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April 11, 1980
IPN-80-40

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. Albert Schwencer, Chief
Operating Reactors Branch No. 1
Division of Operating Reactors

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
NRC Requirements for Auxiliary Feedwater Systems

Dear Sir:

The purpose of this letter is to respond to your letter to Mr. G. Berry dated March 5, 1980 regarding auxiliary feedwater systems.

Attachment 1 provides the commitment dates and/or responses to specific items required by your March 5, 1980 letter.

Very truly yours,

Paul J. Early
Vice President and
Assistant Chief Engineer-
Projects

cc: Mr. R. Rebelowski
Resident Inspector
U.S Nuclear Regulatory Commission
P.O. Box 38
Buchanan, New York 10511

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ATTACHMENT 1

The item numbers of responses listed below correspond to those of the March 5, 1980 NRC letter from A. Schwencer to George T. Berry.

A.3 The Authority will provide a response to Enclosure 2 of the November 7, 1979 letter by August 11, 1980.

B.1 The Authority has reviewed the NRC criteria for level indication and alarm in the control room for the AFW system primary water supply and commits to incorporating this system at Indian Point 3 Plant. The earliest delivery date that can be achieved for safety-related instrumentation based on equipment availability and component lead time is June 1981. The Authority will continue its efforts to improve upon the above date.

B.2 As previously stated in our December 21, 1979 response, the motor driven auxiliary feedwater pumps are the only source of feedwater during start-up from cold shutdown and, as such, have been used in excess of 48 continuous hours on many occasions. The information and data requested by the revised recommendation will be collected and submitted to the Commission during the next anticipated period that these pumps will run for at least 48 hours.

An endurance test has recently been performed on the steam driven auxiliary feed pump in accordance with your revised recommendations. The following is a summary of the conditions and results of the tests:

1. The test was conducted in accordance with PASNY Surveilliance Test 3PT-M20 Rev. 3, "Auxiliary Boiler Feed Pump Functional Test", dated January 1, 1980, as modidifed by SV-10-80, "Temporary Procedure Change Notice" for 3PT-M20 Rev. 3, dated February 14, 1980. These documents provide a detailed description of the test method including how the test was instrumented.

   The Steam Driven Auxiliary Feed Pump was operated in the recirculation mode, as shown in the test flow schematic diagram in Figure 1.

   The pump was initially operated at 1400 psig discharge pressure for a period of 15 to 30 minutes at which time pump speed, discharge pressure, vibration data, bearing temperatures, room ambient conditions and steam temperature were recorded. Pump speed was reduced to 1500 RPM and appropriate data was collected at intervals for a period in excess of 48 hours. Following this period, the pump was temporarily secured for eight hours, at which point it was again restarted and operated at a discharge pressure of 1400 psig for 15 to 30 minutes and data as previously mentioned was again collected.

2. A table of the test results is provided in Figure 2.

   The steam driven auxiliary feed pump test was performed in accordance to the feed pump manufacturers requirements and limitations for recirculation flow conditions. The test conditions are as close to the design operating conditions as can be practically achieved without causing pump damage.

   Inlet steam temperature was taken on the body of valve MS-42, since no direct steam temperature measurement is available. Actual steam temperature was in excess of 400° F during the testing period.

3. Plots of bearing and casing temperatures vs. time demonstrating that design limits were not exceeded are shown in Figure 3.

4. Plots of pump room ambient temperature and humidity vs. time demonstrating that design limits were not exceeded are shown in Figure 4.

5. Pump and turbine vibration measurements taken during the test did not exceed allowable limits.

C.1 The Authority has reviewed the NRC criteria and requirements associated with position indication for valves CT-6 and CT-64 and indication and alarms in the control room in the event that the valves are not in the fully open position. The Authority commits to incorporate this modification at Indian Point 3 Plant. Based on equipment availability and component lead times, this modification can be installed by June, 1981. The Authority will continue its efforts to improve upon the above date.

D. The Authority will provide a response to enclosure 2 of the November 7, 1979 letter by August 11, 1980.

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FIGURE No. 1
ENDURANCE TEST FLOW SCHEMATIC DIAGRAM

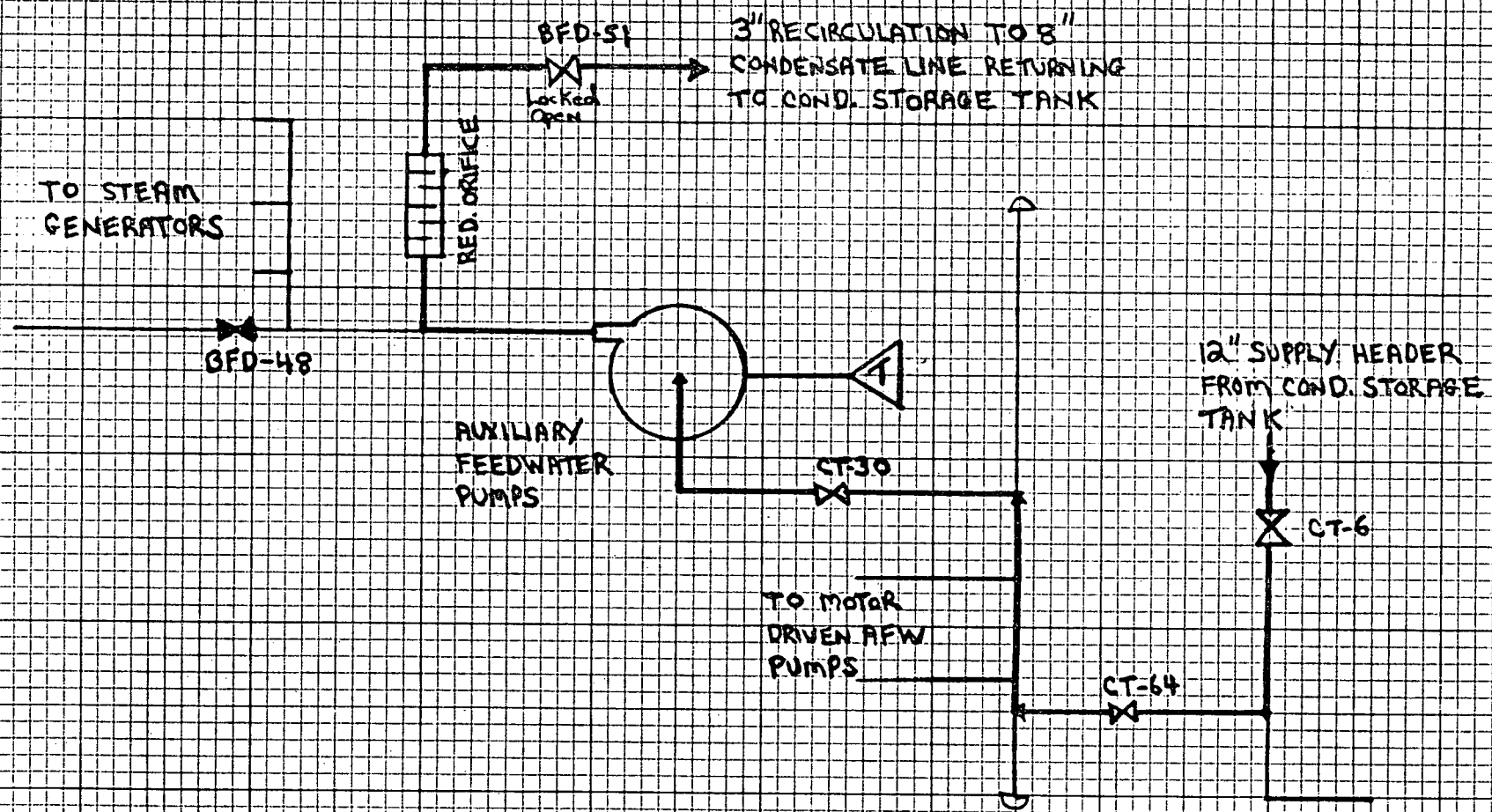

FIGURE No. 2

TEST RESULTS

PARAMETER	INITIAL	1	2	3	4	5	6	FINIAL
TIME	0505	1300	2100	0500	1300	2100	0820	1700
(RPM) Speed	3320	1720	1600	1590	1570	1575	1575	3370
(psig) Suction Press.	35	34	34	34	35	33.5	32	32
(psig) Discharge Press	1400	400	400	350	350	350	350	1500
(°F) Steam Temp.*	295	417	347	348	345	411	345	305

*taken on body of MS-42
INITAL AND FINIAL points – 1400 psig RUNS
Points 1 THUR 6 – ENDURANCE RUN

FIGURE No. 3

Bearing Temp. vs Time Plots

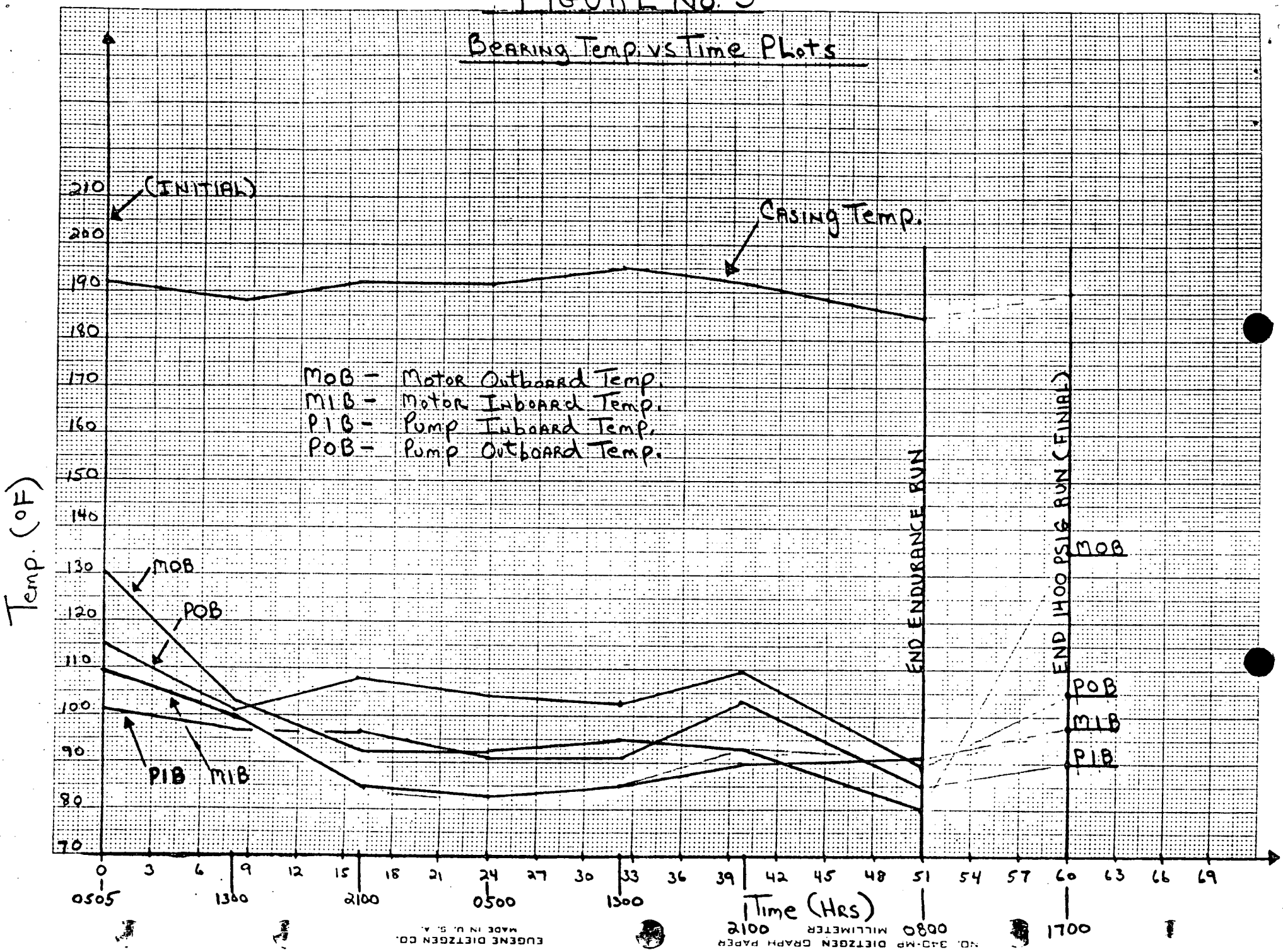

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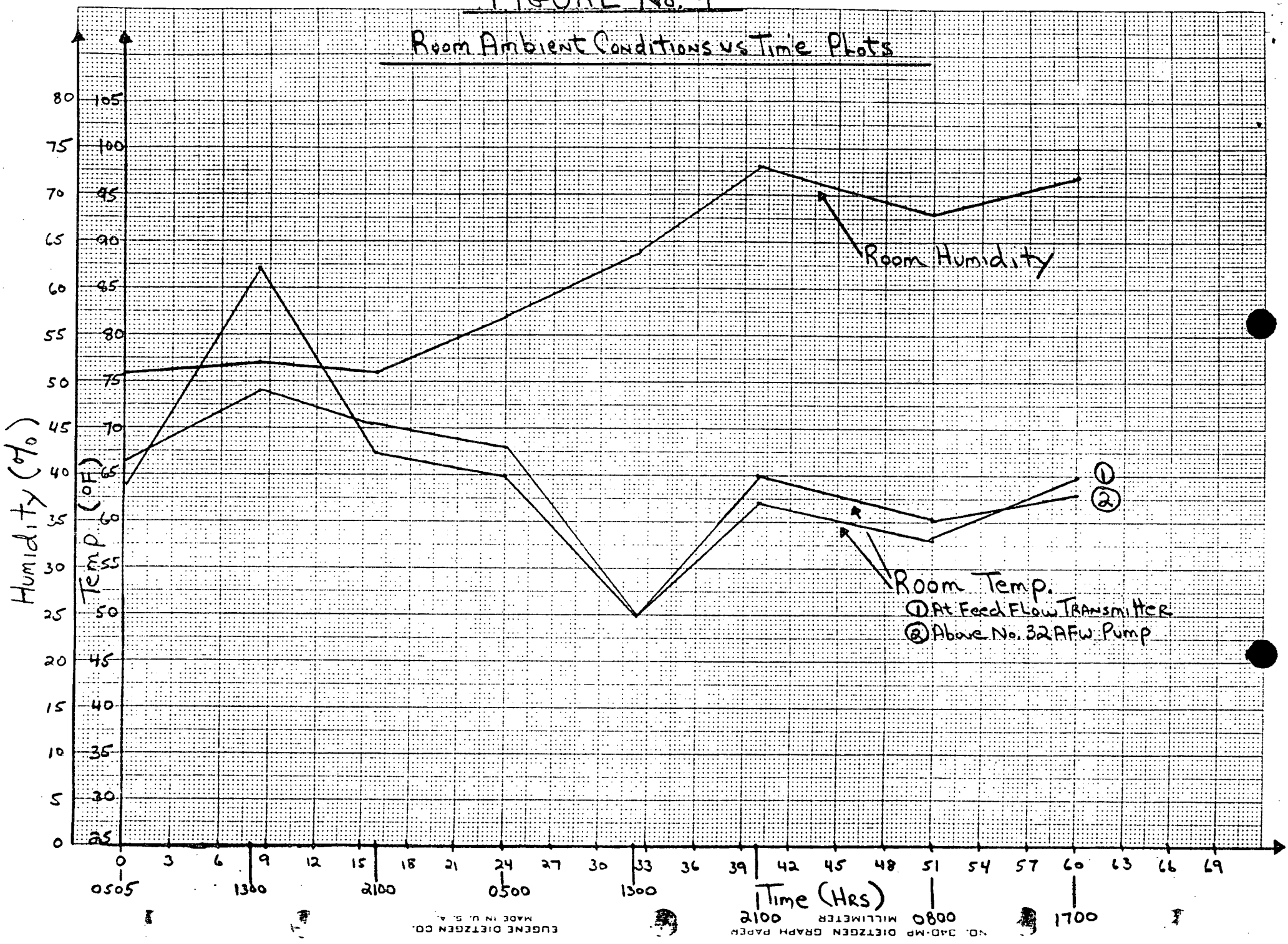
FIGURE No. 4

Room Ambient Conditions vs Time Plots