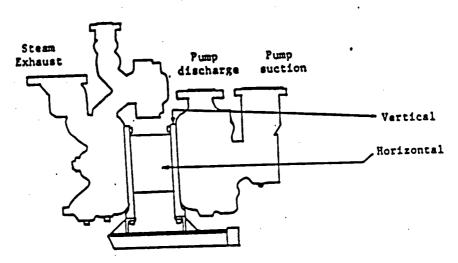
#### VIBRATION DATA

PUMP		DATA	ACCEPTANCE	CRITERIA
	HORIZONTAL	HILS	X/A	
SDAFW	VERTICAL	W A HILS	PARTIES NO WA	
	HORIZONTAL	(1) OAA IN/SEC	STATE WA	\ 
SDAFW	VERTICAL	(1) O A IN/SEC	V 100000 W/	<b>\</b>

(1) If wibration exceeds 0.3 in/sec. notify Technical Support - Systems. OSEECONNESS

# VIBRATION DATA POINTS

Steam Inlet



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ATTACHMENT 8.2 | Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled Unscheduled (Circle one)
(If unscheduled, state reason for test and the page numbers included in partia
tost) rectormed to to to the Salar Arman
seffair of 11-1426 Discharge Herry gose (CAIN CARON)
All PACKS INCLUDED
Test Performed by Man Man (Print)  Date  M. GANA  August
GN COWINGES 6-15-89
Test Completes Date 6/15/65_ Time 16/5
Test Satisfactory: Yes (No) (Circle one)
and and any of the last
Reviewed by:
·
Comments: (Required if results were unsatisfactory) Rump Still in
REQUIRED ROOM RANGE WASS-AFWI
1 Spake Rump RUN TO VENING MORE DP ONLY NO OTHER OTTA
ALGUIRED. NA ON STEPS POT FISHER PROMOTS SECT 5,2,2
Approved by: Buldto Date 7/4/85
Unit 2 - Operating Supervisor
Reviewed by: Whichen Date 7/6/89
ISI Coordinator

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This revision is the latest revision evallable and h	•
verified egainet the Sevicien Status List.	40 been
IA Semina Contact The 10	( K.11
Been and and an analysis Signature	Pate
	.*
The Shift Foreman New given his permission to conduct	>1
	1419
Philt Forence	Date
PARCAUTIONS AND LINITATIONS	
Both of the isolation valves on the Service Water see	d Dogs Mali Mar
Sectup Systems should be closed with the telltale dre	sia velve seen
prevent the Condensate System from being contaminated	e with untreate
•	
Ensure the Automatic Foodwater Control System is fund	etioning
properly while performing this test.	
	•
The Steen Driven Pump shall be run for a minimum of S	dimeter will
The Steam Driven Pump shall be run for a minimum of S feeding the S/G's before any pump or vibration data	le recorded.
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data : Maintain feed made while obtaining data. This 5 min-	le recorded.
The Steam Driven Pump shall be run for a minimum of S feeding the S/G's before any pump or vibration data	le recorded.
The Steam Driven Pump shall be run for a minimum of Steam Orivon Pump shall be run for a minimum of Steam Orivon Pump, were up the steam Driven Pump, were up the steam Driven Pump, were up the steam Driven Pump, were up the steam Driven Pump, were up the steam Driven Pump, were up the steam Driven Pump, were up the steam Driven Pump, were up the steam Driven Pump, were up the steam Driven Pump.	is recorded. uto requiremen
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data : Maintain feed made while obtaining data. This 5 min-	is recorded. uto requirement
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data feeding the S/G's before any pump or vibration data feeding the sale will satisfy the ISI Code.  Sefere testing the Steam Driven Pump, were up the staturbine shell.	is recorded. ote requiremen. can beeder and
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data. Maintain feed made while obtaining data. This 3 minimum vill satisfy the ISI Code.  Sefere testing the Steam Driven Pump, were up the staturbine shell.  Ensure that the Condensate Storage Tank chemistry is	is recorded.  ote requiremen  oan beeder and  within
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data feeding the S/G's before any pump or vibration data feeding the sale will satisfy the ISI Code.  Sefere testing the Steam Driven Pump, were up the staturbine shell.	is recorded.  ote requirement  oan beeder and
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data. Raintain feed made while obtaining data. This 3 minimum vill satisfy the ISI Code.  Sefere testing the Steam Driven Pump, were up the staturbine shall.  Ensure that the Condensate Storage Tank chamistry is required specifications prior to feeding the Steam Co	is recorded.  ote requirement  oan beeder and  within  mereters.
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data. Haintain feed made while obtaining data. This 3 cies will satisfy the ISI Code.  Before testing the Steam Driven Pump, were up the staturbine shell.  Ensure that the Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry in required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specific to the Steam Condensate Storage Tana chamistry is required specific to the Steam Condensate Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is requ	is recorded.  ote requirement  oan beeder and  within  mereters.
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data. Raintain feed made while obtaining data. This 3 minimum vill satisfy the ISI Code.  Sefere testing the Steam Driven Pump, were up the staturbine shall.  Ensure that the Condensate Storage Tank chamistry is required specifications prior to feeding the Steam Co	is recorded.  ote requirement  oan beeder and  within  mereters.
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data faintain feed mode while obtaining data. This 3 circuit satisfy the ISI Code.  Before testing the Steam Driven Pump, were up the staturbine shell.  Ensure that the Condensate Storage Tana chemistry is required specifications prior to feeding the Steam Colosely meniter steam generator level indicators to desired level is maintained during the test.	is recorded.  ote requirement  our beader and  within  merators.
The Steam Driven Pump shall be run for a minimum of feeding the S/G's before any pump or vibration data. Haintain feed made while obtaining data. This 3 cies will satisfy the ISI Code.  Before testing the Steam Driven Pump, were up the staturbine shell.  Ensure that the Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry in required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specifications prior to feeding the Steam Condensate Storage Tana chamistry is required specific to the Steam Condensate Storage Tana chamistry is required specific to the Steam Condensate Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is required to the Storage Tana chamistry is requ	te recorded.  The requirement  The booker and  Tithin  Moretors.  Phouse the

2.9.3.3

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- 5.0 SPECIAL TOOLS AND EQUIPMENT
- 5.1 Calibrated Stop Watch No. HAR-3 Cal. Date 3-30-19 (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 Differential	PUMP	ACCEPTABLE RANGE	RANGE	REQUIRED ACTION
Pressure	Pump	, ·	Low ≥1206 <1247 psig High >1366 ≤1380 psig	<1206 >1380 psig
Vibration	SDAFW Pump	si Hils	>i ≤1.5 HILS	>1.5 HILS

- 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.

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Section 7.2 Page 3 of A

7.0		
	PROCEDURE (Continued)	INITIALS
.2.10		
• • • • • • • • • • • • • • • • • • • •	START the SDAFW pump by opening the	ř
•	following velves:	
	1. S/C "A" Steam Supply to SDAFW Pump, VI-SA	•
	2. S/G "B" Star Sunt	گېز
	2. S/G "B" Steam Supply to SDAFW Pump, V1-88	
	3. 8/C "C" \$1.00 D	
	3. 8/G "C" Steam Supply to SDAFW Pump, V1-88 OPEN	
2.11	OPEN the following amends	1.4
	OPEN the following auxiliary feedwater supply valves:	
*	1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A	
•	2. SDAFY Pump Pandenton Diet	Ma
	2. SDAFW Pump Feedwater Discharge to S/G "B", V2-148	
	3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C	<u></u>
*•	· · · · · · · · · · · · · · · · · · ·	1.1
	V2-14C OPEN	MA
*****	CAUTION  CLOSELY HONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND	
*****	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FOR	STEAN
*****	CLOSELY HOWITOR REACTOR POWER, TURBINE/GENERATOR LOAD	STEAN
**************************************	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.	<b>******</b>
2.12	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 spm. Record the following data in the S/C food and	N.A.
2.12	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 spm. Record the following data in the S/C food and	N.A.
2.12	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 spm.	NA Cra
2.12	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 spm.  Record the following data in the S/G feed mode at 600 spm.  SDAFW Pump Discharge Pressure (PI-1426) /// psig SDAFW Pump Suction Pressure (PI-1478-1) psig	NA Cra
2.12	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 spm.  Record the following data in the S/G feed mode at 600 spm.  SDAFW Pump Discharge Pressure (PI-1426) /// psig SDAFW Pump Suction Pressure (PI-1478-1) psig	NA Cra
2.12	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FRO FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 spm.  Record the following data in the S/G feed mode at 600 spm.  SDAFW Pump Discharge Pressure (PI-1426) /// psig SDAFW Pump Suction Pressure (PI-1478-1) psig  NOTE  NOTE	NA Cra
2.12	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 spm.  Record the following data in the S/G feed mode at 600 spm.  SDAFW Pump Discharge Pressure (PI-1426) /// psig SDAFW Pump Suction Pressure (PI-1478-1) psig	NA Cra
	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND GENERATOR LEVELS TO ENSURE NO ABNORMAL CONDITIONS OCCUR FROM FEEDING COLD WATER TO THE STEAM GENERATORS.  SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MAMUAL and set for 600 gpm.  Record the following data in the S/G feed mode at 600 gpm.  SDAFW Pump Discharge Pressure (PI-1426) /// paig SDAFW Pump Suction Pressure (PI-1478-1) paig  NOTE  NOTE  Step 7.2.13 confirms the opening of check valve AFW-84.	NA Cra

8

7.0	PROCEDURE (Continued)	INITIALS	VERIFIED BY
•			#1, f
7.2.15	Slowly open AFW-FCV-6416 by adjusting FIC-6416	1	••
	in manual and set for 645 gpm.	Mg	
7.2.16	Record SDAFW Pump vibration on ATTACHMENT 8.1		
	after five minutes of pump operation at		· .•
•	645 gpm.	h.B	
7.2.17	Maintaining flow at 645 gpm, record the		•
	indicated discharge pressure, suction pressure,	ı	
-	flow and speed.		
	PI-1426 /391 psig, FI-6416 64 gpm,		
	PI-1478-1 <u>O</u> , Speed <u>9526</u> RPM		•
7.2.18	OPEN AFW-17, SDAFW Pump Recirculation		•
	Isolation.	For	20
7.2.19	STOP the SDAFW pump by closing the following	<del></del>	
	valves:		
*	1. S/G "A" Steam Supply to SDAFW Pump, V1-8A		
and the design of the second	V1-8A CLOSED	2 My	
	2. S/G "B" Steam Supply to SDAFW Pump, V1-8B	-10-	
	V1-8B CLOSED	nys	
	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C	The	
		hob	•
7.2.20	V1-8C CLOSED	1/10	· Spin
7.2.20	CLOSE the following valves:		
	1. SDAFW Pump Feedwater Discharge to S/G "A",	2. Ju	
	V2-14A CLOSED	Ms	
	2. SDAFW Pump Feedwater Discharge to S/G "B",	s la	
	V2-14B CLOSED	his	
	3. SDAFW Pump Feedwater Discharge to S/G "C",	2.1	•
7 4 4.	V2-14C CLOSED	Ma	
7.2.21	FULLY OPEN the Steam Driven Flow Control		
-	Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.	12	16
-	AFW-FCV-6416 OPEN	M	
7.2.22	Return FIC-6416 to AUTO mode and set at 600 gpm	•	' th
	FIC-6416 IN AUTO	Max	
	FIC-6416 AT 600 GPM	MA	
7.2.23	Calculate pump AP from the data gathered in		<i>t'</i> ·
	Step 7.2.17.		
•	1260		
	$\frac{1370}{\text{Discharge Pressure}} = \frac{C}{\text{Suction Pressure}} = \frac{1370}{\Delta P}$		7 11 11 1
	(PI-1426) (PI-1478-1)		
OST-206	3 N ₹	, н 🥌	D 12 -£ 15

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#### \*VIBRATION DATA

PUMP		DATA		ACCEPTANCE CRITERIA
	HORIZONTAL	1.5	HILS	≤1 HILS
SDAFW	VERTICAL	2.0	MILS	≤1 MILS
	HORIZONTAL	(1)	IN/SEC	W/A
SDAFY	VERTICAL	(1) .14	IN/SEC	W/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.
\*MOTE: 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

Steam
Exhaust
Pump Pump
discharge suction
Vertical
Borisontal

Page 1 of 1

# SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

est) All page	state reason for	to place	384=W B15	
	Initials	28%	(Print)	Date
Test Performed by	HA W	F.B. SCA M. GANN	wich	6-16-89
Test Complete:	Date 6-16-55	Time 1750		
Test Satisfactor	71 Yes /19 (C	ircle one)		/AU
	Unit 2 - Shift	. Foremen	Date 4/10/63	
Comments: (Req	wired if results were both is who is wastigant	the action	etory) <u>Vibration</u> - NWI ( Aux	The
Approved by:	Politica - Opera	iting Superviso	Date Z	14/87
	Anta 2 -1		Date	

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3.0	PREREQUISITES (Continued)
	A CAN THE STATE OF
3.5	This revision is the latest revision available and has been
	verified against the Revision Status List.
(%) (%)	Duilokkeney (Print) 6-16-89
	Name Signature Data
3.0	The Shift Foremen has given his permission to conduct this test.
LL CA	Shift Foreman Date
3-10 -	
4.0	PRECAUTIONS AND LIMITATIONS
177	Both of the isolation valves on the Service Water and Deep Well Water
Mr. N	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.
्र <b>4२</b> ३	The Steam Driven Pump shall be run for a minimum of 5 minutes while
	feeding the \$/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.
# <b>4 . 4</b> # # # # # # # # # # # # # # # # # # #	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
Ma.	may affect power and output.

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5.0	SPECIAL TOOLS AND EQUIPMENT	
	Calibrated Stop Watch No. 3 Cal. Date 2/11/2	g (Within 12 mo.)
3.2	RPM Indicator	
3.3	Two-way Radios	
5.4	Vibration Detector with magnetic probe	
<b>.</b>	Pyrometer	
<b>.</b> ?		
N	EST-013	
Fort was	ACCEPTANCE CRITERIA	
6.1		
	The state of the s	REQUIRED

	Pump	40 (14.00	\$1.5 MILS	>1.5 HILS
Vibration	SDAPW	SI HILE	21300 P818	
Differential Pressure	Pump	S1366 paig	Low ≥1206	<1206 '>1380 psig
PARAMETER	PUNCP	RANCE SMOUNT	ALERT RANGE	REQUIRED ACTION RANGE

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.

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Section 7.2 Page 3 of 4

7.0	PROCEDURE (Continued) INITIALS
7.2.10	START the SDAFW pump by opening the
	following valves: Commission and the commission of the commission
	1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
	VI-8A OPEN CLW
	2. S/G "B" Steam Supply to SDAFW Pump, V1-88
	VI-8B OPEN AUD
	3. S/G "C" Steam Supply to SDAFW Pump, V1-80
	VI-8C OPEN Show
7.2.11	OPEN the following auxiliary feedwater supply valves:
	1. SDAFW Pump Feedwater Discharge to S/G "A", V2-14A V2-14A OPEN LW
N	2. SDAFW Pump Feedwater Discharge to S/G "B", V2-148
	V2-148 OPEN OW
	3. SDAFW Pump Feedwater Discharge to S/G "C", V2-14C
	V2-14C OPEN CLU
	CAUTION
	CLOSELY MONITOR REACTOR POWER, TURBINE/GENERATOR LOAD, AND STEAM
<b>~</b>	GENERATOR LEVELS TO EMSURE NO ABNORMAL CONDITIONS OCCUR FROM
	FEEDING COLD WATER TO THE STEAM GENERATORS.
Carrier Contraction	***************************************
7.2.12	AT OUT W ADDRESS AND A SECOND AND A SECOND ASSESSMENT OF THE PARTY OF
77 Ag	SLOWLY OPEN AFW-FCV-6416 by adjusting FIC-6416 in MANUAL and set for 600 gpm.
7.2.13	Record the following data in the S/G feed mode at 600 gpm.
5	
	SDAFW Pump Discharge Pressure (PI-1426) 1345 psis
er er er Televisioner	<b>/</b> -
n nga <del>rt</del> in n	NOTE
eta esperante de la composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della compositio	Step 7.2.13 confirms the opening of check valve AFW-84.
7.2.14	CTOOP APULLY CHAPU Buma Besieveleries
# • <b>6 • 6 •</b> 10 • 6 • 6 • 6 • 6 • 6 • 6 • 6 • 6 • 6 •	CLOSE AFW-17, SDAFW Pump Recirculation Isolation.
	<del></del>
ALL DET-104	Rev. 12 Page 11 of 15

	PROCEDURE (Continued)
	TROCEDORS (CONCINCED)
7.2.15	Slowly open AFW-FCV-6416 by Adjusting FIC-6416
Marine 1	in manual and set for 645 spm.
7.2.16	Record SDAFW Pump vibration on ATTACHMENT 8.1
	after five minutes of pump operation at
	645 gpm. 17. 17. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18
7.2.17	Maintaining flow at 645 com, record the
	indicated discharge pressure, suction pressure,
	flow and speed.
104	PI-1426 /400 Paig, FI-6416 640 gpm,
	PI-1478-1 < O 10 Speed 9600 RPM
7.2118	OPEN AFW-17, SDAFW Pump Recirculation
	Isolation
17,2,19	STOP the SDAFN pump by closing the following
	valvest
	1. S/G "A" Steam Supply to SDAFW Pump, V1-8A
	VI-8A CLOSED
	2. S/G "B" Steam Supply to SDAFW Pump, V1-8B
	VI-8B CLOSED (VI)
_	3. S/G "C" Steam Supply to SDAFW Pump, V1-8C
0	VI-8C CLOSED KIND
2,2.20	CLOSE the following valves:
6	1. SDAFW Pump Feedwater Discharge to S/G "A",  V2-14A V2-14A CLOSED (1)
<b>Q</b> .	2. SDAFW Pump Feedwater Discharge to S/G "B",
	V2-14B V2-14B CLOSED (11)
• •	V2-14B V2-14B CLOSED (11)  3. SDAFW Pump Feedwater Discharge to S/G "C",
	V2-14C V2-14C CLOSED (41)
7.2.21	FULLY OPEN the Steam Driven Flow Control
	Valve, AFW-FCV-6416, using FIC-6416 in MANUAL.
	AFW-FCV-6416 OPEN (AW)
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 AP from the data gathered in
giring at The control of	Step 7.2.17.
	1400 0 (1400)
ng taga Satah dalam	Discharge Pressure Suction Pressure
	(PI-1426) (PI-1478-1)

OST-206 CANTRAL 12

,/a

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PUMP		DATA	ACCEP	TANCE CRITERIA
	HORIZONTAL	2.0 WILS	द्राक्षक विभिन्न । सङ्ग्रीक स्ट्राह्म	ST HITS
SDATV	VERTICAL	(8,2) MILE		≤1 MTLS
4	HORIZONTAL	(I) IN/SEC	2007.Eq. 2	Y/A
*DATH	VERTICAL	(1) 1/8 IN/SEC	4101 ·	W/A

(1) If vibration exceeds 0.3 in/sec. notify Technical Support - Systems.
\*MOTE: 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

Steam Injet

N

Steam Exhaust

Pump Pump

discharge suction

Vertical

Horisontal

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ATTACHMENT 8.2 | Page 1 of 1

### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Scheduled /	Unscheduled (Circle one)	
/+= manhada		
test)	feet Dane as 2001	page numbers included in partial
trouble	Shooting All DAYS	A Maintenance
And the second	and the state of t	Agram
	Initial	
Linest Performe	ed by	(Print) Date
	JEWY TEWY	uto 6/16/89
2		not 6.16.89
		Mooke 6-16-89
Test Complete	el Date 16/16/69 Time 2340	
		<del>-</del>
	ctory: Yes / 80 (Circle one)	•
Reviewed by:	Oloman .	ete 6-17-87 time 0152
-	Unit 2 - Shift Foremen	ite of/10/ time 0/2C
Or Officental (1)	• • • •	Punp
_/NODICAH	dequired if results were unsatisfacto	7) O SDAGNA SHII
Vibras	7/1/19 6 7 7	A 89-AFWI / AFXZI
- DNd	89-AFXWI have her	d Camitted 0-6-17-89
sheet.	O.MCCILL accepted.	IAN OMM-DIS. See officeed
Approved by:	BISTO	1. 1-
	Unit 2 - Operating Supervisor	Date
Bandanad hug	William An	
Reviewed by: _	ISI Coordinator	Date
OST-206		
031-20 <del>0</del>	Rev. 7	Page 15 of 15 [

15



FROM: 146026 -- VMRSCS TO: 124145 -- VMRSCS DATE AND TIME

06/17/89 17:41:13

BURJECT: 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 OPERABILITY CONCERNS EXIST.

DATA FROM OST-206 SINCE 3/10/88 CORRECTED FOR DIFFERENCES IN SPEED HAS AVERAGED BLIGHTLY 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 REQU'IRED TO OPERATE. SINCE THE PUMP IS PROCEDURALLY RESTRICTED FROM OPERATING WITH THE RECIRC. CLOSED, THIS VIBRATION DATA IS NOT AN OPERABILITY CONCERN BINCE 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 HORE ACCURATE DETERMINATION OF PUMP OPERABILITY.

RICK DAYTON 6/17/89

2

CC: EB0659 CC: IB9970 CC: IB7036 CC: I63470

	1.0	PURPOST
	1.1	To verify mechanical performance and assess operational readings of components to fulfill their required safeguard functions. This test will assess the operation of the motor driven auxiliary.
		in flow and diligrations year
		The Booking TT ASME Code. Check Very Man 1
		AFW-68, AFW-69, and AFW-70 will also be tested for forward flow-
	2.0	REFERENCES 1978. Addends
	2.1	ASME Section II, Subsection IWP, 1977 Edition, Summer 1978. Addends.  ASME Section II, Subsection IWP, 1977 Edition, Summer 1978. Addends.  Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air
2	2.2	Engineering Flow Diagram, Collydian Evacuation
9 -	2.3	OP-402, Auxiliary Feedwater System
01	3.0	PREREQUISITES
	3.1	Only one auxiliary feedwater pump shall be tested at, a time.
	3.2	and during is aligned per OP-40Z, Allaudinasi your
. C	3.3	The Reactor Coolant System is at cold shutdown (\$200°F).  The Reactor Coolant System is at cold shutdown (\$200°F).
-	3.4	The Reactor Coolant System This revision is the latest revision available and has been.
4		verified against the Revision Status List.
<b>'</b> ''		1.) E STOUEL (Print)
		W.E STOUEL (Print) Signature Date
	3.5	The Shift Foremen has given his permission to conduct this test.
i .		

3.5 The Shift Foreman has given his patterns.

1-30-88

\_

. 0	ACCEPTAN	CE CE	ITERIA'

6.1

6.2.

6.3

6.4

6.5

6.6

6.7

6.3

6.9

				REQUIRED
	N. TV. D	ACCEPTABLE RANCE	RANCE	RANCE
PARAMETER	PUHP	≥1111.	Low 21075,	<1075
ifferential		≤1219 paig	!!! psig</td <td>&gt;1231° psig</td>	>1231° psig
Lesance			High >1219 ≤1231 psig	\$7 C. C. W
Psig)	l		Low 21023	<1023
		≥1057, ≤1159 psig		>1170. pala
		See Selection See at 1	High >1159,	

Check valves shall exhibit a change of position as required by the

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 ratest showing, acceptable operation shall be run before the valve is returned to service.

All test data shall be compared with the acceptance criteria.

contained in this procedure within 96 hours after completion of the contained in this procedure within 96 hours.

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

Surveillance Testing.

When tests show deviations greater than allowed in 5.1, the instruments involved may be recalibrated and the test rerunded to the deviations fall within the ALFET RANGE of Step 6.1, the

condition shall be evaluated prior to startup.

If the deviations fall within the REQUIRED ACTION RANCE of 6.1, the pump shall be declared inoperable and not returned to service until

pump shall be declared inoperable and not returned to service until the condition has been corrected.

The corrective action shall be considered completed when a

The corrective action shall be considered completed when a satisfactory inservice test has been conducted in accordance with IWP-3111 (ASME Section II) or an analysis is performed that demonstrates that the condition does not impair pump operability and that the pump will still fulfill its function.

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#### PUMPIAND VALVE DATA SHEE

REF. STEP	PARAMETER	2012 1977	DINE TE		2004
жо.				N. B. Walter	ACCEPTABLE 8
7.2.8	Disch. Press.	PI-1474	1240	25.23	1//
or	PSIC	PI-1425	M/A	A A A A	N/V
7.3.8	Suct. Press.				
	PSIC STANK	1 01-11-04-21			CONT.
7.2.15	(Sonic Meter)	11-14258学校	744 3	1/62/51	The state of the s
.2.32	and the second	ristance	の影子	/ Cal	
	· Pump (J		<b>製物</b> 深	100	
or .3.19	PSID			593±	21117 22 21037
			72	W. W.	11219 pele 5115

Pump AP = (Disch. Press.) - (See

REF. STEP	To a market to the second	
NO.	CHICK VALVE	VEHICATION OPEN
7.2.7	AFW-402-	63 300
7.3.7	NATURE OF THE PARTY OF THE PART	30
7.2.7	AFV-68	
7.2.14	APV-69	T. AM
7.2.20	APW-70	SON

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.

+ WR - SI-ABINI

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Page 14 of 15

# CONTINUES TEST ROCKERS

			7	STATE STATES	TODA	
,	Schadulad /				<b>17.4</b> 6 5	
		Inscheduled (	Circle one)			
				10/03	5 2 3	
•	(If unschedul	ed, state rea				Transfer to the second
	namai i	acecs Les	son for tes	t and the pa	ie numbers	
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			The second	Harrist of Constant	The state of the s	
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	- 0 Med Area	**************************************		THE THE	The same	THE REAL PROPERTY.
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		A STATE OF THE STA	2/20mm W.B		THE REAL PROPERTY.	144
			E THE MAKE	THE TAX MACO	A THE REAL PROPERTY.	
T	est Completes	Date _2///	7-1-1-0			
		-7/1/	Time	1430	1	
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		772 (10)/ 30				
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46	viewed by:			<b>福建设建</b>	751206	
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	# 88-AB	CX*(***	- D- D W		美美多人)。	FILL COLORS
	No Flow	11/1/200	DAITICL#	The state of	C-1420E	TOWN CANE
	1,7	12 dicate	<u>q</u>		THE PROPERTY AND ADDRESS.	3457
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						<b>这种种种种的</b>
App	roved by:		- 1	•	37.	
	-,-	Unit 2 - Oner	elfon		Dete 7-	9-88
		oute 7 - Ober	sting Super	visor		7 80%
					1-	
Revi	leved by:	Whole C	1 1 11			
	-,-	annaco	utches	اح. ا	Date _2/18	elca
		131 Cook	inator			V 0 d

OST-207 Re

Page 15 of 15

PURPOSE To verify mechanical performance and assess operational readiness 1.1 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 II ASMZ Code. Check Valves AFW-40, AFW-41, AFW-68, AFW-69, and AFW-70 will also be tested for forward flow. 2.0 REFERENCES ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addends. 2.1 Engineering Flow Diagram, C-190197, Feedwater, Condensate, and Air 2.2 Evacuation OP-402, Auxiliary Feedwater System 2.3 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 9.12 The Reactor Coolant System is at cold shutdown (\$200°F). 3.3 Nº 3.4 This revision is the latest revision available and has been verified against the Revision Status List. B M ollig AN (Print) B Mulluga 9-2-88
Name Signature Date 3.5 The Shift Foreman has given his permission to conduct this test.

> 9-3-55 Dete

### ACCEPTANCE CRITERIA

6.5

PARAMETER	PUMP	ACCEPTABLE RANCE	ALERT RANCE	REQUIRED ACTION
Differential Pressure (Psig)	A	≥1111, ≤1219 peig	Low ≥1075, <1111 paig High >1219 ≤1231 paig	RANCE   <1075,   >1231 psig
CCORPAGN	В	≥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 values 1 is 11.

Check valves shall exhibit a change of position as required by the

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 recest showing acceptable operation shall be run before the valve is returned to service.

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

The reviewing and approving authorities may accept this test in accordance with the provisions set forth in OHOH-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.

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.

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.

OST-201 Rev. 6

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ATTACEMENT 8.1 Page 1 of 2

# PUMP AND VALVE DATA SHEET

REF. STEP	PARAMETER		PUMP T	ESTED	ACCE	PTANCE
NO.			A	В	7	TERIA
7.2.8	Disch. Press.	PI-1424	1200	N/A		/A
or	PSIG	PI-1425	N/A	1190		<u>/A</u> /A
7.3.8	Suct. Press.	PI-1479	225	N/A		/A
	PSIC	PI-1480	N/A	1.5		/ <u>A</u> ·
7.2.9	RTCB Flow	FI-1425A	36	N/A		/A
7.2.17	(Sonic Meter)	FI-1425B	30	N/A		<u>/                                    </u>
7.2.23	Z	FI-1425C	40	N/A		/A
7.2.34 or 7.3.21	* Pump AP PSID		192.75		A Pump ≥1111,	B Pump ≥1057,
7.2.9 or	Vibration, Kils	Horizontal		11885	]	≤1159 <u>rsig</u> /A
7.3.9		Vertical	116	.13	N	/A

<sup>\*</sup> Pump AP = (Disch. Press.) - (Suct. Press.)

REF. STEP	CHECK ANTAE	** VERIFICATION OPEN		
-		(ELAITIKI)		
7.2.7	AF9-40	324		
7.3.7	AFW-41	SM.		
7.2.7	AFW-68	BM		
7.2.16	AFW-69	(2)n		
7.2.22	AFW-70	8m		

obtaining a flowrate of 325 GPM through its respective AFW pump.

Operability of check valves AFW-63, AFW-69, and AFW-70 OPENING is verified by obtaining a flowrate of 325 GPM to its respective steam generator.

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ATTACHMENT 8.2 Page 1 of 1

### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

(If unscheduled,	state reason for t	test and the page numbers	included in
pertial test)	Kuw Dizi	ac Cow SHUTIVIL	N) ALS REQUIRED
	(1911	PAGES 1-16)	
	Initials	Name (Print)	Date
Test Performed by	Ren	R. D. moson	9-3-88
		,	- 22-pl-8
	(5m		2 - Saxo. 8C
	15m	B. Milligan	9-3-88
est Satisfactory	* Yes /(No) (Circ	cle one)	
		Date 9-3-58	
Requi Distruction of the second of the seco	red if results ver  Pu.M. AP  MCKENNY D  SS Due NO	Municipality Debion 100 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	L. BIGISISISI 7-3 1014 KANGE (HIGH SERVICE CL 057-201
<u>u. K. 55 - A</u>	ITMI WAS C	LIEINALLY (CAROLATES) FO	X NA PRIBLIM
pproved by:	Unit 2 - Operating	Date	9-10-33
eviewed by:	41. 17. Co C. fe	or Date	alzilis

#### 1.0 PURPOSE

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 feedvater pumps by measuring flow and differential pressure in accordance with Section XI ASHE Code. Check Valves AFW-40, AFW-41, AFW-6C, AFW-09, 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).
- This revision is the latest revision available and has been verified against the Revision Status List.

Mame (Print) //A (June 4/9/32

Signature Date

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

Shift Foreman 9/10/88
Date

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PARAMETER	PUHP	ACCEPTABLE RANCE	ALERT RANGE	REQUIRED ACTION RANGE
Differential Pressure (Psig)	A	≥1111, ≤1219 psig	Low ≥1075, <1111 psig High >1219 ≤1231 psig	<1075, >1231 psig
	В	≥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.

- 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.
- 5.10 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.

Page 5 or 16

#### PUMP AND VALVE DATA SHEET

REF. STEP	PARAMETER		PUMP TE	STED	ACCEPTANCE
NO.			A	3	CRITERIA
7.2.8	Disch. Press.	PI-1424	ن ر در	N/A	N/A
or	SSIC	PI-1425	N/A	1175	N/A
7.3.8	Suct. Press.	PI-1479	.2.3	N/A	N/A
	PSIC	PI-1480	N/A	تلمين ١٠٠	₩/A
7.2.9	RTCB Flow	FI-1425A	لاوج وسي	N/A	H/A
7.2.17	(Sonic Meter)	FI-1425B	×2000	Η/A	N/A
7.2.23	z	FI-1425C	£ 0	N/A	N/A
7.2.34	* Pump AP			1171	
or	PSID		1.1 عذا	المحالية	≥1111, ≥1105,
7.3.21			الملايل	147.00	≤1219 psig ≤1212 psig
7.2.9	Vibration,	Horizontal		1	N/A
or	Mils	<u> </u>	1.32	.36	
7.3.9		Vertical	13	,:-l	N/A

<sup>\*</sup> Pump AP = (Disch. Press.) - (Suct. Press.)

REF. STEP	CHECK VALVE	** VERIFICATION OPEN	
NO.		(INITIALS)	
	_		
7.2.7	AEW-40	34/	
7.3.7	<u> AFW-41</u>	14	
7.2.7	AE4-68	CAL	
7.2.15	AFW-69	iel	
7.2.22	AEW-70	41	

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.

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- ATTACHMENT 8:2 Page 1 of 1

## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

	Initials		Date
est Performed by	1 hm	I.A. WINGGAR	9/10/80
	(V. 2)	David A. Cook	2-10-89 9/10/88
	24/2	DAY of 1/6: 5 FAIRLY	6. al. p/80/3-1
•		ALHALASIAS. RAIYLIK	9-2-11
Test Satisfactory Reviewed by: Comments: (Requi	Unit 2 - Shift	Date 9-/0. Foreman  Vere unsatisfactory)	·
	·		

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C:

	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	ASHE Section XI. Subsection VIII
	2.2	ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.
4 8 5	2.3 2.4	Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air Evacuation  OP-402, Auxiliary Feedwater System EST-013, Auxiliary Feedwater Pump Bearing Temperature Test
· _	3.0	
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		PREREQUISITES
·	3.1	Only one auxilians 6
	3.2	Only one auxiliary feedwater pump shall be tested at a time.  The AFW System is aligned per OP-AGE
••	3.3	The AFW System is aligned per OP-402, ATTACHMENT 9.1.  The Reactor Coolant System is
. v.	3.4	The Reactor Coolant System is at cold shutdown (\$200°F).  This revision is the larger row;
2		This revision is the latest revision available and has been verified against the Revision Street at
9		
~		Name (Print) Colon (Deans 10-12.88) Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
		Committee Constitution of the Constitution of

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PARAMETER	РИМР	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION
Differential Pressure (Psig)	A .	≥1111, ≤1219 psig	Low ≥1075, <1111 paig High >1219 ≤1231 paig	RANGE <1075, >1231 psig
	8	≥1105, ≤1212 psig	Low ≥1070, <1105 psig High >1212, ≤1224 psig	<1070, >1224 psig

Acceptance criteria for vibration will be established after initial performance of this test.

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

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.

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

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

If the deviations fall within the ALERT RANCE of Step 6.1, the condition shall be evaluated prior to startup.

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.

The corrective action shall be considered completed when a satisfactory inservice test has been conducted in accordance with IMP-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.

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#### PUMP AND VALVE DATA SHEET

REF. STEP	PARAMETER		PUMP T	ESTED	155	CDT41105
			A	В		EPTANCE ITERIA
7.2.8	Disch. Press.	PI-1424	1190	N/A		
or	PSIC	PI-1425	N/A	1185		N/A
7.3.8	Suct. Press.	PI-1479	3	N/A		I/A
	PSIC	PI-1480	N/A	5		1/A
7.2.9	RTCB Flow	FI-1425A	32	N/A		1/A
7.2.17	(Sonic Meter)	FI-1425B	34	N/A		1/A
7.2.23	Z Z	FI-1425C	39	N/A		/A
7.2.34 or	* Pump AP		1157		A Pump	B Pump
7.3.21	PSID	.4.17 -15	1190	1180	≥1111,	≥1105,
7.2.9	Vibration,	110-11	- 70		≤1219 psig	≤1212 psig
or	Mils	Horizontal	. 3	.32	N	/A
.3.9	(Disch. Press.) -	Vertical	, 15	.15		/A

Pump &P = (Disch. Press.) - (Suct. Press.)

REF. STEP	CHECK VALVE	** VERIFICATION OPEN
NO.		(INITIALS)
.2.7	AFW-40	201
.3.7	AFW-41	214'
.2.7	AFW-63	271
.2.16	AFW-69	
.2.22	AFW-10	2/11

\*\*\*Cperability 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 flourate of 325 GPM to its respective steam generator.

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ATTACHHENT 8.2 Page 1 of 1

## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

(If unsched	Unscheduled (Circle uled, state reason for the control of the cont		included in
Test Perform	Initials  ad by MIM  RIU	Name (Print)  Michael S. Macie  LAMP (. Paway  APHALAI	Date
Test Satisfact	tory: Yes / No (Cir	Time	
Comments: (Re	Unit 2 - Shift For	oreman  Date /////  Oreman  re unsatisfactory)	of Time 15-20
Approved but		. 117	
		Supervisor Date 16/5	

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		- 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987年 - 1987
	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	ASHE Section XI. Subsection Tun
0	2.2	ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda. Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air Evacuation
O	2.3	OP-402, Auxiliary Feedwater System
	2.4	EST-013, Auxiliary Feedwater Pump Bearing Temperature Test
N	3.0	PREREQUISITES
į.	3.1	Only one auxilians c
į.	3.2	Only one auxiliary feedwater pump shall be tested at a time.  The AFW System is aligned per Operon
· 6	3.3	The AFW System is aligned per OP-402, ATTACHMENT 9.1. The Reactor Coolant System is
. (. <del></del>	3.4	The Reactor Coolant System is at cold shutdown (<200°F).  This revision is the larger and in the cold shutdown (<200°F).
		This revision is the latest revision available and has been verified against the Revision See
		verified against the Revision Status List.
7		Name (Print) Millete 125/69 Signature Date
	3.5	The Shift Foreman has given his permission to conduct this test.
		(M. h. t.

Shift Foreman

#### 6.0 ACCEPTANCE CRITERIA

6		1
•	•	•

	T			
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 prig
	В	≥1105, ≤1212 psig	Low ≥1070, <1105 psig High >1212,	<1070, >1224 psig
Vibration Amplitude (Hils)	٨	≤1	≤1224 psig >1 ≤1.5	>1.5
	8	≤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

6.5

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

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C:

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 OHM-015, Operations Surveillance Testing.

6.3

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

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### PUMP AND VALVE DATA SHEET

REF. STEP	PARAMETER		PUMP	TESTED	ACCEPTANCE	
-			A	В		EPTANCE ITERIA
7.2.8	Disch. Press.	PI-1424	1220	N/A		
7.3.8	PSIC	PI-1425	N/A	1100		N/A
, •3•8	Suct. Press.	PI-1479	5.5	N/A		1/A
.2.11	PSIC	PI-1480	N/A	6.5		1/A
.2.17	RTCB Flow	FI-1425A	365	N/A		1/A
.2.23	CPM	FI-1425B	375	N/A		/A
.2.34		FI-1425C	375	N/A		/A
or .3.21	* Pump AP PSID		1214.5	1193.5	A Pump ≥1111,	/A B Pump ≥1105,
.2.9 or 3.9	Vibration, Mils	Horizontal	36	.3	≤1219 psig	≤1212 psig
	(Disch. Press.) -	Vertical	.12	.32		

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

REF. STEP	CHECK VALVE	** VFDIETCATE
NO.		VERIFICATION OPEN
7.2.7	AFW-40	*
.3.7	AFW-41	Ear
.2.7	AFW-68	+
2.16	AFW-69	4
.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.

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ATTACHHENT 8.2 Page 1 of 1

## SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

MIOR WEIVER CAR MOITADIRITHED
Scheduled / Unscheduled (Circle one)
(If unscheduled, state reason for test and the page numbers included in
DONE TRIOR TO HEAT-UP
AU PAJES (1-17)
Initials  Name (Print)  Date  Sture Atlae  -25-55
MW /12 [MWINTES   Kale Sark 1/25/89   1/25/89  4/820 G Taylor   D Mulliam 1-25-89  10/800 KPRESIN/8012 1/25/89
Test Complete: Date 1-25-89 Time 2130
Test Satisfactory: Yes / No (Circle one)
Reviewed by:  Unit 2 Shift Foreman  Date 125-83 Time 2157
Comments: (Required if results were unsatisfactory)
Approved by:  Unit 2 - Operating Supervisor  Date 1-26-89
Reviewed by: SINCONTECTION Date 1/30/84

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	1.0	PURPOSE
		and the second s
	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,
ř		AFW-68, AFW-69, and AFW-70 will also be tested for forward flow.
	2.0	REFERENCES
ល	2.1	ASME Section XI, Subsection IWP, 1977 Edition, Summer 1978 Addenda.
. n	2.2	Engineering Flow Diagram, G-190197, Feedwater, Condensate, and Air
		Evacuation
	2.3	OF-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.
<b>\</b>	3.2	The AFW System is aligned per OP-402, ATTACHMENT 9.1.
} ~	3.3	The Reactor Coolant System is at cold shutdown (5200°F).
	3.4	This revision is the latest revision available and has been
		verified against the Revision Status List.
<u>; C:</u>		1 Old
		WE. STOVER (Print) Willow. 4-10-89
		Name Signature Date

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

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6	ı

	[	I		REQUIRED
		ACCEPTABLE	ALERT	ACTION
PARAMETER	PUMP	RANGE	RANGE	RANCE
		≥1111,	Low ≥1075,	<1075,
Differential	A	≤1219 psig	<li>1111 psig</li>	>1231 psig
Pressure		, -	High >1219	
(Psig)		1	≤1231 psig	
		≥1105,	Low ≥1070,	<1070,
	8	≤1212 psig	<1105 psig	>1224 psig
			High >1212,	
	1		≤1224 psig_	
Vibration	A	≤1	>1	>1.5
Amplitude			≤1.5	
(Mils)		1		
<del></del>	В	≤1	>1	>1.5
	[		≤1.5	1

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
- data. Each value shall be categorized into one of the ranges as indicated in Step 6.1.

  Thank values shall exhibit a change of position as required by the

Pump Data taken shall be compared to the appropriate baseline

- 6.4 Check valves shall exhibit a change of position as required by the data sheet.
- 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.
- 6.3 When tests show deviations greater than allowed in 6.1, the instruments involved may be recalibrated and the test rerun.

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### PUMP AND VALVE DATA SHEET

REF. STEP	PARAMETER		PUMP 1	ESTED	100	
			A	В		EPTANCE ITERIA
7.2.8 or	Disch. Press.	PI-1424	1210	¥/A	<del>                                     </del>	1/A
	PSIC	PI-1425	H/A	1195		
7.3.8	Suct. Press.	PI-1479	3.5	Y/A		1/A
	PSIC	PI-1480	N/A	3.2		/A
7.2.11	RICE Flow	FI-1425A	3/5	¥/A		/A
7.2.17	GPH	FI-1425B	335			<u>/A</u>
7.2.23		FT-1425C			Н	/A
7.2.34	* Pump AP	1-1-1-10	330	W/A	Я	/A
or	PSID			_	A Pump	B Pump
.3.21			12065	141.8	≥1111,	≥1105,
.2.9	Vibration,				≤1219 psig	≤1212 psis
or	Mils	Horizontal	.35	.5	≤1	
.3.9	(Disch. Press.) -	Vertical	.15	-3		<del></del>

Pump AP = (Disch. Press.) - (Suct. Press.)

NO.	CHECK VALVE	** VERIFICATION OPEN (INITIALS)
.2.7	AFW-40	ō /
.3.7	AFW-41	- Ofw
.2.7	AFW-68	<u> </u>
.2.16	AFW-69	<u> </u>
.2.22	AFW-70	<u> </u>

\*\*\*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.

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ATTACHMENT 8.2 Page 1 of 1

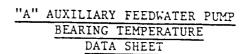
### SURVEILLANCE TEST PROCEDURE CERTIFICATION AND REVIEW FORM

Test Performed by	Name (Print)  FLEGUTE  TRUVITE	1/11/89 4/11/89
Test Complete: Date 4/1/89		4-11-89
Test Satisfactory: Yes / No (	Circle one)	
Reviewed by:	Date 4/u/r)	
	Date 4/0/r) Foreman  Vere unsatisfactory) FST- 01  T-013 NOT REQUIRED	3 MANTED POET

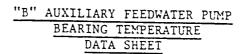
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START TIME:	TEMPERATURE			
		RATURE		
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2		
Initial Time - Zero	1/2/ss 88.8 98.8	TOH 112158 87. 497.4		
2	98.8	97.5		
4	98.9	97.4		
6	98.9	97.5		
8	98.8	97.5		
10	98,8	97.5		
12	98.8	97.5		
14	98.9	97.5		
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	18.8	97.6		
32				
34				
36	-	^		
38				



START TIME:	TEMPERATURE		
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2	
Initial Time - Zero	NA	NA	
2	1	1	
4			
6			
8			
10	-		
12			
14			
16			
18			
20			
22	,		
24			
26			
28	-		
30			
32			
34			
36			
38	$\sqrt{}$	-	

## STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME:	TEVDEDATURE	
	TEMPERATURE	
INTERVAL TIME	OIL COOLER INLET	
Initial Time - Zero	NA	
2		
4		
6		
8		
10		
12		
14		
16		
18		
20		
22		
24		
. 26		
28		
30		
32		
34		
36		
38	_	

#### CERTIFICATION AND REVIEW FORM

Scheduled Unsched	uled (Circle one)	
(If unscheduled, partial test)	state reason for test and the page number	rs included in
Test Performed By	Initials  Tolt  Tolt  Name (Print)  Ho(utt	<u>Date</u> 1/20/88
Test Complete: Da	ate: NA Time: NA	
	: Yes /No (Circle one)	
Reviewed By:		1/20/88
Reviewed By:	ISI Coordinator	
Comments: (Requir	red if results were unsatisfactory)	EST 15 TO
BE RESC	HEDULED TO LATER DA	TF DUE TO
REQUIREMEN	I TO FEED THE STEAM	GENERATAS
DURING Y	HIS TEST DUE TO THE	PLANT BEING
SHUTDOWN		The first occur
Approved By:	Dat	:e:
Łn	gineering Supervisor - Performance	

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#### "A" AUNILIARY FEEDWATER PUMT BEARING TEMPERATURE DATA SHEET

START TIME: 2226	TEMPERATURE	
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	64.4	62,7
2	71.3	69.2
4	78.8	70.2
6	83.4	13.0
8	86.0	78.0
10	88.7	78.5
12	90.5	79 i
14	92,7	81.7
16	97.4	82.5
18	92.5	90.0
20	95.9	83.8
22	96.7	79.6
24	97.1	853
26	98.3	82.4
2.8	96.8	83.2
30	97.3	80.9
32	NA	Λ/Λ
34		1
. 36		
38 _	\\	1/

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· 新建工作

## "B" AUXILIARY FEEDWATER PUMP | TATE ONE TRADEL TO BE | DATA SHEET

START TIME: 010/	TEMPERA	TEMPERATURE		
INTERVAL TIME	BEARING NUMBER 1 BEARING NU			
Initial Time - Zero	65.2			
2	658	64,0		
٤		63.9		
6	71.3	66.6		
8		<u>70.8</u> 73.2		
10	77.8			
12	79.0	74.6		
14	81.6	74.2		
	83.7	76.5		
16	<u> </u>	77.2		
18	82.8	77.5		
20	85.3	77.6		
22	03./	77.9		
24	83.6	76.9		
26	- 85.7	76.2		
28	852	80.1		
30	88.4			
32		80.4		
34	N/A	<u> </u>		
36				
38				

#### CERTIFICATION AND REVIEW FORM

Scheduled/Unsched	duled (Circle one)			
(If unscheduled. partial test)	State reason for te	st and the pag	e numbers in	Cluded in
Test Performed By	Initials	Name (I		Date
rest reflormed by	Rom Rehe	NW KIKK		
	-Kum - Mane	MOSOR		2./7-88
T	- 11 OJ			
Test Satisfactement	ate: <u>Z-///-88</u> Ti	me: OSCO	<del></del>	
Reviewed By:	: Yes No (Circle			. 7 00
	Shift Forem	ian		-17-88
Reviewed By:	ISI Coordinat	6000	Date: 3	/3/88
Comments: (Requir	red if results were	unsatisfactor.	*	
ON DENE	S Pump LANDOT	- BE TESTED	V MALL LA	(202 2)0
X * / !!! }#	$w$ $\rho_{ll} m/s$	DES Dara of	San Agrante	ves did
Not MIN Lte	Stabilize.	Charry a	the.	30
14// 41	I RAN ON	Leike	·	
			-	
pproved By:				
	gineering Supervison	- Performance	Date:	
	•		•	

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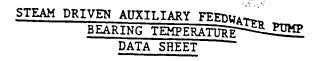
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# STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: 176/	TEMPERATURE	
INTERVAL TIME	OIL COOLER INLET	
Initial Time - Zero	121,	
2	128.5	
4	128.7	
6	129	
8	129	
10	130	
12	129.8	
14	132	
16		
18	132.1 133.6	
20	NA	
22		
24		
26		
28		
30		
32		
34		
36		
38	<u> </u>	

#### CERTIFICATION AND REVIEW FORM

Scheduled Unscheduled (Circle one)	
(If unscheduled, state reason for test and the page numbers in partial test)	cluded in
Test Performed By:    Initials   Name (Print)	<u>Date</u> 4-19-80
Trubte	4/10/88
Test Complete: Date: 4/19/88 Time: 1745	
Test Satisfactory: Yes /(No) (Circle one)	'-15-88
Reviewed By: Wolfeling Date: 4	
Comments: (Required if results were unsatisfactory) did not	pass since
	' i 1
olso osi-zul was run concurrently, so this	may have
some effect on the EST. WR 88-AESHI WA	s generation
pproved By:  Engineering Supervisor - Performance  Date:	
- Constitution and	



START TIME: 2120	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	/19
2	
4	125
6	(22
8	123
10	122
12	121
14	121
16	122
18	125
20	123
22	123
24	125
	/20
26	123
28	122
30	122
32	MA
34	
36	
38	

#### CERTIFICATION AND REVIEW FORM

Scheduled/Uns	cheduled (Circle one)		
(If unschedul	ed, state reason for test and	the page numbers included	i in
			-
	,		
	Initials	Name (Print)	Date
Test Performed	By: June M. Roberto	<del>//</del>	5-17-88
·	1 PM touc	hock	5-17-88
Test Complete:	Date: 5-/7-88 Time:	22'21	
Reviewed By:	Ory: Yes   Cho (Circle one)  Advinto  Shift Foreman	Date: <u>5/17/88</u> Date: <u>6/3/88</u>	
Reviewed By:	Ul Sul chem— ISI Coordinator	Date: <u>6/3/88</u>	
Comments: (Rec	quired if results were unsatis	factory) Dio Not Mit	ACCIONNIC
		<u> </u>	
pproved By: _	Engineering Supervisor - Perf	Date:	

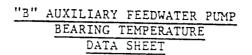
# AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE TEST DATA SHEET

Temperature Measuring Device:

CONTRIT PYROMETO	<u> CC11.</u>	<i>BR  (</i> Serial	016 Number		1/-4-87 Calibration	Date
Stabilized Temperatures:	Bearing Bearing				"3" Pump 99.2 94,9	Steam Driven "C" Rumr
Test Comments (as applica	able):	···				
	<del></del>					
				<del>-</del>		
	•					
			_	<del></del>		<del></del>
			<del></del>			<del></del>

### "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	11/. 7	100.7	
4	110,4		
6		103.1 99. 2	
8	107.7)	103.1	
10	107 2	05.6	
12	111.6	102.4	
14	107.4	104.8	
16	108.8	105.4	
18	1072	101.7	
20	110.		
22	106.5	103.5	
24	108.2	100.4	
26	106.6	1/16.3	
28	1066	105.2	
30	109.	102)	
32		7070	
34			
. 36			
38		-	



START TIME:	TEMPERATURE		
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2	
Initial Time - Zero	93.9 100 7:547	8811	
2	11.8	91.2	
4	96.0	9/,7	
6	95.3	91.7	
8	95.2	94.8	
10	100	92.2	
12	94.8	92.3	
14	162.4	94.5	
16	96.1	95.6	
18	98.5	94.6	
20	102.7	986	
22	99.5	98.7	
24	105.4	95.2	
26	106.8	1001	
28	102 2 89.39.5W	95.5	
30	100.9	989	
32	7.50-1	/ O . /	
34			
36			
38		_	

#### CERTIFICATION AND REVIEW FORM

Scheduled Unscheduled (Circle one)	
(If unscheduled, state reason for test and the page number partial test) All PAGES USED IN CONTUNCTORY	rs included in TION WITH
	-
Test Performed By: Roa R. M. M. O. S. S. TOSER	<u>Date</u> <u>9-2-11</u> 9-3-89
Test Complete: Date: 9-3-98 Time: 0447  Test Satisfactory: Tes / No (Circle one)  Reviewed By: Date:  Shift Foreman  Reviewed By: Usuac Cutchen  ISI Coordinator	9-3-88 9/20/88
Comments: (Required if results were unsatisfactory)  BEARING No. 2 OF 'A" PUMP DID NOT STABILIZE AS  THIS TEST WAS RERUN ON 9/19/88 WITH SATISFI	REQUIRED.
	CIVICY RESULTS.
Approved By:  Engineering Supervisor - Performance	e:

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# AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE TEST DATA SHEET

Temperature Measuring Device:

1.	Turo	<del></del>			1/16/31	
	Theremocouple Type		Serial Number		Calibration	Date
						Steam
				"A" Pump	"B" Pump	Driven
Stabilized	Temperatures:	Bearing	Number 1		100.1	
		Bearing	Number 2	16:6.7	941	
Test Commer	nts (as applica	ble):	Str. Barren	t - 25	at 2	12 4
22,	(107,/04"	1040)		7		, , , , ,
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					<del>-</del>	
				· · · · · · · · · · · · · · · · · · ·		
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	<del></del>			· · · · · · · · · · · · · · · · · · ·		

# "A" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: 0907	TEMPERATURE		
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER	
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	78.3	
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	Ü	,,,,,	
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	76,5	93,5	
4	97.4	94.1	
6	96.5	54.2	
8	99,0	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	100.7	93.8	
24	100:3		
26	100.2	94.1	
28	100.3	94.4	
30	100.9		
32	100.7	93.6	
34	700.7	94,1	
36			
38			

# STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME:	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	114 Jm 8-18-80
2	107
4	98
6	103
8	15
10	99
12	104
14	104 106 93
16	93
18	102
20	99
22	104
24	109
26	100
28	106
30	104
32	110
34	100
36	107
38 .	/23

105

### CERTIFICATION AND REVIEW FORM

semeddied/onscr	neduled (Circle one)	
(If unscheduled partial test)	d, state reason for test and the page numbers include	d in
		-
·.		
	_	
Test Performed	Initials  Name (Print)  By: AAA ALMAICA	<u>Date</u> 9/10/93
Test Complete: Test Satisfactor Reviewed By:		1,0
Reviewed By:	Shift Foreman  Date: 9/14/.  ISI Coordinator	¥ 8
Comments: (Requ	ired if results were unsatisfactory)	
Approved By:		
Ē	ngineering Supervisor - Performance	

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## "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	95,5	80.7
12	85.5	81. 2
14	85.5	82.0
16	85.7	8z.7
18	95.7	82.7
20	85, 7	81.0
22	86.0	
24	87.5	81.5 81.5
26	88.0	81.5
28 )	88. D	81,4
30	88.0	81.3
32	J-4.	
34		
36		
38		

# "B" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME:	2020 TEMPE	RATURE
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	731
10	79.5	73.5
12	80.1	
14	79.8	73.3
16	80.0	73.7
18	80.2	74.0
20	&Z.	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/Unschedu	led (Circle one)			
(If unscheduled, separtial test)	tate reason for to	est and the pag	e numbers include	d in
	·		·	
				-
	·			
•		•		
	Initials	Name (1	Print)	Date
Test Performed By:	b Ko	ARNIN		1/25/89
	942 Ste	ve Ather		1-25-89
	Mu C.	OWINTERS		1/25/89
	Bm B	rendon Mullian		1/25 189
	1 ,			
Test Complete: Dat	e: <u>1/24/29</u> T	ime: 1420		
Test Satisfactory:	Yes / No (Circl	e one)	<del></del>	/
Reviewed By:	Comente	•	Date: 1/26/	<i>8</i> 9
•	Shift Fore	man		
Reviewed By:	TOT 0		Date:	
Commando (D. )	ISI Coordina			
Comments: (Require	i if results were	unsatisfactory	)	
* SUATEW T	ump will Be	Persones	IN LONJUNCT	row
WITH US)	Zor Witer Pi	ANT LONDIT	DONS FERMIT.	Plant
	e colp s/t	D. All DATA	ON MOATW HE	mPS
WN3 SATISF	AcTory			
	·			
			<del></del>	
	<del></del>			
			•	
:				
pproved By:	·		Date:	
Engi	neering Superviso	r - Performance		

# AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE TEST DATA SHEET

Temperature Measuring Dev	rice:					
Py Romen	4	CC HBR	_04314	L	1/17/89	-
Type	<del></del>	Serial	Number		Calibration	Date
						Steam Driver
			-	"A" Pump	"B" Pump	"C" Pur
Stabilized Temperatures:	Bearing	Number	1	76	7/	NA
	Bearing	Number	2	85	71 76	
Test Comments (as applica	hla)•					
rese commenes (as apprica		<del></del>		7		<del></del>
	<del></del>					<del></del>
			<del>.</del>		·	<del></del>
	····	<del> </del>	<del></del> -	· · · · · · · · · · · · · · · · · · ·	<del></del>	<del></del>
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				- <del></del> -		<del></del> -
	<del></del>			<del> </del>		<del></del>
		<del></del>	<del></del>			<del> </del>
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					<del> </del>	
						<del></del>
	<del></del>				<del></del>	
					<del></del>	

## "A" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

and the commence of the commen

START TIME: 7230	TEMP	ERATURE
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2
Initial Time - Zero	74	80
2	75	82
4	75	82.
6	2,-	f3
8	76	84
10	76	85
12	76	F3
14	74	85
16	74	82
18	75	85
20 .	77	85
22	77.	83
24	78	84
26	28	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		24	
10	70 . HSh Q-21-20 24 71	76	
12	71	74	
14	7/	7,-	
16	72	25	
18	73	78	
20	74	74	
22	73	78	
24	74	78 80	
26	73	81	
28	74	29	
30	73	78	
32			
34			
36		-	
38			

## STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME: MA	TEMPERATURE
INTERVAL TIME	OIL COOLER INLET
Initial Time - Zero	
2	
4	
6	V
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 include partial test) SDAFW PUMP NOT DONE, PLANT IN COLD S	d in
Initials  Name (Print)  F. B. SCHWIER  Show Stule Atlee	<u>Date</u> <u> </u>
Test Complete: Date: 2/22/69 Time: 06/0	
Reviewed By: Wanda Date: 2/22/ Shift Foreman Reviewed By: Wand Outle Date: 2/23/	<u> </u>
222 Gootdingtof	189
Comments: (Required if results were unsatisfactory)	
	· · · · · · · · · · · · · · · · · · ·
pproved By: Date: Date:	

# AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE TEST DATA SHEET

Temperature Measuring Device:

TYNE K THOMOCOCKE	CCHBR 16 Serial Num	014	10-06-	88
76-	Serial Num	ber	Calibratio	n Date
	,			
				Steam
tobili - 1 m		"A" Pump	"B" Pump	Drive "C" Po
tabilized Temperatures:	9	*	<del>**</del>	*
	Bearing Number 2	*	<u>*</u>	
est Comments (as applies	11.\ <u>\</u>			
est Comments (as applica	ole): ATEMPENA	TUKE STA	981213471	>~
The party				
	·	·		
		·		

## "A" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME:	TEMPERATURE		
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER	
Initial Time - Zero	77.4	76,5	
2	86.8	80:8	
4	90.0	82.0	
6	95,0	€3.0	
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	9125	
26	99,5	91,9	
28	99.7	91,9	
30	99.9	915	
32		10.15	
34		A STATE OF THE STA	
36		1,4,7 €	
38			

## "B" AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

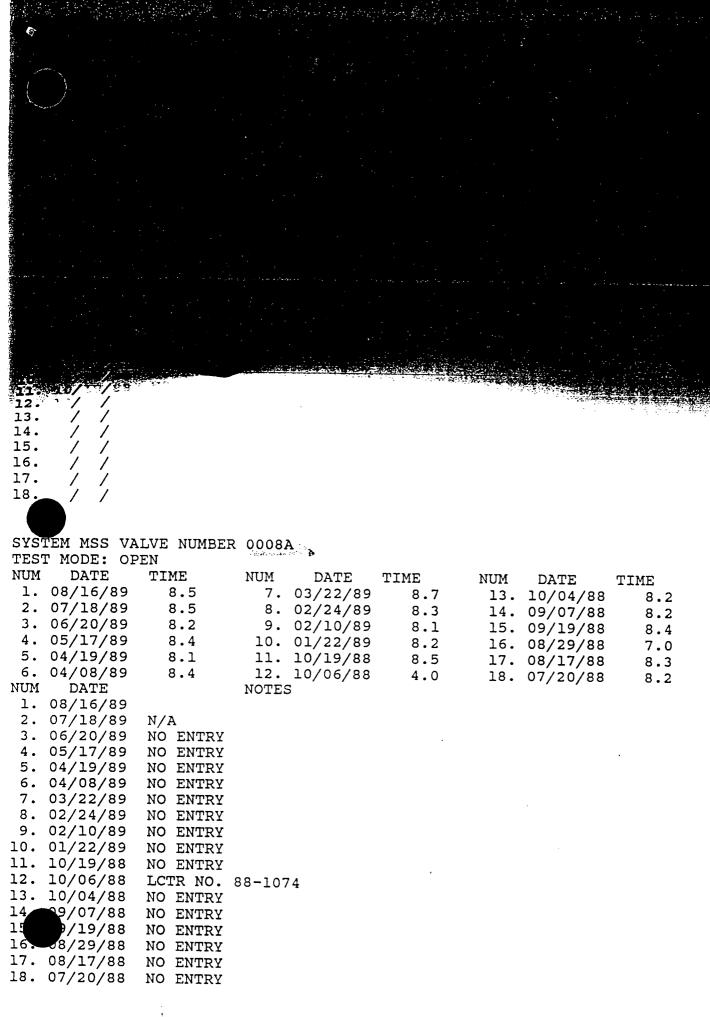
START TIME:	TEMPERATURE		
INTERVAL TIME	BEARING NUMBER 1	BEARING NUMBER 2	
Initial Time - Zero	78.9	: 77.8	
2	845	78.7	
4	82.7	79,1	
6	83.8	80,3	
8	83. <del>8</del>	80,2	
10	84.0	80.3	
12	84.8	80.5	
14	85,7	90.7	
16	86.1	81.1	
18	88.3	87.8	
20	881	<b>43,5</b>	
22	88.5	818	
24	8\$.8	84.0	
26	89.7	82.3	
28	90,0	843	
30	90.2	84,5	
32			
34			
36			
38		_	

### STEAM DRIVEN AUXILIARY FEEDWATER PUMP BEARING TEMPERATURE DATA SHEET

START TIME:		TEMPERATURE
INTERVAL TIME	OI	L COOLER INLET
Initial Time - Zero	117.8	
2	108,9	·
-4	110.4	
6	111.3	
8	109.6	
10	1129	
12	111,2	
14	110.4	
16	114.0	
18	109.4	
20	1/2,1	
22	109,5	
24	1095	
26	110,2	
28	109,8	
30	111,2	
32		
34		
36		
38		_

#### CERTIFICATION AND REVIEW FORM

Semeduled/Unschedu.	ied (Clicie o	ue)				
(If unscheduled, spartial test)		r test and t	the page n	umbers in	cluded	in
	•					<del></del> .
<del></del>					<del></del>	
	Initials		Name (Pri	.nt)	•	<u>Date</u>
Test Performed By:	me	MA XIK.	ł		<del></del>	ZZMAR E
				<u> </u>	<del></del>	
			· · · ·	<u> </u>		
			· · · · · · · · · · · · · · · · · · ·		<del></del>	
Test Complete: Da	te: <u>ZZWAA</u> 8	9 Time:	335	_		
Test Satisfactory:	Yes / No (C	ircle one)				
Reviewed By: 🔑	mcQl	<u></u>	<u> </u>	Date:	3/22/8	9
Reviewed By: <u></u>	USMcCuto	Foreman Leax dinator		Date:	1/23/89	
Comments: (Require	ed if results	were unsatis	factory)	Temp	1 1 A-Y	urcs
D.d n.t	Stat: 1:2	2 C DUE 7	0 30 m	NUTE R	UN TIMI	<u> </u>
LIMITATION. HOW						
ARE CONSIDER	TO ACCEPTA	BLE FUR C	ONTINUE	n open	ZATION)	·
		<u> </u>		•	<del></del>	
						<del></del>
			·			
				<del>-</del> .		
Approved By:	gineering Supe	rvicor - Par	formance	Date:		
En	Princerring author	TATOOF - LEE	TOTMOTICE			



```
15/86
     03/07/86
 7.
 8.
 9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
SYSTEM MSS VALVE NUMBER 0008A
TEST MODE: OPEN
MUM
       DATE
               TIME
                          NUM
                                  DATE
                                          TIME
                                                     MUM
                                                           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
    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
               NO ENTRY
 4. 09/07/88
 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
    Q3/10/88
               NO ENTRY
     1/20/88
               NO ENTRY
16.
   03/15/88
               NO ENTRY
17. 02/01/88
               NO ENTRY
18. 01/20/88
               NO ENTRY
```



M MSS VALVE NUMBER 0008A TEST MODE: OPEN

2. 3. 4. 5. 6.	DATE 03/10/88 01/20/88 03/15/88 02/01/88 01/20/88 01/05/88 DATE	**TIME	NUM DATE 7. 11/11/87 8. 12/15/87 9. 11/18/87 10. 10/21/87 11. 09/15/87 12. 08/19/87	8.1 8.8 8.4 8.2	14. 15. 16. 17.	DATE 07/22/87 06/17/87 06/14/87 06/07/87 05/10/87 05/10/87	TIME 8.2 8.0 8.4 8.1 8.2
	DATE		NOTES			///	0.2

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 15 /14/87 107/87 NO ENTRY

NO ENTRY NO ENTRY

6. 16. /07/87 17. 05/10/87 NO ENTRY

8. 05/10/87 NO ENTRY

```
VALVE PERFORMANCE SYSTEM
STEM MSS VALVE NUMBER 0008B
EST MODE: OPEN
```

14:34:06

TIME

7.7

7.3

7.3

7.6

7.5

7.0

```
DATE
                TIME
                          NUM
                                  DATE
                                         TIME
                                                    MUM
                                                          DATE
      3/10/88
                  7.5
                            7. 11/11/87
                                            7.6
                                                     13. 08/19/87
 2. 01/20/88
                  7.3
                            8. 12/15/87
                                            7.4
                                                     14. 05/29/87
 3. 03/15/88
                  7.9
                            9. 11/18/87
                                            7.7
                                                     15. 07/22/87
 4. 02/01/88
                  7.9
                           10. 10/21/87
                                            8.2
                                                     16. 06/17/87
 5. 01/20/88
                 7.8
                           11. 09/18/87
                                            7.5
                                                     17. 06/14/87
 6. 01/05/88
                  8.2
                           12. 09/15/87
                                            7.6
                                                     18. 06/07/87
MUM
      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
```

M MSS VALVE NUMBER 0008C TEST MODE: OPEN

2. 3. 4. 5. 6. NUM	DATE 03/10/88 01/20/88 03/15/88 02/01/88 01/20/88 01/05/88 DATE 03/10/88	TIME 8.5 8.1 8.5 8.3 8.7 8.5	NUM DATE 7. 11/11/87 8. 12/15/87 9. 11/18/87 10. 10/21/87 11. 09/15/87 12. 08/19/87 NOTES	8.1 8.6	14. 15. 16. 17.	DATE 07/22/87 06/17/87 06/14/87 06/07/87 05/10/87 05/10/87	TIME 8.1 8.0 8.3 8.0 8.5 8.5
-----------------------------------	--	------------------------------	---	------------	--------------------------	--	--

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 <u>06</u>/17/87

NO ENTRY 5. 14/87 NO ENTRY

6. 707/87 NO ENTRY

7. 05/10/87 LCTR NO. 87-499,87-651

8. 05/10/87 NO ENTRY

```
YSTEM MSS VALVE NUMBER 0008B
TES
      MODE: OPEN
                          MUM
      DATE
               TIME
                                 DATE
                                         TIME
                                                    MUM
                                                           DATE
                                                                   TIME
    10/19/88
                 7.6
 1.
                            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
    10/04/88
                 7.7
 3.
                            9. 07/20/88
                                            7.3
                                                     15. 01/20/88
                                                                       7.3
 4. 09/07/88
                 7.7
                           10. 06/17/88
                                                     16. 03/15/88
                                            8.0
                                                                       7.9
    09/19/88
                 7.5
                           11. 05/17/88
                                            7.5
                                                     17. 02/01/88
                                                                       7.9
    08/29/88
                 7.4_
                           12. 04/18/88
                                                     18. 01/20/88
 6.
                                            6.8
                                                                       7.8
MUM
      DATE
                          NOTES
 1. 10/19/88
               NO ENTRY
               LCTR NO. 88-1074
 2. 10/06/88
 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
MUK
      DATE
               TIME
                          NUM
                                 DATE
                                         TIME
                                                    MUM
                                                          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
   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
MUM
      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
              LCTR NO. 88-513
12. 04/18/88
13. 04/07/88
              LCTR NO. 88-488
```

1

14

15

**3/10/88** 

/20/88

16.03/15/88

17. 02/01/88

18. 01/20/88

NO ENTRY

NO ENTRY

NO ENTRY

NO ENTRY

NO ENTRY

```
DATE
               TIME
                         MUM
                                 DATE
                                        TIME
                                                   MUM
                                                          DATE
                                                                  TIME
    78/16/89
                 7.3
                           7. 03/22/89
                                           7.7
                                                    13. 10/04/88
 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
                          10. 01/22/89
                 8.2
                                           7.6
                                                    16. 08/29/88
                                                                     7.4
 5. 04/19/89
                 7.4
                          11. 10/19/88
                                                    17. 08/17/88
                                           7.6
                                                                     7.5
 6. 04/08/89
                 7.6
                          12. 10/06/88
                                           4.1
                                                    18. 07/20/88
                                                                     7.2
MUN
      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

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

MUM		TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	08/16/89	8.3	7	02/22/00				
			/ •	03/22/89	8.3	13.	10/04/88	8.1
۷.	07/18/89	8.3	8.	02/24/89	8.3			
3	06/20/89	0 1		, ,			09/07/88	
	, ,	8.1	9.	02/10/89	8.2	15.	09/19/88	8.1
4.	05/17/89	8.3	10	01/22/89				0.7
	, ,	=			8.5	16.	08/29/88	7.6
	04/19/89	8.3	11.	10/19/88	8.3		08/17/88	
6.	04/08/89	8.3						8.4
		0.5	12.	10/06/88	4.0	18.	07/20/88	6.1
NUM	DATE		NOTES	3			/ - 0/ 00	0.1
-	00/55/55			•				

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 /19/88 NO ENTRY

16. 8/29/88 NO ENTRY

17. 08/17/88 NO ENTRY 18. 07/20/88 NO ENTRY

```
NO ENTRY
     05/17/87
                LCTR NO. 87-700
    05/27/87
03/11/86
01/09/85
 4.
 5.
 6.
 7.
          /
 8.
 9.
10.
          /
11.
12.
          111
13.
14.
15.
16.
17.
18.
SYSTEM FWS VALVE NUMBER 0014A
TEST MODE: OPEN
MUK
      DATE
                TIME
                           NUM
                                   DATE
                                           TIME
                                                      MUM
                                                             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
    01/20/88
6.
                 18.2
                            12. 10/21/87
                                             19.3
                                                       18. 06/14/87
                                                                         19.7
MU1
      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.
               LCTR NO. 87-1360
   11/10/87
.0.
   11/18/87
               NO ENTRY
.1.
   10/08/87
               LCTR NO. 87-1265
.2.
   10/21/87
               NO ENTRY
.3.
   09/15/87
               NO ENTRY
.4.
     2/19/87
               NO ENTRY
5.
       07/87
               LCTR NO.87-959
6.
      /22/87
               NO ENTRY
7.
   06/17/87
               NO ENTRY
   06/14/87
               NO ENTRY
```

1

```
0.0
                                                                         0.0
                           12.
                                                      18.
      DATE
                          NOTES
               NO ENTRY
    09/02/88
               NO ENTRY
    01/31/88
2.
3.
    05/17/87
               NO ENTRY
    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.
     FWS VALVE NUMBER 0014A
'EST MODE: OPEN
MJ.
      DATE
               TIME
                          NUM
                                  DATE
                                          TIME
                                                     MUK
                                                            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
   09/19/88
З.
                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
TM.
      DATE
                          NOTES
1.
   10/19/88
              NO ENTRY
2. 09/07/88
              NO ENTRY
3.
   09/19/88
              NO ENTRY
   08/17/88
              NO ENTRY
   07/20/88
5.
              NO ENTRY
6. 07/20/88
              NO ENTRY
              NO ENTRY
7.
   06/17/88
8.
   05/17/88
              NO ENTRY
9.
   04/18/88
              LCTR NO. 88-513
0.
   04/08/88
               LCTR NO. 88-495
   03/10/88
              NO ENTRY
2.
   01/20/88
              NO ENTRY
З.
   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
   12/15/87
              NO ENTRY
```

```
ENTRY
               NO ENTRY
    05/17/87
    05/27/87
               LCTR NO. 87-700
 5.
 6.
    03/11/86
 7.
    01/09/85
 8.
 9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
      M FWS VALVE NUMBER 0014A
TEST MODE: OPEN
MUM
      DATE
               TIME
                          NUM
                                  DATE
                                          TIME
                                                     MUM
                                                           DATE
                                                                    TIME
 1.
    08/16/89
                            7. 04/19/89
                20.6
                                            20.7
                                                      13. 01/22/89
                                                                      19.6
    07/18/89
                20.8
                            8. 04/08/89
                                                      14. 10/19/88
                                            20.8
                                                                      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
    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
   -09/07/88
               NO ENTRY
15
     9/19/88
               NO ENTRY
    8/17/88
               NO ENTRY
18. 07/20/88
               NO ENTRY
```

1

20.2

20.9

20.2

20.5

20.5

20.7

```
YSTEM FWS VALVE NUMBER 0014B
TEST MODE: OPEN
     DATE
               TIME
                         MUM
                                DATE
                                        TIME
                                                  NUM
                                                        DATE
                                                                 TIME
     3/10/88
                20.5
                         7. 11/10/87
                                          20.5
                                                   13. 06/17/87
 2. 01/20/88
                19.6
                           8. 11/18/87
                                          19.9
                                                   14. 06/14/87
 3. 03/16/88
                20.6
                           9. 10/21/87
                                          20.3
                                                   15. 06/07/87
 4. 02/01/88
               20.6
                          10. 09/15/87
                                          20.3
                                                   16. 05/10/87
 5. 01/20/88
               20.5
                          11. 08/19/87
                                         20.6
                                                   17. 05/10/87
 6. 12/15/87
                19.8
                          12. 07/22/87
                                         20.2
                                                   18. 03/27/87
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
16. 03/27/87
              NO ENTRY
```

#### SYS M FWS VALVE NUMBER 0014C TEST MODE: OPEN

	<b></b>	~						
	DATE	TIME	NUM	DATE	TIME	NUM	DATE	TIME
1.	03/10/88	19.0	7.	11/10/87	20.8			
2.	01/20/88	20.5					06/17/87	20.1
	, ,		8.	11/18/87	20.0	14.	06/14/87	20.5
٤.	03/16/88	20.6	9.	10/21/87	21.3			<del>-</del>
4 .	02/01/88	19.8					06/07/87	20.0
	• •	— <del>-</del>	10.	09/15/87	20.4	16.	05/10/87	20.5
⊃.	01/20/88	21.0	11.	08/19/87	20.8			<del>-</del>
6.	12/15/87	20.5			<del>-</del>		05/10/87	20.5
		20.5	12.	07/22/87	20.3	18.	03/27/87	21.1
NUM	DATE		NOTES	3			,, -,	21.1
7	02/10/00	NO ENERGY		-				

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 6. 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. <del>2</del>6/14/87 NO ENTRY

NO ENTRY

NO ENTRY

NO ENTRY

NO ENTRY

151

. 6

/07/87

3/10/87

.7. 05/10/87

.5. 03/27/87

```
T MODE: OPEN
  DATE
           TIME
                      NIIM
```

.,•			NOM DATE	TIME	እ <b>ፐፐ ነ</b> ገለያ	TO 3 (012)	
Ĭ	0/19/88 09/07/88	20.0			MUM	DATE	TIME
	00/07/00		7. 06/17/88	20.4	13.	03/16/88	
2	-09/0//88	19.9	8. 05/17/88	20.3			20.6
	09/19/88				14.	02/01/88	20.6
		20.6	9. 04/18/88	19.4			· -
4.	08/17/88	20.3			15.	01/20/88	20.5
		20.5	10. 04/08/88	20.4	3.6	12/15/87	_
5.	07/20/88	20.4	11 03/10/00				19.8
			11. 03/10/88	20.5	17.	11/10/87	20 5
ο.	07/20/88	20.3	12. 01/20/88	10 6			20.5
TTM	DATE			19.6	18.	11/18/87	19.9
OIL	DAIL		$M \cap T \subset C$			,, - ,	40.5

NOTES

NUM DATE 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

TEST MODE. OF	T.IV						
NUM DATE 1. 10/19/88 2. 10/04/88 3. 09/07/88 4. 09/19/88 5. 08/17/88 6. 07/20/88 NUM DATE	TIME 20.3 20.4 20.0 20.7 20.5 20.6	8. 00 9. 09 10. 04 11. 04	DATE 7/20/88 5/17/88 5/17/88 1/18/88 1/08/88 3/10/88	TIME 19.4 20.4 19.9 19.9 20.5 19.0	14. 15. 16. 17.	DATE 01/20/88 03/16/88 02/01/88 01/20/88 12/15/87 11/10/87	20.6
7 70/7							

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 6.1 20/88 NO ENTRY

12/15/87 NO ENTRY

8. 11/10/87 LCTR NO. 87-1360

#### VALVE PERFORMANCE SYSTEM

TEM FWS VALVE NUMBER 0014B

```
T MODE: OPEN
      DATE
               TIME
                         NUM
                                 DATE
                                         TIME
                                                   MUM
                                                          DATE
                                                                  TIME
    08/16/89
                20.5
                           7. 03/22/89
                                           20.9
                                                    13. 01/22/89
                                                                     21.3
   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
- NO ENTRY 3. 06/20/89
- 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

#### M FWS VALVE NUMBER 0014C

- 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
- 9/19/88 NO ENTRY
- B/17/88 NO ENTRY
- 17. 07/20/88 NO ENTRY
- 18. 07/20/88 NO ENTRY

/12/88 VALVE PERFORMANCE SYSTEM 13:58:14

18.6

19.4

19.5

19.2

19.0

18.0

```
YSTEM FWS VALVE NUMBER 0016A
TEST MODE: OPEN
      DATE
              TIME
                         NUM
                                DATE
                                       TIME
                                                  MUM
                                                        DATE
                                                                 TIME
     3/16/88
               19.4
                         7. 10/27/87
                                         19.2
                                                   13. 05/20/87
 2. 02/17/88
               19.4
                           8. 10/20/87
                                         19.2
                                                   14. 03/18/87
 3. 01/20/88
               19.5
                          9. 09/16/87
                                         19.2
                                                  15. 02/17/87
 4. 12/16/87
                         10. 08/18/87
               19.2
                                         19.6
                                                  16. 01/26/87
 5. 11/12/87
               19.4
                          11. 07/22/87
                                         18.9
                                                   17. 01/21/87
 6. 11/17/87
               20.0
                          12. 06/17/87
                                         19.0
                                                   18. 12/17/86
MUM
      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
```

#### FWS VALVE NUMBER 0016B TEST MODE: OPEN

	L 111					
TUM DATE  1. 03/16/88  2. 02/17/88  3. 01/20/88  4. 12/16/87  5. 11/10/87  6. 11/10/87  TUM DATE  1. 03/16/88  2. 02/17/88	22.0 21.4 21.5 22.0 NO ENTRY NO ENTRY	NUM DATE 7. 11/17/87 8. 10/20/87 9. 09/16/87 10. 08/18/87 11. 07/22/87 12. 06/26/87 NOTES	TIME 21.8 21.5 21.4 21.7 21.2 22.0	14. 15. 16. 17.	DATE 06/17/87 05/20/87 03/18/87 02/17/87 01/21/87 12/17/86	TIME 21.3 21.1 21.8 22.7 21.2 20.0
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 ÷. <u>05</u>/20/87 NO ENTRY

18/87 NO ENTRY 17/87 5. NO ENTRY 7. 01/21/87 NO ENTRY

12/17/86 NO ENTRY

//89 VALVE PERFORMANCE SYSTEM EM FWS VALVE NUMBER 0016A T MODE: OPEN DATE TIME NUM DATE TIME NUM DATE TIME /15/88 20.2 7. 08/30/88 19.8 13. 05/14/88 20.0 8. 08/16/88 2. 10/17/88 19.9 20.0 14. 04/19/88 20.0 9. 07/21/88 3. 09/21/88 20.2 15. 04/15/88 19.7 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 17. 03/16/88 19.9 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 NO ENTRY 4. 09/16/88 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 LCTR NO. 88-634

11. 05/24/88 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 FWS VALVE NUMBER 0016B TEST MODE: OPEN

	THOUSE. OF	T-11						
NUM		TIME	NUM	DATE	TIME	NUM	DATE	TIME
	11/15/88	21.2	7.	06/17/88	21.0	13.	02/17/88	21.5
	10/17/88	20.7	8.	05/24/88	21.0	14.	01/20/88	22.0
	09/21/88	20.9	9.	05/18/88	21.0	15.	12/16/87	21.4
	09/16/88	21.0	10.	04/19/88	20.5	16.	11/10/87	21.5
	08/16/88	21.2	11.	04/12/88	21.0	17.	11/10/87	22.0
	07/21/88	21.0	12.	03/16/88	21.7	18.	11/17/87	21.8
NUM			NOTES	5				
1.	11/15/88	NO ENTRY						

2. 10/17/88 NO ENTRY 3. 09/21/88 NO ENTRY

4. 09/16/88 NO ENTRY

NO ENTRY 5. 08/16/88

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

154 16/87 NO ENTRY

LCTR NO. 87-1384 16 /10/87 17. 11/10/87 LCTR NO. 87-1372

18. 11/17/87 NO ENTRY

```
VALVE PERFORMANCE SYSTEM
TEM FWS VALVE NUMBER 0016A 🦠
                                                                    10:50:43
```

5	T MODE: OF	PEN						
3. 4. 5. 6. NUM 1. 2.	DATE 8/15/89 07/18/89 06/20/89 05/17/89 04/19/89 03/22/89	TIME 20.8 21.2 20.6 20.8 20.8 20.3	8. 9. 10. 11.	DATE 03/21/89 02/21/89 01/27/89 01/25/89 11/15/88 10/17/88	TIME 20.8 20.9 21.9 20.7 20.2 19.9	14. 15. 16. 17.	DATE 09/21/88 09/16/88 09/15/88 09/02/88 08/30/88 08/16/88	TIME 20.2 20.3 20.0 20.3 19.8 20.0

- 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
- 13. 08/16/88 NO ENTRY

SY	FWS	VALVE	NUMBER	0016B	
TEST	MODE:	OPEN		00101	,

06/20/89 05/17/89 04/19/89 03/21/89 DATE	21.0 21.2 21.3 21.3	9. 10. 11. 12.	01/25/89 11/15/88 10/17/88 09/21/88	20.7 21.2 20.7	15. 16. 17.	07/21/88 06/17/88 05/24/88	21.0
	05/17/89 04/19/89 03/21/89	05/17/89 21.2 04/19/89 21.3 03/21/89 21.3 DATE	76/20/89 21.0 9. 05/17/89 21.2 10. 04/19/89 21.3 11. 03/21/89 21.3 12. DATE NOTES	06/20/89 21.0 9.01/25/89 05/17/89 21.2 10.11/15/88 04/19/89 21.3 11.10/17/88 03/21/89 21.3 12.09/21/88 DATE NOTES	75/20/89 21.0 9.01/25/89 20.7 75/17/89 21.2 10.11/15/88 21.2 74/19/89 21.3 11.10/17/88 20.7 73/21/89 21.3 12.09/21/88 20.9 NOTES	06/20/89 21.0 9.01/25/89 20.7 15. 05/17/89 21.2 10.11/15/88 21.2 16. 14/19/89 21.3 11.10/17/88 20.7 17. 03/21/89 21.3 12.09/21/88 20.9 18. DATE NOTES	9. 01/25/89 20.7 15. 07/21/88 05/17/89 21.2 10. 11/15/88 21.2 16. 06/17/88 04/19/89 21.3 11. 10/17/88 20.7 17. 05/24/88 03/21/89 21.3 12. 09/21/88 20.9 18. 05/18/88

- 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
- 5. 03/21/89 NO ENTRY
- 7. 02/21/89 NO ENTRY
- 3. 01/27/89 LCTR NO. 88F-620
- 9. 01/25/89 NO ENTRY
- 0. 11/15/88 NO ENTRY 1. 10/17/88
- NO ENTRY
- 2. 09/21/88 NO ENTRY
- 3. 09/16/88 NO ENTRY
- ÷. 08/16/88 NO ENTRY
- 5. **/21/88** NO ENTRY
- 5. 17/88 NO ENTRY
- 03/24/88 LCTR NO. 88-635
- 3. 05/18/88 NO ENTRY

```
MODE: OPEN
      DATE
               TIME
                          MUM
                                 DATE
                                         TIME
                                                    MUM
                                                          DATE
                                                                   TIME
    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

MUM	DATE	TIME	NUM	DATE	TIME	NUM	ממש	mrsen.
1.	03/16/88	21.9	7				DATE	TIME
	• •		/ •	09/16/87	21.8	13.	02/17/87	21.9
۷.	02/17/88	22.0	8.	08/18/87	22.0		01/21/87	21.0
3	01/22/88	22.0		07/22/87				
تر. 4 شنان	12/16/87	22 5	10	01/22/61	22.0	TP.	12/17/86	21.0
	12/16/87	22.00	LU.	06/17/87	19.8	16.,	11/18/86	21.8×
		المحسامين بسائس		105/20/ <b>8</b> 79		100 miles	A - 49 - 40 - 40	

EM FWS VALVE NUMBER 0016C

$y_{ij}$	MODE: OF	EN						
7	DATE 1/15/88	TIME	MUM	DATE	TIME	NUM	DATE	TIME
1.	1/15/88	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
MIIM	DATE		NOTES	5			•	

1. 11/15/88 NO ENTRY

2. 10/17/88 NO ENTRY

3. 09/21/88 NO ENTRY

4. 09/16/88 NO ENTRY

LCTR NO. 88-999 5. 09/15/88

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 16. 12/16/87 LCTR NO, 87-1358

NO ENTRY

17. 11/17/87 NO ENTRY

18.\_10/20/87 NO ENTRY

SYSTEM FWS VALVE NUMBER 0020A TEST MODE: OPEN

THU.	I HODE. OI							
MUK	DATE	TIME	MUM	DATE	TIME	MUM	DATE	TIME
1.	11/15/88	22.0	7.	07/21/88	22.0		01/22/88	22.0
2.	10/17/88	21.8	8.	06/17/88	21.9		12/16/87	22.5
3.	09/21/88	21.9	9.	05/18/88	22.0		11/17/87	
	09/16/88	21.9	10.	04/19/88	21.0		10/20/87	22.0
3.5·	08/30/88 08/16/88	21.9		03/16/88	21.9		09/16/87	
NUX	DATE DATE	20.2	12.	02/17/88	22.0	18.	08/18/87	22.0

```
VALVE PERFORMANCE SYSTEM
    TEM FWS VALVE NUMBER 0016C 🚈
                                                                           10:51:13
     MODE: OPEN
      DATE
               TIME
                          MUM
                                 DATE
                                         TIME
                                                    MUM
                                                           DATE
                                                                    TIME
     8/15/89
                21.3
                            7. 02/21/89
                                           21.4
                                                     13. 09/21/88
                                                                      21.1
   07/18/89
                21.4
                            8. 01/27/89
                                           21.2
                                                     14. 09/16/88
                                                                      21.3
    06/20/89
                21.2
                            9. 01/28/89
                                           21.1
                                                     15. 09/15/88
                                                                      20.8
    05/17/89
                21.2
                           10. 01/25/89
                                           20.9
                                                     16. 08/16/88
                                                                      21.6
    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
MUI
      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
0. 01/25/89
              NO ENTRY
.1. 11/15/88
              NO ENTRY
.2.
              NO ENTRY
   10/17/88
13. 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
YSTEM FWS VALVE NUMBER 0020A
EST MODE: OPEN
JUM
     DATE
              TIME
                         NUM
                                DATE
   08/15/89
               21.4
                              02/21/89
                           7.
2. 07/18/89
               22.1
   06/20/89
               21.9
   05/17/89
```

VALVE PERFORMANCE SYSTEM SYSTEM FWS VALVE NUMBER 01424 09:28:47 TEST MODE: OPEN DATE TIME NUM DATE TIME NUM DATE TIME 08/16/89 7. 03/21/89 8.7 9.2 13. 2. 07/18/89 0.0 8.9 8. 02/22/89 9.5 14. / 3. 06/20/89 0.0 8.4 9. / / 10. / / 0.0 15. / 9.0 0.0 4. 05/17/89 / 0.0 16. 5. 04/19/89 0.0 9.3 11. 0.0 17. 6. 04/19/89 0.0 10.0 12. 0.0 18. NUM DATE 0.0 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. / 1 7 11. /////////

12.

13. 14. 15. 16. 17. 18.

/////////

SYSTEM FWS VALVE NUMBER 01425

TEST MODE: OPEN

3. 4. 5.	DATE 08/16/89 08/16/89 07/18/89 06/20/89 05/17/89 04/19/89 DATE	TIME 8.5 10.3 8.9 9.1 9.3 9.5	NUM DATE 7. 04/19/89 8. 03/21/89 9. 02/22/89 10. 02/13/89 11. / / 12. / / NOTES	9.4	NUM 13. 14. 15. 16. 17.	DATE / / / / / / / / / /	TIME 0.0 0.0 0.0 0.0 0.0
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- 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.



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.
- 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.
- 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 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.
  - 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.

Conclusion:

CIRICAL

TION

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.

PEM:89-3515(3)

DATE 11/07/89 \*IME 13:00 INITIATED

ROUTINE WR/JO LIST PAGE 1
ROBINSON NUCLEAR REPORT PMMRI
THRU COMPLETED THRU UNIT 2

SYSTEM 3065-AUXILIARY FEEDWATER

PMP-PUMP

ID

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 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 PREVENTIVE MAINTENANCE MEASURE, AND TO ENSURE CONTINUED RELIABILITY, THE NEEDS A COMPLETE OVERHAUL DURING THE 1990 REFUELING.

\*\*NEED PLANNER TO CONTACT VENDOR FOR A WRITTEN RECOMMENDATION AS TO THE RECOMMENDED FUMP INTERNAL INSPECTION INTERVAL, INITATE THIS LETTER THRU OUR PLANT PLP-038 VENDOR RECOMMENDATION FROGRAM AND ENSURE A PM IS SETUP FOR FUTURE INSPECTIONS.-EVERETT

WR/JO 87 AFEM? 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-RY AUX. BOILERS COMPONENT- STEAM DRIVEN AUX. FEEDWATER FUMP---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 FUMP INTERNAL INSPECTION INTERVAL, INITATE THIS LETTER THRU OUR PLANT PLP-038 VENDOR RECOMMENDATION PROGRAM AND ENSURE A PM IS SETUP FOR FUTURE

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-PHMP

LOCATION- FIRST FLOOR OF TURBINE BLDG.

INSPECTIONS.-EVERETT

COMPONENT- MDAFW AND SDAFW FUMP 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.

DATE 11/07/89 TIME 11:28 INITIATED

ROUTINE WR/JO LIST ROBINSON NUCLEAR COMPLETED

THRU

PAGE 2 REPORT FMMRI UNIT 2

SYCEM 3065-AUXILIARY FEEDWATER

THRU

PMP-PUMP

ID

89-AIMK1

LUCATION- 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

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 FUMP 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-F, VIBRATION, AND VALVE STROKE TIMES.

89-AHQA1 :

3 /20/A

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.

3065

89-AJIL1 3 /22/A 2 EL 36
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

3 /21/A

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 30 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-ACZZT 82-ACZZY 5 /50/F 2 ME 36 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/08/82 12:00

3065

EQUIP PMP-PUMP

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 2HO/01/82 RQSTR - SMITH

CNENT - A PUMP

\*SYSTEM - AFW

CHG - H12Z33 53060 SHOP - Z33

3065

COMPLETED AND APPROVED REQ'R CRAWFORD

3 /20/F

ME

EQUIP PMP-PUMP

INITIATED 06/16/82 12:00

DATE 11/07/89

\*\*ROUTINE WR/JO LIST

\*\*IME 11:28

\*\*ROBINSON NUCLEAR

INITIATED

\*\*THRU

\*\*COMPLETED

\*\*THRU PAGE 3 REPORT PMMRI UNIT 2 M 3065-AUXILIARY FEEDWATER PMP-PUMP 1 D 82-AECRI LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 4UJ/01/82 RQSTR - ALLEN COMPONENT - A PUMP \*SYSTEM - AFW INBOARD PACKING LEAKS CHG - H12Z33 53060 SHOP - Z33 82 AEJEN 3 /20/F 2 ME 30 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/17/82 12:00 3065 EQUIP PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 5NG/01/82 ROSTR - THIBODEA COMPONENT - A PUMP \*SYSTEM - AFW EXCESSIVE SEAL LEAKAGE AT INBD SEAL CHG - H12Z33 53060 SHOP - Z33 82:AERWINE 3 /21/F 2 LU 306
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-AESE17 4 /20/F 2 ME 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/16/82 12:00 EQUIP PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 6IT/02/82 RQSTR - SMITH NENT - STM DRVN PUMP \*SYSTEM - AFW CHG - H12Z33 53060 SHOP - Z33 IN OIL 82 AEYW1: 4 /20/F 2 ME 30 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/31/82 12:00 EQUIP PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 6TJ/01/82 RQSTR - SMITH LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 6WO/01/82 RQSTR - PRITCHAR COMPONENT - A PUMP \*SYSTEM - AFW EXCESSIVE SEAL LEAKAGE OUTBD CHG - H12Z33 53060 SHOP - Z33 82:AFBRYS 3 /21/F 2 LU 30 CUMPLETED 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 AFEG 3 /20/F 2 ME TTED AND APPROVED REQ'R CRAWFORD INITIATED 09/30/82 12 INITIATED 09/30/82 12:00 PMP-PUMP SATION - \*\*WOTE CONVERSION\*\* WOTE - 71Z/01/82 ROSTE - HALEY COMPONENT - STM DRVN PMP

LOW ON OIL CHG - H12Z33 53060 SHOP - Z33 82-AFIXIC 3 /20/F 2 LU
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/20/82 12 3065 INITIATED 10/20/82 12:00

\*SYSTEM - AFW

DATE 11/07/89

TIME 11:28

INITIATED

ROUTINE WR/JO LIST

ROBINSON NUCLEAR

COMPLETED

THRU PAGE 4 REFORT PMMRI UNIT 2 SYSTEM 3065-AUXILIARY FEEDWATER PMP-PUMP ID82 AFIXI 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 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/16/82 12:00 3065 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 8LM/01/82 RQSTR - JOHNSON COMPONENT - STM DRVN PMP \*SYSTEM -- AFW LOW ON OIL CHG - H12Z33 53060 SHOP - Z33 82 AFNO12 3 /21/F 2 LU 3069 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/19/82 12:00 3065 LUCATION - \*\*WOTR CONVERSION\*\* WOTR - 8M5/01/82 RQSTR - JOHNSON COMPONENT - STM DRVN PUMP \*SYSTEM - AFW LOW ON OIL CHG - H12Z33 53060 SHOP - Z33 82-AFRGY: 5 /20/F 2 ME 306 COMPLETED AND APPROVED REG'R CRAWFORD INITIATED 12/06/82 12:00 EQUIP PMP-PUMP LOCATION - \*\*WOTE CONVERSION\*\* WOTE - 8WK/01/82 RQSTE - GRIGGS MONENT - VALVE AFW 20 \*SYSTEM - FW HAS LEK AROUND PLUG IN SIDE OF STUFF CHG - H12Z33 53060 SHOP - Z33 B2 AFTRIC 1 /20/F 2 ME 30
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/23/82 12:00 3065 EQUIP PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 9DA/01/82 RQSTR - JOHNSON COMPONENT - STM DRVN PUMP

LOW ON OIL

CHG - H12Z33 53060 SHOP - Z33 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 ADQUID 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 306 ETED AND APPROVED REQ'R CRAWFORD INITIATED 01/19/83 12:00

COMPONENT - STM DRVN PMP

INSTALL TARP AROUND PUMP

83-ADTX1

COMPLETED AND APPROVED REQ'R CRAWFORD

REQ'R CRAWFORD

\*SYSTEM - AFW
CHG - H12Z33 53060

SHOP - Z33

\*\*SYSTEM - AFW
CHG - H12Z33 53060

SHOP - Z33

\*\*SYSTEM - AFW
CHG - H12Z33 53060

SHOP - Z33

\*\*SHOP - Z33

\*\*SYSTEM - AFW
CHG - H12Z33 53060

SHOP - Z33

CATION - \*\*WOTR CONVERSION\*\* WOTR - 1KS/01/83 ROSTR - WALKUP

PMP-PUMP

DATE 11/07/89 ROUTINE WR/JO LIST

\*IME 11:28 ROBINSON NUCLEAR
INITIATED THRU COMPLETED THRU PAGE 5 REFORT-PMMRI UNIT 2 SYSTEM 3065-AUXILIARY FEEDWATER PMP-PUMP ID 83-ADTX12

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 1LG/01/83 RQSTR - OATES

COMPONENT - STM DRVN PMF \*SYSTEM - AFW

OVERSPEED TRIP TRIPS TO EARLY CHG - H12Z33 53060 SHOP - Z33 and the second 83-ADIYI: 2 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/20/83 12:00
EQUIP PMP-PUMP EQUIP PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 1LH/01/83 RQSTR - JERNIGAN - \*\*\* COMPONENT - STM DRVN PMP COMPONENT - STM DRVN PMP \*SYSTEM - AFW
MECHANICAL TRIP WORKING INCORRECTLY CHG - H12Z33 53060 SHOP - Z33 83-ADYY15 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 30
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00 ~**30**65 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 2DA/01/83 RQSTR - MCINNIS ONENT - STEAM DRIVEN PUMP \*SYSTEM - AFW
DIL AS NEEDED CHG - H12Z33 53060 SHOP - Z33 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 03/30/83 12:00 3065 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 2WT/01/83 ROSTR - MCINNIS
COMPONENT - SDAFW PUMP \*SYSTEM - AFM EQUIP PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 3RH/01/83 RQSTR - DATES COMPONENT - PUMP \*SYSTEM - AFW
REINSULATE FLANGE ON AFW PUMP CHG - H12Z33 53060 SHOP - Z33 COMPONENT - PUMP 83-AFFT1 3 /20/F 2 ME 3065 ETED AND APPROVED REQ'R CRAWFORD INITIATED 05/20/83 12:00

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

PMF-PUMF ATION - \*\*WOTR CONVERSION\*\* WOTR - 4EP/01/83 RQSTR - CUTRIGHT

DATE 11/07/89

ROUTINE WR/JO LIST
ROBINSON NUCLEAR
INITIATED THRU COMPLETED THRU
CYCTEM ROAS-AUYLLTARY FFEDMATER PAGE 6 REPORT PMMRI UNIT 2 SYSTEM 3065-AUXILIARY FEEDWATER PMP-PUMP ID 83-AFHM1 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 4HO/01/83 ROSTR - NA COMPONENT - SDAW PUMP \*SYSTEM - AFW
ADD OIL FOR ONE MONTH CHG - H12Z33 53060 SHOP - Z33 83 AFBH1 30 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/30/83 12:00 3065 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 4KO/01/83 RQSTR - PRICE COMPONENT - SDAFW PUMP OIL LOW IN SDAFW PUMP \*SYSTEM - AFW CHG - H12Z33 53060 SHOP - Z33 83-AFTZ1» 3 /21/F 2 LU 30. COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00 3065 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 5BB/01/83 ROSTR - WALKUP COMPONENT - SDAFW PUMP \*SYSTEM - AFW ADD OIL AS NEEDED TO SDAFW PUMP CHG - H12Z33 53060 SHOP - Z33 COMPONENT - SDAFW PHMP 83-ACCD1\*-- 3 /21/F 2 LU 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 50U/01/83 RQSTR - JOHNSON ONENT - SDAFW FUMP ONENT - SDAFW PUMP \*SYSTEM - AFW DIL TO SDAFW FOR 1 MONTH CHG - H12Z33 53060 SHOP - Z33 83-ACDE1 3 /20/F 2 LU 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 08/01/83 12:00 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 B3 ACKBIS 3 721/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 FUMP \*SYSTEM - AF ADD OIL AS NEEDED TO THE SDAFW PMP FOR 1 CHG - H12Z33 53060 SHOP - Z33 83 AGUGAS 3 /21/F 2 LU 300 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00 EQUIP PMP-PUMP LUCATION - \*\*WOTR CONVERSION\*\* WOTR - 6UI/01/83 RQSTR - JOHNSON COMPONENT - SDAFW FUMP \*SYSTEM - AFW ADD OIL AS NEEDED TO SDAFW FMP FOR 1 MON CHG - H12Z33 53060 SHOF - Z33 83-AGZNT<sup>\*</sup> 3 /21/F 2 LU 306 ETED AND APPROVED REQ'R CRAWFORD INITIATED 10/18/83 12:00 PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 7DF/01/83 RQSTR - LEAR COMPONENT - B AUX FW PUMP \*SYSTEM - AX FW

83-AHAN1 3 /20/F 2 ME 3065 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/24/83 12:00

PUMP BRG OIL IS OUT OF SPECS AND NEEDS T CHG - H12Z33 53060 SHOP - Z33

DATE 11/07/89

ROUTINE WR/JO LIST

TIME 11:28

ROBINSUN NUCLEAR

INITIATED

THRU

COMPLETED

THRU

UNIT 2 SYMEM 3065-AUXILIARY FEEDWATER 9MU9-9M9 TD 83-AHAN1 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 7GF/01/83 RQSTR - DARWIN COMPONENT - A AFW PUMP EXCESSIVE PACKING LEAK \*SYSTEM - AFW CHG - H12Z33 53060 SHOP - Z33 83 AHEB1 3 /21/F 2 LU 30 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 7MT/01/83 RQSTR - NA COMPONENT - SDAFW PUMP COMPONENT - SDAFW PUMP \*SYSTEM - AF ADD OIL AS NEEDED TO SDAFW CHG - H12Z33 53060 SHOP - Z33 83 AHIK1990 3 /20/F 2 LU 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/15/83 12:00 3065 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 7UV/01/83 RQSTR - NORRIS SHOP - Z33 83-AHNAT 3 /20/F 2 ME 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/30/83 12:00 3065 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 8CW/01/83 RQSTR - TALBERT ONENT - A&B MOTOR DRIVEN PUMP \*SYSTEM - AF LOW IN PUMPS CHG - H12Z33 53060 SHOP - Z33 83 AHFTY 3 /20/F 2 ME 3065 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/05/83 12:00 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 8FB/01/83 RQSTR - HALEY COMPONENT - B AFW FUMP
FUMP IS LOW IN OIL DUE TO TUBING LEAK CHG - H12Z33 53060 SHOP - Z33

\*\*\*SYSTEM - AX FW
FUMP IS LOW IN OIL DUE TO TUBING LEAK CHG - H12Z33 53060 SHOP - Z33

\*\*\*SYSTEM - AX FW
FUMP 23065

\*\*SYSTEM - AX FW
FUMP 23065

\*\*\*COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/04/83 12:00

EQUIP PMP-FUMP COMPONENT - B AFW FUMP EQUIP PMP-FUMP 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 ACHE1639 1A/23/F 2 EL 306 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

3065

84-ADAU1 4 /20/F 2 EL 306 ETED AND APPROVED REQ'R CRAWFORD INITIATED 10/24/84 12:00 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 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/24/84 12:00 CONTO DMOLDIMO

TIME 11:28

DATE 11/07/89 ROUTINE WR/JO LIST
TIME 11:28 ROBINSON NUCLEAR
INITIATED THRU COMPLETED THRU

PAGE 8 REPORT FMMRI UNIT 2

SYSTEM 3065-AUXILIARY FEEDWATER PMP-PUMP

ΙD

84-ADAZI

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 308
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/03/84 12:00 3065

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-AEEU% 3 /20/F 2 ME 306 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 5306 CHG - H12Z33 53060 SHOP - Z33

84-AEGE187 3 /20/F 2 ME 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/10/84 12:00 3065

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 1DS/01/84 RQSTR - TERFETIL

ONENT - SD AFW WARMUP LINE Y STRAINER \*SYSTEM - AFW

INER LEAKAGE

CHG - H12Z33 53060 SHOP - Z33

84-AEHDE 3 /20/F 2 ME 306 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/11/84 12:00

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 1FT/01/84 RQSTR - JOHNSON

COMPONENT - A AFP \*SYSTEM - AF

PACKING LEAK

CHG - H12Z33 53060 SHOP - Z33

5/50/F

COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/17/84 12:00 EQUIP PMP-PUMP

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 10J/01/84 RQSTR - BACOTE

COMPONENT - STM DRV FD WTR PMP STM NOZZLE \*SYSTEM - AUX F

STM NOZZLE LEAKING CHG - H12Z33 53060 SHOP - Z33

84 AEXXIII 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-AFKUM 3 /20/F 2 ME 306 ETED AND AFFROVED REQ'R CRAWFORD INITIATED 04/02/84 12:00

PMP-PUMP LOCATION - \*\*WOTE CONVERSION\*\* WOTE - 3HV/01/84 RQSTE - 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 30 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/19/84 12:00 3065

DATE 11/07/89

ROUTINE WR/JO LIST

YIME 11:28

ROBINSON NUCLEAR

REFORT PMMRI

INITIATED

THRU

COMPLETED

THRU

UNIT 2

SYMMEM 3065-AUXILIARY FEEDWATER PMP-PUMP

I D

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-AGME13 4 /20/F 2 ME 3065 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/07/84 12:00 EQUIP PMP-FUMP

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 5MC/01/84 RQSTR - GRUDGE

COMPONENT - "A" AFW FUMP

\*SYSTEM - AFW

PUMP NEEDS OIL IN MTR END OF PMP INSPECT CHG - H12Z33 53060 SHOP - Z33

84-AGSI15 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

SHOP - Z33

COMPONENT - A AUX FW PUMF \*SYSTEM - AFW
OIL SYSTEM NEEDS FLUSHING CHG - H12Z33 53060 SHOP - Z

84-ATAD1:
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/23/84 12:00
EQUIP PMP-FUMP

3065

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 8FN/01/84 ROSTR - WALDSMIT

ONENT - A AFW FUMP INBOARD PKG LEAKS \*SYSTEM - AFW CHG - H12Z33 53060 SHOP - Z3

SHOP - Z33

85-ACLH1 4 /20/F 2 ME 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 10/18/85 12 00

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - HHJ/01/85 RQSTR - CARR 

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

EQUIP FMP-PUMP

85-AGJY1 4 /20/F 2 MW 30
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 06/20/85 12:00
EQUIP FMP-PUMP

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - UMD/01/85 ROSTR - LEAR COMPONENT - SDAFW FUMP 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

EQUIP PMP-PUMP

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - YQD/01/85 RQSTR - WATTS COMPONENT - E-R-26

\*SYSTEM - AUX FW

DATE 11/07/89 ROUTINE WR/JO LIST
TIME 11:28 ROBINSON NUCLEAR
INITIATED THRU COMPLETED THRU PAGE 10 REPORT FMMRI UNIT 2 SYSTEM 3065-AUXILIARY FEEDWATER PMP-PUMP 1 **D** 85-AHNC1 MM PERFORM MST 202 MOTOR DRIVEN AUX FEED CHG - H12Z32 520 SHOP - Z32 RW 031386 4 /20/F 2 IN 36 REQ'R CRAWFORD INITIATED 01/16/85 12:00 85-AIEW1 COMPLETED AND APPROVED 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 85-AIZQ1 4 /20/F 2 ME 30 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 02/25/85 12:00 ME 3065 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 30 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
CHG - H12Z33 53060 SHOP - Z33

86 ABJULE
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/18/86 12:00 EQUIP PMP-PUMP LOCATION - \*\*WOTR CONVERSION\*\* WOTR - HCJ/01/86 ROSTR - HELD COMPONENT - STEAM DRIVEN AUX FEED PUMP \*SYSTEM - AUX FW COMPONENT - STEAM DRIVEN AUX FEED PUMP \*SYSTEM - AUX FW
NEED TO INVESTIGATE INTERACTION SDAFP WI CHG - H12Z32 53060 SHOF - Z32 MG 071886 TEG ACCUTE TO THE TOTAL 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 COMPLETED AND APPROVED REQ'R CRAWFORD 4 /20/F 2 IN 30 WFORD INITIATED 04/17/86 12:00

DN 041786 86-AEXU1 3 /20/F 2 ET 306
COMMETED AND APPROVED REQ'R CRAWFORD INITIATED 05/20/86 12:00 EQUIP PMP-PUMP

COMPONENT - STEAM TRAP \*SYSTEM - AUX FW
INSULATION NEEDS TO BE REMOVED CHG - H12Z33 K09 53060 SHOP - Z33

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - YLG/01/86 RQSTR - UNK COMPONENT - SDAFWP \*SYSTEM - AUX FW

LQCATION - \*\*WOTR CONVERSION\*\* WOTR - NKF/01/86 RQSTR - GRANT

EQUIP PMP-PUMP

DATE 11/07/89 TIME 11:28 INITIATED

ROUTINE WR/JO LIST THRU COMPLETED

PAGE 11 REPORT PMMRI UNIT 2

SYCTEM 3065-AUXILIARY FEEDWATER

THRU

PMP-PUMP

ID

86=AEXU1

PUMP TRIPPED ON OVERSPEED WHILE PERFORMI CHG - H12Z32 53060 SHOP - Z32 MG 052186

86-ANMS1

5 /50/N 86 ANMSIZE 5 /50/N 2 EL 36 COMPLETED AND AFPROVED 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

86-ANXII 3 /20/A 2 ME 36 COMPLETED AND APPROVED REQ'R CLOUSE, MARK K INITIATED 12/05/86 23:44 3 /20/A

3065

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

COMPLETED AND APPROVED REQ'R GRANT, CLARENC

INITIATED 01/07/87 10:43

EQUIP PMP-PUMP

LOCATION- SDAFWE

COMPONENT- STEAM TRAP ON WARM UP LINE LEAKS BY

3065

87 AFND1 5 /50/N 2 ME 30 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.

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

ME

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

3065

COMPLETED AND APPROVED REQ'R JONES, MICHAEL INITIATED 03/16/88 06:01

YMP-PUMP

TION- 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.

DATE 11/07/89 TIME 11:28 INITIATED

ROUTINE WR/JO LIST
ROBINSON NUCLEAR
THRU COMPLETED THRU

PAGE 12 REPORT PMMRI UNIT 2

SYSTEM 3065-AUXILIARY FEEDWATER

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.

ME 3065

88-AEFN1 3 /20/A 2 ME 306 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-AFBP4 3 /20/A 2 ME 3065 COMPLETED AND APPROVED REG'R DOUGLAS, JAMES INITIATED 04/30/88 11:02

EQUIP PMP-PUMP

TION- GROUND LEVEL TURBINE BUILDING.

ONENT- STEAM DRIVEN AUXILIARY FEEDWATER PUMP IS LOW IN OIL.

887AKEW1 3 /20/D 2 ME 30/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 DIME HARVING COMPONENT-STM DRIVEN AFW PUMP WARMUP LINE STM TRAP HAS A STM LEAK FROM

IT'S FLANGE

3 /20/A 2 EL 3065
COMPLETED AND AFFROVED REQ'R FARVIN, 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 AHXER 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" AFWF--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 COLLETED 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

DA'TE 11/07/89

TIME 11:28

ROBINSON NUCLEAR
INITIATED

THRU

COMPLETED

THRU

REPORT PMMRI UNIT 2

SYSTEM 3065-AUXILIARY FEEDWATER

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 FUMP BEARING RESERVOIR NEEDS TO HAVE GLASS REPLACED. TOP OF SIGHT GLASS IS BROKEN AND JAGGED. THIS NEEDS TO BE CORRECTED.

89\_ABEQ1 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" AFWF--NEED TO DISASSEMBLE/INSPECT INTERNALS/RENEW PARTS-AS ED/REASSEMBLE. ALSO, NEED TO OBTAIN A WRITTEN VENDOR RECOMMENDATION AS MEIR RECOMMENDED PUMP INTERNAL INSPECTION INTERVAL FOR OUR PUMPS AND ENTER THIS RECOMMENDATION INTO THE FLANT FLF-038 VENDOR RECOMMENDATION PROGRAM SO A PM CAN BE SETUP.

89-AJIJ1 89-AJIJ1 3 /21/D 2 FE COMPLETED AND APPROVED REQ'R MCINNIS, JAMES INITIATED 10/13/89 09 23

LOCATION-AFW PMP ROOM

COMPONENT - MDAFW PMP SUCTION STRAINER - INSTALL AND REMOVE SUCTION STRAINER AS PER SCHEDULING.

87-AGZS1 3 /20/N 2 ME 3-30/5

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-**ACUES** 3 /20/A COMPLETED AND APPROVED REQ'R HOCUTT, TILMON INITIATED 03/01/88 13:34 --

EDB-LOC: AUX FW PUMP ROOM , NORTH END OF PUMP NEAR OIL SIGHT GLASS. COMPONENT- SMALL OIL LEAK , PLEASE INVESTIGATE AND REPAIR.

DATE 11/07/89

ROUTINE WR/JO LIST

ROBINSON NUCLEAR

REPORT PMMRI
INITIATED

THRU

COMPLETED

THRU

UNIT 2

MTR-MOTORS

TD 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-AHZE12 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/JOT**82 GACTI** 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 FUMP MOTOR \*SYSTEM - AFW
DID NOT START ON PT 2.1 CHG - H12Z32 53060 SHOP - Z32

WR**7JO 82 ABANIS** FRI/TYPE/WCC 3 /10/F UNIT 2 SKILL ET SYSTEM 3065 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 09/20/82 12:00 FIRST MTR-MOTORS

TION - \*\*WOTR CONVERSION\*\* WOTR - KH6/01/82 RQSTR - STEELE COMPONENT - STM DRVN PMP

COMPONENT - STM DRVN PMP

STARTS WITH NO VALID SIGNAL, GET DC GROU CHG - H12Z32 53060

\*WRZJO 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 RUMP BREAKERS

WR/JO 82-ABA1 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 RGSTR - WINDHAM

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - VP3/01/82 RQSTR - WINDHAM COMPONENT - A FUMP MOTOR \*SYSTEM - AFW CHG - H12Z32 53060 SHOP - Z32

WR/JO 82 ACUMP PRI/TYPE/WCC 5 /23/F UNIT 2 SKILL EL SYSTEM 3065 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/09/82 12:00 FOUTP MTR-MOTORS

EQUIP MTR-MOTORS LOCATION - \*\*WOTR CONVERSION\*\* WOTR - YW4/01/82 RQSTR - NA COMPONENT - STM DRVN PUMP \*SYSTEM - AFW
MM PERFORM FT 6.3 4KV UV TEST CHG - H12Z32 53060 SHOP - Z32

WR/JO 82 ACMX 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 - 18A/01/82 RQSTR - PATE

COMPONENT - B PUMP MOTOR \*SYSTEM - AFW

DATE 11/07/89 ROUTINE WR/JO.LIST PAGE 2
TIME 11:47 ROBINSON NUCLEAR REPORT FMMRI.
INITIATED THRU COMPLETED THRU UNIT 2 DATE 11/07/89 TIME 11:47

SYSTEM 3065-AUXILIARY FEEDWATER MTR-MOTORS

TD - - - A - - -

82-ACMX1

TNBOARD 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 PMP GOVERNOR \*SYSTEM - AFW - CHG - H12Z33 53060 SHOP - Z33

\*82 ACUTY: 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 FUMP 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 AAKO15 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 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

COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 07/28/83412 000 EQUIP MTR MOTORS
LOCATION - \*\*WOTR CONVERSION\*\* WOTR - DK6/01/83 RQSTR - WINDHAM
COMPONENT - VALVE V2-14B

PSYSTEM - 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

COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/20/83 12:00

EQUIP MTR-MOTORS

TION - \*\*WOTR CONVERSION\*\* WOTR - GF3/01/83 RQSTR - JONES

DNENT - B AFW PUMP

\*SYSTEM - AFW

CHG - H12Z32 53060 SHOP - Z32

83 ABHILL 4 /10/F- 2 PA 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/18/83 12:00
EQUIP MTR-MOTORS

EQUIP MTR-MOTORS

DATE 11/07/89

ROUTINE WR/JO LIST

TIME 11:47

ROBINSON NUCLEAR

INITIATED

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SYSTEM 3065-AUXILTARY FEEDMATER SYSTEM 3065-AUXILIARY FEEDWATER MTR-MOTORS ID 83=ABHEA 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 SPEED OF SDAFF COULD NOT BE ADJUSTED TO CHG - H12Z32 53060 SHOP - Z32

83 AE ID12 3 /21/F 2 LU 3065

COMPLETED AND AFFROVED 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

\*\*SYSTEM - AFW
CHG - H12Z33 53060 SHOP - Z33

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\*\*SYSTEM - AFW
CHG - H 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 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/22/83 12:00 3065 LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 3KZ/01/83 RQSTR - JERNIGAN ONENT - A AUX FW FUMP MOTOR \*SYSTEM - AUX FW NEEDS TO BE CHANGED CHG - H12Z33 53060 SHOP -83-AHHS1 3 /20/F 2 ME 306
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 11/07/83 12:00
EQUIF MTR-MOTORS
LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 7TW/01/83 RQSTR - SHANE LOCATION - \*\*WOTR CONVERSION\*\* WOTR - 7TW/01/83 RQSTR - SHANE

COMPONENT - A AFW FUMP TEMPERATURE GAUGE \*SYSTEM - AFW

LEAKING OIL CHG - H12Z33 53060 SHOE - Z33

CHG - H12Z33 53060 SHOE - Z33

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 AAUSI 4 /20/F 2 EL 3065
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 12/07/84 12:00 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 87 - AAZR 3 / 20/F 2 EL 3065
CO ETED AND APPROVED REQ'R CRAWFORD INITIATED 11/10/84 12:00
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

DATE 11/07/89

ROUTINE WR/JO LIST

TIME 11:47

ROBINSON NUCLEAR

INITIATED

THRU

COMPLETED

THRU

UNIT 2

SYMMEM 3065-AUXILIARY FEEDWATER MTR-MOTORS ---

I D

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

and the

84-ADFR1 4 /20/F 2 ET 3065 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 09/12/84 12:00

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-ADKEY 4 /20/F 2 EL 306
COMPLETED AND AFFROVED 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-ADPS) 1A/23/F 2 EL 306
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 01/29/84 12:00 EQUIP MTR-MOTORS

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - WT1/01/84 RQSTR - BOWEN

ONENT - MST 201 \*SYSTEM - AFW

ERFORM REFUELING MST 201 4KV U/V TES CHG - H12Z32 53060 SHOP - Z32

2 /20/F 2 EL 30
COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 05/31/84 12:00

EQUIP MTR-MOTORS

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - WZ4/01/84 RQSTR - JOHNSON

\*SYSTEM - AEW MOTORS

COMPONENT - AFW MOTORS \*SYSTEM - AFW
NEED TO CHECK MOTORS AFTER CONSTRUCTION CHG - H12Z32 53060 SHOP = Z32

85-ABQT1 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 FUMP MOTORS \*SYSTEM - AFWS

NEED TO OBTAIN STRIP CHART CURRENT DATA CHG - H12Z32 53060 SHOP - Z32

85 ACBRY 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

NOT PASS OST 201 CHG - H12Z32 53060 SHOP - Z

85 AHFKI 5 /23/F 2 EL 30

ETED AND AFFROVED REQ'R CRAWFORD INITIATED 06/25/85 12:00

LOCATION - \*\*WOTR CONVERSION\*\* WOTR - YUD/01/85 ROSTR - WATTS

COMPONENT - E-R-30 \*SYSTEM - AUX FW

MM PERFORM MST 201 4KV UNDERVOLTAGE TEST CHG - H12Z32 520 SHOP-- Z32 MG 031386

DATE 11/07/89 ROUTINE WR/JO-LIST PAGE 5
TIME 11:47 ROBINSON NUCLEAR REPORT PMMRI
INITIATED THRU COMPLETED THRU UNIT 2

SYSTEM 3065-AUXILIARY FEEDWATER MTR-MOTORS ...

TD

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-ABZUT 3 /10/F 2 I 3065 COMPLETED AND APPROVED REQ'R CRAWFORD INITIATED 04/16/86 12:00

EQUIP MTR-MOTORS

LOCATION - \*\*WOTE CONVERSION\*\* WOTE - KQF/01/86 ROSTE - BYRON

COMPONENT - SDAFW PUMP \*SYSTEM - AUX FW
TRIPFED 3 TIMES WHILE OPENING V1-8A CHG - H12Z32 53060 SHOP - Z32

NL 041686

86 ACUMI 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 ROSTR - MORRIS

COMPONENT - OIL LEVEL GAUGES #SYSTEM - AUX FW CHG - H12Z33 53060 SHOP - Z33

00 052286

86-ADTZ: 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

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 FUMP \*SYSTEM - AUX FW CHG - H12Z32 53060 SHOP - Z32

NL 071686

86 AUCCIE 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 ANMIL 5 /50/N 2 EL 3065 COMPLETED AND APPROVED REQ'R WATTS, WILLIAM INITIATED 12/02/86 09:48 ECONOMIC MINITIATED 12/02/86 09:48

TIUN-

PONENT- 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

# DATE 11/07/89 ROUTINE WR/JO LIST TIME 11:47 ROBINSON NUCLEAR INITIATED THRU COMPLETED THRU

PAGE 6 REPORT PMMRI UNIT 2

SYSTEM 3065-AUXILIARY FEEDWATER 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 ME 3065 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.

872AHTBY 3 /20/A 2 ME 30 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 MTR-MOTORS

TION- AUX. FW PUMP ROOM

COMPONENT- PECHERHEAD FOR "B" AUX. FW PUMP HAS WRUNG OFF SCREWS IN COVER

87-ANBC1 3 /20/A 2 EL 36 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 4-7207A 2 ME 3065 COMPLETED AND AFPROVED 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 88-AHLZI 30/A 2 EL 30 COMPLETED AND APPROVED REQ'R BILLINGS, DANN INITIATED 07/20/88 03:59 EQUIP MTR-MOTORS

LOCATION- SDAFF

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 ACUETE 3 /21/A 2 EL 306 ETED AND APPROVED REQ'R PRITCHARD, JOS INITIATED 02/24/89 16:29 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 36 COMPLETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 08/24/89 15:02 3065 COUTE MIDEA ANY ECONDATED DUMB MATAN

DATE 11/07/89 TIME 11:47 INITIATED

ROUTINE WR/JO LIST THRU COMPLETED THRU

PAGE 7 REPORT PMMRI UNIT 2

SYSTEM 3065-AUXILIARY FEEDWATER 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 RECIEFT INSPECTION AND BASE LINE DATA AT RETURN OF MOTOR FROM WESTINGHOUSE (SPARTANBURG).

89-AHZQ1 3 /20/D 2 EL 36 COMPLETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 08/24/89 15:39

EQUIP MTR-B AUX FEEDWATER PUMP MOTOR

EDB-LOC: TURB 1 124 1'

COMPONENT- B AUX FEEDWATER PUMP MOTOR. DISCONNECT AND RECONNECT PUMP MOTOR TO FACILITATE MOTOR INSPECTION/REFUBISHMENT.

89-AHZQ2 3 /50/D 2 ME 30 ETED AND APPROVED REQ'R MEREDITH, DONA INITIATED 08/24/89 15:56 EQUIF MTR-B AUX FEEDWATER PUMP MOTOR

EDB-LOC: TURB 1 124 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.

18C 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 1 124 1'

COMPONENT- "B" AUXILIARY FEEDWATER PUMP MOTOR. BRIDGE AND MEGGER "B" AUX.FW MOTOR PRIOR INSTALLATION.

89-AJER1 3 /20/A 2 EL 36 COMPLETED AND AFPROVED REQ'R BARRY, JAMES H INITIATED 10/06/89 15:04 EQUIP MTR-B AUX FEEDWATER PUMP MOTOR

EDB-LOC: TURB 1 124 1'

COMPONENT- "B" AFW PUMP MOTOR WAS SPRAYED WITH WATER, REQUEST I&C INSPECT FOR DAMAGE.

Service Bastles Market St. St.

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