SEQUOYAH NUCLEAR PLANT UNIT 1

TEST REPORT: Auxiliary Feedwater Pump Endurance Run

October 31, 1980

The auxiliary feedwater pumps at Sequoyah Nuclear Plant unit 1 were subjected to a 48-hour endurance test as required by NRC Task Action Plan item II.E.1.1 and operating license condition 2.C.22.E. The pumps were run at normal conditions: speed, flow, suction and discharge pressure, and steam generator pressure. Data was recorded every eight hours. The data sheets are included as Tables 1 through 27.

During the endurance test the pumps and rooms were instrumented with permanently instrument systems (pressures, flows, and nuclear power), portable contact pyrometer for measuring bearing temperatures at the top of the bearing, and humidity/temperature chart recorders for measuring ambient room conditions. The location of the pump flow and pressure instrumentation listed on the data sheets by instrument number can be found on Figure 1.

The performance of the auxiliary feedwater pumps during the endurance test were evaluated by comparing the data recorded versus the acceptance criteria. Both sets of values are included on the data sheets. Comparison of the data to the pump head curves provided by the manufacturer yielded good agreement. The data for the 24-hour interval and the corresponding pump head curve values for each pump are compared below.

PUMP	DATA AT 24-HOUR INTERVAL			PUMP CURVE FLOWS
	Disch Press (PSI)	Feet of Head	GPM (Flow Without Recirc.)	GPM - RECIRC FLOW
1AS	1099	2532	890	1020 - 60 = 960
1A-A	1230	2834	425	485 - 25 = 460
1B-B	1250	2880	435	490 - 25 = 465

Some of the bearing temperatures were higher than the acceptance criteria. Preliminary indications from the manufacturer is that the bearing temperature limit for the motor driven pumps can be increased to 180° F. The motor driven pump bearing temperatures did not exceed this new value. TVA will get formal documentation from the vendor regarding the temperature limit increase. TVA is still evaluating the turbine driven pump bearing performance and will report the resolution of the problem at a later date. Figures 2 through 4 are plots of bearing temperature versus time for each pump. Figures 5 and 6 are plots of humidity and temperature versus time for the different pump rooms. The temperature differential between the inlet and exhaust of the auxiliary turbine pump room exhaust fan was 12.7° F initially and later stabilized at 20.35° F. All pump vibrations were within specified limits.

During the endurance test for the turbine driven pump, a failure occurred on the electronic speed controller. TVA suspects that the controller overheated. The failure caused a reduction in speed which resulted in low flow. This condition lasted for 30 minutes. The control panel door was opened to cool the controller. The endurance test proceeded with the panel door open and the turbine stablized at rated speed.

Several modifications were made as a result of the control deficiency. They included venting and relocation of the control panel, enclosing and relocating heat-producing components, and insulating pipes. An additional 8-hour endurance test was run after completion of the modifications. Additional thermocouples were added to monitor temperatures around the control panel. The turbine maintained stable conditions at rated speed in 125°F room heat after the controller temperature stabilized. TVA believes that the 30-minute speed reduction does not affect the validity of the 48-hour endurance test. The 8-hour test demonstrates the effectiveness of the modifications made to correct the controller temperature problem.

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Data Sheet: 5.7.3
AFWP 1A-S
Time T- 0 hrs
1430 EDT

See also P-41 DKB

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1090 ~~2200~~ DKB	Info
Suction Pressure	PI-3-137	22	Info
RPM	~~3000~~ DKB 1-SI 46-56B	3000	≥ 3750 RPM 4000 RPM DKB 8/7/80
Room Temperature	See Below	102°F	≤ 120 F 107°F
Humidity	↓	36%	≤ 100% 36%
Bearing No. 1 Temp	Contact Pyrometer	109°F	<160°F 95°F
Bearing No. 2 Temp	Contact Pyrometer	106°F	<160°F 93°F
Bearing No. 3 Temp	Contact Pyrometer	141°F	<160°F 151°F
Bearing No. 4 Temp	Contact Pyrometer	142°F	<160°F 158°F
% Nuclear Power	1-IR-92-5001	47.	Info
Pump Flow	FIC-46-57	875	≥ 800 gpm
S. G. #1 Press	Log P0400A	1005.1	> 500 psi

DW-115 DKB 8/7/80

DKB 8/7/80

8/7/80

Bearings are numbered from the pump outboard bearing toward the driver.

CONTACT PYROMETER # 417194 CAL 10/26/79 DUE 10/26/80

HUMIDITY & TEMP. RDGR. # 387045 CAL 7/17/80 DUE 1/17/81

TABLE-1

OFFICIAL COPY APPROVED FOR USE

Data Sheet: 5.7.3
AFWP 1A-S
Time T- 9 hrs

2230 hrs 8/7/80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1115	Info
Suction Pressure	PI-3-137	21	Info
RPM	1-51-46-568	4000	≥ 3750 RPM
Room Temperature	Temp recorder	108	≤ 120 F
Humidity	Hum Rec	38	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	105	<160°F
Bearing No. 2 Temp	Contact Pyrometer	102	<160°F
Bearing No. 3 Temp	Contact Pyrometer	153	<160°F
Bearing No. 4 Temp	Contact Pyrometer	159	<160°F
% Nuclear Power	XR-92500J	47	Info
Pump Flow	FIC-46-37	880	≥ 800 gpm
S. G. #1 Press	Log P0400A	1001.5	> 500 psi

David K. Litts 8-7-80

Bearings are numbered from the pump outboard bearing toward the driver.

Local bearing temp gages:

1	108
2	102
3	125
4	152

Contact Pyrometer #417194 due 10/26/80 for re-cal

Temp/hum recorder #387045 due 11/7/80

TABLE-2

OFFICIAL COPY APPROVED FOR USE

Data Sheet: 5.7.3
AFWP 1A-S
Time T- 16 hrs

0630 8/5/80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1120	Info
Suction Pressure	PI-3-137	21	Info
RPM	SI-46-56B	4000	≥ 3750 RPM
Room Temperature	417194	112 F	≤ 120 F
Humidity	417194	34	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	110	<160°F
Bearing No. 2 Temp	Contact Pyrometer	102	<160°F
Bearing No. 3 Temp	Contact Pyrometer	155	<160°F
Bearing No. 4 Temp	Contact Pyrometer	157	<160°F
% Nuclear Power	XR-92-5001	4	Info
Pump Flow	FI-46-57	880	≥ 800 gpm
S. G. #1 Press	Log P0400A	999.4	> 500 psi

David K. Wikel 8/5/80

Bearings are numbered from the pump outboard bearing toward the driver.

Local Bearing gauges:
1 118
2 105
3 124
4 154

Contact Pyrometer
417194 due 10/24/8

Temp/Rem recorder
387045 due
1/17/81

TABLE - 3

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Data Sheet: 5.7.3
AFWP 1A-S
Time T- 24 hrs
1430 8/8/80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1120	Info
Suction Pressure	PI-3-137	21	Info
RPM	1-SI-46-56B	4000	≥ 3750 RPM
Room Temperature	~~417194~~ See Below	112°F	≤ 120 F
Humidity	See Below	31%	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	101°F	<160°F
Bearing No. 2 Temp	Contact Pyrometer	101°F	<160°F
Bearing No. 3 Temp	Contact Pyrometer	158°F	<160°F
DN-116 DAB 8/8/80 → Bearing No. 4 Temp	Contact Pyrometer	165°F	<160°F
% Nuclear Power	1-XR-92-5001	47%	Info
Pump Flow	1-FIC-46-57	890	≥ 800 gpm
S. G. #1 Press	Log P0400A	1002.2	>500 psi

[signature] 8/8/80

Bearings are numbered from the pump outboard bearing toward the driver.

CONTACT PYROMETER #417194 CAL 10/26/79 DUE 10/26/80

HUMIDITY & TEMP. RCDR. #387045 CAL 7/17/80 DUE 1/17/81

TABLE-4

Data Sheet: 5.7.3
AFWP 1A-S
Time T- 32 hrs
~~2030~~ 2230 [illegible] 8-8-80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1155	Info
Suction Pressure	PI-3-137	20	Info
RPM	SI-46-56A	4050	≥ 3750 RPM
Room Temperature	See Below	112	≤ 120 F
Humidity	See Below	55%	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	103	<160°F
Bearing No. 2 Temp	Contact Pyrometer	99	<160°F
Bearing No. 3 Temp	Contact Pyrometer	150	<160°F
Bearing No. 4 Temp	Contact Pyrometer	155	<160°F
% Nuclear Power	XR-92-5001	4	Info
Pump Flow	FIC-46-57	880	≥ 800 gpm
S. G. #1 Press	Log P0400A	1002.2	>500 psi

David K White 8-8-80

Bearings are numbered from the pump outboard bearing toward the driver.

TABLE-5

local reading for Bearing temp
1 104
2 100
3 120
4 150
DKW

Contact pyrometer and temp [illegible] recorder same as previous data DKW

C. Pyrometer reading for Woodward Cabinet:
MCP - 122F
Woodward ECM 126 F
DKW

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Data Sheet: 5.7.3
AFWP 1A-S
Time T- 40 hrs
0630 8/9/80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1150	Info
Suction Pressure	PI-3-137	20.5	Info
RPM	1-SI-46-56B	4100	≥ 3750 RPM
Room Temperature	See Below	107°F	≤ 120 F
Humidity	↓	38%	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	99°F	<160°F
Bearing No. 2 Temp	Contact Pyrometer	98°F	<160°F
Bearing No. 3 Temp	Contact Pyrometer	155°F	<160°F
Bearing No. 4 Temp	Contact Pyrometer	159°F	<160°F
% Nuclear Power	1-XR-92-5001	3%	Info
Pump Flow	1-FIC-46-57	880	≥ 800 gpm
S. G. #1 Press	Log P0400A	1003.0	> 500 psi

D. Ballenger 8/9/80

Bearings are numbered from the pump outboard bearing toward the driver.

Contact Pyrometer # 417194 Cal. 10/26/79 Due 10/26/80
Humidity & Temp. Rdr # 387045 Cal 7/17/80 Due 1/17/81

TABLE-6

OFFICIAL COPY APPROVED FOR USE

Data Sheet: 5.7.3
AFWP 1A-S
Time T- 48hrs

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1160	Info
Suction Pressure	PI-3-137	20.5	Info
RPM	1-SI-46-56B	4050	≥ 3750 RPM
Room Temperature	See Below	108	≤ 120 F
Humidity	↓	40	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	104	<160°F
Bearing No. 2 Temp	Contact Pyrometer	101	<160°F
Bearing No. 3 Temp	Contact Pyrometer	150	<160°F
Bearing No. 4 Temp	Contact Pyrometer	160	<160°F
% Nuclear Power	1-XR-92-5001	4	Info
Pump Flow	1-FIC-46-57	880	≥ 800 gpm
S. G. #1 Press	Log P0400A	1005.2	> 500 psi

D K Childs 18-9-80

Bearings are numbered from the pump outboard bearing toward the driver.

1500 EDT

Contact Pyrometer #417194 Cal 10/26/79 Due 10/26/80

Humidity & Temp. Rdr. # 387045 Cal 7/17/80 Due 1/17/81

TABLE-7

OFFICIAL COPY APPROVED FOR USE

Data Sheet: 5.7.3
AFWP 1A-S
Time T- 0 hrs after Cooldown

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1120	Info
Suction Pressure	PI-3-137	24	Info
RPM	514656B	3990	≥ 3750 RPM
Room Temperature	417194	88F	≤ 120 F
Humidity	See		≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	100	<160°F
Bearing No. 2 Temp	Contact Pyrometer	100	<160°F
Bearing No. 3 Temp	Contact Pyrometer	133	<160°F
Bearing No. 4 Temp	Contact Pyrometer	133	<160°F
% Nuclear Power	XR-97-500	3.75	Info
Pump Flow	FIC-46-57	830	≥ 800 gpm
S. G. #1 Press	~~Log R0400A~~ PI-1-2D	1000	> 500 psi

1

Bearings are numbered from the pump outboard bearing toward the driver.

TABLE - 8

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Data Sheet: 5.7.3
AFWP 1A-S
Time T- 8 hrs after cooldown

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-138	1120	Info
Suction Pressure	PI-3-137	22	Info
RPM	SI-46-56B	3950	≥ 3750 RPM
Room Temperature	417194	90	≤ 120 F
Humidity	387045	48	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	103	<160°F
Bearing No. 2 Temp	Contact Pyrometer	99	<160°F
Bearing No. 3 Temp	Contact Pyrometer	133	<160°F
Bearing No. 4 Temp	Contact Pyrometer	141	<160°F
% Nuclear Power	XR-97-5001	3.75	Info
Pump Flow	FI-46-57	850	≥ 800 gpm
S. G. #1 Press	~~Lo P0400A~~ PI-1-2D	1000	> 500 psi

Bearings are numbered from the pump outboard bearing toward the driver.

417194 Dig Ther due 10-26-80
Humm. Rec 387045 due 1-17-81

TABLE-9

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Test No. TVA-22
Change Sheet
Data Sheet 5.7.3
Page 19 of 48
Change No. 52
5/5/80

Data Sheet: 5.7.3
AFWP 1A-A
Time T- 0 hrs

Ex 112
Okw
8-5-80

1000 EDT
8-7-80 Okw

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA	
Discharge Pressure	PI-3-122B	1265	info	1265
Suction Pressure	PI-3-117	15.8	info	16.8
Room Temperature	387045	85	≤ 120 F	88
Humidity	"	42	≤ 100%	42
Bearing No. 1 Temp	Con. Pyrometer	~~120~~ 111	Okw 7-23-80 <160°F	92
Bearing No. 2 Temp	Con. Pyrometer	100	<160°F	94
Bearing No. 3 Temp	TI-3-120B	140	<160°F	75
Bearing No. 4 Temp	TI-3-120A	145	<160°F	76
% Nuclear Power	XR-97-5001	≈3½	info	4%
Pump Flow to SG1	FI-3-163A	210	≥ 200 GPM	200
Pump Flow to SG2	FI-3-155A	220	≥ 200 GPM	200

RKWhite 1000hrs 8/7/80

[signature] 7-23-80
RKWhite 8-7-80

Bearings are numbered from the pump outboard bearing toward the driver.

digital therm 417194-1 (10-26-79 to 10-26-80) Okw 7-23-80
temp & humidity recorder 387045 (8-17-80 to 8-17-81)

TABLE - 10

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Test No. TVA-22
Change Sheet
Data Sheet 5.7.3
Page 20 of 48
Change No. 52
5/5/80

Data Sheet: 5.7.3
AFWP 1A-A
Time T- 8 hrs

Ex-112
Dkw
8-5-80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA	
Discharge Pressure	PI-3-122B	1340	info	1258
Suction Pressure	PI-3-117	16.9	info	17.3
Room Temperature	SEE BELOW	86	≤ 120 F	90
Humidity	↓	43	≤ 100%	58
Bearing No. 1 Temp	Con. Pyrometer	112	<160°F	103
Bearing No. 2 Temp	Con. Pyrometer	103	<160°F	99
Bearing No. 3 Temp	TI-3-120B	172	<160°F	176
Bearing No. 4 Temp	TI-3-120A	171	<160°F	171
% Nuclear Power	1-XR-92-5001	3.75	info	
Pump Flow to SG1	FI-3-163A	200	≥ 200 GPM	210
Pump Flow to SG2	FI-3-155A	210	≥ 200 GPM	210

DN-14 RaB 7/23/80 (Bearing No. 3 and No. 4)

[illegible] 8/10/80

[signature] 7/23/80

Bearings are numbered from the pump outboard bearing toward the driver.
DIGITAL THERMOMETER #417194 CAL 10/26/79 DUE 10/26/80
HUMIDITY & TEMP. RCDR.# 387045 CAL 7/17/80 DUE 1/17/81

TABLE - 11

OFFICIAL COPY APPROVED FOR USE

Data Sheet: 5.7.3
AFWP 1A-A
Time T- 16 hrs
0800 EDT

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-122B	1240	info
Suction Pressure	PI-3-117	17.1	info
Room Temperature	SEE BELOW	90°F	≤ 120 F
Humidity	↓	46%	≤ 100%
Bearing No. 1 Temp	Con. Pyrometer	107°F	<160°F
Bearing No. 2 Temp	Con. Pyrometer	98°F	<160°F
Bearing No. 3 Temp	TI-3-120B	176°F	<160°F
Bearing No. 4 Temp	TI-3-120A	170°F	<160°F
% Nuclear Power	1-XR-92-5001	4%	info
Pump Flow to SG1	FI-3-163A	210	≥ 200 GPM
Pump Flow to SG2	FI-3-155A	210	≥ 200 GPM

DN-114 DNB 8/10/80

D. Bellamy 8/10/80

Bearings are numbered from the pump outboard bearing toward the driver.
CONTACT PYROMETER #417194 CAL 10/26/79 DUE 10/26/80
HUMIDITY & TEMP. RDR. #387045 CAL 7/17/80 DUE 1/17/81

TABLE-12

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APPROVED FOR USE

Data Sheet: 5.7.3
AFWP 1A-A
Time T- 24 hrs
1600 EDT

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-122B	1245	info
Suction Pressure	PI-3-117	17.3	info
Room Temperature	SEE BELOW	90 °F	≤ 120 F
Humidity	↓	48%	≤ 100%
Bearing No. 1 Temp	Con. Pyrometer	105°F	<160°F
Bearing No. 2 Temp	Con. Pyrometer	98 °F	<160°F
Bearing No. 3 Temp	TI-3-120B	177°F	<160°F
Bearing No. 4 Temp	TI-3-120A	171°F	<160°F
% Nuclear Power	1-XR-92-5001	3.5%	info
Pump Flow to SG1	FI-3-163A	210	≥ 200 GPM
Pump Flow to SG2	FI-3-155A	215	≥ 200 GPM

DN-114 DLB 8/10/80 (Bearings No. 3 and 4)

[signature] 8/10/80

Bearings are numbered from the pump outboard bearing toward the driver.
CONTACT PYROMETER # 417154 CAL. 10/26/79 DUE 10/26/80
HUMIDITY & TEMP. RCDR. # 387045 CAL 7/17/80 DUE 1/17/81

TABLE - 13

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Data Sheet: 5.7.3
AFWP 1A-A
Time T-32 hrs
0000 hrs EDT
10-11-80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-122B	1249	info
Suction Pressure	PI-3-117	18.7	info
Room Temperature	387045	90	≤ 120 F
Humidity	"	48	≤ 100%
Bearing No. 1 Temp	Con. Pyrometer	105	<160°F
Bearing No. 2 Temp	Con. Pyrometer	97	<160°F
Bearing No. 3 Temp	TI-3-120B	177	<160°F
Bearing No. 4 Temp	TI-3-120A	171	<160°F
% Nuclear Power			info
Pump Flow to SG1	FI-3-163A	210	≥ 200 GPM
Pump Flow to SG2	FI-3-155A	210	≥ 200 GPM

[signature] 18-11-80
0000 hrs

Bearings are numbered from the pump outboard bearing toward the driver.

TABLE-14

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OFFICIAL COPY

Data Sheet: 5.7.3
AFWP 1A-A
Time T- 40 hrs
0800 EDT

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-122B	1245	info
Suction Pressure	PI-3-117	19.3	info
Room Temperature	See Below	90°F	≤ 120 F
Humidity	↓	49%	≤ 100%
Bearing No. 1 Temp	Con. Pyrometer	103°F	<160°F
Bearing No. 2 Temp	Con. Pyrometer	99°F	<160°F
Bearing No. 3 Temp	TI-3-120B	177°F	<160°F
Bearing No. 4 Temp	TI-3-120A	170°F	<160°F
% Nuclear Power	1-YR-92-5001	4%	info
Pump Flow to SG1	FI-3-163A	210	≥ 200 GPM
Pump Flow to SG2	FI-3-155A	215	≥ 200 GPM

B Bollinger 8/11/80

Bearings are numbered from the pump outboard bearing toward the driver.

Contact Pyrometer # 417194 Cal 10/26/79 Due 10/26/80

Humidity & Temp. Rcdr. # 387045 Cal 7/17/80 Due 1/17/81

TABLE -15

APPROVED FOR USE

OFFICIAL COPY

Data Sheet: 5.7.3
AFWP 1A-A
Time T- 48hrs

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-122B	1275	info
Suction Pressure	PI-3-117	19.2	info
Room Temperature	see below	90	≤ 120 F
Humidity	"	51	≤ 100%
Bearing No. 1 Temp	Con. Pyrometer	100	<160°F
Bearing No. 2 Temp	Con. Pyrometer	96	<160°F
Bearing No. 3 Temp	TI-3-120B	176	<160°F
Bearing No. 4 Temp	TI-3-120A	169	<160°F
% Nuclear Power		3½%	info
Pump Flow to SG1	FI-3-163A	200	≥ 200 GPM
Pump Flow to SG2	FI-3-155A	200	≥ 200 GPM

[signature] 8-11-80

Bearings are numbered from the pump outboard bearing toward the driver.

used same temporary instruments as before
[signature] 8-11-80

TABLE -16

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1A-A
Time T- 0 hrs
1230 10/1/80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-122B	1310	info
Suction Pressure	PI-3-117	25.5	info
Room Temperature		82°F	≤ 120 F
Humidity		46	≤ 100%
Bearing No. 1 Temp	Con. Pyrometer	87°F	<160°F
Bearing No. 2 Temp	Con. Pyrometer	87°F	<160°F
Bearing No. 3 Temp	TI-3-120B	85°F	<160°F
Bearing No. 4 Temp	TI-3-120A	87°F	<160°F
% Nuclear Power	1-XR-92-5001	3½%	info
Pump Flow to SG1	FI-3-163A	200	≥ 200 GPM
Pump Flow to SG2	FI-3-155A	200	≥ 200 GPM

N.R. Mustaffi 10-1-80

Bearings are numbered from the pump outboard bearing toward the driver.

TABLE -17

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1A-A
Time T- 1 hrs
1355 10-1-80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-122B	1325	info
Suction Pressure	PI-3-117	25.2	info
Room Temperature		92	≤ 120 F
Humidity		42	≤ 100%
Bearing No. 1 Temp	Con. Pyrometer	96	<160°F
Bearing No. 2 Temp	Con. Pyrometer	90	<160°F
Bearing No. 3 Temp	TI-3-120B	171	<160°F
Bearing No. 4 Temp	TI-3-120A	169	<160°F
% Nuclear Power	~~NR-92-5001~~	3%	info
Pump Flow to SG1	FI-3-163A	~~175~~ 200 10-1-80	≥ 200 GPM
Pump Flow to SG2	FI-3-155A	200	≥ 200 GPM

N. R. Michael 10-1-80

Bearings are numbered from the pump outboard bearing toward the driver.

TABLE - 18

APPROVED FOR USE

OFFICIAL COPY

Data Sheet: 5.7.3
AFWP 1B-B
Time T- 0 hrs

CX 112
8-5-80
Dkw

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA	
Discharge Pressure	PI-3-132B	1275	info	1278
Suction Pressure	PI-3-127	14.9	info	11.9
Room Temperature	See below	92	≤ 120 F	104 F
Humidity	See below	36	≤ 100%	25%
Bearing No. 1 Temp	Contact Pyro	110	<160°F	Dkw 8-7-80 82
Bearing No. 2 Temp	Contact Pyro	100	<160°F	Dkw 8-7-80 81
Bearing No. 3 Temp	TI-3-130B	165	<160°F	Dkw 8-7-80 75
Bearing No. 4 Temp	TI-3-130A	175	<160°F	Dkw 8-7-80 76
% Nuclear Power		3.5	info	10%
Pump Flow to SG3	FI-3-147A	225	≥ 200 GPM	200
Pump Flow to SG4	FI-3-170A	250	≥ 200 GPM	200

DN-113 Dkw 7-23-80

Dkw 7-23-80

Bearings are numbered from the pump outboard bearing toward the driver.

digital thermometer: 417194-1 (10-26-79 to 10-26-80) Dkw 7-22-80

temp/humidity recorder 47189 (7-17-80 to 1-17-81)

TABLE - 19

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EX 112
DKW
8-5-80

Data Sheet: 5.7.3
AFWP 1B-B
Time T- 8 hrs

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA	
Discharge Pressure	PI-3-132B	1375	info	1258
Suction Pressure	PI-3-127	16.0	info	12.2
Room Temperature	see below	94	≤ 120 F	98 F
Humidity	see below	38	≤ 100%	38%
Bearing No. 1 Temp	Dig Therm	170	<160°F	100
Bearing No. 2 Temp	" "	102	<160°F	98
Bearing No. 3 Temp	TI-3-130B	165 DKW 7/23 +10	<160°F	168
Bearing No. 4 Temp	TI-3-130A	174	<160°F	176
% Nuclear Power	I-XR-92-5001	3.75	info	
Pump Flow to SG3	FI-3-147A	240	≥ 200 GPM	210
Pump Flow to SG4	FI-3-170A	210	≥ 200 GPM	230

DN-113 DKW 7/23/80

DKW 7/23/80

Bearings are numbered from the pump outboard bearing toward the driver.

DIGITAL THERMOMETER # 417194 CAL 10/26/79 DUE 10/26/80

Checked 8/12/80 cooches

TABLE -20

Test No. TVA-22
Change Sheet
Data Sheet 5.7.3
Page 30 of 48
Change No. 52
5/5/80

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Data Sheet: 5.7.3
AFWP 1B-B
Time T- 16 hrs
0800 EDT

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-132B	1250	info
Suction Pressure	PI-3-127	12.2	info
Room Temperature	See Below	94°F	≤ 120 F
Humidity	↓	29%	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	102°F	<160°F
Bearing No. 2 Temp	↓	97°F	<160°F
Bearing No. 3 Temp	TI-3-130B	167°F	<160°F
Bearing No. 4 Temp	TI-3-130A	174°F	<160°F
% Nuclear Power	1-XR-92-5001	4%	info
Pump Flow to SG3	FI-3-147A	220	≥ 200 GPM
Pump Flow to SG4	FI-3-170A	215	≥ 200 GPM

DN-113 RDB 8/10/80 (Bearings No. 3 and 4)

[signature] / 8/10/80

Bearings are numbered from the pump outboard bearing toward the driver.
Contact Pyrometer #417194 Cal 10/26/79 Due 10/26/80
Humidity & Temp. Rcdr. #471789 Cal 7/17/80 Due 1/17/81

TABLE - 21

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1B-B
Time T- 24 hrs
1600 EDT

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-132B	1250	info
Suction Pressure	PI-3-127	12.4	info
Room Temperature	See Below	95°F	≤ 120 F
Humidity	↓	30%	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	102°F	<160°F
Bearing No. 2 Temp	↓	98°F	<160°F
Bearing No. 3 Temp	TI-3-130B	169°F	<160°F
Bearing No. 4 Temp	TI-3-130A	175°F	<160°F
% Nuclear Power	1-XR-92-5001	3.5%	info
Pump Flow to SG3	FI-3-147A	220	≥ 200 GPM
Pump Flow to SG4	FI-3-170A	215	≥ 200 GPM

DN-113 DB 8/10/80

D. Bolling 8/10/80

Bearings are numbered from the pump outboard bearing toward the driver.
Contact Pyrometer #417194 Cal 10/26/79 Due 10/26/80
Humidity & Temp. Rcdr. #471789 Cal 7/17/80 Due 1/17/81

TABLE - 22

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1B-B
Time T- 32 hrs

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-132B	1252	info
Suction Pressure	PI-3-127	13.8	info
Room Temperature		95	≤ 120 F
Humidity		28	≤ 100%
Bearing No. 1 Temp		106	<160°F
Bearing No. 2 Temp		97	<160°F
Bearing No. 3 Temp	TI-3-130B	167	<160°F
Bearing No. 4 Temp	TI-3-130A	175	<160°F
% Nuclear Power		~~3.47.~~	info
Pump Flow to SG3	FI-3-147A	210	≥ 200 GPM
Pump Flow to SG4	FI-3-170A	230	≥ 200 GPM

18-1150

Bearings are numbered from the pump outboard bearing toward the driver.

TABLE -23

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1B-B
Time T-40 hrs
0800 EDT

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-132B	1250	info
Suction Pressure	PI-3-127	14.4	info
Room Temperature	See Below	94°F	≤ 120 F
Humidity	↓	30%	≤ 100%
Bearing No. 1 Temp	Contact Pyrometer	102°F	<160°F
Bearing No. 2 Temp	↓	98°F	<160°F
Bearing No. 3 Temp	TI-3-130B	167°F	<160°F
Bearing No. 4 Temp	TI-3-130A	175°F	<160°F
% Nuclear Power	I-XR-92-5001	47.	info
Pump Flow to SG3	FI-3-147A	220	≥ 200 GPM
Pump Flow to SG4	FI-3-170A	215	≥ 200 GPM

DN-113 DRA 8/11/80

Pat Ballard 8/11/80

Bearings are numbered from the pump outboard bearing toward the driver.

Contact Pyrometer #417194 Cal 10/26/79 Due 10/26/80
Humidity & Temp. Rcdr. #471789 Cal 7/17/80 Due 1/17/81

TABLE - 24

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1B-B
Time T- 4/8 hrs

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-132B	1280	info
Suction Pressure	PI-3-127	14.0	info
Room Temperature	See below	95	≤ 120 F
Humidity	"	30	≤ 100%
Bearing No. 1 Temp	"	104	<160°F
Bearing No. 2 Temp	"	91	<160°F
Bearing No. 3 Temp	TI-3-130B	168	<160°F
Bearing No. 4 Temp	TI-3-130A	174	<160°F
% Nuclear Power		3½	info
Pump Flow to SG3	FI-3-147A	210	≥ 200 GPM
Pump Flow to SG4	FI-3-170A	200	≥ 200 GPM

David K. Curtis 8/11/80

Bearings are numbered from the pump outboard bearing toward the driver.

Same as previous temps unit. David 8-11-80

TABLE - 25

E-115
Okw
8-27-80

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1B-B
Time T- 0 hrs
10/1/80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-132B	1300	info
Suction Pressure	PI-3-127	15.7	info
Room Temperature		82°F	≤ 120 F
Humidity		46	≤ 100%
Bearing No. 1 Temp		84°F	<160°F
Bearing No. 2 Temp		83°F	<160°F
Bearing No. 3 Temp	TI-3-130B	92°F	<160°F
Bearing No. 4 Temp	TI-3-130A	87°F	<160°F
% Nuclear Power	1-XR-92-5001	3½ %	info
Pump Flow to SG3	FI-3-147A	200	≥ 200 GPM
Pump Flow to SG4	FI-3-170A	200	≥ 200 GPM

M. R. Mulaft 10-1-80

Bearings are numbered from the pump outboard bearing toward the driver.

TABLE -26

APPROVED FOR USE

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Data Sheet: 5.7.3
AFWP 1B-B
Time T- 1 hrs
1355 10-1-80

MEASUREMENT	INSTRUMENT	DATA	ACCEPTANCE CRITERIA
Discharge Pressure	PI-3-132B	1345 psig	info
Suction Pressure	PI-3-127	5.5 psig	info
Room Temperature		92	≤ 120 F
Humidity		42%	≤ 100%
Bearing No. 1 Temp		94	<160°F
Bearing No. 2 Temp		89	<160°F
Bearing No. 3 Temp	TI-3-130B	175	<160°F
Bearing No. 4 Temp	TI-3-130A	170	<160°F
% Nuclear Power		3%	info
Pump Flow to SG3	FI-3-147A	~~205~~ 200 gpm 10/1/80	≥ 200 GPM
Pump Flow to SG4	FI-3-170A	200	≥ 200 GPM

N. R. Michaf 1 10-1-80

Bearings are numbered from the pump outboard bearing toward the driver.

Temp & Humid Rec. 471789 Due 1-17-81

TABLE - 27

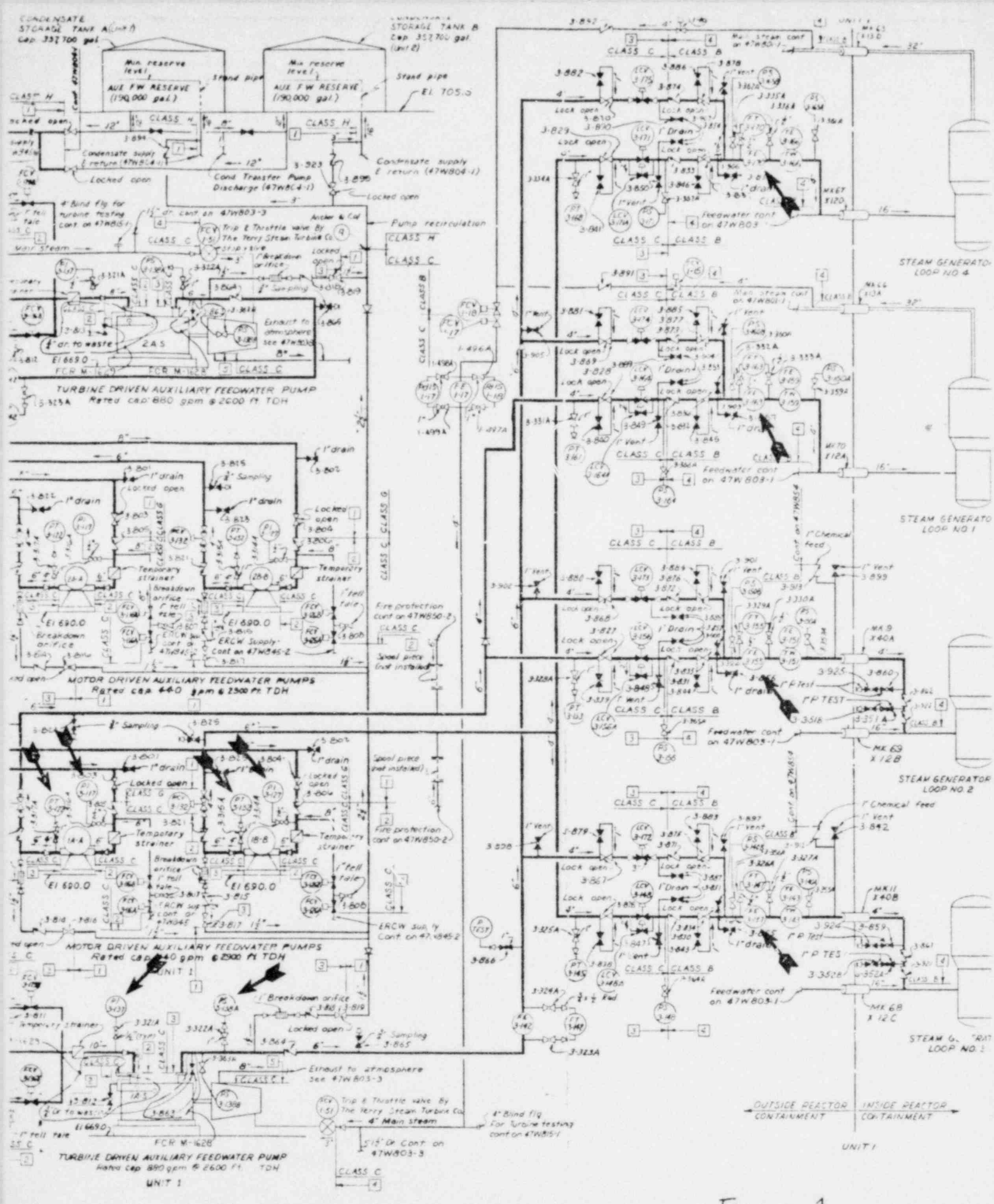

Figure 1

(FSAR Figure 10.4-19)

POOR ORIGINAL

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AUX FEEDWATER PUMP

[TEMP. OF BEARINGS AWFP 1B-B °F VS. TIME]

(FIGURE 2)

U J Mroz
10-20-80

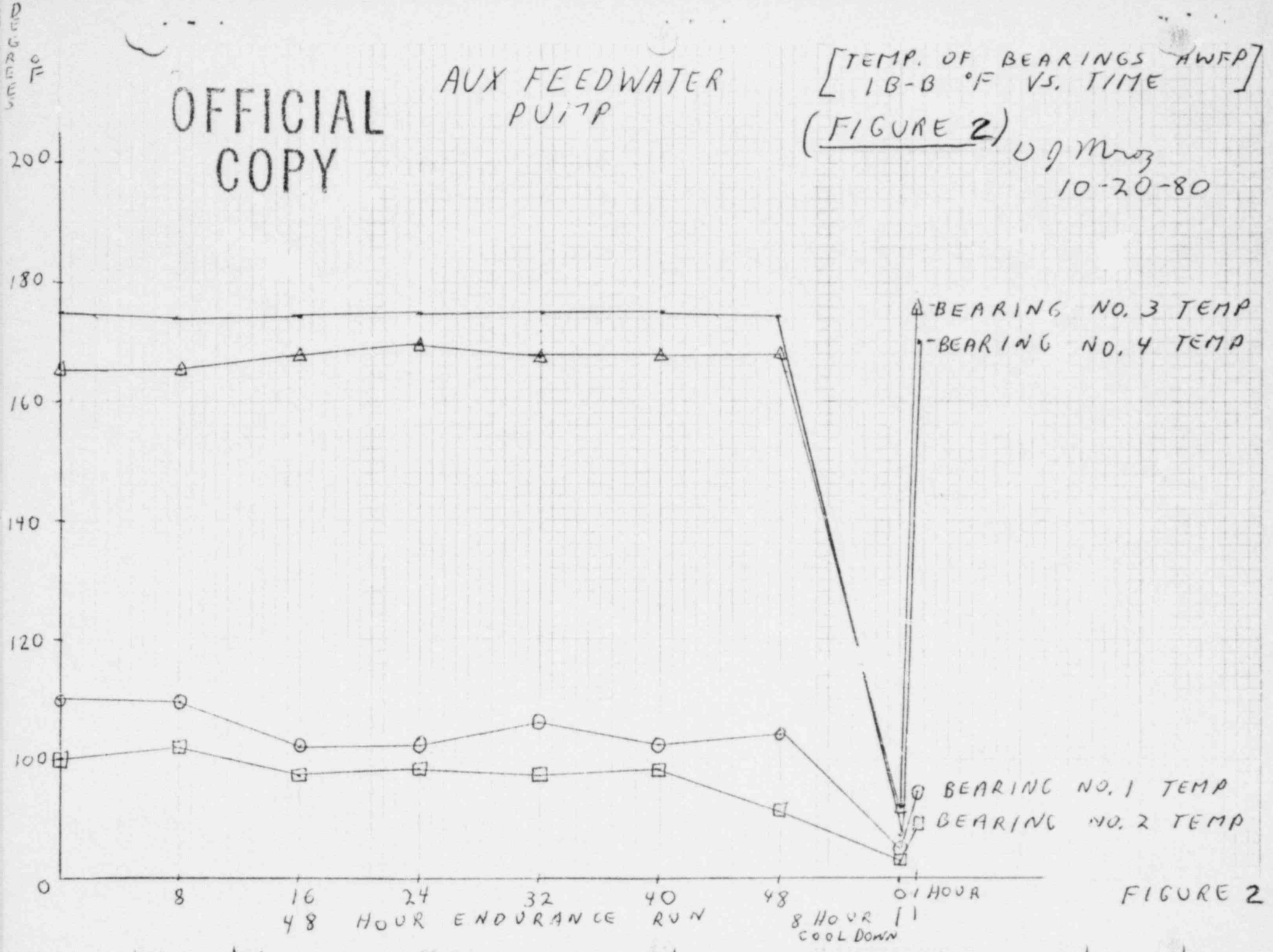


FIGURE 2

OFFICIAL COPY

AUX FEEDWATER PUMP

[TEMP OF BEARINGS AWFP IAS °F VS. TIME]

(FIGURE 3)

DJ Mroz
10-20-80

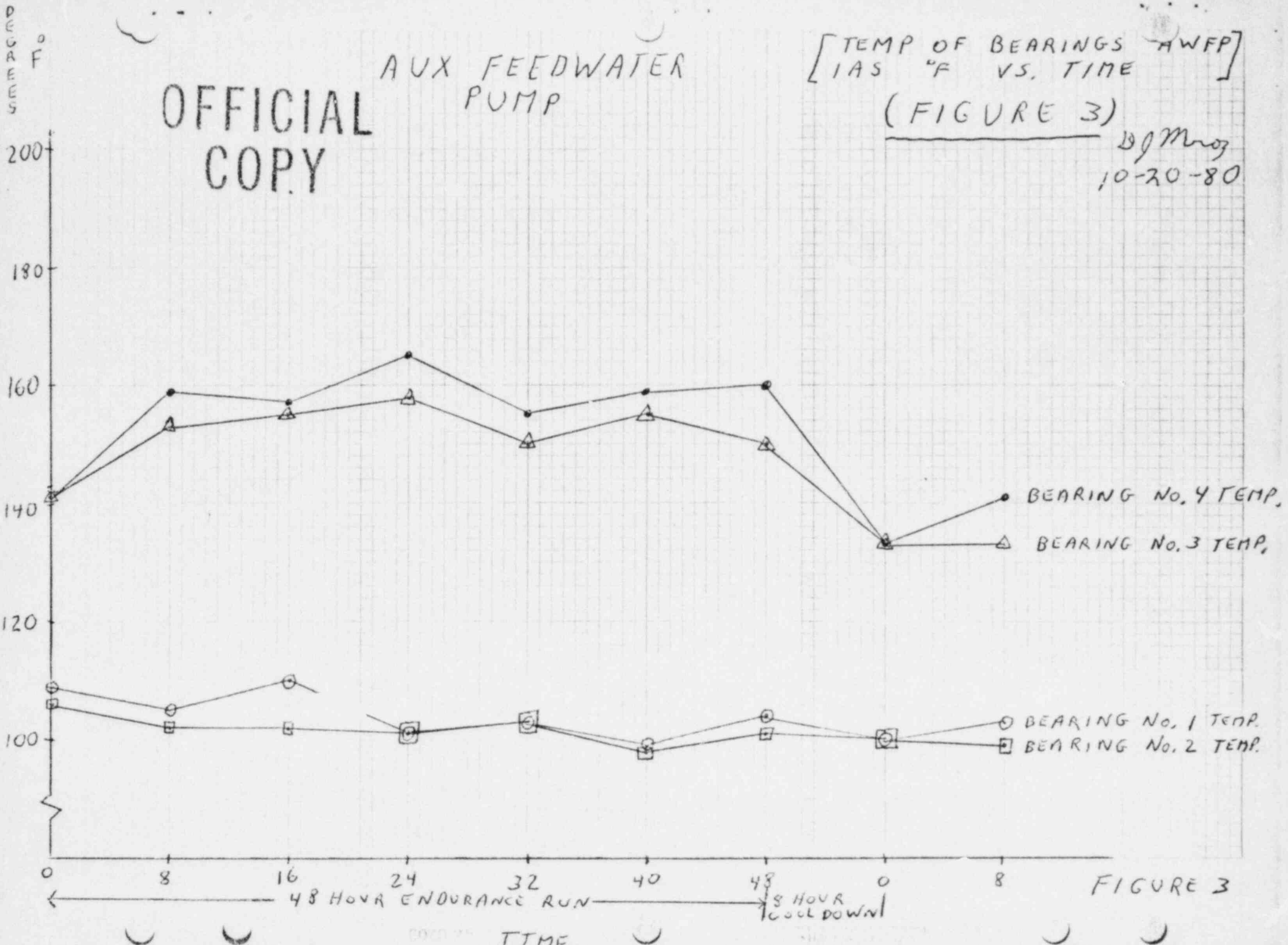


FIGURE 3

AUX FEEDWATER PUMP [TEMP. OF BEARINGS AWFP 1A-A °F VS TIME]

(FIGURE 4) DJM 10-20-80

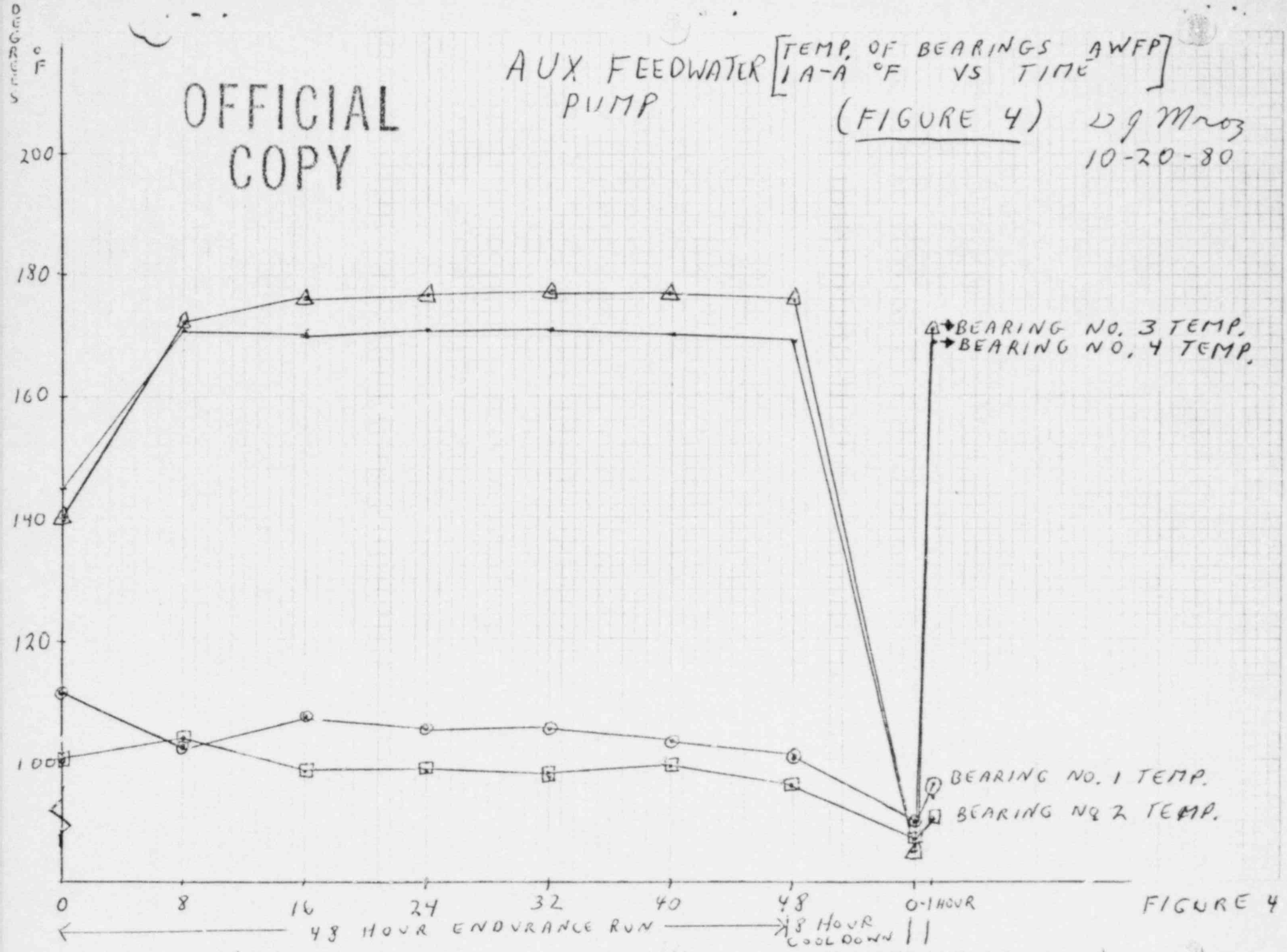
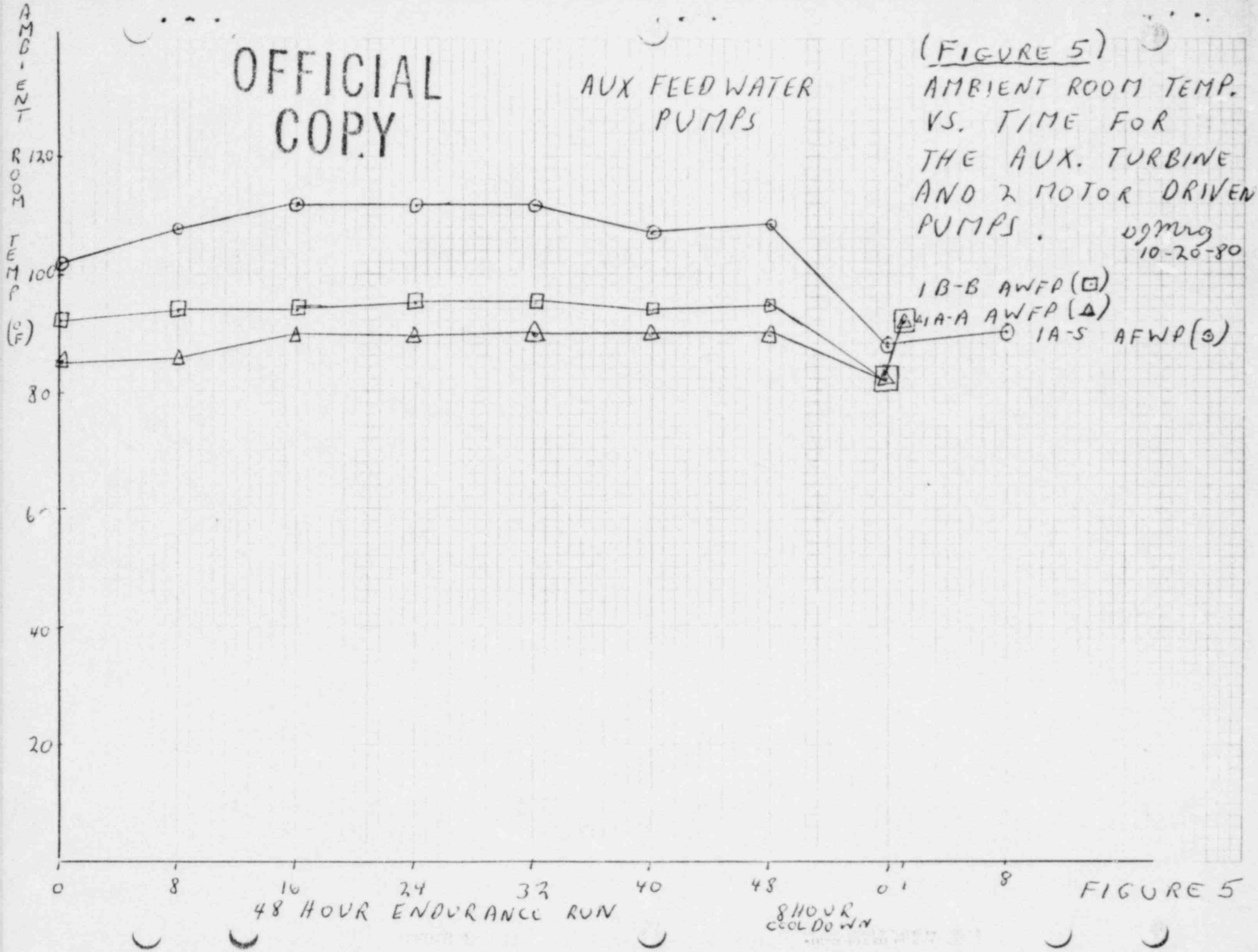


FIGURE 4

OFFICIAL COPY



(FIGURE 5)
AMBIENT ROOM TEMP. VS. TIME FOR THE AUX. TURBINE AND 2 MOTOR DRIVEN PUMPS.
djmrg
10-20-80

FIGURE 5

OFFICIAL COPY

AUX FEEDWATER PUMPS

(FIGURE 6)
HUMIDITY VS. TIME FOR THE AUX. TURBINE AND 2 MOTOR DRIVEN PUMPS

L.J. Mrazek
10-20-80

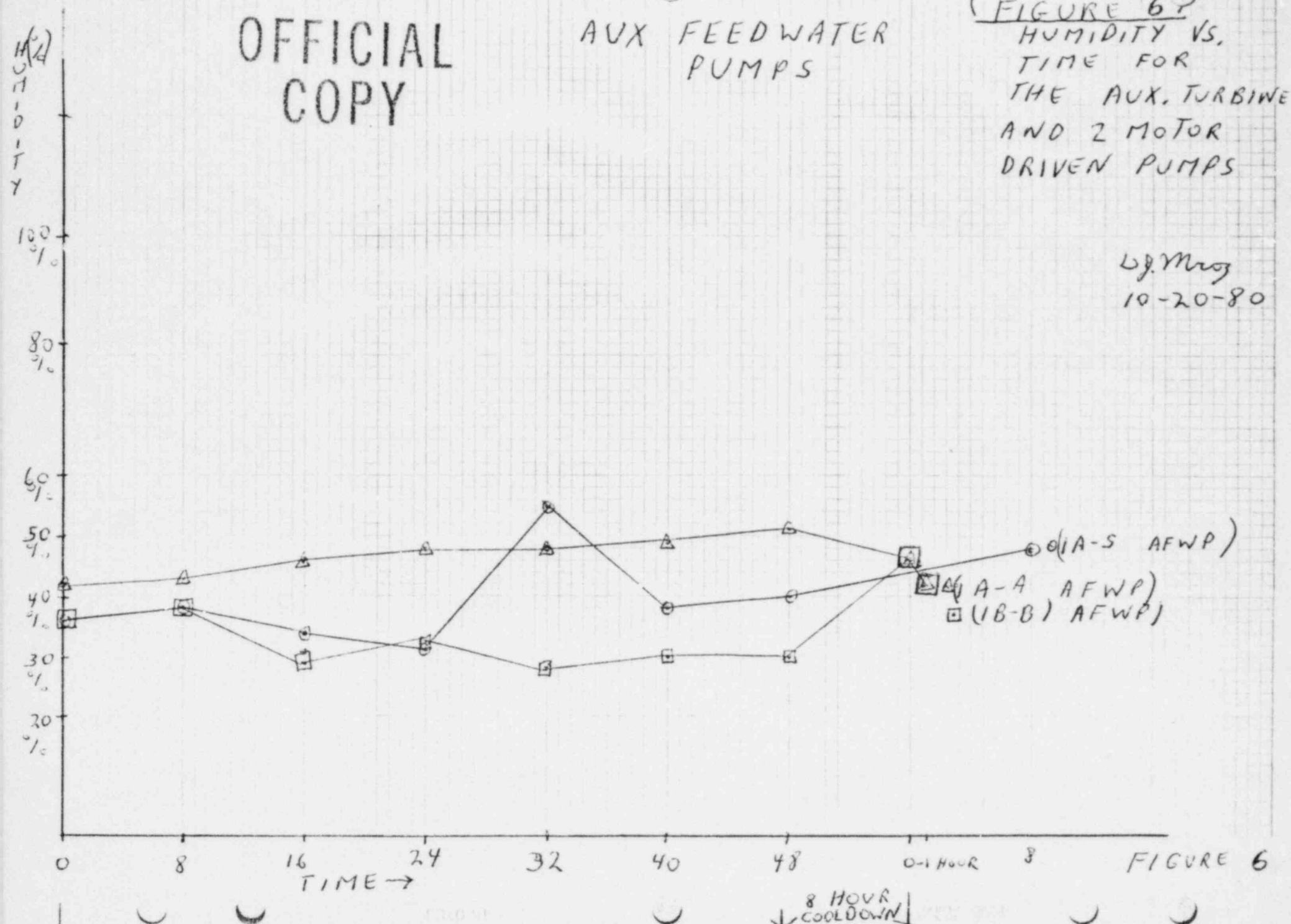


FIGURE 6