

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

W. L. STEWART  
VICE PRESIDENT  
NUCLEAR OPERATIONS

August 2, 1983

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Attn: Mr. Robert A. Clark, Chief  
Operating Reactors Branch No. 3  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Serial No. 427  
NO/JHL:acm  
Docket No. 50-339  
License No. NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY  
NORTH ANNA POWER STATION UNIT NO. 2  
RESPONSE TO THE REQUEST FOR INFORMATION CONCERNING  
LOW POWER NATURAL CIRCULATION TESTING

Enclosed is the response to the request for information concerning low power natural circulation testing at North Anna Unit No. 2, conducted July 5, 1980 through July 16, 1980. Attachments 1 through 5, respectively, contain all the data that was available for the natural circulation tests that were conducted on July 5, 1980, July 8, 1980, July 8, 1980, July 9, 1980 and July 16, 1980. (Note that the test was conducted twice on July 8, 1980) The data in Attachments 1 through 5 are 30 minute plots of Pressurizer Pressure vs. Time and RCS Pressure vs. Time, operating conditions prior to and during natural circulation testing and the control conditions of the PORV's.

Very truly yours,

*W. L. Stewart*  
W. L. Stewart

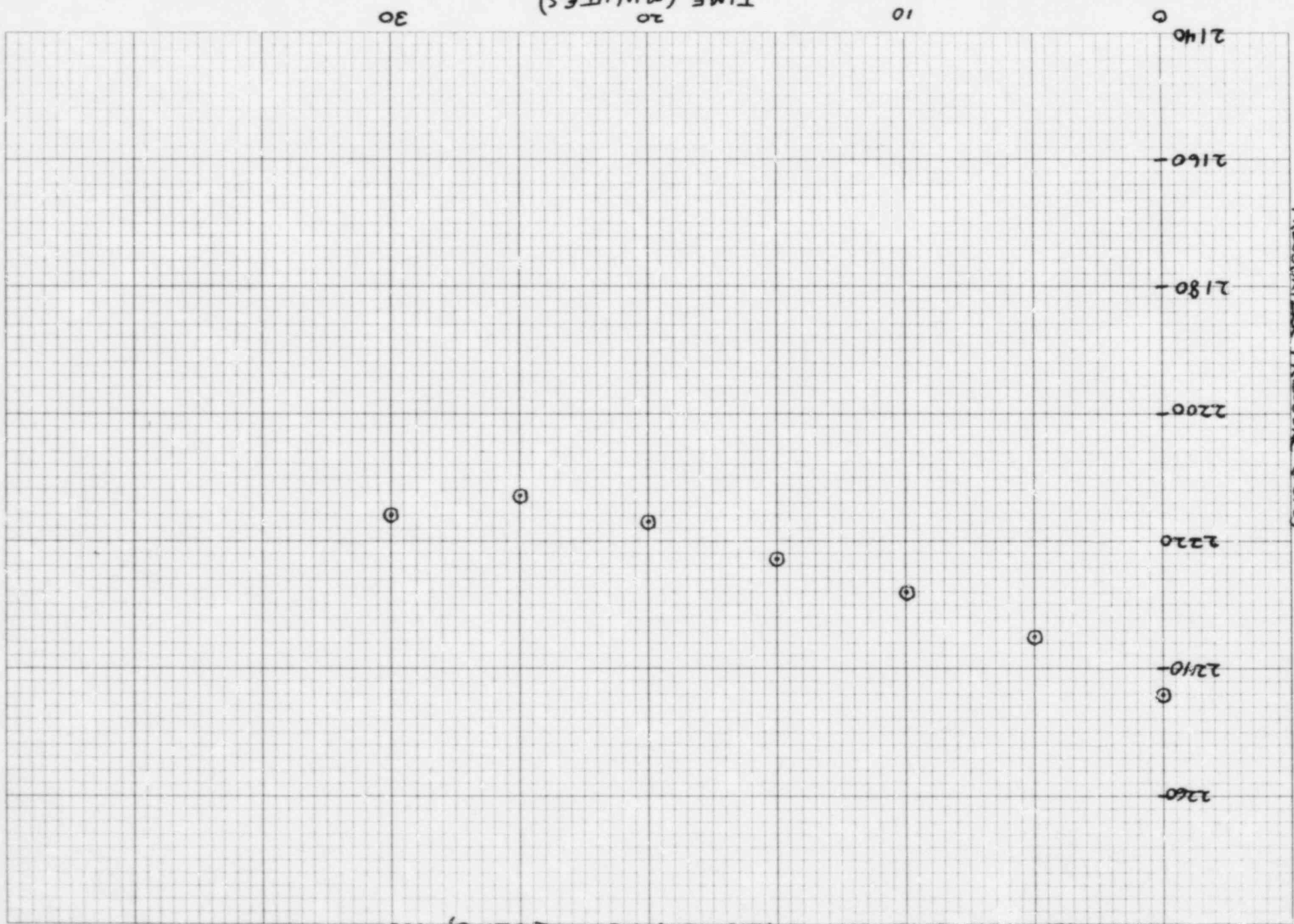
Attachments

cc: Mr. James P. O'Reilly  
Regional Administrator  
Region II

Mr. M. B. Shymlock  
NRC Resident Inspector  
North Anna Power Station

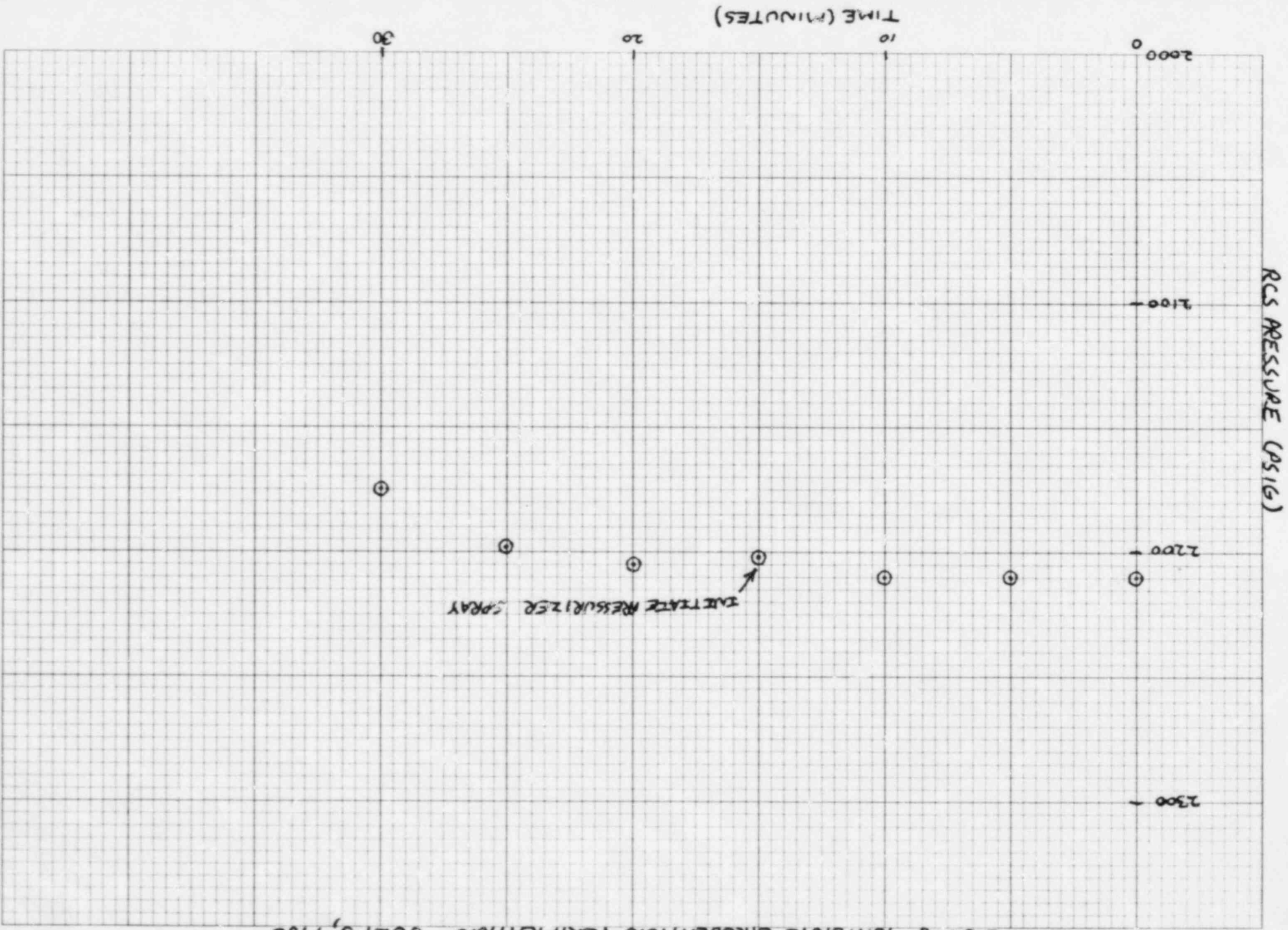
ATTACHMENT 1

PRESSURIZER PRESSURE (PSIG)



2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 5, 1980

2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 5, 1980



OPERATING CONDITIONS PRIOR TO AND DURING NATURAL CIRCULATION TESTING

Test Date: July 5, 1980

<u>Parameter</u>	<u>Initial Conditions</u>	<u>Test Conditions In Relation With Time (Minutes)</u>
Pressurizer Pressure, psig	2241.0	No Data Available
Pressurizer Level, %	27.0	
RCS Loop 1 T <sub>H</sub> , °F	549.0	
RCS Loop 1 T <sub>C</sub> , °F	548.5	
RCS Loop 2 T <sub>H</sub> , °F	552.0	
RCS Loop 2 T <sub>C</sub> , °F	548.5	
RCS Loop 3 T <sub>H</sub> , °F	542.0	
RCS Loop 3 T <sub>C</sub> , °F	550.0	
Steam Generator 1 Level (NR), %	28.0	
Steam Generator 2 Level (NR), %	29.0	
Steam Generator 3 Level (NR), %	31.0	
Steam Generator 1 Level (WR), %	63.5	
Steam Generator 2 Level (WR), %	65.0	
Steam Generator 3 Level (WR), %	65.0	
Steam Generator 1 Pressure, psig	1000.0	
Steam Generator 2 Pressure, psig	1000.0	
Steam Generator 3 Pressure, psig	1000.0	
Steam Generator 1 Feedwater Flow, lbs/hr	0.0	
Steam Generator 2 Feedwater Flow, lbs/hr	0.0	
Steam Generator 3 Feedwater Flow, lbs/hr	0.0	
Steam Generator 1 Steam Flow, lbs/hr	1.3x10 <sup>6</sup>	
Steam Generator 2 Steam Flow, lbs/hr	1.15x10 <sup>6</sup>	
Steam Generator 3 Steam Flow, lbs/hr	0.0	

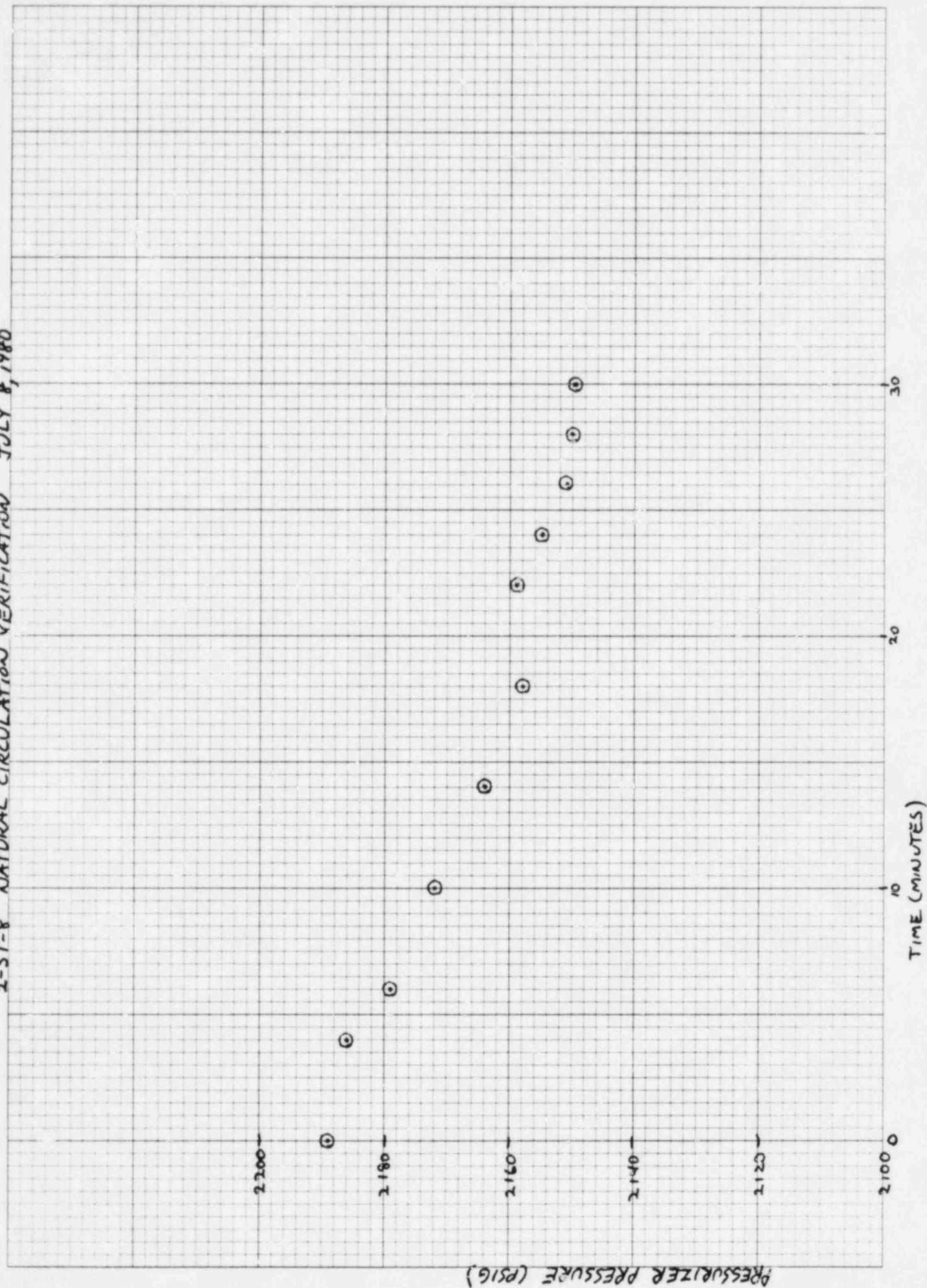
Control Conditions of the PORV's

The PORV's were in automatic during natural circulation testing.  
The setpoints were in accordance with Technical Specification 3.4.9.3.

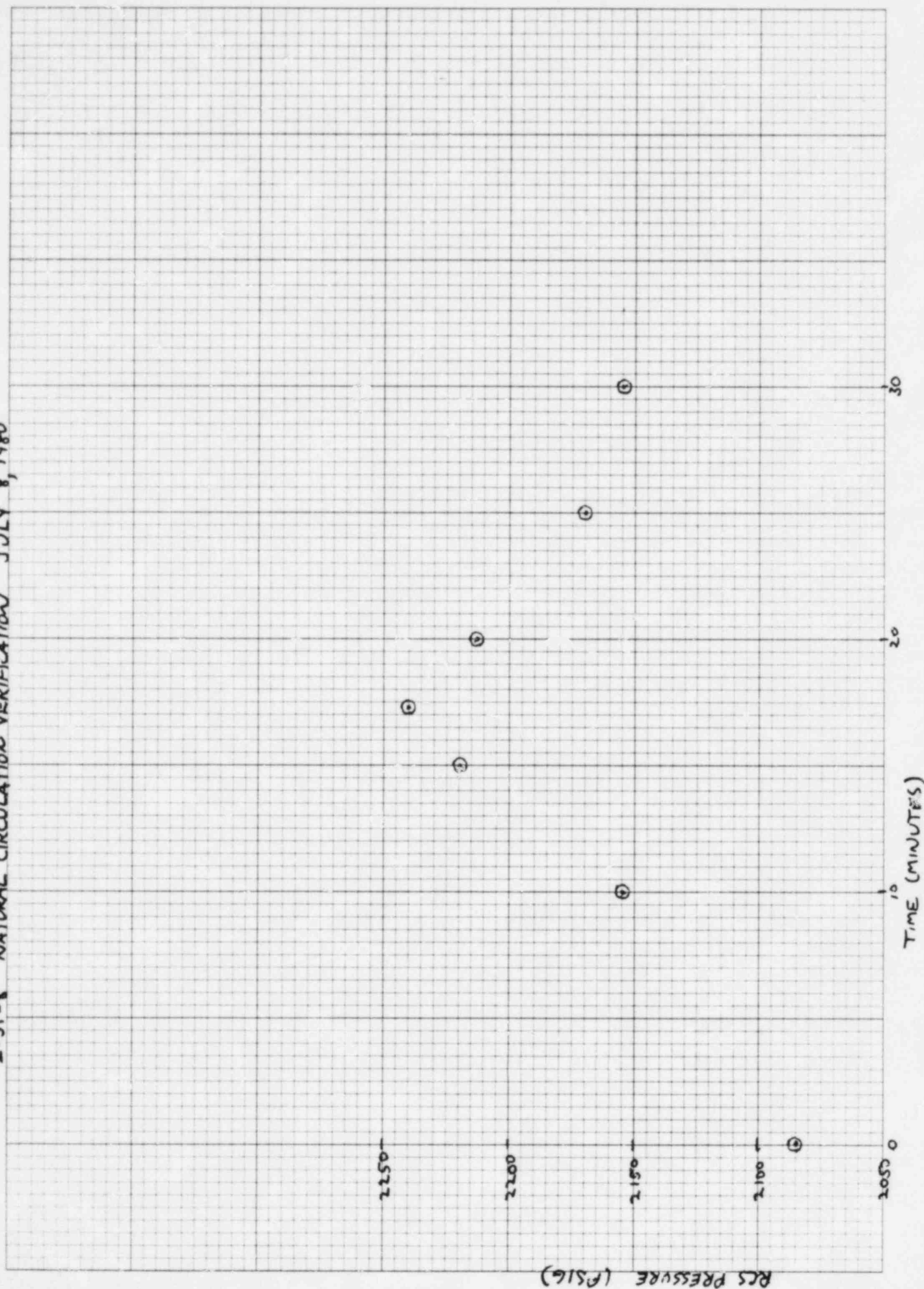
ATTACHMENT 2



2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 8, 1980



2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 8, 1980





OPERATING CONDITIONS PRIOR TO AND DURING NATURAL CIRCULATION TESTING

Test Date: July 8, 1980

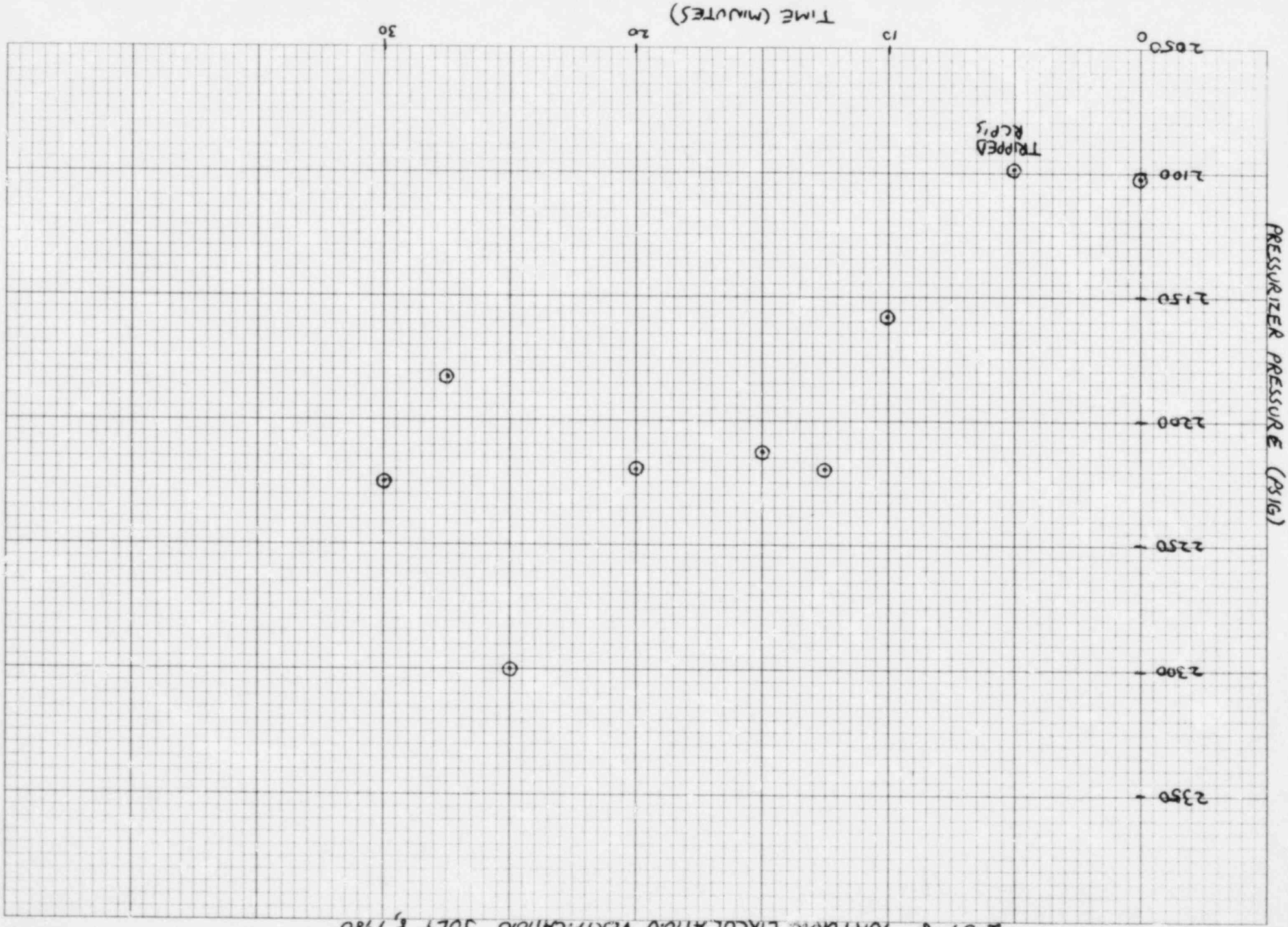
<u>Parameter</u>	<u>Initial Conditions</u>	<u>Test Conditions In Relation With Time (Minutes)</u>
Pressurizer Pressure, psig	2230.0	No Data Available
Pressurizer Level, %	25.0	
RCS Loop 1 T <sub>H</sub> , °F	545.0	
RCS Loop 1 T <sub>C</sub> , °F	545.5	
RCS Loop 2 T <sub>H</sub> , °F	555.0	
RCS Loop 2 T <sub>C</sub> , °F	540.0	
RCS Loop 3 T <sub>C</sub> , °F	543.0	
RCS Loop 3 T <sub>H</sub> , °F	550.0	
Steam Generator 1 Level (NR), %	31.0	
Steam Generator 2 Level (NR), %	29.0	
Steam Generator 3 Level (NR), %	32.0	
Steam Generator 1 Level (WR), %	64.0	
Steam Generator 2 Level (WR), %	65.0	
Steam Generator 3 Level (WR), %	65.0	
Steam Generator 1 Pressure, psig	1000.0	
Steam Generator 2 Pressure, psig	1000.0	
Steam Generator 3 Pressure, psig	1000.0	
Steam Generator 1 Feedwater Flow, lbs/hr	0.0	
Steam Generator 2 Feedwater Flow, lbs/hr	0.0	
Steam Generator 3 Feedwater Flow, lbs/hr	0.0	
Steam Generator 1 Steam Flow, lbs/hr	0.0	
Steam Generator 2 Steam Flow, lbs/hr	0.0	
Steam Generator 3 Steam Flow, lbs/hr	0.0	

Control Conditions of the PORV's

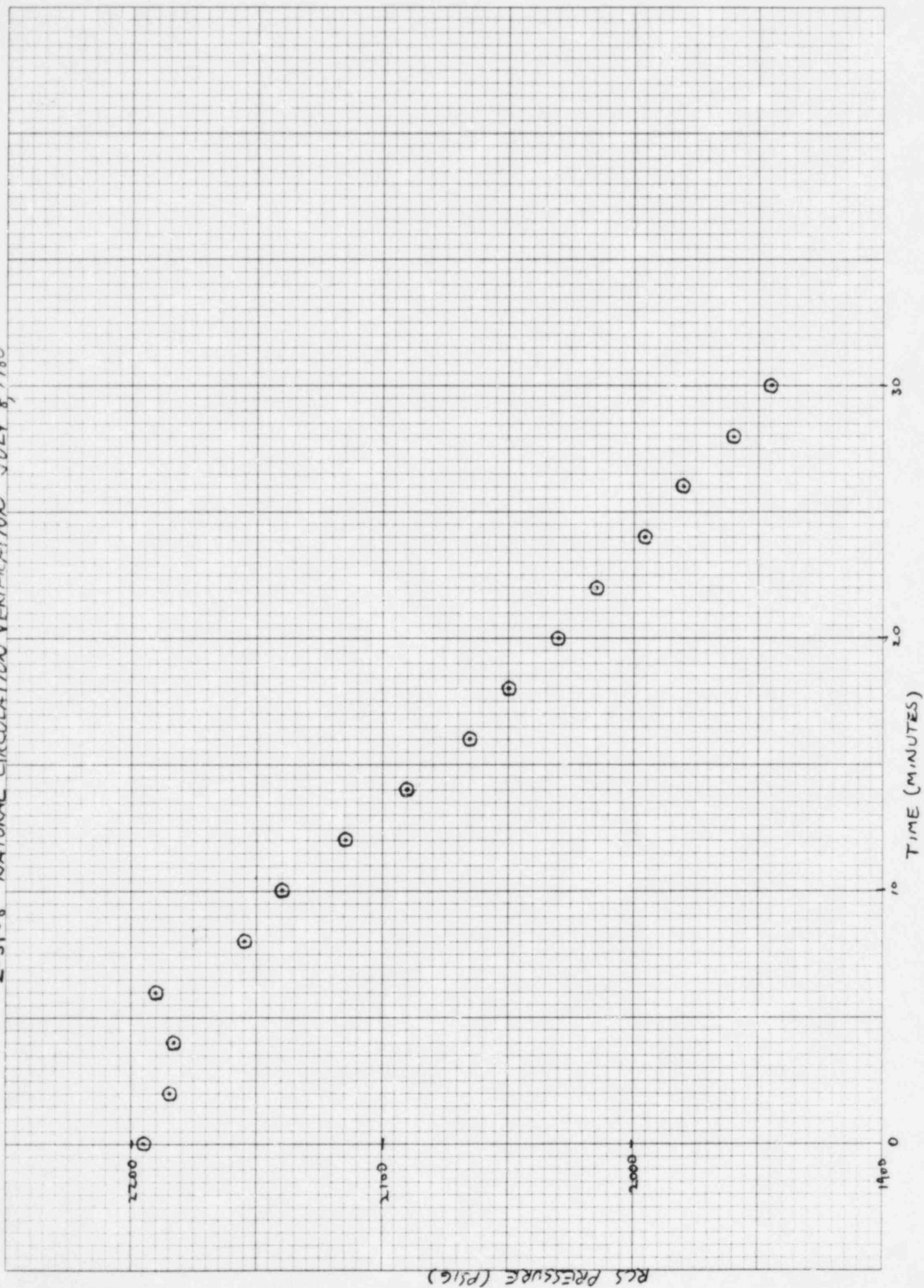
The PORV's were in automatic during natural circulation testing.  
The setpoints were in accordance with Technical Specification 3.4.9.3.

ATTACHMENT 3

2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 8, 1980



2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 8, 1980



# OPERATING CONDITIONS PRIOR TO AND DURING NATURAL CIRCULATION TESTING

Test Date: July 8, 1980

Parameter	Initial Conditions	Test Conditions in Relation With Time (Minutes)							
		<u>6</u>	<u>9</u>	<u>11</u>	<u>15</u>	<u>19</u>	<u>23</u>	<u>27</u>	<u>29</u>
Pressurizer Pressure, psig	2135.0	2234.7	2237.1	2235.5	2235.0	2235.4	2235.1	2222.5	2208.0
Pressurizer Level, %	22.0	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
RCS Loop 1 T <sub>H</sub> , °F	547.0								
RCS Loop 1 T <sub>C</sub> , °F	550.0								
RCS Loop 2 T <sub>C</sub> , °F	548.0								
RCS Loop 2 T <sub>H</sub> , °F	545.0								
RCS Loop 3 T <sub>C</sub> , °F	548.0								
RCS Loop 3 T <sub>H</sub> , °F	547.0								
Steam Generator 1 Level (NR), %	34.0	38.5	38.9	38.8	39.1	39.1	38.2	36.8	36.7
Steam Generator 2 Level (NR), %	34.0	29.6	30.1	30.1	30.7	31.5	31.6	30.6	29.9
Steam Generator 3 Level (NR), %	33.0	32.0	32.4	32.6	33.4	34.1	34.9	34.5	33.8
Steam Generator 1 Level (WR), %	64.0								
Steam Generator 2 Level (WR), %	64.0								
Steam Generator 3 Level (WR), %	64.0								
Steam Generator 1 Pressure, psig	1000.0	998.4	998.7	998.7	998.7	998.7	999.1	999.1	999.1
Steam Generator 2 Pressure, psig	1000.0	1000.8	1000.8	1000.8	1000.8	1000.8	1001.4	1001.1	1001.1
Steam Generator 3 Pressure, psig	1000.0	999.4	999.7	999.4	999.4	999.7	999.7	999.7	999.7
Steam Generator 1 Feedwater Flow, lbs/hr	0.0								
Steam Generator 2 Feedwater Flow, lbs/hr	0.0								
Steam Generator 3 Feedwater Flow, lbs/hr	0.0								
Steam Generator 1 Steam Flow, lbs/hr	0.0								
Steam Generator 2 Steam Flow, lbs/hr	0.0								
Steam Generator 3 Steam Flow, lbs/hr	0.0								

## Control Conditions of the PORV's

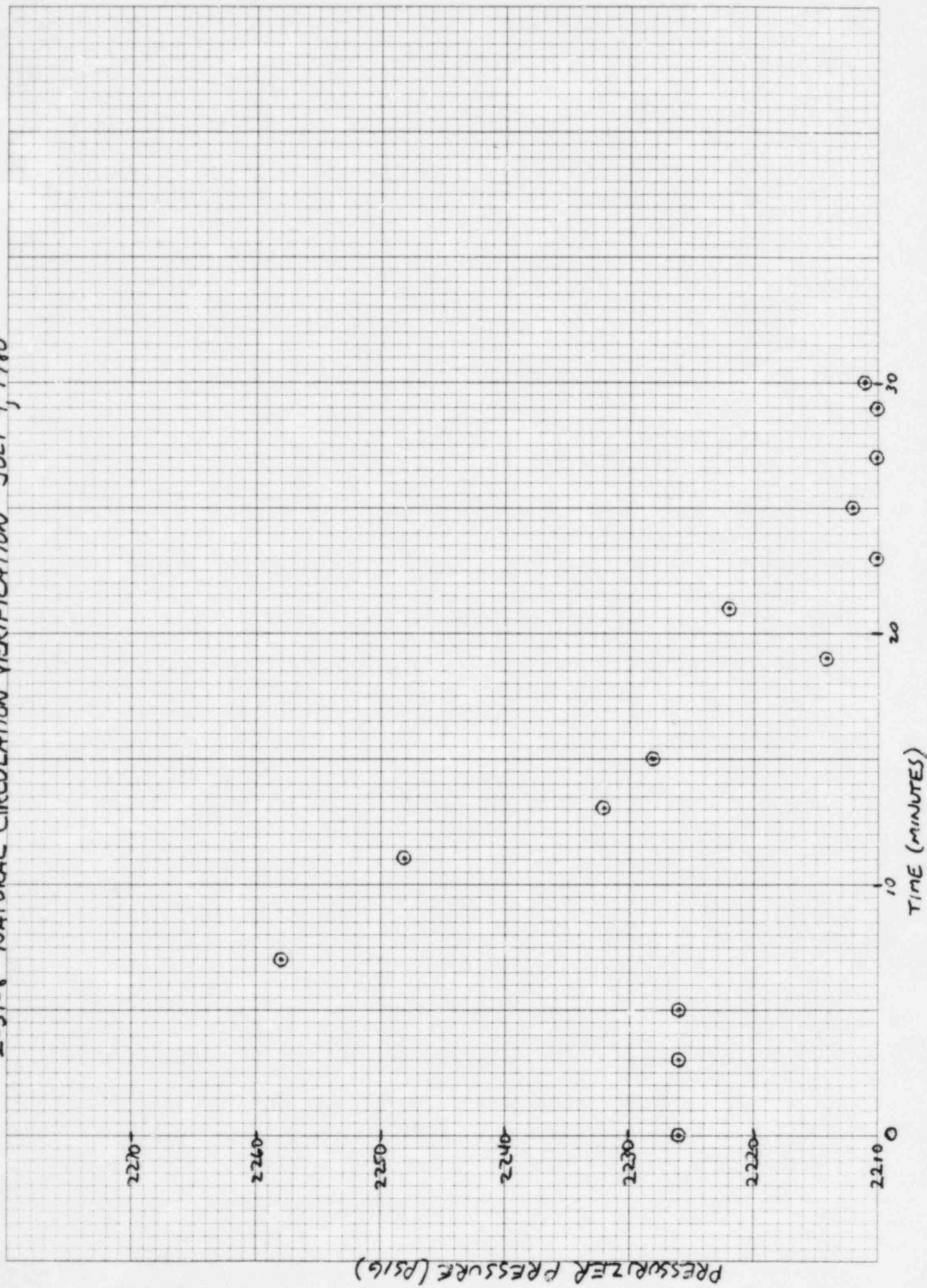
The PORV's were in automatic during natural circulation testing.

The setpoints were in accordance with Technical Specification 3.4.9.3.

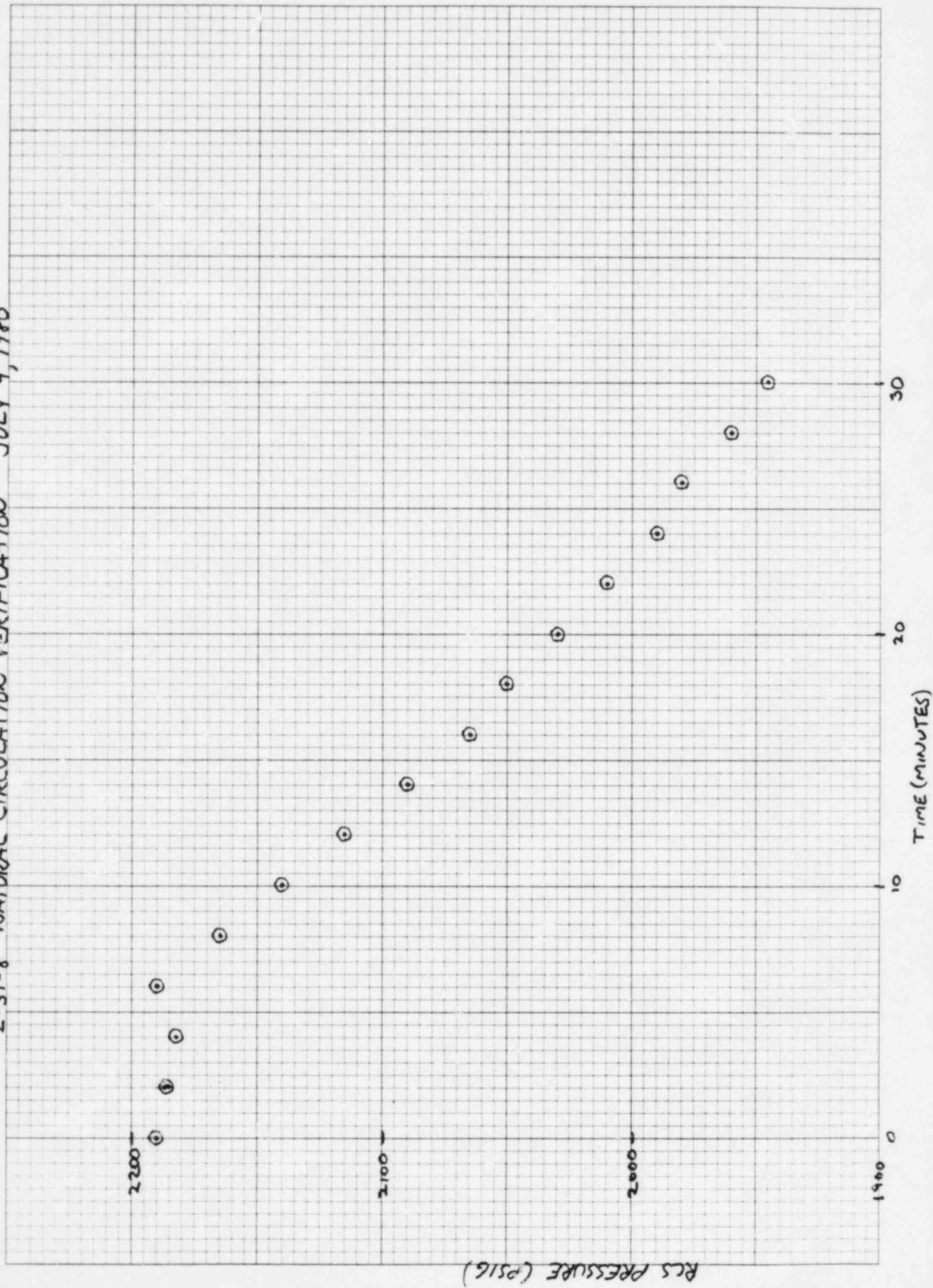
ATTACHMENT 4



# 2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 9, 1980



2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 9, 1980



OPERATING CONDITIONS PRIOR TO AND DURING NATURAL CIRCULATION TESTING

Test Date: July 9, 1980

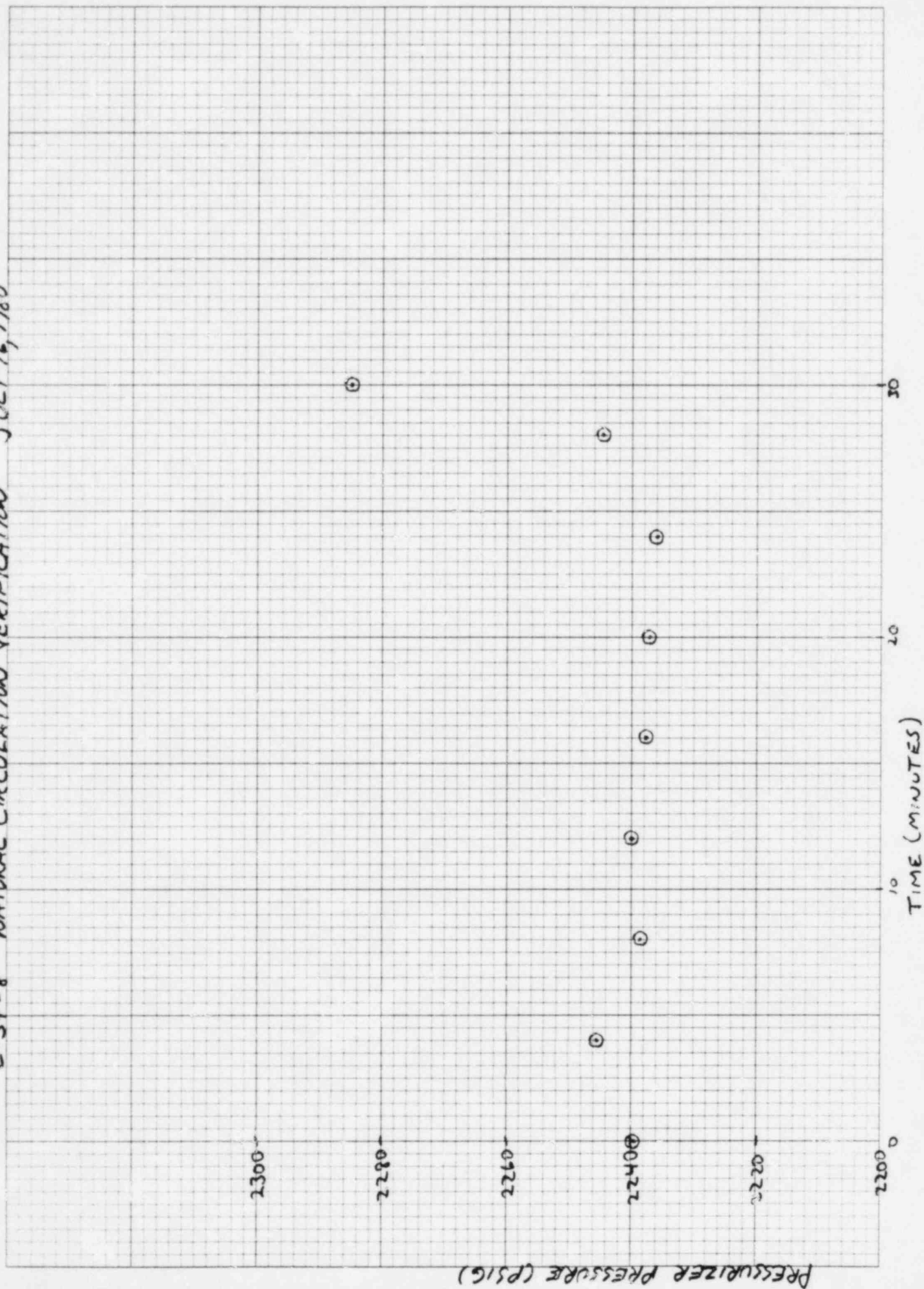
<u>Parameter</u>	<u>Initial Conditions</u>	<u>Test Conditions in Relation With Time (Minutes)</u>
Pressurizer Pressure, psig	2230.0	No Data Available
Pressurizer Level, %	23.0	
RCS Loop 1 T <sub>H</sub> , °F	544.0	
RCS Loop 1 T <sub>C</sub> , °F	543.0	
RCS Loop 2 T <sub>H</sub> , °F	544.0	
RCS Loop 2 T <sub>C</sub> , °F	543.0	
RCS Loop 3 T <sub>H</sub> , °F	545.0	
RCS Loop 3 T <sub>C</sub> , °F	550.0	
Steam Generator 1 Level (NR), %	35.0	
Steam Generator 2 Level (NR), %	33.0	
Steam Generator 3 Level (NR), %	36.0	
Steam Generator 1 Level (WR), %	64.0	
Steam Generator 2 Level (WR), %	65.0	
Steam Generator 3 Level (WR), %	65.0	
Steam Generator 1 Pressure, psig	1005.0	
Steam Generator 2 Pressure, psig	1005.0	
Steam Generator 3 Pressure, psig	1005.0	
Steam Generator 1 Feedwater Flow, lbs/hr	0.0	
Steam Generator 2 Feedwater Flow, lbs/hr	0.0	
Steam Generator 3 Feedwater Flow, lbs/hr	0.0	
Steam Generator 1 Steam Flow, lbs/hr	0.0	
Steam Generator 2 Steam Flow, lbs/hr	0.0	
Steam Generator 3 Steam Flow, lbs/hr	0.0	

Control Conditions of the PORV's

The PORV's were in automatic during natural circulation testing.  
The setpoints were in accordance with Technical Specification 3.4.9.3.

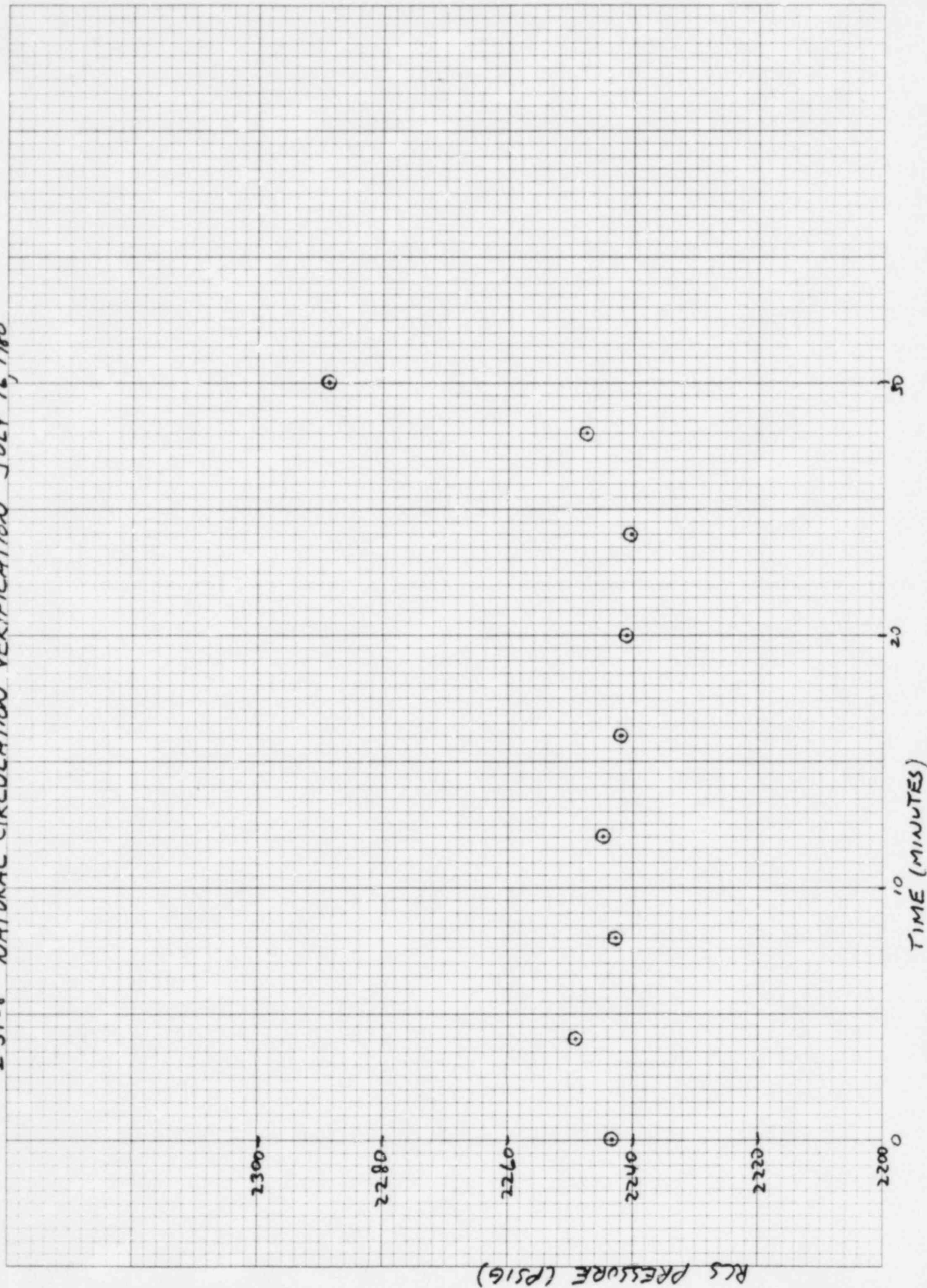
ATTACHMENT 5

2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 16, 1980





2-ST-8 NATURAL CIRCULATION VERIFICATION JULY 16, 1980





# OPERATING CONDITIONS PRIOR TO AND DURING NATURAL CIRCULATION TESTING

Test Date: July 16, 1980

<u>Parameter</u>	<u>Initial Conditions</u>	<u>Test Conditions in Relation With Time (Minutes)</u>								
		<u>0</u>	<u>4</u>	<u>8</u>	<u>12</u>	<u>16</u>	<u>20</u>	<u>24</u>	<u>28</u>	<u>30</u>
Pressurizer Pressure, psig	2220.0	2239.5	2245.7	2238.6	2240.0	2237.9	2237.2	2236.1	2244.7	2285.2
Pressurizer Level, %	22.0	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
RCS Loop 1 T <sub>H</sub> , °F	550.0									
RCS Loop 1 T <sub>C</sub> , °F	545.0									
RCS Loop 2 T <sub>H</sub> , °F	550.0									
RCS Loop 2 T <sub>C</sub> , °F	545.0									
RCS Loop 3 T <sub>H</sub> , °F	550.0									
RCS Loop 3 T <sub>C</sub> , °F	545.0									
Steam Generator 1 Level (NR), %	32.0	34.3	24.5	31.6	33.8	30.8	27.2	30.7	31.7	32.4
Steam Generator 2 Level (NR), %	32.0	29.9	25.7	31.7	32.5	29.2	26.6	28.6	29.8	29.9
Steam Generator 3 Level (NR), %	33.0	38.8	33.6	37.4	38.8	35.5	30.3	33.8	34.7	34.2
Steam Generator 1 Level (WR), %	62.0									
Steam Generator 2 Level (WR), %	63.0									
Steam Generator 3 Level (WR), %	64.0									
Steam Generator 1 Pressure, psig	960.0	976.9	951.9	973.1	975.1	969.0	965.9	967.3	937.9	979.9
Steam Generator 2 Pressure, psig	970.0	978.9	953.6	974.8	976.9	971.1	967.6	969.3	940.6	933.0
Steam Generator 3 Pressure, psig	950.0	976.9	952.2	972.7	975.1	969.0	965.9	967.3	938.9	981.3
Steam Generator 1 Feedwater Flow, lbs/hr	0.0									
Steam Generator 2 Feedwater Flow, lbs/hr	0.0									
Steam Generator 3 Feedwater Flow, lbs/hr	0.0									
Steam Generator 1 Steam Flow, lbs/hr	0.0									
Steam Generator 2 Steam Flow, lbs/hr	0.0									
Steam Generator 3 Steam Flow, lbs/hr	0.0									

## Control Conditions of the PORV's

The PORV's were in automatic during natural circulation testing.

The setpoints were in accordance with Technical Specification 3.4.9.3.