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50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316
AUTH.NAME AUTHOR AFFILIATION
ALEXICH,M.P. American Electric Power Service Corp.
RECIP.NAME RECIPIENT AFFILIATION
MURLEY,T.E. Document Control Branch (Document Control Desk)

SUBJECT: Forwards plant simulator certification abstract, per see reports (2 volumes)
10CFR55.45(b)(5).

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AMERICAN ELECTRIC POWER

AEP:NRC:1134
10CFR55.45(b)(5)

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
COOK NUCLEAR PLANT SIMULATOR CERTIFICATION

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Attn: T. E. Murley

August 24, 1990

Dear Dr. Murley:

The purpose of this letter is to submit information pursuant to 10CFR55.45.(b)(5) to certify the Cook Nuclear Plant Simulator Facility. Our submittal for certification addresses both units at Cook Nuclear Plant with Unit 2 serving as the reference plant. The requirements for dual unit simulation facilities were evaluated and the results demonstrate that the Cook Nuclear Plant simulator performance compares favorably with each unit. In addition, steady state and transient testing per ANSI/ANS 3.5-1985 Appendix B, was performed and compared the simulator performance to Cook Nuclear Plant Unit 1 performance with favorable results. We have discussed the certification requirements and the contents of Attachments 1 and 2, for Cook Nuclear Plant Units 1 and 2, respectively, with members of your staff on several occasions.

Both attachments contain the NRC Simulator Facility Certification Form 474, one for each docket number, and two copies of the Initial Certification Report, dated August 24, 1990, and a list of exceptions from ANSI/ANS 3.5-1985.

00293

A005
1/1

This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,

M. P. Alexich
Vice President

dfw

Attachments

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
J. R. Padgett
G. Charnoff
A. B. Davis - Region III
NRC Resident Inspector - Bridgman
NFEM Section Chief

COOK PLANT SIMULATOR

SIMULATOR CERTIFICATION SUBMITTAL INDEX

NRC FORM 474

OVERVIEW

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TESTS (ANS 3.5 - A.3)

OVERVIEW

COMPUTER (ANS 3.5 - A.3.1)

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SIMULATOR PERFORMANCE (ANS 3.5 - 5.4.1)

MALFUNCTION (ANS 3.5 - 3.4.2)

OPERABILITY (ANS 3.5 - 5.4.2)

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2	70% STEADY STATE POWER TEST
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4	SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS
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6	MAIN TURBINE TRIP (<10% POWER)
7	MAXIMUM RATE POWER RAMP (100% DOWN TO 50% AND BACK TO 100%)
8	MAXIMUM SIZE REACTOR COOLANT SYSTEM RUPTURE WITH LOSS OF ALL OFFSITE POWER
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INSTRUCTOR STATION CAPABILITIES (ANS 3.5 - 3.4)

CONFIGURATION MANAGEMENT SYSTEM (ANS 3.5 - 5.0)

DIFFERENCES

- OVERVIEW
- HUMAN FACTOR STUDY

NRC FORM 474 (1-90)
10 CFR 55.45(b), 55.4 and 55.5

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0138
EXPIRES: 9-30-92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 120 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0138), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

SIMULATION FACILITY CERTIFICATION

INSTRUCTIONS. This form is to be filed for initial certification, recertification (if required), and for any change to a simulation facility performance testing plan made after initial submittal of such a plan. Provide the following information, and check the appropriate box to indicate reason for submittal.

FACILITY	DOCKET NUMBER
COOK NUCLEAR PLANT	50- 315
LICENSEE	**DATE**
INDIANA MICHIGAN POWER COMPANY	8/24/90

This is to certify that:

1. The above named facility licensee is using a simulation facility consisting solely of a plant-referenced simulator that meets the requirements of 10 CFR 55.45.
2. Documentation is available for NRC review in accordance with 10 CFR 55.45(b).
3. This simulation facility meets the guidance contained in ANSI/ANS 3.5, 1985, as endorsed by NRC Regulatory Guide 1.149.

If there are any exceptions to the certification of this item, check here [X] and describe fully on additional pages as necessary.

NAME *(or other identification)* AND LOCATION OF SIMULATION FACILITY

COOK TRAINING CENTER
ONE COOK PLACE
BRIDGMAN, MI 49106

[X] SIMULATION FACILITY PERFORMANCE TEST ABSTRACTS ATTACHED. *(For performance tests conducted in the period ending with the date of this certification)*

DESCRIPTION OF PERFORMANCE TESTING COMPLETED *(Attach additional page(s) as necessary, and identify the item description being continued)*

See attached Transient, Steady State, Malfunction and Operability tests.

[X] SIMULATION FACILITY PERFORMANCE TESTING SCHEDULE ATTACHED. *(For the conduct of approximately 25% of performance tests per year for the four year period commencing with the date of this certification.)*

DESCRIPTION OF PERFORMANCE TESTING TO BE CONDUCTED. *(Attach additional page(s) as necessary, and identify the item description being continued)*

See attached test schedule of Cook Plant Simulator Unit 2 certification package.

[ ] PERFORMANCE TESTING PLAN CHANGE. *(For any modification to a performance testing plan submitted on a previous certification)*

DESCRIPTION OF PERFORMANCE TESTING PLAN CHANGE *(Attach additional page(s) as necessary, and identify the item description being continued)*

Not Applicable. Initial submittal.

[ ] RECERTIFICATION *(Describe corrective actions taken, attach results of completed performance testing in accordance with 10 CFR § 55.45(b)(5)(iv). Attach additional page(s) as necessary, and identify the item description being continued.)*

Not Applicable. Initial submittal.

Any false statement or omission in this document, including attachments, may be subject to civil and criminal sanctions. I certify under penalty of perjury that the information in this document and attachments is true and correct.

SIGNATURE — AUTHORIZED REPRESENTATIVE	TITLE	DATE
M R Allen	Vice President	8/24/90

In accordance with 10 CFR § 55.5, Communications, this form shall be submitted to the NRC as follows:

BY MAIL ADDRESSED TO: Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555

BY DELIVERY IN PERSON TO THE NRC OFFICE AT: One White Flint North, 11555 Rockville Pike, Rockville, MD

COOK PLANT SIMULATOR

EXCEPTIONS TO ANS 3.5 AND/OR REG GUIDE 1.149

1. (ANS 3.5 - 3.2.1) Currently the reference plant process computer is not replicated on the simulator. The Unit 2 plant process computer is being replaced during the 1991 refueling outage. The replacement plant process computer hardware is on site and being integrated into the simulator at this time. Scheduled implementation is by the last quarter of 1991.

2. (ANS 3.5 - 3.2.3) The reference plant wireless telephone equipment is not currently replicated in the simulator. A facsimile of this equipment has been ordered and will be integrated into the simulator during the last quarter of 1990.

3. (ANS 3.5 - 3.2.1) The degree of panel simulation is slightly different between the simulator and Cook Nuclear Plant Unit 1. Both units of the Cook Plant are essentially the same with minor differences, mainly on the Unit 1 secondary systems and secondary system control room displays. These minor differences have been reviewed by a team of consultants experienced in human factors and found not to cause negative training errors. The simulator software for Unit 1 training has been modified to functionally replicate Cook Plant Unit 1 systems and operating conditions.

COOK PLANT SIMULATOR

COOK PLANT UNIT 1 REFERENCE PLANT INFORMATION

1) Plant

Owner: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Operator: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Plant : Type - 4 Loop Pressurized Water Reactor (PWR)

NSSS - Westinghouse Electric
Turbine - General Electric (GE)
MWTh - 3250
MWE - 1150

2) Simulator

Owner: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Operator: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Manufacturer: Singer Link Corporation
8895 McGaw Road
Columbia, MD 21045

3) Date Available For Training: May 16,. 1988

4) Type of Report: Initial

COOK PLANT SIMULATOR

GENERAL INFORMATION

The Cook Plant reference plant simulator functions to provide training for both Units of the Cook Plant. Unit 2 certification is provided in a separate report. The simulator is modelled to the Cook Plant Unit 2 and modified to support training on Cook Plant Unit 1.

NRC Regulatory Guide 1.149 states that a utility wishing to utilize a simulator for more than one nuclear power plant, it must demonstrate in it's certification that the differences between the plants are not so significant that they have an impact on the ability of the facility to meet the requirements of ANSI/ANS 3.5 - 1985.

The demonstration includes:

1) Facility design and systems relevant to control room personnel;

2) Technical Specifications;

3) Procedures, primarily abnormal and emergency operating procedures;

4) Control room design and instrumentation/control locations; and

5) Operational characteristics.

All differences between Cook Plant Unit 1 and the simulator, assuming that the simulator only replicated Cook Plant Unit 2, were identified and a human factor analysis was performed to determine if training operators that operate Cook Plant Unit 1 were likely to make an error that resulted in a critical safety function (CSF) being challenged. This analysis (see attached "Human Factor Study") indicated that an operator trained on the simulator was not likely to cause an error that would result in a critical safety function being challenged.

Differences are summarized in the Human Factor Study.

Both units of the Cook Plant use the same systems and system designations.

Technical specifications are virtually identical for both units, with the exception that setpoints vary for each unit.

Procedures and procedure numbering scheme is the same for both units. However, procedures referencing turbine control, feedwater and condensate and main generator systems differ due to physical differences in equipment.

However, to enhance and support Cook Plant Unit 1 simulator training, a Unit 1 "training load" has been developed to replicate Cook Plant Unit 1 as a reference plant.

Transient and steady state testing has been conducted on the Unit 1 "training load" to verify system stability and operating characteristics.

Training with the Unit 1 training load fully supports training and examinations with respect to Cook Plant Unit 1, with the exception that training will not be conducted on the main turbine, feedwater (including condensate) and main generator systems. This training will be conducted in the classroom as difference training.

Marked up procedures will be used as applicable to substitute appropriate controls that are different between the units.

The Unit 1 training load will be modified to maintain dynamic replication of Cook Plant Unit 1 as the reference plant, however, the hardware configuration will only replicate Cook Plant Unit 2.

The Unit 1 "training load" uses the same models as Unit 2 and replicates all operating conditions per Unit 2 certification package.

COOK PLANT SIMULATOR

SIMULATOR ENVIRONMENT

I. Degree of Panel Simulation (ANS 3.5 - 3.2.1)

This section of the standard requires that the simulator shall contain sufficient operational panels, controls, instrumentation, alarms and other man-machine interfaces to conduct normal plant evolutions and respond to malfunctions.

The simulator contains sufficient panels, controls, instrumentation and alarms to conduct reference plant control room training on the Cook Plant Simulator (see Human Factor Study).

All panels are duplicated in size, color, shape, configuration, arrangement, and functionality as the reference plant, with few exceptions.

Those exceptions are:

1) Instrument bezel color may not be the same, as there isn't any exact method in the reference plant to control bezel color.

2) The containment RCP camera controls are not simulated, however, half loop level indication is provided during reactor coolant system half loop operations (which is the main purpose of the containment camera).

3) Two recorders on the main generator panel have been substituted for the original recorders which are slightly different and do not detract from training.

4) Back panels without controls have been simulated for spacial relationships, however they do not contain wiring, relays,etc. Additionally, the following simulator back panels are an approximate mirror image to the reference plant control room back panels:

1)	CW	Circulating Water
2)	RMS	Radiation Monitoring System
3)	APDMS	Axial Power Difference Monitoring System
4)	MFX	Movable Incore Flux Cabinet
5)	FFC	Failed Fuel Cabinet
6)	RMS-CT	Radiation Monitoring System Control Terminal
7)	FI	Fixed Incore
8)	Auxiliary Relay Panels	

II. Controls on Panels (ANS 3.5 - 3.2.2)

This section states that controls, panels and consoles shall be designed to replicate the size, shape, color and configuration of the functionally simulated hardware of the reference plant.

Most reference plant information is displayed in the same form and units on the simulator.

Most controls are located in the same location of the panels.

Differences in the control room panel configuration are maintained per the reference plant by comparing photographs taken that are biennially to verify the simulator configuration control process.

III. Control Room Environment (ANS 3.5 - 3.2.3)

This section states that consideration shall be given to simulating the reference plant control room environment to a degree reasonably possible and practical.

The Cook Plant simulator replicates lighting (both normal and emergency), obstructions (desks, bookcases, etc.), floor covering, communication systems(with the exception of the two way radio) and ceiling height the same as the reference plant.

Plant and/or reference plant control room noise has been simulated as listed below:

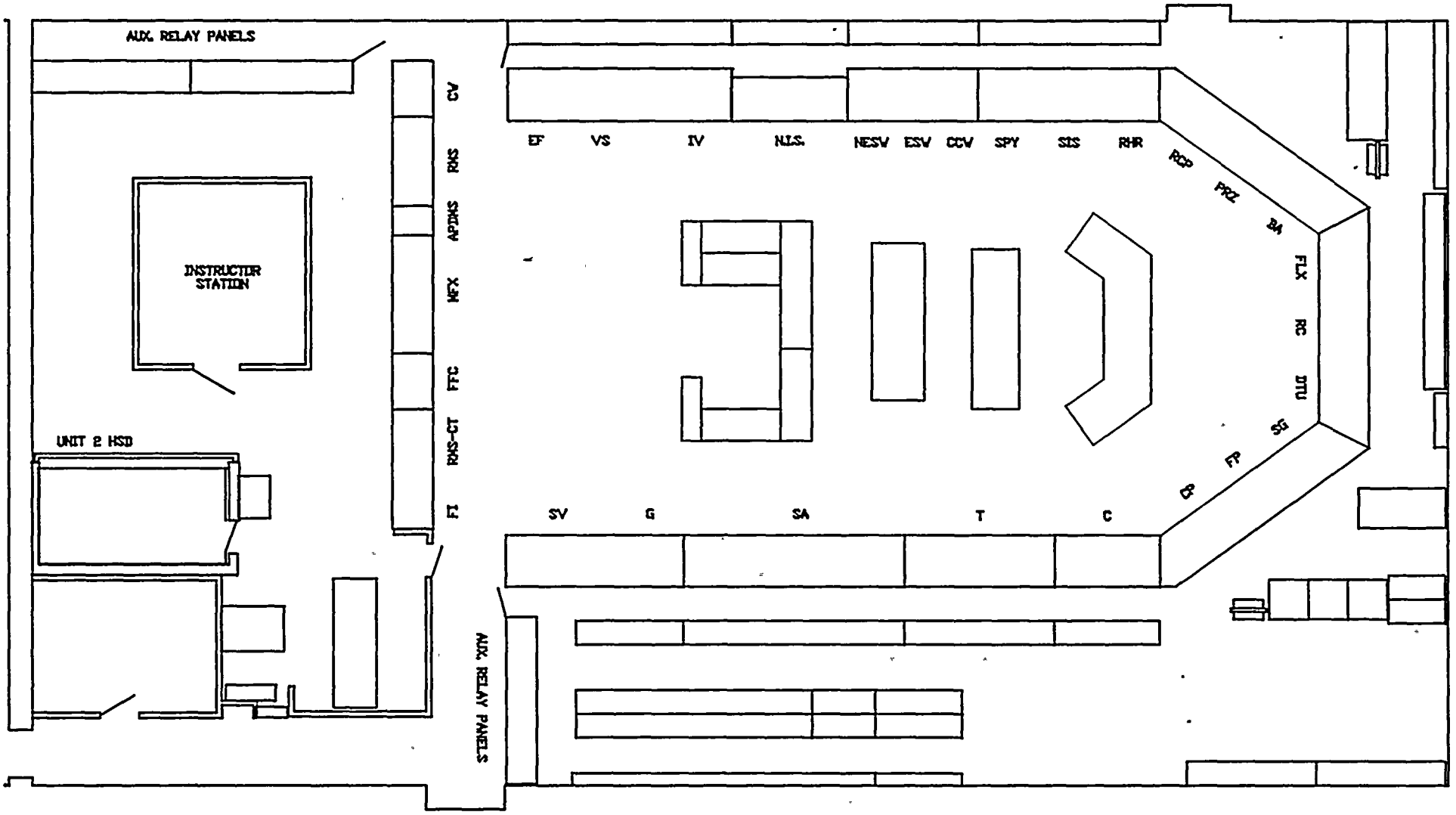
- Turbine room noise
- Pneumatic controllers
- Various relay noises
- Control room pressurization fan
- Some plant noises on the PA system

IV. Control Room Documentation (ANS 3.5 - A1.4)

All procedures, drawings and data used in the simulator control room are controlled in accordance with plant document control and do not deviate from the reference plant.

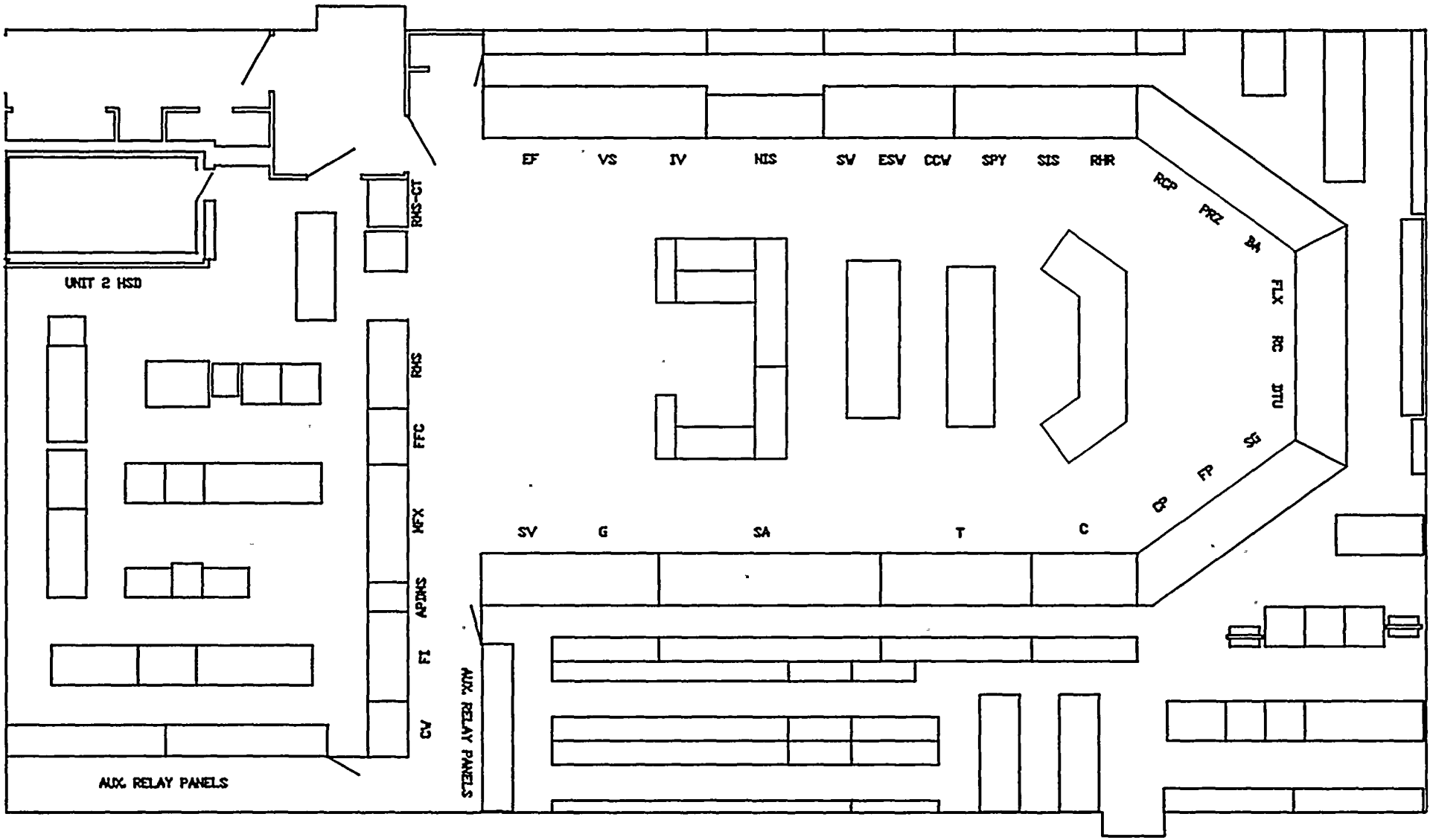
SIMULATOR CONTROL ROOM

SCALE: 1" = 9'0"



UNIT ONE CONTROL ROOM

SCALE: 1" = 9'0"



List of Panel Abbreviations for Control Room

SV	Plant Service
G	Generator
SA	Station Auxiliary
T	Turbine
C, CP.	Condensate
FP	Main Feedpump
SG	Steam Generator & Auxiliary Feedpump
DTU	Delta T & Unit
RC	Rod Control
FLX	Flux
BA	Boric Acid
PRZ	Pressurizer
RCP	Reactor Coolant Pump
RHR	Residual Heat Removal
SIS	Safety Injection System
SPY	Containment Spray
CCW	Component Cooling Water
ESW	Essential Service Water
NESW	Nonessential Service Water
N.I.S.	Nuclear Instrumentation System
IV	Isolation Valves
VS	Ventilation System
EF	Emergency Fire
CW	Circulating Water
RMS	Radiation Monitoring System
APDMS	Axial Power Difference Monitoring System
MFX	Movable Incore Cabinet
FFC	Failed Fuel & Communications
RMS-CT	Control Terminal for Rad. Monitoring System
FI	Fixed Incore
HSD	Hot Shutdown Panel

COOK PLANT SIMULATOR

SIMULATOR TESTS

I. Introduction (ANS 3.5 - A.3)

Appendix A.3 addresses simulator testing to demonstrate compliance with the documentation requirements of the standard by comparison of simulator performance with the data base where applicable.

II. Implementation

The following four areas of testing were performed to demonstate compliance with the standard:

1) Computer Real Time Test (Tab Computer) (ANS 3.5 - A3.1)

2) Normal Plant Evolutions (Tab 1) (ANS 3.5 - A3.2)

3) Simulator Transient Tests (ANS 3.5 - A3.3)

TAB

1 Reactor Vessel Head Void Formation
2 Anticipated Transient Without Scram
3 Steam Generator Tube Rupture
4 Unit Two Reactor Trip on November 13, 1985

SEE COOK PLANT SIMULATOR UNIT 2 CERTIFICATION PACKAGE

COOK PLANT SIMULATOR

NORMAL OPERATIONS TESTS

I. Introduction (ANS 3.5 - 3.1.1)

The Cook Plant Simulator is capable of simulating continuously, and in real time, plant operations of the reference plant. The simulator calculates plant system parameters corresponding to all selected plant operating plant conditions, displays those parameters on appropriate instrumentation and provides proper alarm and/or protective actions.

The simulator responds to operator action, improper operator action and no operator action in a realistic manner such that there is no observable difference between the reference plant control room indications and the simulator indications to the extent possible.

II. Implementation

The Cook Plant Simulator simulates plant operations from, and including, operations at Cold Shutdown at half loop (Mode 5) to full reactor power as specifically listed below:

1) Operations at Reactor Coolant System half loop (1-OHP-4021.017.001)

2) Filling and Venting the Reactor Coolant System (1-OHP-4021.002.001)

3) Plant Heatup From Cold Shutdown to Hot Standby (1-OHP-4021.001.001)

4) Reactor Startup (1-OHP-4021.001.002)

5) Power Escalation (1-OHP-4021-001.006)

6) Power Reduction (2.-OHP-4021.001.003)

7) Plant Cooldown From Hot Standby to Cold Shutdown (1-OHP-4021.001.004)

8) RCS Draining (1-OHP-4021.002.005)

9) Turbine Startup and Generator Synchronization (1-OHP-4021.050.001)

10) Load Changes (1-OHP-4021.001.003 OR 1-OHP-4021.001.006)

11) Reactor Trip Followed by Recovery to Rated Power (1-OHP-4021.001.002)

12) Power Operation at Less Than Full Reactor Coolant Flow (supported by the simulator, however, not allowed by Technical Specifications)

13) Core Performance Testing

A) Plant Thermal Power Calculation
B) Determination of Shutdown Margin (1-OHP-4021.001.012)
C) Determination of Critical Conditions (1-OHP-4021.001.011)
D) Low Power Physics Testing, including rod worth, temperature coefficient and flux distribution.

14) Operator Conducted Surveillance Testing

No effort has been made to single out operator conducted surveillance tests for certification. All surveillance tests that interface the operator and control room can be performed.

SEE COOK PLANT SIMULATOR UNIT 2 CERTIFICATION PACKAGE

SEE .COOK PLANT SIMULATOR UNIT 2 CERTIFICATION PACKAGE

COOK PLANT SIMULATOR

STEADY STATE OPERATION GENERAL INFORMATION

I. Steady State Operation (ANS 3.5 - 4.1)

To ensure compliance with the standard in regards to simulator steady state operation, the simulator has been operated at one hour intervals without operator action and compared to reference plant data for four different power levels (30%, 70%, 90% and 100%).

All simulator controls were aligned the same as the reference plant (all controls in AUTO).

Computed values were collected at one second intervals over a one hour period for each power level, graphed and compared to reference plant data, with the exception that non critical data points were not compared at power levels less than 100%.

Plant data was not available for Reactor Coolant System Hot Leg and Cold Leg temperature in the time frame during which the Steady State tests were performed for 30% and 90% power. These temperatures will be compared during performance of the next scheduled 30% and 90% Steady State tests.

All simulator instruments are calibrated on regular intervals and verified not to have errors greater than the reference plant. Instrument error was included in the allowable error range for each parameter.

Simulator discrepancy reports have been written for all data points designated by an '*'.

COOK PLANT SIMULATOR

25% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
CRITICAL PARAMETERS					
Nuclear Power	PR Avg.	Percent	25.25	25.19	0.2
Thermal Power	Calc.	Percent	N/A	25.36	ERR *
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	N/A	555.5	ERR *
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	N/A	539.4	ERR *
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	N/A	555.5	ERR *
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	N/A	539.5	ERR *
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	N/A	555.5	ERR *
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	N/A	539.5	ERR *
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	N/A	555.5	ERR *
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	N/A	539.4	ERR *
Loop 1 Tavg.	NTI-13	Deg. F	548	547.5	0.1
Loop 2 Tavg.	NTI-23	Deg. F	549	547.5	0.3
Loop 3 Tavg.	NTI-33	Deg. F	547	547.5	-0.1
Loop 4 Tavg.	NTI-43	Deg. F	548	547.5	0.1
Pressurizer Pressure	NPP Avg.	PSIG	2091.2	2089.9	0.1
Pressurizer Level	NLP Avg.	Percent	36.67	36.4	0.7
Press. Steam Temperature	NTA-252	Deg. F	635	642.6	-1.2
Press. Liquid Temp.	NTA-251	Deg. F	655	642.7	1.9
Press. Surge Line Temp.	NTA-253	Deg. F	655	636.8	2.8
Steam Generator #21 Level	BLP Avg.	Percent	50	44.1	11.8 *
Steam Generator #22 Level	BLP Avg.	Percent	46	44	4.3
Steam Generator #23 Level	BLP Avg.	Percent	43.7	44	-0.7
Steam Generator #24 Level	BLP Avg.	Percent	42.3	44.1	-4.3
Steam Generator #21 Press	MPP Avg.	PSIG	885	889.4	-0.5
Steam Generator #22 Press	MPP Avg.	PSIG	876.7	889.3	-1.4
Steam Generator #23 Press	MPP Avg.	PSIG	876.7	889.4	-1.4
Steam Generator #24 Press	MPP Avg.	PSIG	878.3	889.4	-1.3
Total Feedwater Flow		E6 lb/hr	3.63	3.17	12.7 *
Main Generator Elect Pwr		Megawatts	261	235	10 *

08/20/90 16:42:25 TASK # 1E000031 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.6028	DEGF
T1004	PZR LIQUID TEMP		642.7461	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		633.2400	DEG F
L1091	PRESSURIZER WATER LEVEL		36.4362	PC
RXLCOLDC	05350 PRZ COLD CALIS		.2794	%
P1036	PRESSURIZER PRESSURE		2090.2605	PSIG
T1101	LOOP 1 AVG TEMP		547.4924	DEGF
T1102	LOOP 2 AVG TEMP		547.5295	DEGF
T1103	LOOP 3 AVG TEMP		547.5315	DEGF
T1104	LOOP 4 AVG TEMP		547.4919	DEGF
T1111	LOOP 1 HOT LEG TEMP		555.5020	DEGF
T1112	LOOP 2 HOT LEG TEMP		555.5017	DEGF
T1113	LOOP 3 HOT LEG TEMP		555.5261	DEGF
T1114	LOOP 4 HOT LEG TEMP		555.5020	DEGF
T1115	LOOP 1 COLD LEG TEMP		539.4656	DEGF
T1116	LOOP 2 COLD LEG TEMP		539.5378	DEGF
T1117	LOOP 3 COLD LEG TEMP		539.5303	DEGF
T1118	LOOP 4 COLD LEG TEMP		539.4600	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.2521	%
CRQN	03030 NORMALIZED CORE^POWER		.2416	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		889.3542	PSIG
P1025	STM GEN OUTLET PRES LP 2		889.4216	PSIG
P1028	STM GEN OUTLET PRES LP 3		889.4297	PSIG
P1031	STM GEN OUTLET PRES LP 4		889.4358	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.1328	PC
L1207	STM GEN 2 NARROW LEVEL		43.8540	PC
L1210	STM GEN 3 NARROW LEVEL		43.9700	PC
L1213	STM GEN 4 NARROW LEVEL		43.9608	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	530.2825	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	531.2151	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	530.5437	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	530.8669	F
RCBORON	11070 BORON CONC	(001)	891.2908	PPM
RCBORON	11070 BORON CONC	(002)	891.2903	PPM
RCBORON	11070 BORON CONC	(003)	891.2917	PPM

ISD>

08/20/90 16:43:18 TASK # 1E000031 COOK1 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		85.3274	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		85.2827	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		85.2827	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		126.6747	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		126.6750	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		126.6750	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		170.0299	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		169.0861	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		211.5162	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		211.7435	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		229.7073	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		229.7708	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		253.5137	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		253.3823	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		302.1260	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		302.0742	F

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		184.1620	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		185.1012	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		184.5353	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		63.0718	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		138.7994	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		139.2645	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		182.9029	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		183.1327	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		211.2087	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		211.5932	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		211.1329	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		209.4228	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		267.9331	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		267.9392	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	168	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	168	

ISD>

08/20/90 16:58:14 TASK # 1E000031 COOK1 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.5901	DEGF
T1004	PZR LIQUID TEMP		642.7253	DEGF
RCTNTA253	83000 PRZ SURGE LINE.TEMP		637.7351	DEG F
L1091	PRESSURIZER WATER LEVEL		36.3920	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2792	%
P1036	PRESSURIZER PRESSURE		2089.8879	PSIG
T1101	LOOP 1 AVG TEMP		547.4827	DEGF
T1102	LOOP 2 AVG TEMP		547.5186	DEGF
T1103	LOOP 3 AVG TEMP		547.5225	DEGF
T1104	LOOP 4 AVG TEMP		547.4817	DEGF
T1111	LOOP 1 HOT LEG TEMP		555.4934	DEGF
T1112	LOOP 2 HOT LEG TEMP		555.4934	DEGF
T1113	LOOP 3 HOT LEG TEMP		555.5154	DEGF
T1114	LOOP 4 HOT LEG TEMP		555.4937	DEGF
T1115	LOOP 1 COLD LEG TEMP		539.4558	DEGF
T1116	LOOP 2 COLD LEG TEMP		539.5286	DEGF
T1117	LOOP 3 COLD LEG TEMP		539.5198	DEGF
T1118	LOOP 4 COLD LEG TEMP		539.4553	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.2520	%
CRQN	03030 NORMALIZED CORE^POWER		.2416	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		889.3745	PSIG
P1025	STM GEN OUTLET PRES LP 2		889.3542	PSIG
P1028	STM GEN OUTLET PRES LP 3		889.3987	PSIG
P1031	STM GEN OUTLET PRES LP 4		889.3823	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.1036	PC
L1207	STM GEN 2 NARROW LEVEL		44.0147	PC
L1210	STM GEN 3 NARROW LEVEL		44.1309	PC
L1213	STM GEN 4 NARROW LEVEL		44.0486	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	531.2314	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	530.1389	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	529.5149	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	531.3250	F
RCBORON	11070 BORON CONC	(001)	891.2925	PPM
RCBORON	11070 BORON CONC	(002)	891.2932	PPM
RCBORON	11070 BORON CONC	(003)	891.2922	PPM

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		85.3008	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		85.3005	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP		85.3090	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		126.6769	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		126.6645	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		126.6645	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		169.5058	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		170.0241	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		210.7229	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		211.6181	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		229.5871	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		229.6281	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		253.4985	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		253.6168	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		302.0974	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		302.1313	F

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		184.2359	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		185.1765	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		184.6178	F
CWTAVGIN	03050	COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		63.0718	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		139.0716	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		139.3142	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		182.9485	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		183.0293	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		210.9230	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		211.8141	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		208.1710	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		209.4685	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		267.8801	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		267.9382	F
RDPROD	03030	ROD POSITION/ACTUAL	(045)	168	
RDPROD	03030	ROD POSITION/ACTUAL	(053)	168	

ISD>

08/20/90 17:12:46 TASK # 1E000031 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.5588	DEGF
T1004	PZR LIQUID TEMP		642.7009	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		638.8423	DEG F
L1091	PRESSURIZER WATER LEVEL		36.3947	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2792	%
P1036	PRESSURIZER PRESSURE		2089.5442	PSIG
T1101	LOOP 1 AVG TEMP		547.4795	DEGF
T1102	LOOP 2 AVG TEMP		547.5134	DEGF
T1103	LOOP 3 AVG TEMP		547.5181	DEGF
T1104	LOOP 4 AVG TEMP		547.4763	DEGF
T1111	LOOP 1 HOT LEG TEMP		555.4902	DEGF
T1112	LOOP 2 HOT LEG TEMP		555.4902	DEGF
T1113	LOOP 3 HOT LEG TEMP		555.5217	DEGF
T1114	LOOP 4 HOT LEG TEMP		555.4902	DEGF
T1115	LOOP 1 COLD LEG TEMP		539.4529	DEGF
T1116	LOOP 2 COLD LEG TEMP		539.5220	DEGF
T1117	LOOP 3 COLD LEG TEMP		539.5154	DEGF
T1118	LOOP 4 COLD LEG TEMP		539.4478	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.2512	%
CRQN	03030 NORMALIZED CORE^POWER		.2416	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		889.2822	PSIG
P1025	STM GEN OUTLET PRES LP 2		889.2500	PSIG
P1028	STM GEN OUTLET PRES LP 3		889.3389	PSIG
P1031	STM GEN OUTLET PRES LP 4		889.3430	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.1104	PC
L1207	STM GEN 2 NARROW LEVEL		44.0233	PC
L1210	STM GEN 3 NARROW LEVEL		43.8811	PC
L1213	STM GEN 4 NARROW LEVEL		44.0678	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	530.6855	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	529.2056	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	531.2700	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	529.6392	F
RCBORON	11070 BORON CONC	(001)	891.2922	PPM
RCBORON	11070 BORON CONC	(002)	891.2927	PPM
RCBORON	11070 BORON CONC	(003)	891.2913	PPM

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08/20/90 17:13:45 TASK # 1E000031 COOK1 GOULD C.S.O. MPX-32

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		85.2653	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		85.2652	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP		85.2652	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		126.6471	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		126.6755	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		126.6755	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		168.9858	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		169.0440	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		210.6704	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		210.7804	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		229.6334	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		229.6906	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		253.6297	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		253.4833	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		302.1838	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		302.1238	F

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		184.2476	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		185.2122	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		184.6464	F
CWTAVGIN	03050	COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		63.0718	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		139.6101	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		139.3347	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		183.2018	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		183.1712	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		212.0686	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		211.0346	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		208.7761	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		209.8741	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		267.8262	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		267.8491	F
RDPROD	03030	ROD POSITION,ACTUAL	(045)	168	
RDPROD	03030	ROD POSITION,ACTUAL	(053)	168	

ISD>

08/20/90 17:28:34 TASK # 1E000031 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.5583	DEGF
T1004	PZR LIQUID TEMP		642.6746	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		639.3560	DEG F
L1091	PRESSURIZER WATER LEVEL		36.4317	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2794	%
P1036	PRESSURIZER PRESSURE		2089.1672	PSIG
T1101	LOOP 1 AVG TEMP		547.4792	DEGF
T1102	LOOP 2 AVG TEMP		547.5154	DEGF
T1103	LOOP 3 AVG TEMP		547.5193	DEGF
T1104	LOOP 4 AVG TEMP		547.4775	DEGF
T1111	LOOP 1 HOT LEG TEMP		555.4927	DEGF
T1112	LOOP 2 HOT LEG TEMP		555.4927	DEGF
T1113	LOOP 3 HOT LEG TEMP		555.5193	DEGF
T1114	LOOP 4 HOT LEG TEMP		555.4927	DEGF
T1115	LOOP 1 COLD LEG TEMP		539.4595	DEGF
T1116	LOOP 2 COLD LEG TEMP		539.5293	DEGF
T1117	LOOP 3 COLD LEG TEMP		539.5142	DEGF
T1118	LOOP 4 COLD LEG TEMP		539.4497	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.2512	%
CRQN	03030 NORMALIZED CORE^POWER		.2416	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		889.3252	PSIG
P1025	STM GEN OUTLET PRES LP 2		889.2822	PSIG
P1028	STM GEN OUTLET PRES LP 3		889.3826	PSIG
P1031	STM GEN OUTLET PRES LP 4		889.3711	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.1947	PC
L1207	STM GEN 2 NARROW LEVEL		44.0724	PC
L1210	STM GEN 3 NARROW LEVEL		43.8536	PC
L1213	STM GEN 4 NARROW LEVEL		44.0131	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	531.0212	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	531.2910	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	530.9690	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	530.5564	F
RCBORON	11070 BORON CONC	(001)	891.2861	PPM
RCBORON	11070 BORON CONC	(002)	891.2861	PPM
RCBORON	11070 BORON CONC	(003)	891.2854	PPM

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08/20/90 17:29:28 TASK # 1E000031 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		85.3022	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		85.3017	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		85.3017	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		126.7179	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		126.6861	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		126.6861	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		170.0095	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		169.8007	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		210.0682	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		211.4026	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		229.4767	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		229.6601	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		253.4498	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		253.4521	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		301.9966	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		302.0239	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		184.2541	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		185.0895	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		184.5219	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		63.0718	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		138.4189	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		139.2527	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		182.4812	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		182.7709	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		212.2937	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		212.0888	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		209.6527	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		209.0729	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		267.8098	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		267.8904	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	168	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	168	

ISD>

08/20/90 17:43:07 · TASK # 1E000031 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.5186	DEGF
T1004	PZR LIQUID TEMP		642.6572	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		634.8972	DEG F
L1091	PRESSURIZER WATER LEVEL		36.4942	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2797	%
P1036	PRESSURIZER PRESSURE		2088.9187	PSIG
T1101	LOOP 1 AVG TEMP		547.4817	DEGF
T1102	LOOP 2 AVG TEMP		547.5171	DEGF
T1103	LOOP 3 AVG TEMP		547.5225	DEGF
T1104	LOOP 4 AVG TEMP		547.4788	DEGF
T1111	LOOP 1 HOT LEG TEMP		555.4963	DEGF
T1112	LOOP 2 HOT LEG TEMP		555.4966	DEGF
T1113	LOOP 3 HOT LEG TEMP		555.5186	DEGF
T1114	LOOP 4 HOT LEG TEMP		555.4966	DEGF
T1115	LOOP 1 COLD LEG TEMP		539.4565	DEGF
T1116	LOOP 2 COLD LEG TEMP		539.5308	DEGF
T1117	LOOP 3 COLD LEG TEMP		539.5266	DEGF
T1118	LOOP 4 COLD LEG TEMP		539.4543	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.2532	%
CRQN	03030 NORMALIZED CORE^POWER		.2417	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		889.3525	PSIG
P1025	STM GEN OUTLET PRES LP 2		889.3489	PSIG
P1028	STM GEN OUTLET PRES LP 3		889.4585	PSIG
P1031	STM GEN OUTLET PRES LP 4		889.4265	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.8435	PC
L1207	STM GEN 2 NARROW LEVEL		44.0969	PC
L1210	STM GEN 3 NARROW LEVEL		43.8911	PC
L1213	STM GEN 4 NARROW LEVEL		44.1592	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	529.6365	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	532.0972	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	530.2214	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	531.1721	F
RCBORON	11070 BORON CONC	(001)	891.2751	PPM
RCBORON	11070 BORON CONC	(002)	891.2739	PPM
RCBORON	11070 BORON CONC	(003)	891.2739	PPM

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		85.3891	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		85.3210	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP		85.3210	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		126.7504	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		126.7349	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		126.7349	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		169.0667	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		169.1180	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		210.1923	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		211.1564	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		229.5730	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		229.4779	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		253.5556	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		253.4356	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		302.0132	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		301.9688	F

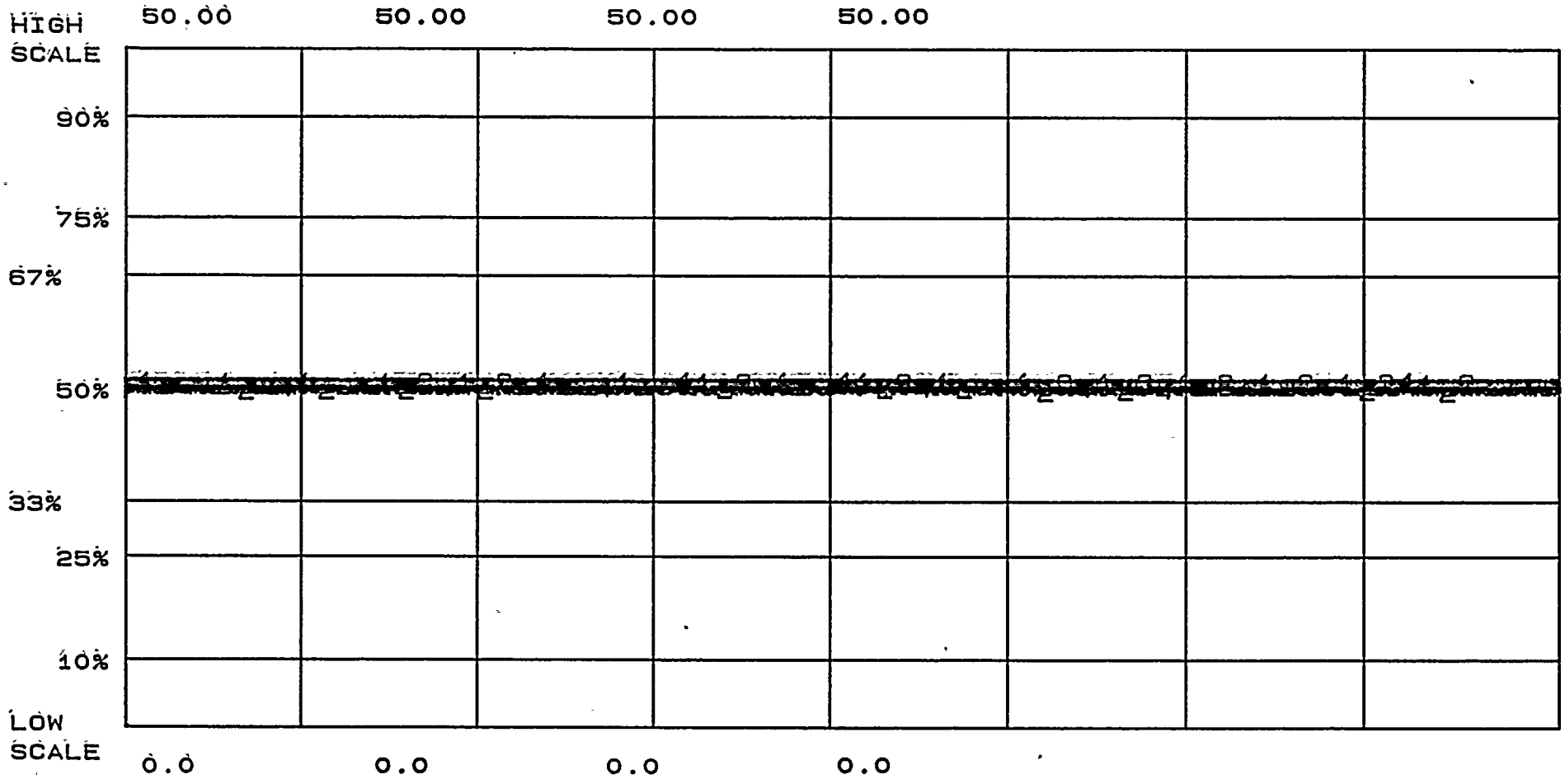
ISD>

DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		184.2957	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		185.2346	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		184.6692	F
CWTAVGIN	03050	COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		63.0718	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		139.1453	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		139.1982	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		182.9859	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		182.7295	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		211.4336	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		212.1950	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		209.5018	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		208.7986	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		267.7266	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		267.6406	F
RDPROD	03030	ROD POSITION,ACTUAL	(045)	168	
RDPROD	03030	ROD POSITION,ACTUAL	(053)	168	

ISD>

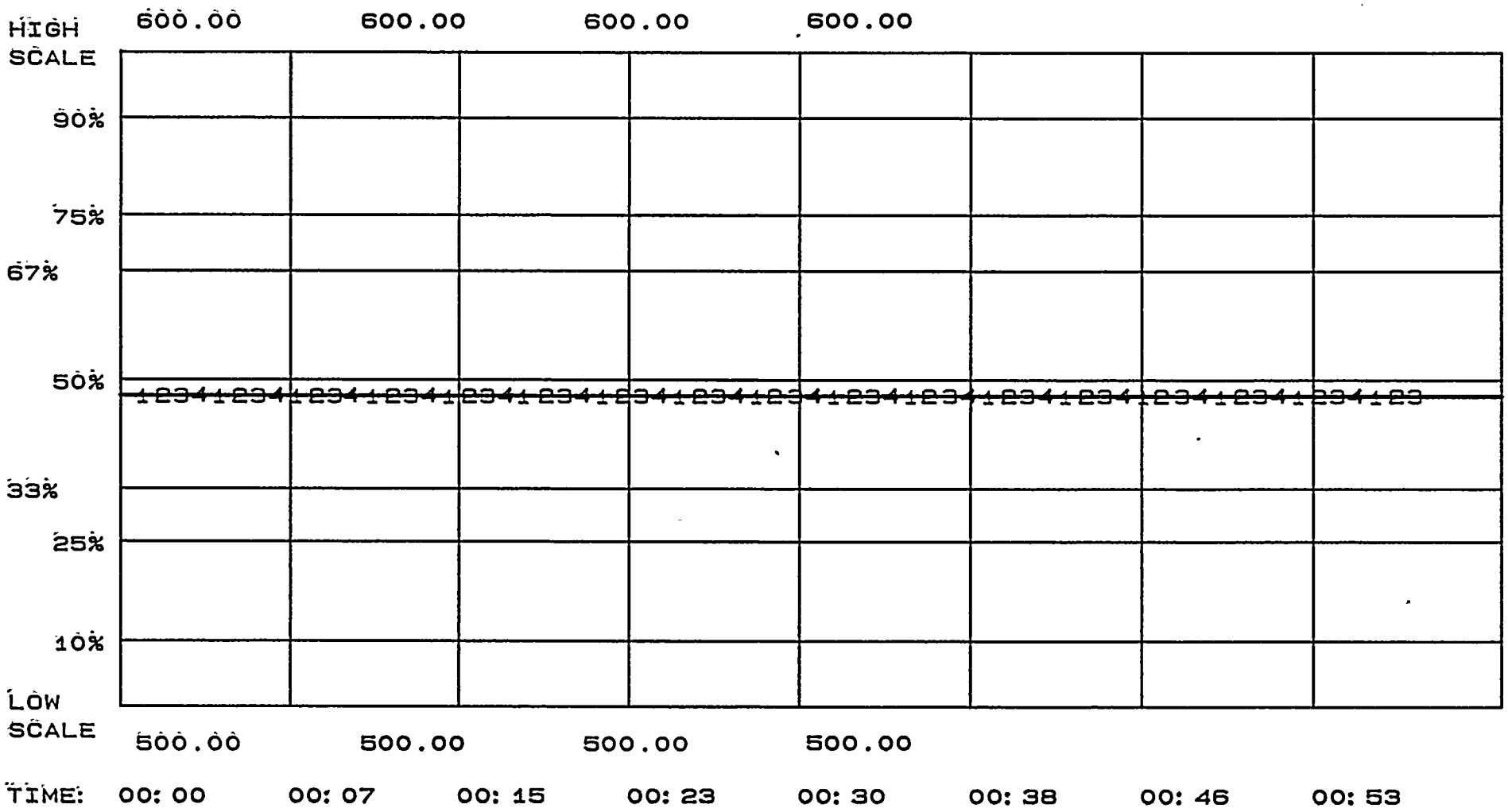
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N-41	PC	TIME
2	N1013	POWER RANGE N-42	PC	START 00: 00: 00
3	N1014	POWER RANGE N-43	PC	STOP 01: 02: 27
4	N1015	POWER RANGE N-44	PC	
5				
6				



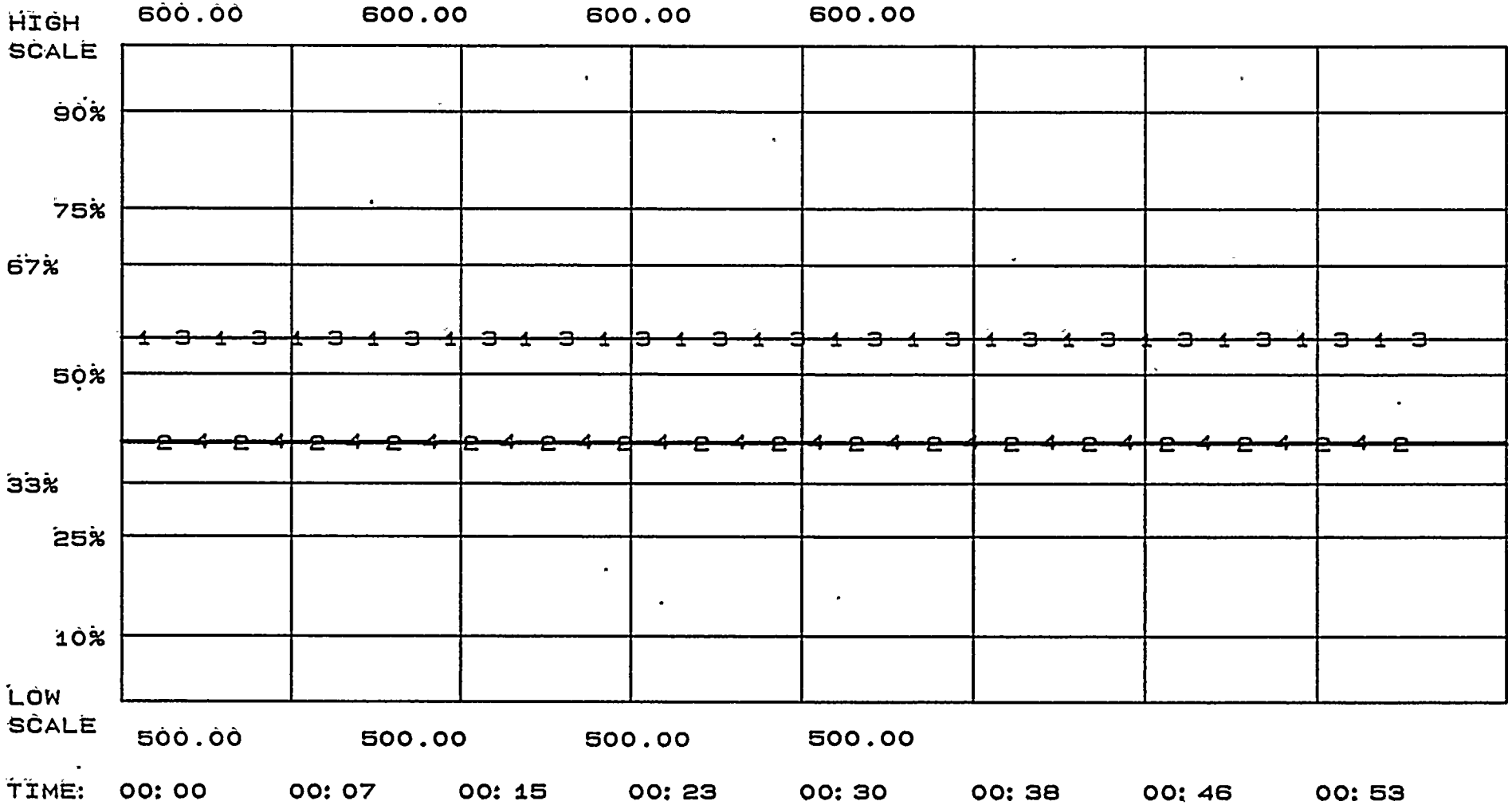
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVERAGE TEMP.	DEG_F	TIME
2	T1102	LOOP 2 AVERAGE TEMP.	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVERAGE TEMP.	DEG_F	STOP 01: 02: 27
4	T1104	LOOP 4 AVERAGE TEMP.	DEG_F	
5				
6				



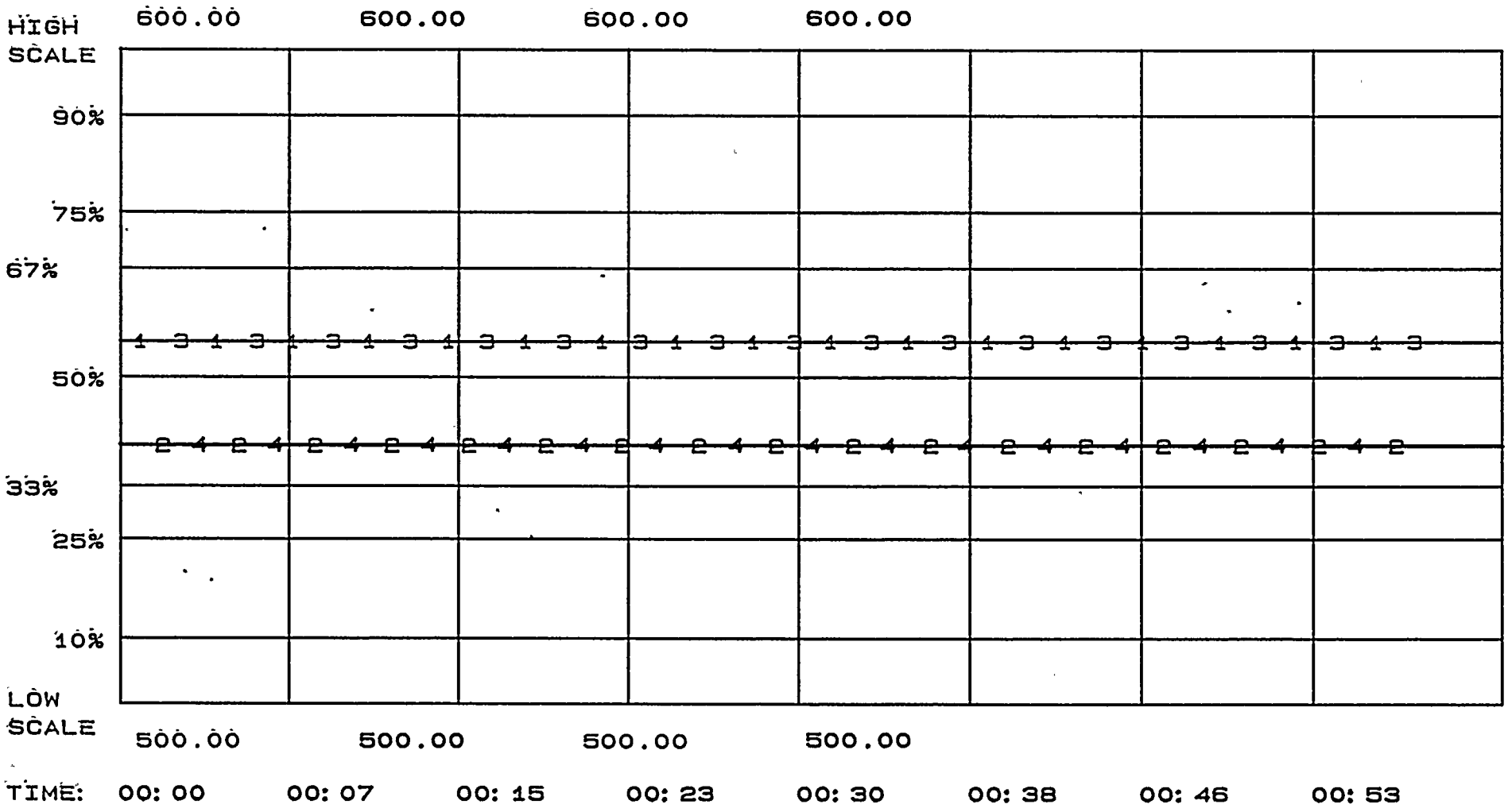
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1115	LOOP 1 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1112	LOOP 2 HOT LEG TEMP	DEG_F	STOP 01: 02: 27
4	T1116	LOOP 2 COLD LEG TEMP	DEG_F	
5				
6				



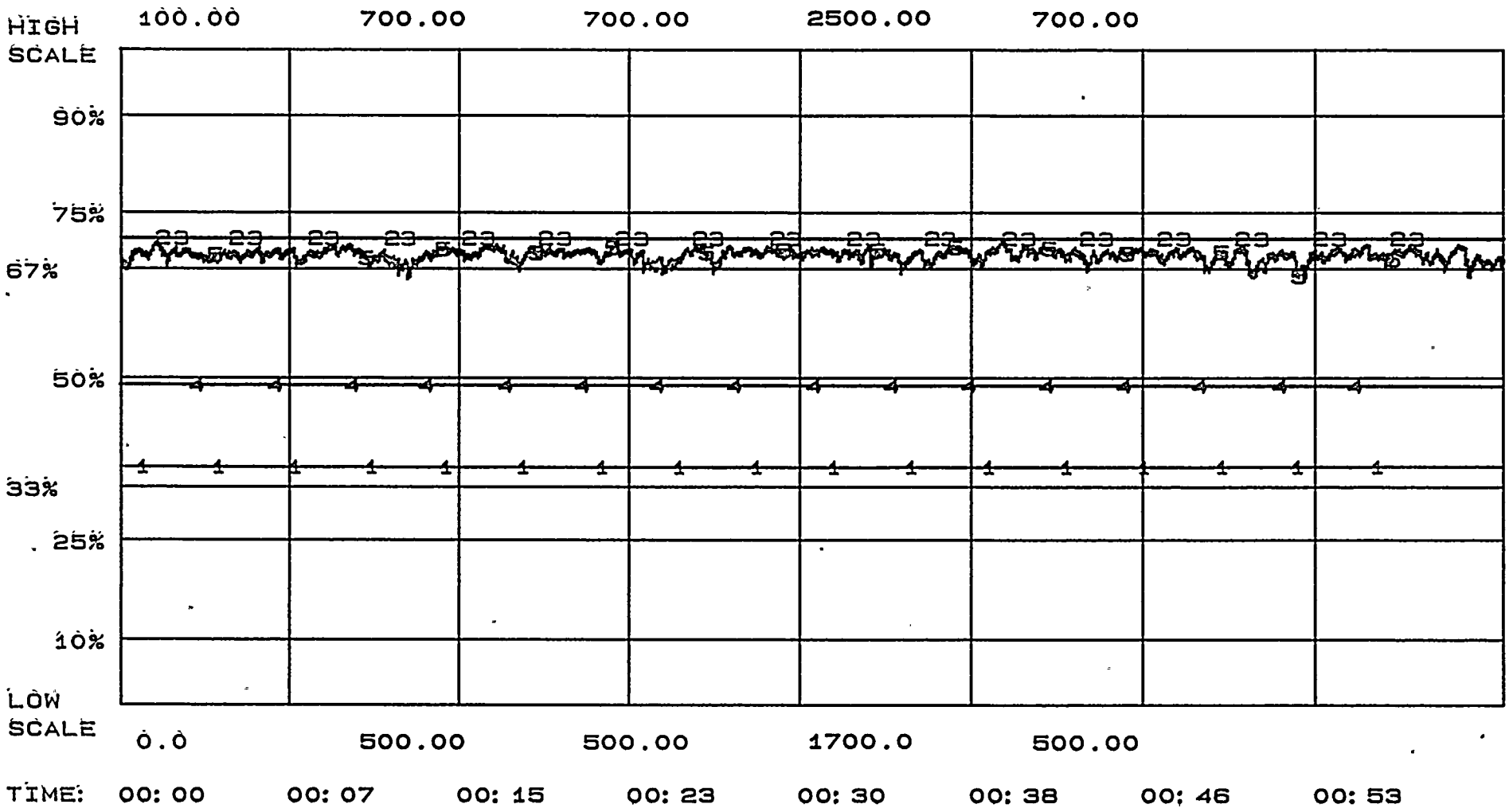
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	LOOP 3 HOT LEG TEMP.	DEG_F	TIME
2	T1117	LOOP 3 COLD LEG TEMP.	DEG_F	START 00: 00: 00
3	T1114	LOOP 4 COLD LEG TEMP.	DEG_F	STOP 01: 02: 27
4	T1118	LOOP 4 HOT LEG TEMP.	DEG_F	
5				
6				



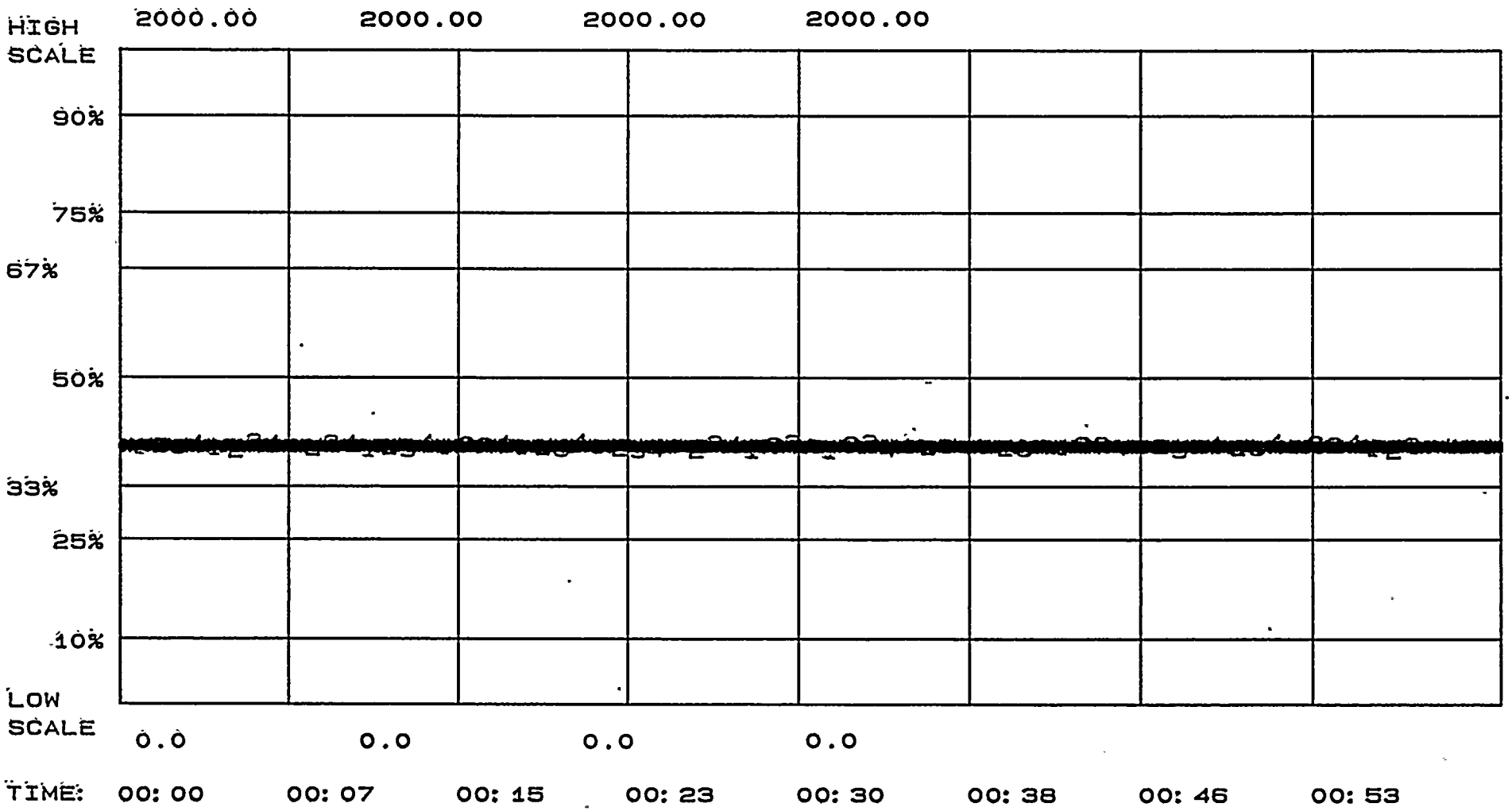
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	START 00: 00: 00
3	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	STOP 01: 02: 27
4	P1036	PRESSURIZER PRESSURE	PSIG	
5	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	
6				



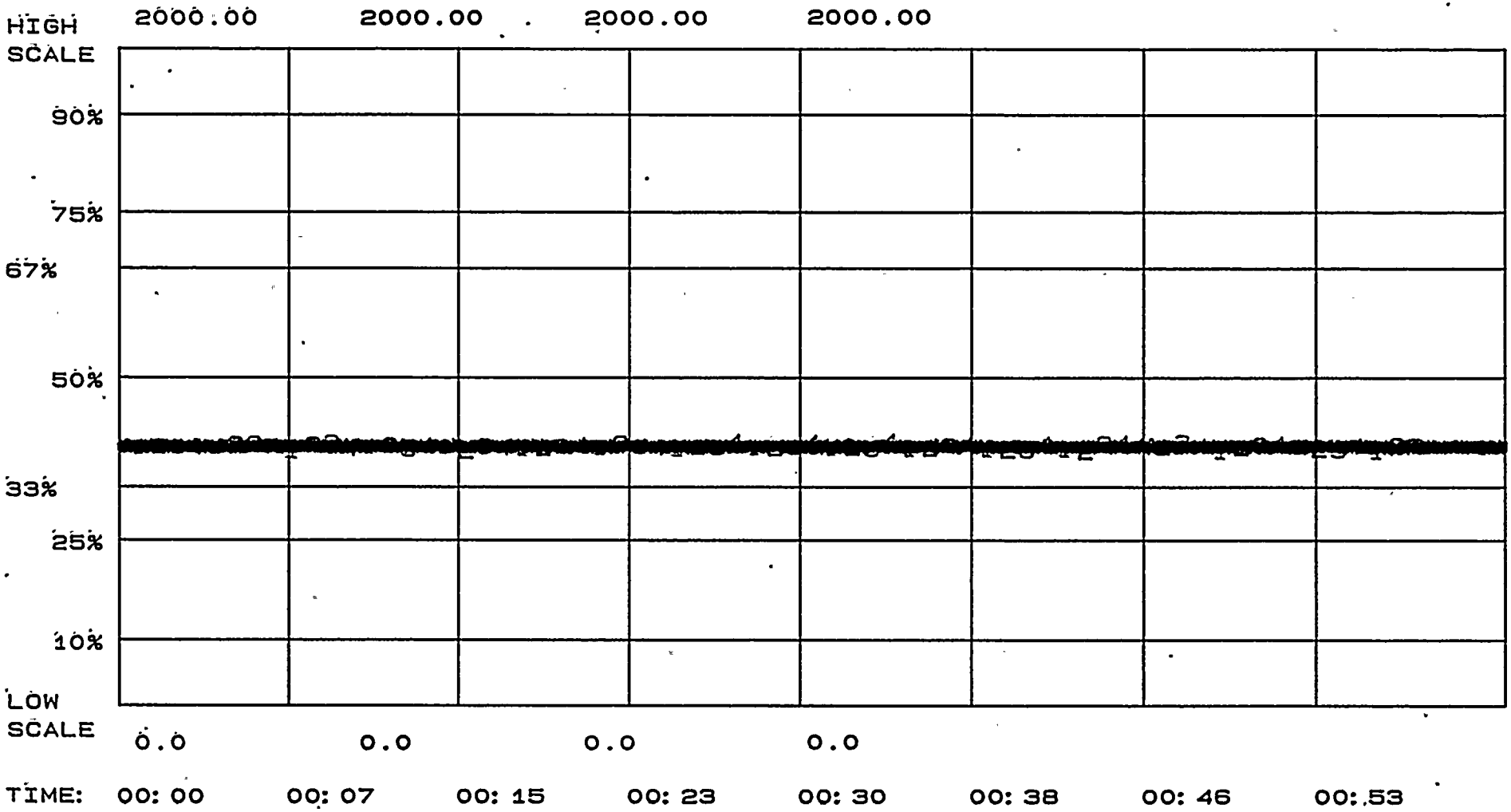
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	LOOP 1 STEAM FLOW	KBH	TIME
2	F1050	LOOP 2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	LOOP 3 STEAM FLOW	KBH	STOP 01: 02: 27
4	F1054	LOOP 4 STEAM FLOW	KBH	
5				
6				



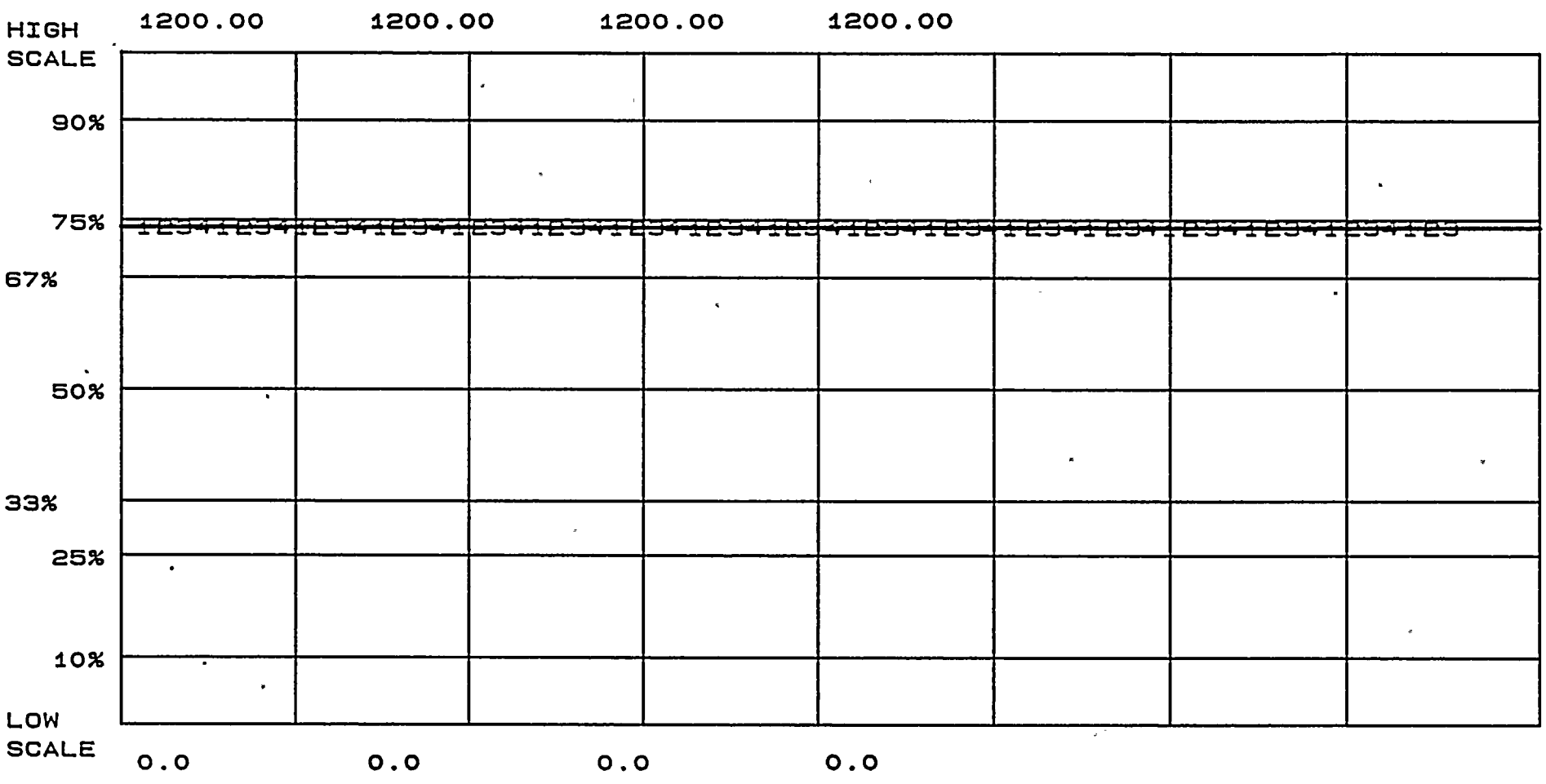
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	LOOP 1 FEEDWATER FLOW	KBH	TIME
2	F1201	LOOP 2 FEEDWATER FLOW	KBH	START 00: 00: 00
3	F1202	LOOP 3 FEEDWATER FLOW	KBH	STOP 01: 02: 27
4	F1203	LOOP 4 FEEDWATER FLOW	KBH	
5				
6				



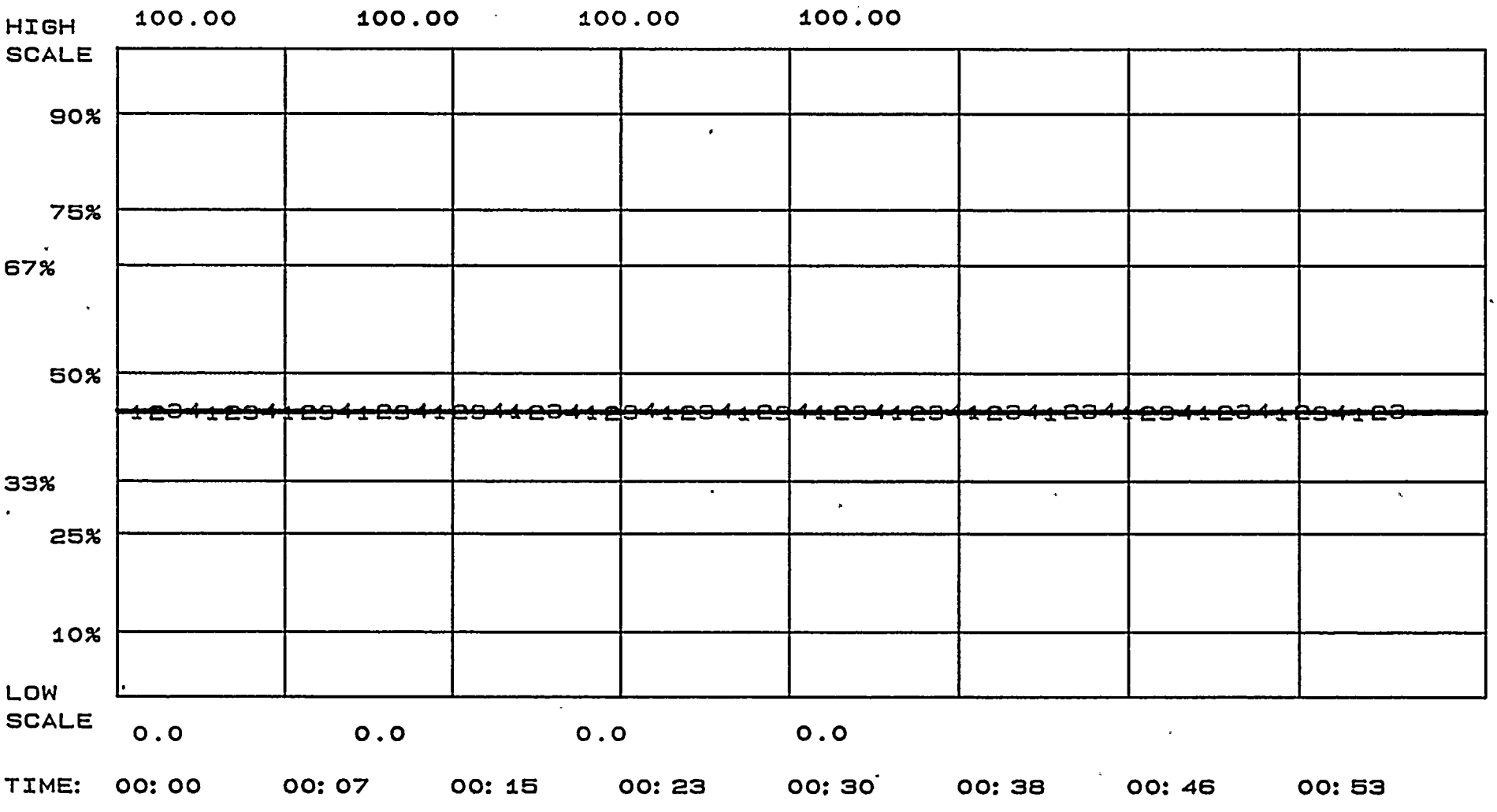
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 01: 02: 27
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



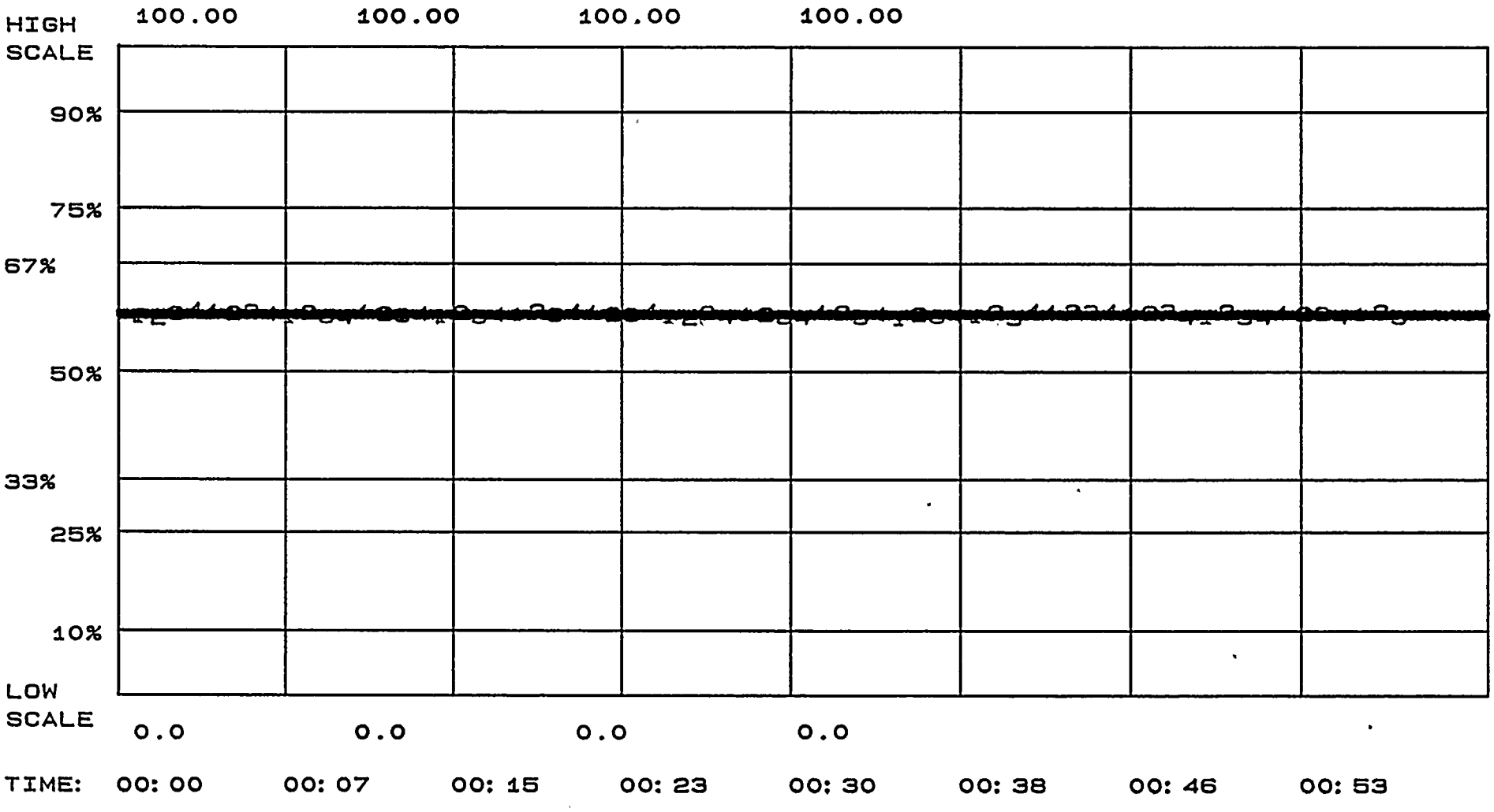
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GEN #1 NARROW RANGE LEVEL	PC	TIME
2	L1207	STEAM GEN #2 NARROW RANGE LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GEN #3 NARROW RANGE LEVEL	PC	STOP 01: 02: 27
4	L1213	STEAM GEN #4 NARROW RANGE LEVEL	PC	
5				
6				



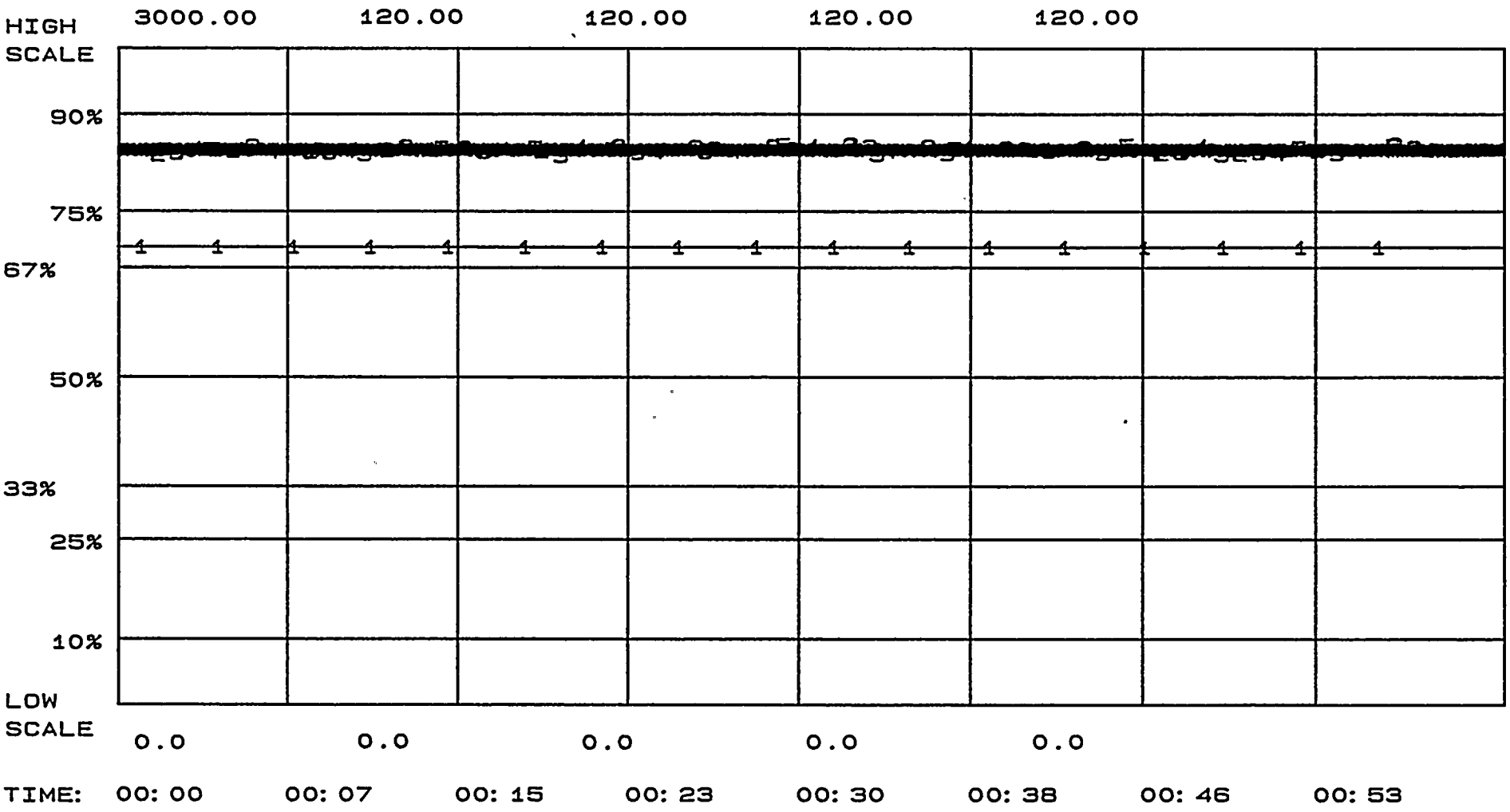
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN #1 WIDE RANGE LEVEL	PC	TIME
2	L1201	STEAM GEN #2 WIDE RANGE LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GEN #3 WIDE RANGE LEVEL	PC	STOP 01: 02: 27
4	L1203	STEAM GEN #4 WIDE RANGE LEVEL	PC	
5				
6				



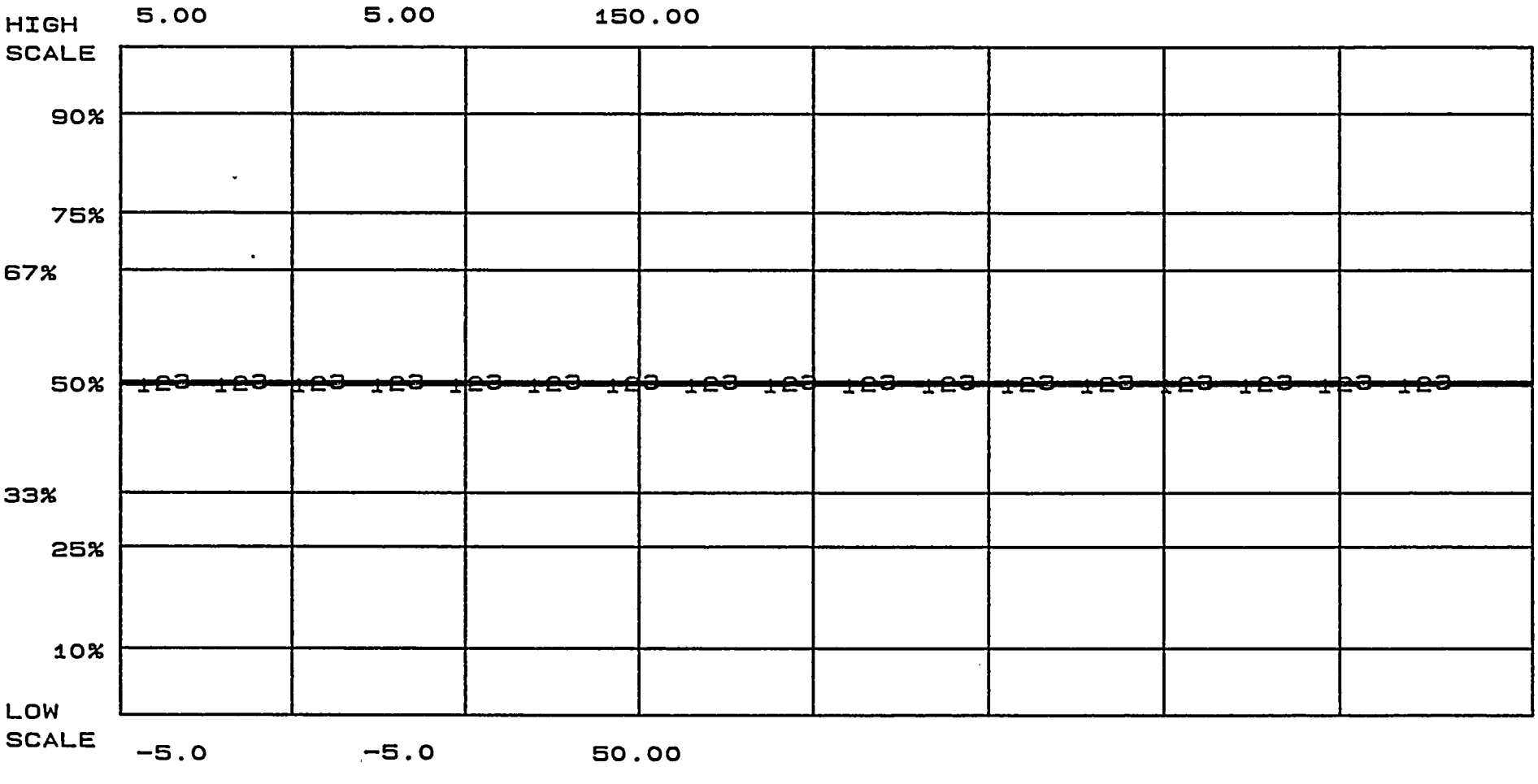
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WIDE RANGE RCS PRESSURE	PSIG	TIME
2	F1089	RCS FLOW LOOP 1	PC	START 00: 00: 00
3	F1092	RCS FLOW LOOP 2	PC	STOP 01: 02: 27
4	F1095	RCS FLOW LOOP 3	PC	
5	F1098	RCS FLOW LOOP 4	PC	
6				



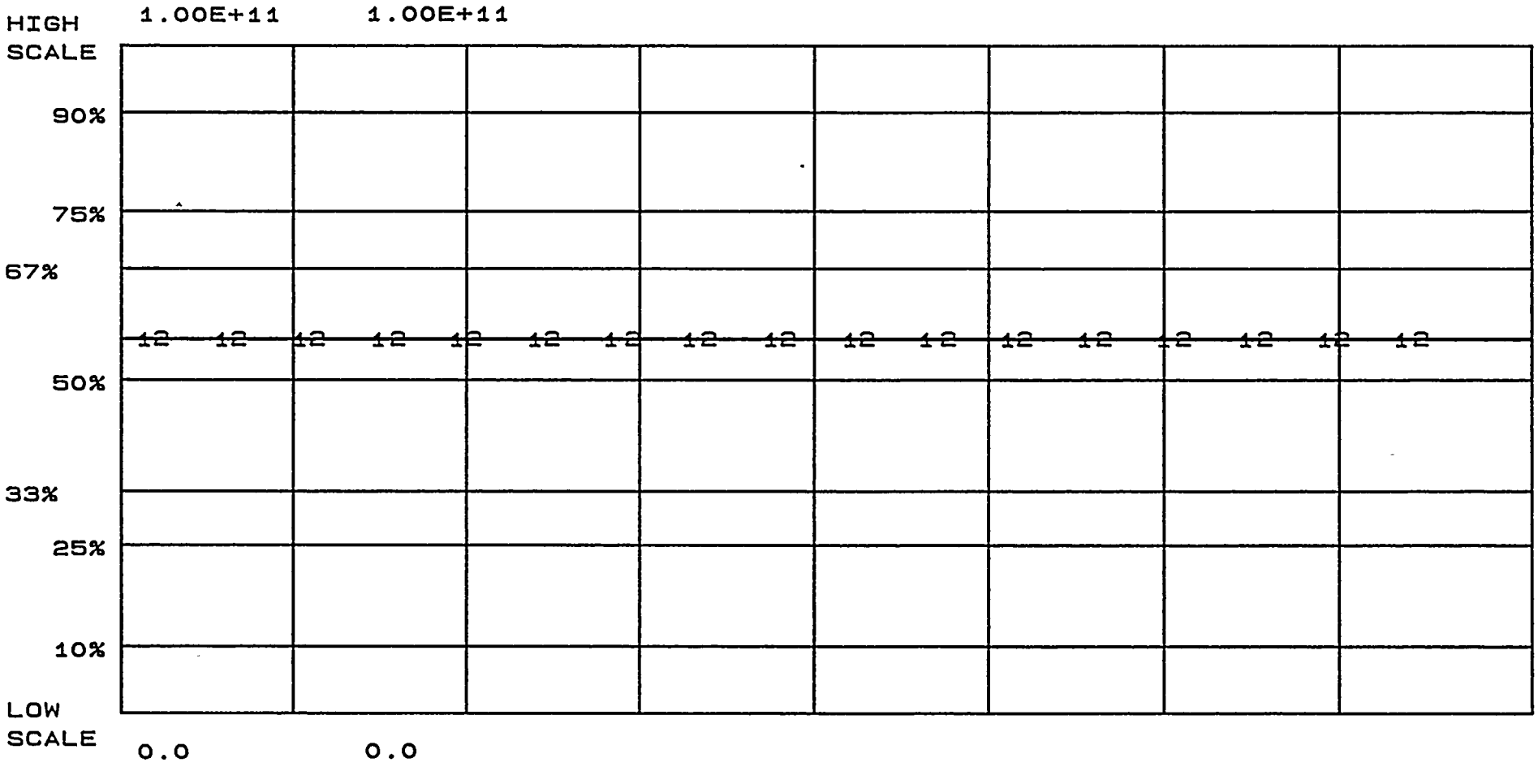
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 00
3	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	STOP 01: 02: 27
4				
5				
6				



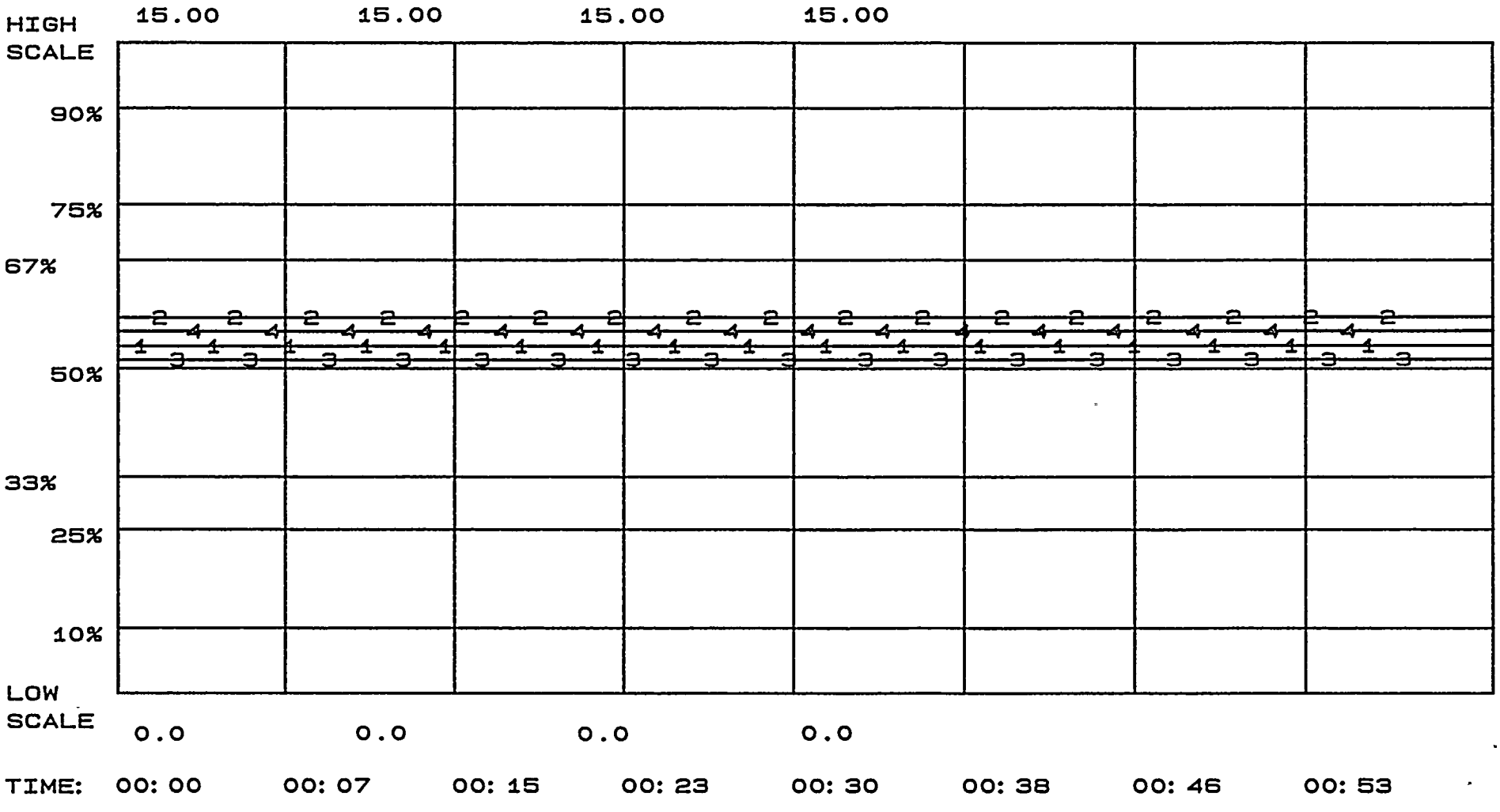
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU(1)	SOURCE RANGE N-31	CPS	TIME
2	NILDTOU(2)	SOURCE RANGE N-32	CPS	START 00:00:00
3				STOP 01:02:27
4				
5				
6				



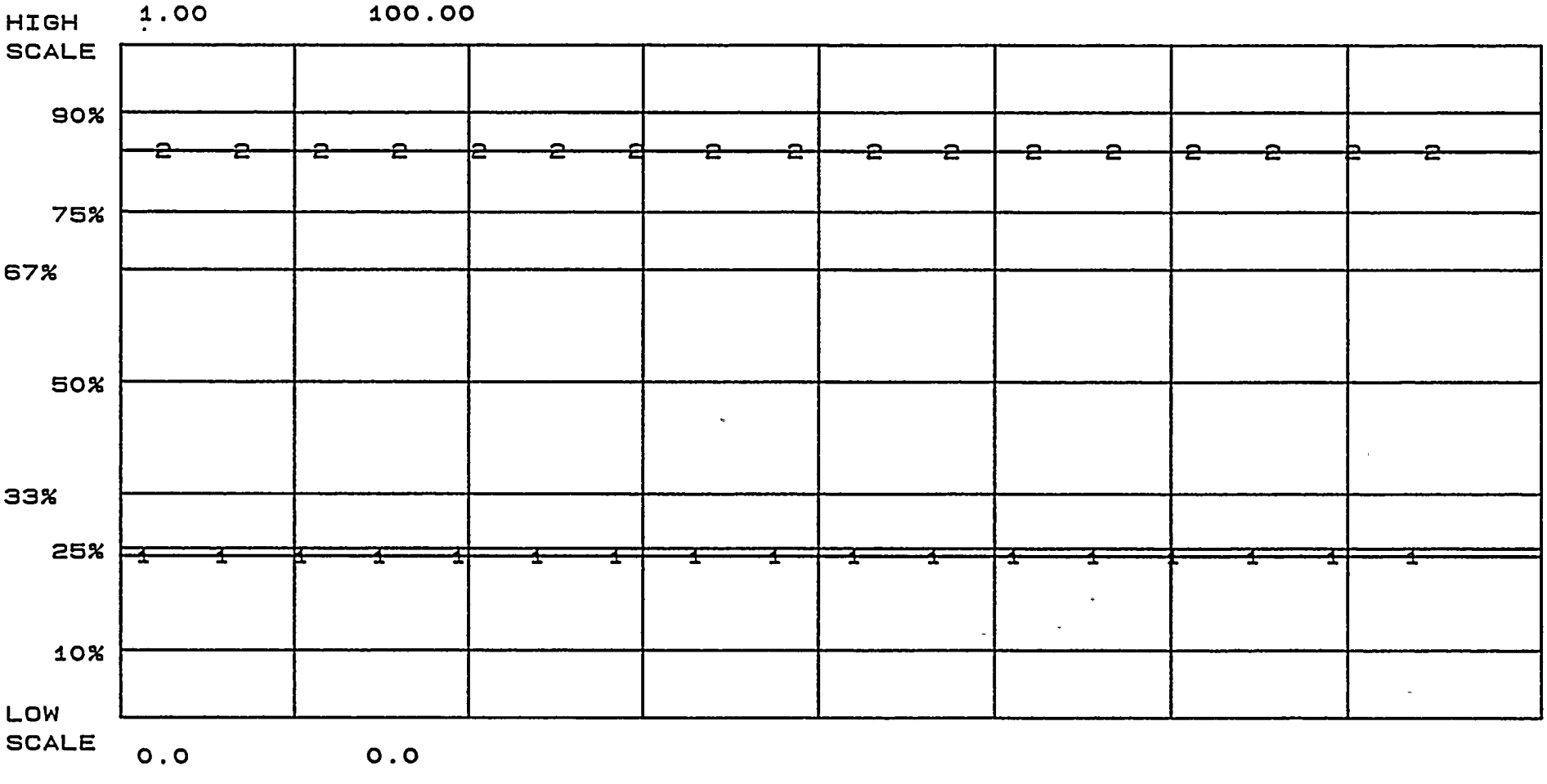
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	LOOP 1 RCP SEAL FLOW	GPM	TIME
2	F1001	LOOP 2 RCP SEAL FLOW	GPM	START 00: 00: 00
3	F1002	LOOP 3 RCP SEAL FLOW	GPM	STOP 01: 02: 27
4	F1003	LOOP 4 RCP SEAL FLOW	GPM	
5				
6				



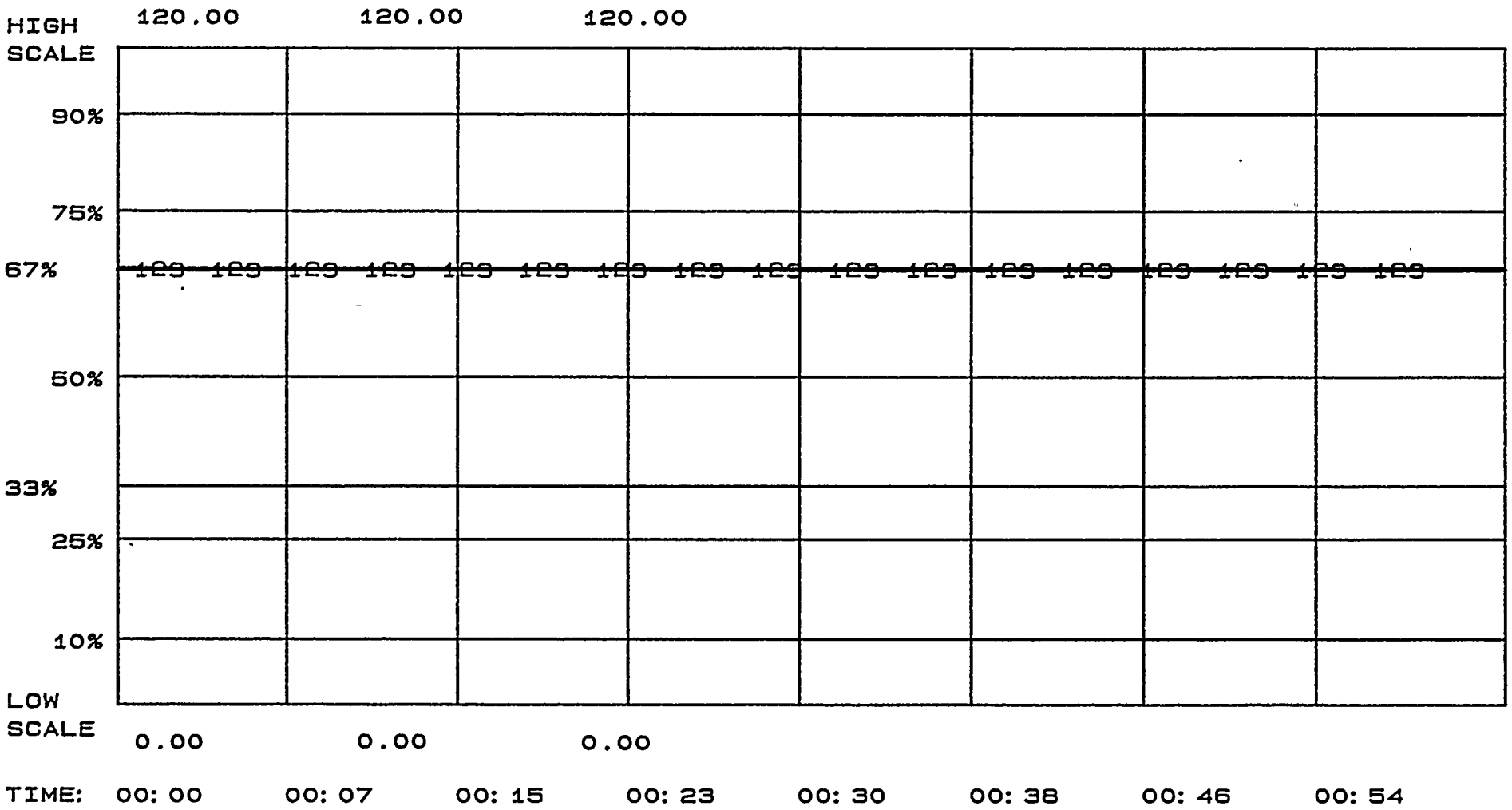
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CRQN	CORE HEAT FLUX	PC	TIME
2	RXTSC	SATURATION MARGIN	DEG_F	START 00: 00: 00
3				STOP 01: 02: 27
4				
5				
6				



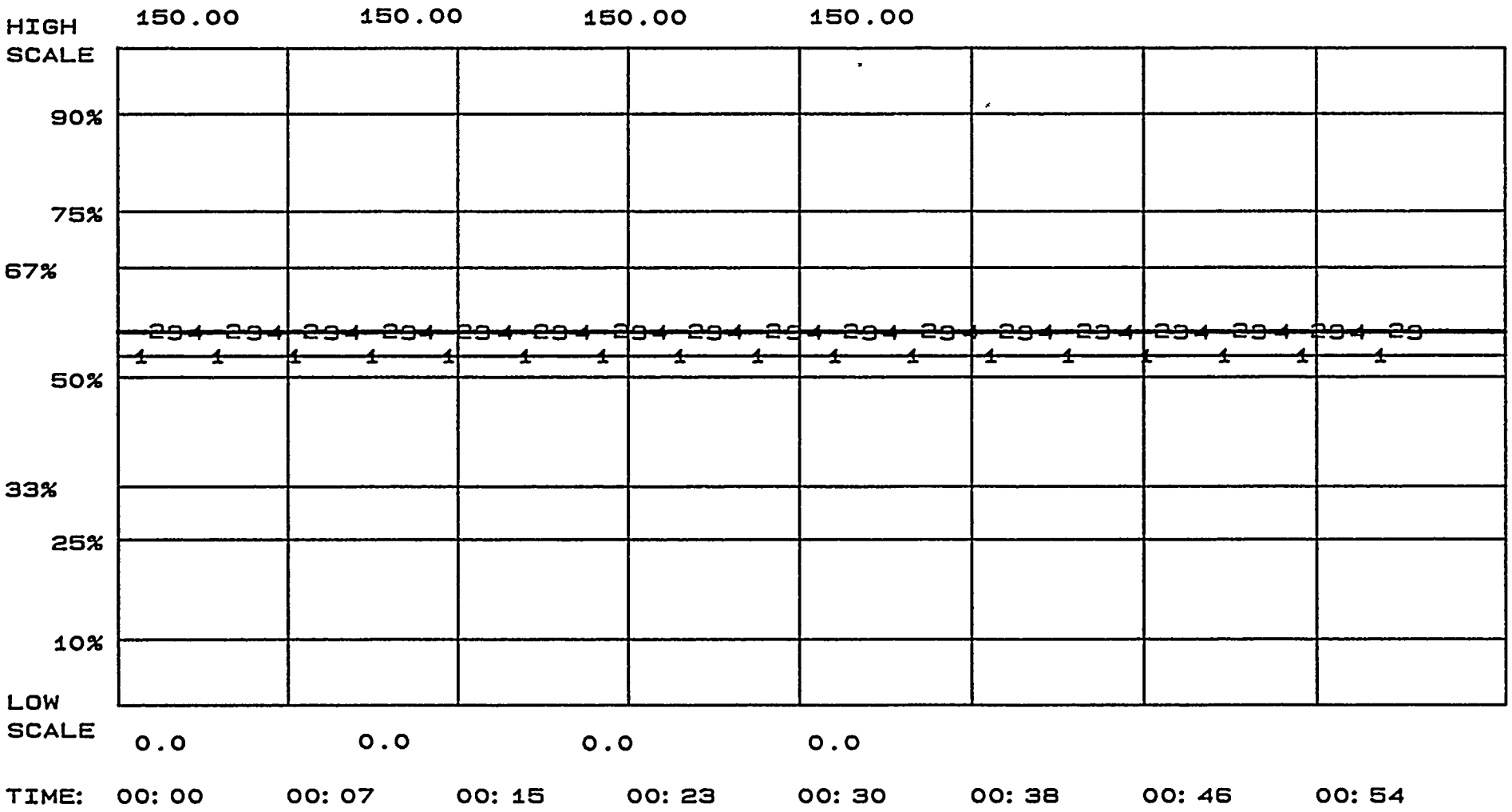
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN (1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN (2)	CONDENSER B TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTCN (3)	CONDENSER C TEMPERATURE	DEG_F	STOP 01: 02: 27
4				
5				
6				



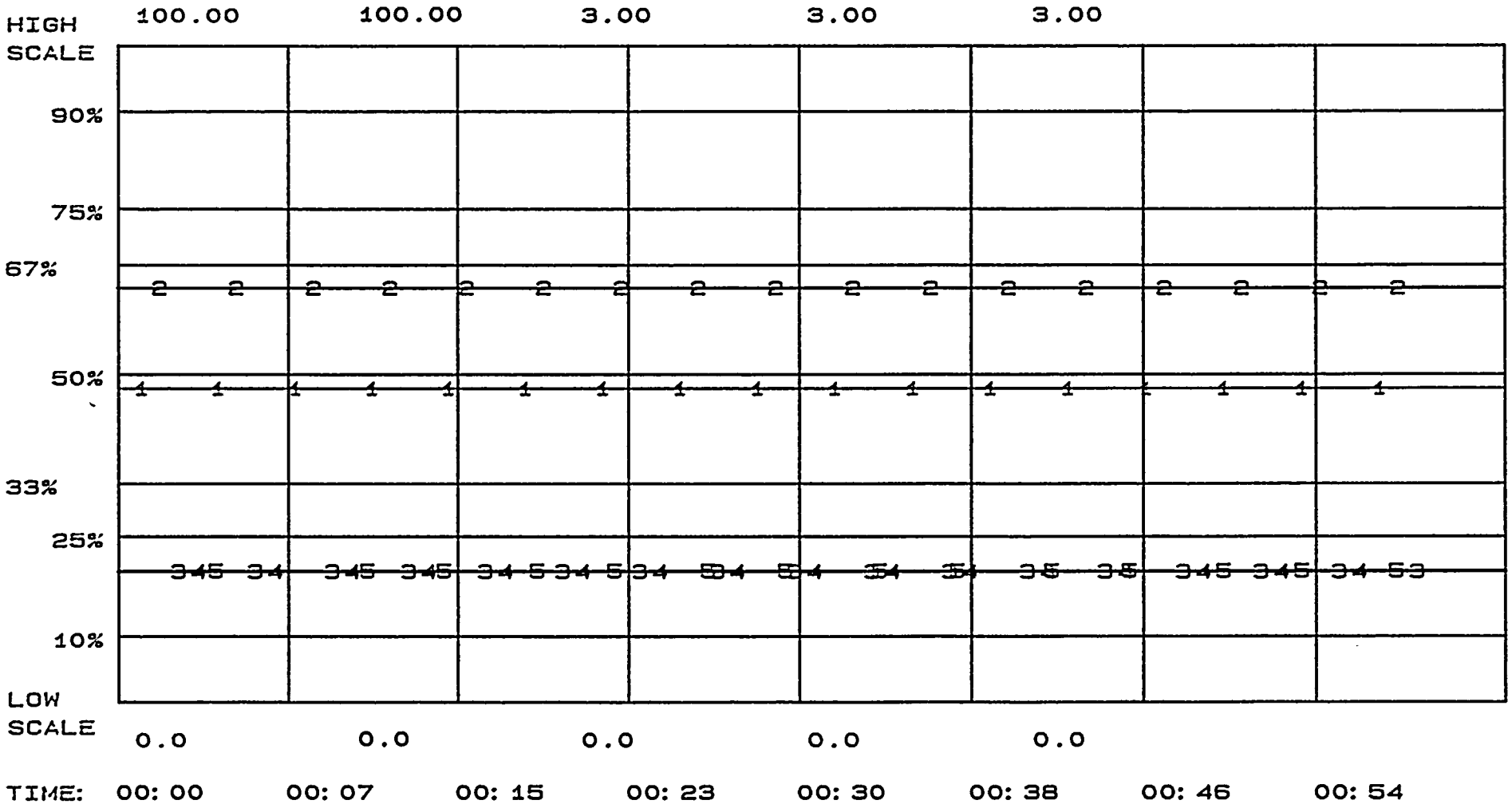
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP DISC. HDR. TEMP	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 27
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



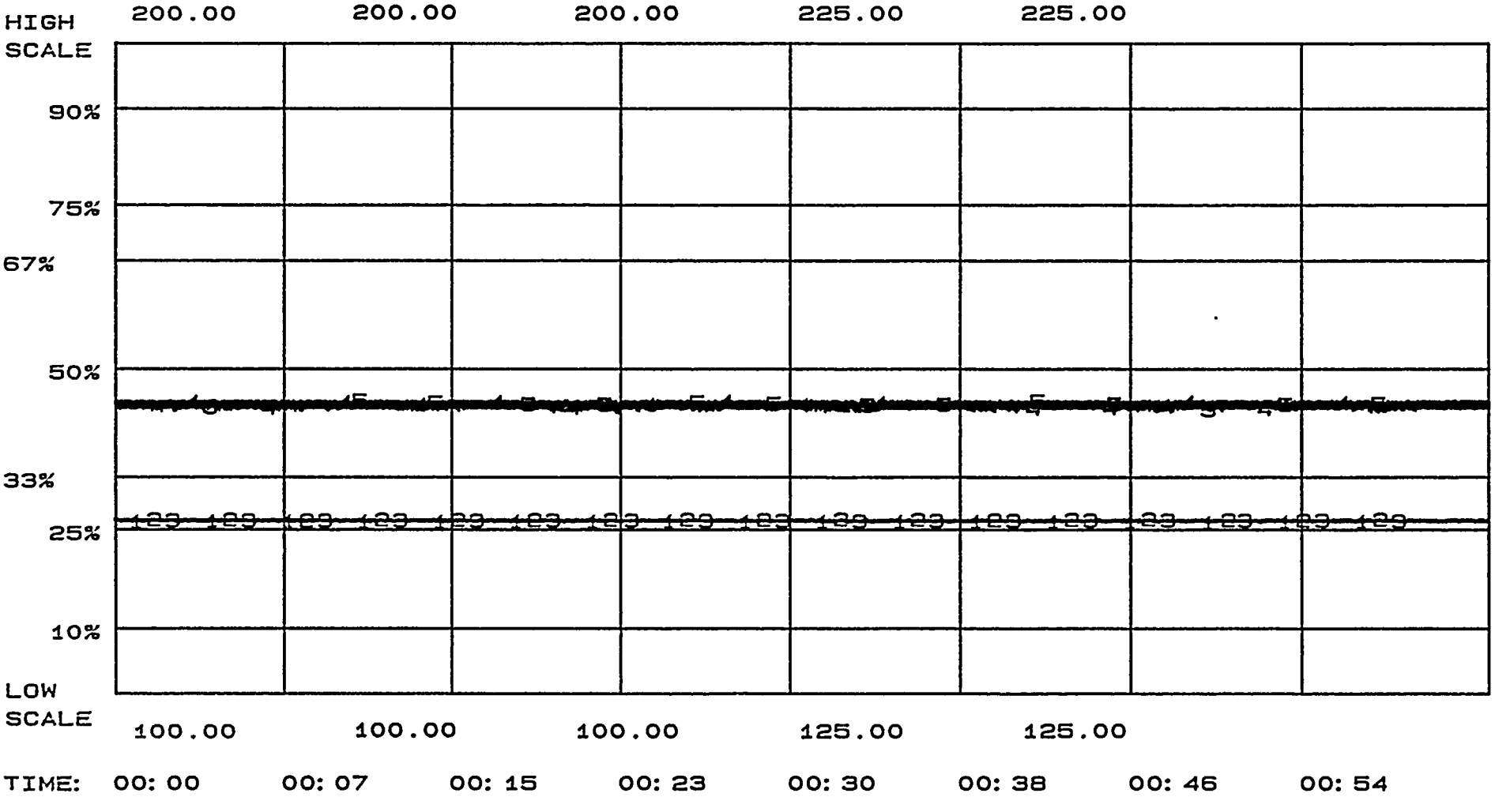
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER AVG. INLET TEMP.	DEG_F	TIME
2	CWTAVGOUT	CONDENSER AVG. OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 01: 02: 27
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



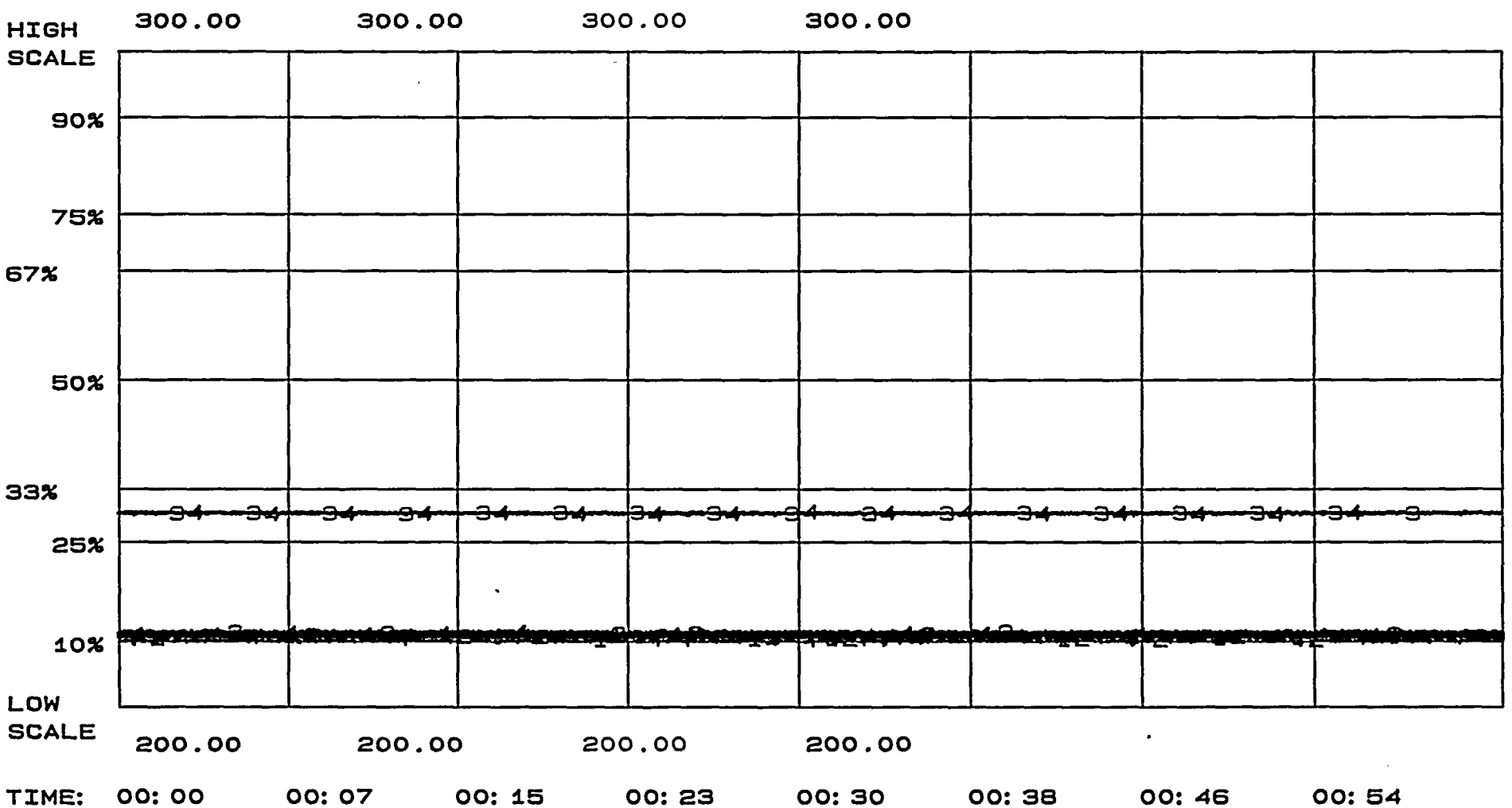
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH1A	HEATER 1A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH1B	HEATER 1B TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTOH1C	HEATER 1C TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 27
4	FWTTOH2A	HEATER 2A TUBE OUTLET TEMP.	DEG_F	
5	FWTTOH2B	HEATER 2B TUBE OUTLET TEMP.	DEG_F	
6				



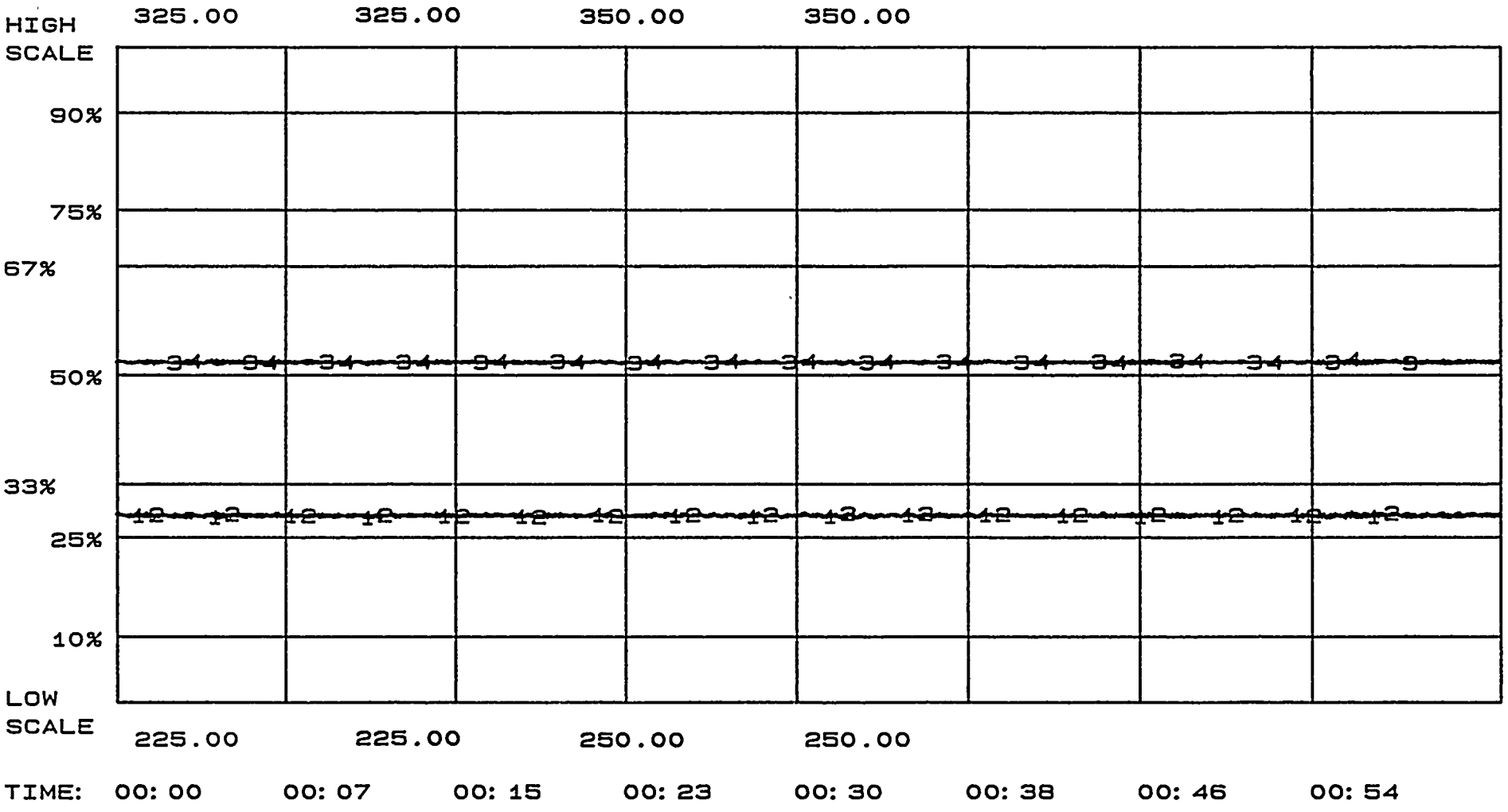
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 27
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP.	DEG_F	
5				
6				



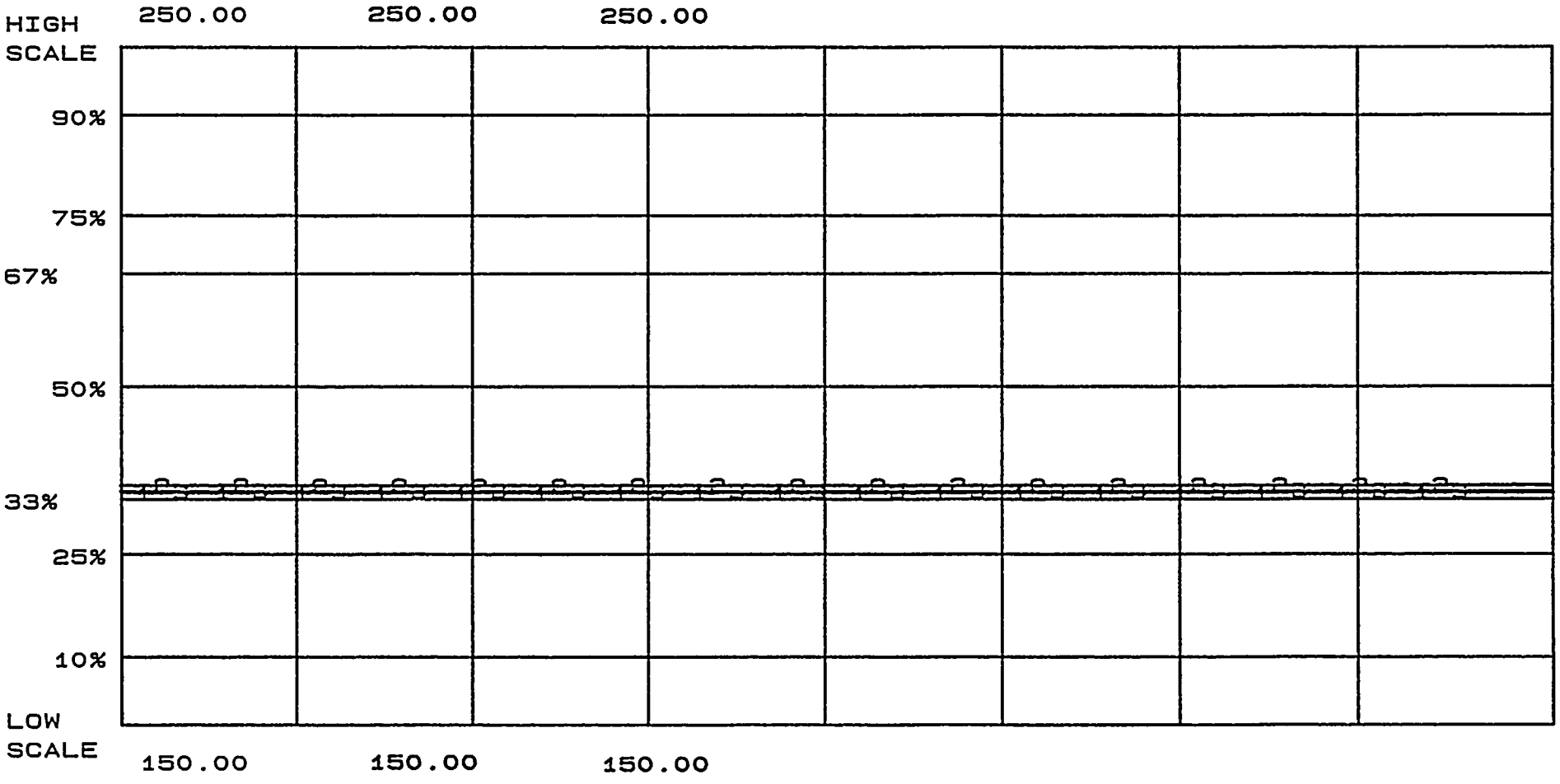
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 27
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP	DEG_F	
5				
6				



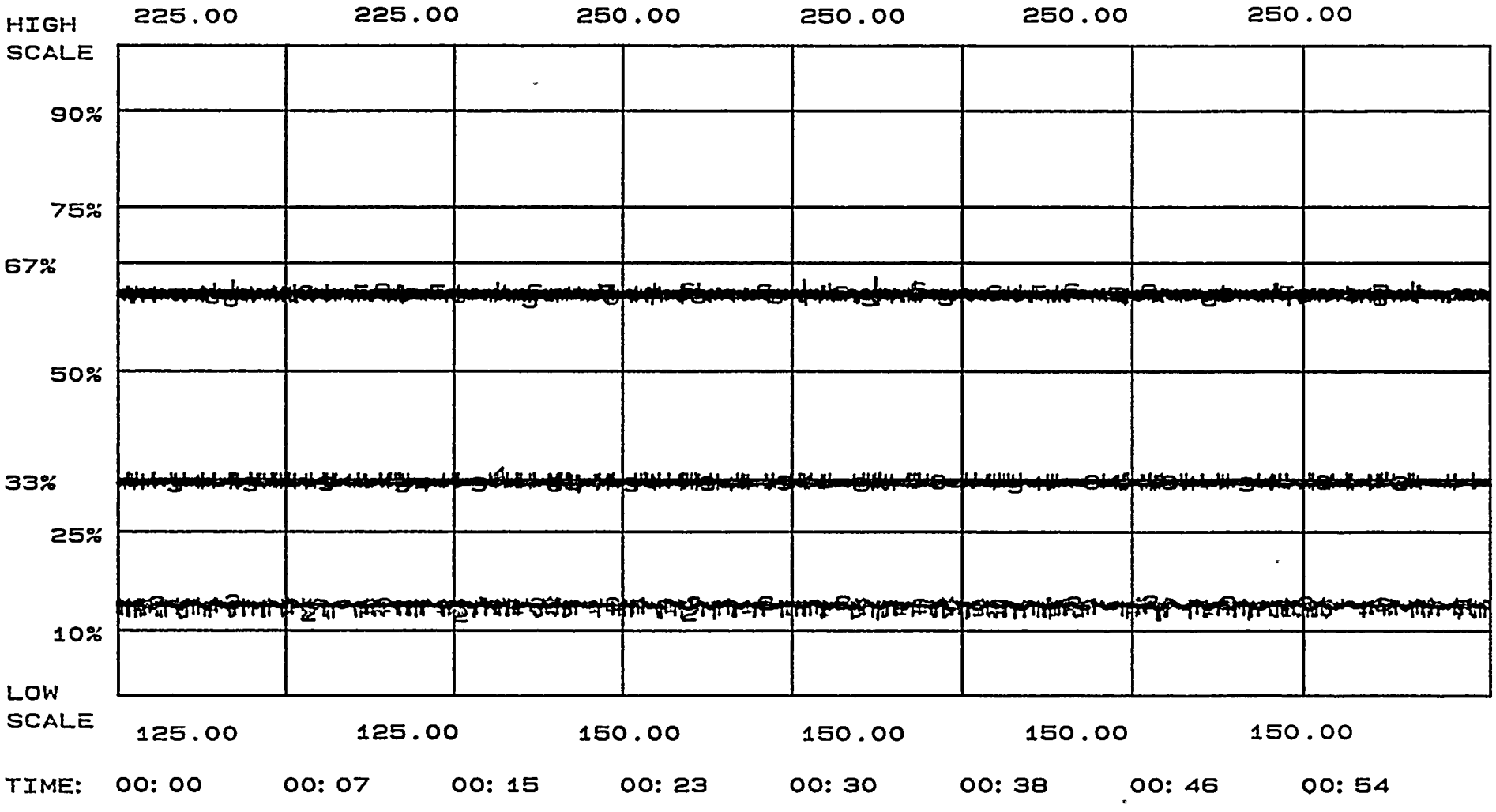
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	MAIN FEEDPUMP SUCTION TEMP.	DEG_F	TIME
2	FWTDEMFP	EAST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	START 00: 00: 00
3	FWTDWMFP	WEST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	STOP 01: 02: 27
4				
5				
6				



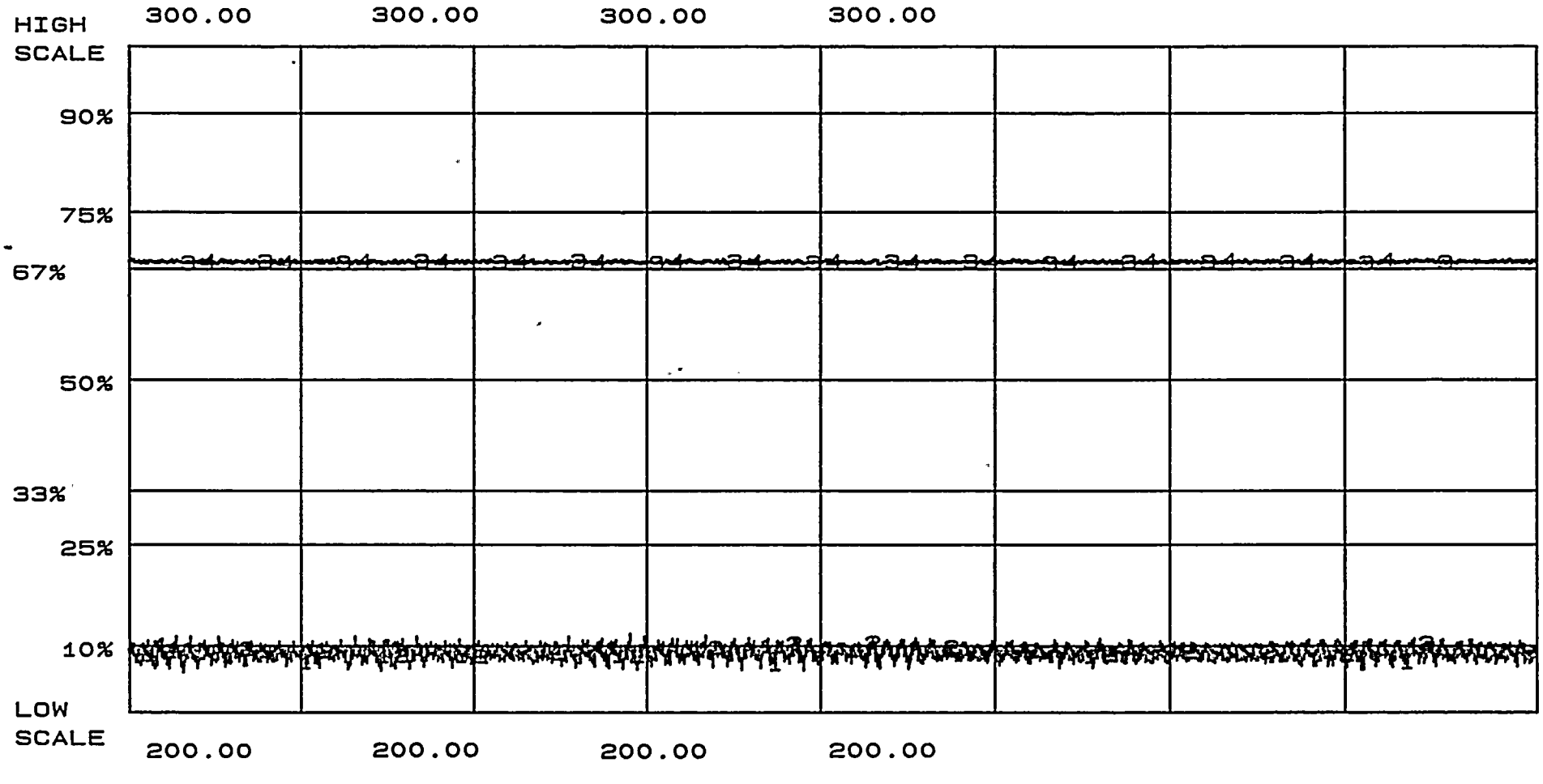
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F	STOP 01: 02: 27
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F	
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATURE	DEG_F	
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F	



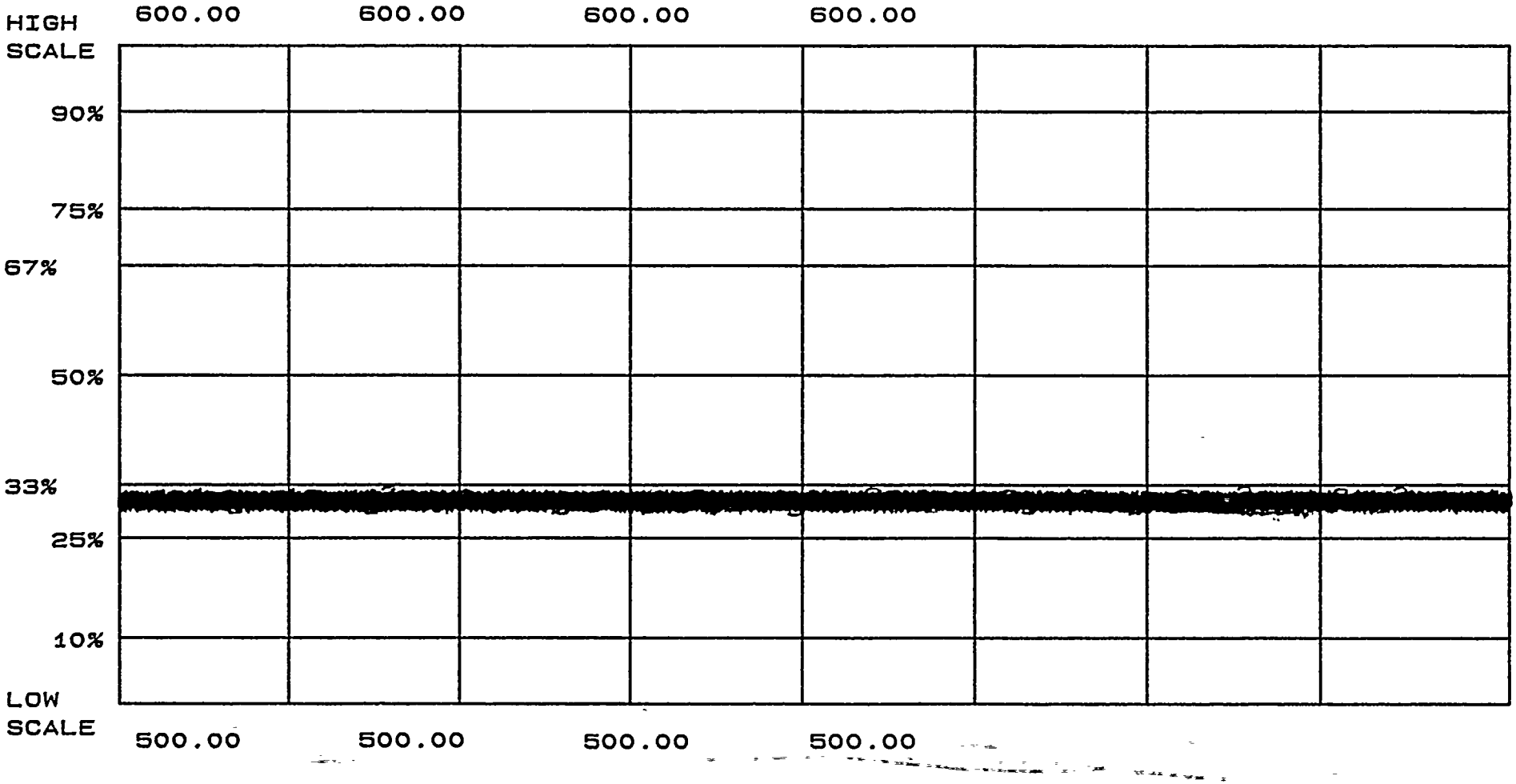
25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 01: 02: 27
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



25% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCTSGDM (1)	STEAM GEN. #1 DOME TEMPERATURE	DEG_F	TIME
2	RCTSGDM (2)	STEAM GEN. #2 DOME TEMPERATURE	DEG_F	START 00: 00: 00
3	RCTSGDM (3)	STEAM GEN. #3 DOME TEMPERATURE	DEG_F	STOP 01: 02: 27
4	RCTSGDM (4)	STEAM GEN. #4 DOME TEMPERATURE	DEG_F	
5				
6				



COOK PLANT SIMULATOR

70% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
| CRITICAL PARAMETERS |					
Nuclear Power	PR Avg.	Percent	70.13	70	0.2
Thermal Power	Calc.	Percent	70	70	0
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	580	571	1.6
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	528	527	0.2
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	575	571	0.7
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	520	527	-1.3
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	575	571.1	0.7
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	520	527	-1.3
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	578	571	1.2
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	522	527	-1
Loop 1 Tavg.	NTI-13	Deg. F	548	549	-0.2
Loop 2 Tavg.	NTI-23	Deg. F	549	549	0
Loop 3 Tavg.	NTI-33	Deg. F	548	549	-0.2
Loop 4 Tavg.	NTI-43	Deg. F	548	549	-0.2
Pressurizer Pressure	NPP Avg.	PSIG	2080	2075	0.2
Pressurizer Level	NLP Avg.	Percent	40.5	41.1	-1.5
Press. Level Cold Cal.	NLI-151	Percent	30	30.26	-0.9
Press. Steam Temperature	NTA-252	Deg. F	635	641.8	-1.1
Press. Liquid Temp.	NTA-251	Deg. F	650	641.8	1.3
Press. Surge Line Temp.	NTA-253	Deg. F	655	641.8	2
Steam Generator #21 Level	BLP Avg.	Percent	45	44.16	1.9
Steam Generator #22 Level	BLP Avg.	Percent	45.33	44	2.9
Steam Generator #23 Level	BLP Avg.	Percent	43.83	44	-0.4
Steam Generator #24 Level	BLP Avg.	Percent	43.17	43.88	-1.6
Steam Generator #21 Press	MPP Avg.	PSIG	736.67	743.66	-0.9
Steam Generator #22 Press	MPP Avg.	PSIG	718.33	743.68	-3.5
Steam Generator #23 Press	MPP Avg.	PSIG	726.67	743.72	-2.3
Steam Generator #24 Press	MPP Avg.	PSIG	730	743.68	-1.9
East Fp. Suction Flow	CFC-201	E6 lb/hr	4.5	4.9	-8.9 *
West Fp. Suction Flow	CFC-202	E6 lb/hr	5.6	4.8	14.3 *
Main Generator Elect Pwr		Megawatts	N/A	722	ERR *

COOK PLANT SIMULATOR

70% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
NON CRITICAL PARAMETERS					
Steam Gen. #21 Shell Temp	BTI-110	Deg. F	477	495	-3.8
Steam Gen. #22 Shell Temp	BTI-120	Deg. F	464	495	-6.7
Steam Gen. #23 Shell Temp	BTI-130	Deg. F	472	495	-4.9
Steam Gen. #24 Shell Temp	BTI-140	Deg. F	473	495	-4.7
Turbine 1st Stage Press.	MPC Avg.	Percent	68	66	2.9
HP Turbine 1st Stage Press.	MPR-253	Press.	301	390	-29.6 *
Main Steam Header Press	MPI-230	Press.	721	728	-1
LP Turbine Inlet Press.	MPR-412	Press.	122	134	-9.8
	SPI-300U	Inch. Vac	27.7	28.9	-4.3
Main Turbine Control Valve A Position	CV-1	Percent	26	22	15.4 *
Main Turbine Control Valve B Position	CV-2	Percent	29	22	24.1 *
Main Turbine Control Valve C Position	CV-3	Percent	28	22	21.4 *
Main Turbine Control Valve D Position	CV-4	Percent	30	22	26.7 *
East Fpt. Stm Supply Press	API-11	PSIG	120	85	29.2 *
East Fpt. Condenser Vac.	SPI-351	Inch. Vac	27.5	27.9	-1.5
East Fp. Suction Press.	CPI-201	PSIG	365	385	-5.5
East Fp. Discharge Press	FPI-260	PSIG	875	910	-4
East Fpt. Speed		RPM	3750	3682	1.8
West Fpt. Stm Supply Press	API-12	PSIG	120	80	33.3 *
West Fpt. Condenser Vac.	SPI-352	Inch. Vac	28	27.9	0.4
West Fp. Suction Press	CPI-202	PSIG	360	387	-7.5
West Fp. Discharge Press	FPI-261	PSIG	860	920	-7
West Fpt. Speed		RPM	4000	3680	8
Fp. Discharge Header Press	FPC-250	PSIG	850	850	0
Condensate Booster Pump Discharge Header Press.	CPI-203	PSIG	405	395	2.5
Hotwell Pp.Discharge Press	CPI-101	PSIG	153	142	7.2
Drain Cooler A Shell Press	HPI-111	Inch. Vac	14	13.4	4.3
Drain Cooler B Shell Press	HPI-112	Inch. Vac	14	13.7	2.1
Drain Cooler C Shell Press	HPI-113	Inch. Vac	14.8	13.5	8.8
Heater 1A Shell Press.	HPI-101	Inch. Vac	22.1	19.5	11.8 *
Heater 1B Shell Press.	HPI-102	Inch. Vac	26	20	23.1 *

COOK PLANT SIMULATOR

70% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
Heater 1C Shell Press.	HPI-103	Inch. Vac	28	19.5	30.4 *
Heater 2A Shell Press.	HPI-201	Inch/PSIG OOS		5.2	ERR *
Heater 2B Shell Press.	HPI-202	Inch/PSIG OOS		5	ERR *
Heater 3A Shell Press.	HPI-301	PSIG	36	35.5	1.4
Heater 3B Shell Press.	HPI-302	PSIG	35.5	35.5	0
Heater 4A Shell Press.	HPI-401	PSIG	69	69	0
Heater 4B Shell Press.	HPI-402	PSIG	70	69	1.4
Heater 5A Shell Press.	HPI-501	PSIG	122	115	5.7
Heater 5B Shell Press.	HPI-502	PSIG	120	100	16.7 *
Heater 6A Shell Press.	HPI-601	PSIG	235	222	5.5
Heater 6B Shell Press.	HPI-602	PSIG	235	225	4.3
North Htr. Drain pump Discharge Pressure	CPI-252	PSIG	460	455	1.1
Middle Htr. Drain pump Discharge Pressure	CPI-253	PSIG	570	0	100 *
South Htr. Drain Pump Discharge Pressure	CPI-251	PSIG	145	455	-213.8 *
(Left)	MPI-411	PSIG	670	720	-7.5
(Right)	MPI-412	PSIG	730	720	1.4
FP Discharge Heater Temp.	FTR-258	Deg. F	318	273	14.2 *
Heater 5A Tube Outlet Temp	FTR-250	Deg. F	352	328	6.8
Heater 5B Tube Outlet Temp	FTR-251	Deg. F	352	328	6.8
Heater 6A Tube Outlet Temp	FTR-252	Deg. F	402	387	3.7
Heater 6B Tube Outlet Temp	FTR-253	Deg. F	402	387	3.7
Heater 6A & 6B Outlet Temp	FTR-259	Deg. F	402	387	3.7
Fp Suction Header Temp.	CTR-224	Deg. F	308	268	13 *
Main Steam to Left Outer	MTR-220	Deg. F	508	515	-1.4
Main Steam to Right Outer	MTR-210	Deg. F	508	515	-1.4
Reheat Steam Upstream CIV-1	MTR-415	Deg. F Deg. F	481	471	2.1
Reheat Steam Upstream CIV-2	MTR-414	Deg. F Deg. F	495	471	4.8
Reheat Steam Upstream CIV-3	MTR-413	Deg. F Deg. F	487	471	3.3
Reheat Steam Upstream CIV-4	MTR-403	Deg. F Deg. F	487	471	3.3
Reheat Steam Upstream CIV-5	MTR-404	Deg. F Deg. F	490	471	3.9
Reheat SteamUpstream CIV-6	MTR-405	Deg. F	480	471	1.9

COOK PLANT SIMULATOR

70% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
Exhaust Hood A - Gen. End	TTR-25	Deg. F	91	85	6.6
Exhaust Hood B - Gen. End	TTR-26	Deg. F	90	85	5.6
Exhaust Hood C - Gen. End	TTR-27	Deg. F	88	85	3.4
Condenser Inlet Avg.	SG-21 P1	Deg. F	57	48.5	
Condenser Outlet Avg.	SG-21 P2	Deg. F	73.2	60.2	17.8 *
Condenser Delta T	SG-21 P3	Deg. F	15.8	11.6	26.6 *
CW Pump #11 Discharge	WTR-11	Deg. F	57.5	48.6	15.5 *
CW Pump #12 Discharge	WTR-12	Deg. F	57.8	48.5	16.1 *
CW Pump #13 Discharge	WTR-13	Deg. F	57.5	48.6	15.5 *
Condenser A Outlet NW	WTR-113	Deg. F	74.2	60.3	18.7 *
Condenser A Outlet SW	WTR-117	Deg. F	74.2	60.1	19 *
Condenser B Outlet NW	WTR-213	Deg. F	74.2	60.2	18.9 *
Condenser B Outlet SW	WTR-217	Deg. F	74.8	60.2	19.5 *
Condenser C Outlet NW	WTR-313	Deg. F	71	60.2	15.2 *
Condenser C Outlet SW	WTR-317	Deg. F	73	60.3	17.4 *
Bank D Rod Position		Steps	197.5	211	-6.8

08/16/90 19:12:22 TASK # 16000028 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		641.7935	DEGF
T1004	PZR LIQUID TEMP		641.8354	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		641.7581	DEG F
L1091	PRESSURIZER WATER LEVEL		40.9993	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3023	%
P1036	PRESSURIZER PRESSURE		2075.0520	PSIG
T1101	LOOP 1 AVG TEMP		548.9380	DEGF
T1102	LOOP 2 AVG TEMP		548.9663	DEGF
T1103	LOOP 3 AVG TEMP		549.0100	DEGF
T1104	LOOP 4 AVG TEMP		548.9348	DEGF
T1111	LOOP 1 HOT LEG TEMP		570.9741	DEGF
T1112	LOOP 2 HOT LEG TEMP		570.9741	DEGF
T1113	LOOP 3 HOT LEG TEMP		571.0720	DEGF
T1114	LOOP 4 HOT LEG TEMP		570.9741	DEGF
T1115	LOOP 1 COLD LEG TEMP		526.9160	DEGF
T1116	LOOP 2 COLD LEG TEMP		526.9688	DEGF
T1117	LOOP 3 COLD LEG TEMP		526.9390	DEGF
T1118	LOOP 4 COLD LEG TEMP		526.9021	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.6988	%
CRQN	03030 NORMALIZED CORE^POWER		.6744	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		743.3875	PSIG
P1025	STM GEN OUTLET PRES LP 2		743.3135	PSIG
P1028	STM GEN OUTLET PRES LP 3		743.4421	PSIG
P1031	STM GEN OUTLET PRES LP 4		743.3745	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.0636	PC
L1207	STM GEN 2 NARROW LEVEL		43.9520	PC
L1210	STM GEN 3 NARROW LEVEL		44.2731	PC
L1213	STM GEN 4 NARROW LEVEL		43.8114	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	508.5740	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	510.0439	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	509.1211	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	509.0283	F
RCBORON	11070 BORON CONC	(001)	755.3289	PPM
RCBORON	11070 BORON CONC	(002)	755.3284	PPM
RCBORON	11070 BORON CONC	(003)	755.3301	PPM

ISD>

08/16/90 19:13:10 TASK # 16000028 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		95.9168	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		82.2441	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		91.7424	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		164.9622	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		139.0886	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		161.5246	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		226.8865	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		225.9291	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		282.1167	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		282.0640	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		314.2546	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		314.4275	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		331.0193	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		331.0254	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		390.4556	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		390.4692	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		256.1167	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		256.9849	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		256.9753	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		59.4917	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		182.6700	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		186.1481	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		246.4003	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		245.7989	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		283.1284	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		281.6580	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		272.0886	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		271.9355	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		342.7568	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		343.0281	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	211	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	211	

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08/16/90 19:27:22 TASK # 16000028 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		641.7717	DEGF
T1004	PZR LIQUID TEMP		641.8298	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		641.8311	DEG F
L1091	PRESSURIZER WATER LEVEL		41.0222	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3024	%
P1036	PRESSURIZER PRESSURE		2074.8926	PSIG
T1101	LOOP 1 AVG TEMP		548.9590	DEGF
T1102	LOOP 2 AVG TEMP		548.9832	DEGF
T1103	LOOP 3 AVG TEMP		549.0305	DEGF
T1104	LOOP 4 AVG TEMP		548.9529	DEGF
T1111	LOOP 1 HOT LEG TEMP		570.9956	DEGF
T1112	LOOP 2 HOT LEG TEMP		570.9956	DEGF
T1113	LOOP 3 HOT LEG TEMP		571.1082	DEGF
T1114	LOOP 4 HOT LEG TEMP		570.9956	DEGF
T1115	LOOP 1 COLD LEG TEMP		526.9309	DEGF
T1116	LOOP 2 COLD LEG TEMP		526.9763	DEGF
T1117	LOOP 3 COLD LEG TEMP		526.9597	DEGF
T1118	LOOP 4 COLD LEG TEMP		526.9238	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.7002	%
CRQN	03030 NORMALIZED CORE^POWER		.6743	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		743.5286	PSIG
P1025	STM GEN OUTLET PRES LP 2		743.4658	PSIG
P1028	STM GEN OUTLET PRES LP 3		743.5500	PSIG
P1031	STM GEN OUTLET PRES LP 4		743.5090	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.5518	PC
L1207	STM GEN 2 NARROW LEVEL		43.5679	PC
L1210	STM GEN 3 NARROW LEVEL		44.4272	PC
L1213	STM GEN 4 NARROW LEVEL		43.7032	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	509.4023	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	509.6912	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	509.0046	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	509.2209	F
RCBORON	11070 BORON CONC	(001)	755.3083	PPM
RCBORON	11070 BORON CONC	(002)	755.3079	PPM
RCBORON	11070 BORON CONC	(003)	755.3074	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		94.8546	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		93.9788	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		90.5775	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		157.6839	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		158.7278	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		164.9017	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		226.9371	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		227.3243	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		282.3220	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		282.0547	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		314.4570	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		314.3230	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		331.9338	F
FWTTOH5B	17030 H5B TUBE OUTLET TEMP		331.8862	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		390.6179	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		390.5544	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		256.1802	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		257.0486	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		257.0789	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		59.4917	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		182.4949	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		184.5016	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		246.0456	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		247.0836	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		282.4065	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		282.7756	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		272.4595	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		273.1218	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		342.3950	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		342.8132	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	211	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	211	

ISD>

08/16/90 19:42:14 TASK # 16000028 COOK1 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		641.7771	DEGF
T1004	PZR LIQUID TEMP		641.8359	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		641.8289	DEG F
L1091	PRESSURIZER WATER LEVEL		41.0513	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3025	%
P1036	PRESSURIZER PRESSURE		2075.0105	PSIG
T1101	LOOP 1 AVG TEMP		548.9802	DEGF
T1102	LOOP 2 AVG TEMP		549.0034	DEGF
T1103	LOOP 3 AVG TEMP		549.0491	DEGF
T1104	LOOP 4 AVG TEMP		548.9741	DEGF
T1111	LOOP 1 HOT LEG TEMP		571.0156	DEGF
T1112	LOOP 2 HOT LEG TEMP		571.0156	DEGF
T1113	LOOP 3 HOT LEG TEMP		571.1140	DEGF
T1114	LOOP 4 HOT LEG TEMP		571.0156	DEGF
T1115	LOOP 1 COLD LEG TEMP		526.9509	DEGF
T1116	LOOP 2 COLD LEG TEMP		526.9988	DEGF
T1117	LOOP 3 COLD LEG TEMP		526.9749	DEGF
T1118	LOOP 4 COLD LEG TEMP		526.9336	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.7000	%
CRQN	03030 NORMALIZED CORE^POWER		.6745	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		743.6602	PSIG
P1025	STM GEN OUTLET PRES LP 2		743.5977	PSIG
P1028	STM GEN OUTLET PRES LP 3		743.7166	PSIG
P1031	STM GEN OUTLET PRES LP 4		743.6423	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.7243	PC
L1207	STM GEN 2 NARROW LEVEL		43.7893	PC
L1210	STM GEN 3 NARROW LEVEL		43.9242	PC
L1213	STM GEN 4 NARROW LEVEL		44.4643	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	510.0493	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	510.0417	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	508.9502	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	510.1384	F
RCBORON	11070 BORON CONC	(001)	755.2859	PPM
RCBORON	11070 BORON CONC	(002)	755.2849	PPM
RCBORON	11070 BORON CONC	(003)	755.2852	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		89.8441	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		94.8103	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		96.3409	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		150.5245	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		167.4193	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		168.7341	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		226.7772	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		225.7856	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		281.1553	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		281.9736	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		314.2136	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		314.2288	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		331.8931	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		331.9275	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		390.5225	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		390.4993	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		254.1901	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		255.0585	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		255.0488	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		59.4917	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		179.0092	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		173.4086	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		245.0984	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		247.5000	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		282.9287	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		281.4800	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		270.7085	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		271.5439	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		342.3928	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		342.3162	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	211	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	211	

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08/16/90 20:00:18 TASK # 16000028 COOK1 GOULD C.S.D. MPX-32

D>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		641.7937	DEGF
T1004	PZR LIQUID TEMP		641.8408	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		641.8337	DEG F
L1091	PRESSURIZER WATER LEVEL		41.1089	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3028	%
P1036	PRESSURIZER PRESSURE		2075.0632	PSIG
T1101	LOOP 1 AVG TEMP		549.0015	DEGF
T1102	LOOP 2 AVG TEMP		549.0264	DEGF
T1103	LOOP 3 AVG TEMP		549.0720	DEGF
T1104	LOOP 4 AVG TEMP		548.9973	DEGF
T1111	LOOP 1 HOT LEG TEMP		571.0405	DEGF
T1112	LOOP 2 HOT LEG TEMP		571.0405	DEGF
T1113	LOOP 3 HOT LEG TEMP		571.1409	DEGF
T1114	LOOP 4 HOT LEG TEMP		571.0403	DEGF
T1115	LOOP 1 COLD LEG TEMP		526.9709	DEGF
T1116	LOOP 2 COLD LEG TEMP		527.0200	DEGF
T1117	LOOP 3 COLD LEG TEMP		527.0034	DEGF
T1118	LOOP 4 COLD LEG TEMP		526.9670	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.7017	%
CRQN	03030 NORMALIZED CORE^POWER		.6745	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		743.8340	PSIG
P1025	STM GEN OUTLET PRES LP 2		743.8892	PSIG
P1028	STM GEN OUTLET PRES LP 3		743.8743	PSIG
P1031	STM GEN OUTLET PRES LP 4		743.8665	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.9401	PC
L1207	STM GEN 2 NARROW LEVEL		44.2363	PC
L1210	STM GEN 3 NARROW LEVEL		43.9212	PC
L1213	STM GEN 4 NARROW LEVEL		43.6048	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	509.3931	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	508.9624	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	510.2488	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	509.6809	F
RCBORON	11070 BORON CONC	(001)	755.2573	PPM
RCBORON	11070 BORON CONC	(002)	755.2568	PPM
RCBORON	11070 BORON CONC	(003)	755.2563	PPM

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08/16/90 20:01:05 TASK # 16000028 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		96.4453	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		95.5340	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		92.8095	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		170.6862	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		164.8095	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		168.0870	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		227.1333	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		226.5697	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		282.2698	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		282.0991	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		314.4175	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		314.3198	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		332.8955	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		332.9160	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		391.1104	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		391.1133	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		255.3902	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		256.7590	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		256.7493	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		59.4917	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		184.2395	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		184.6121	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		246.6690	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		248.2457	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		282.9390	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		281.6182	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		273.0750	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		273.0884	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		342.9480	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		342.9583	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	211	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	211	

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08/16/90 20:15:41 TASK # 16000028 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		641.7847	DEGF
T1004	PZR LIQUID TEMP		641.8337	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		641.8345	DEG F
L1091	PRESSURIZER WATER LEVEL		41.1660	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3031	%
P1036	PRESSURIZER PRESSURE		2074.9556	PSIG
T1101	LOOP 1 AVG TEMP		549.0254	DEGF
T1102	LOOP 2 AVG TEMP		549.0513	DEGF
T1103	LOOP 3 AVG TEMP		549.0940	DEGF
T1104	LOOP 4 AVG TEMP		549.0217	DEGF
T1111	LOOP 1 HOT LEG TEMP		571.0654	DEGF
T1112	LOOP 2 HOT LEG TEMP		571.0654	DEGF
T1113	LOOP 3 HOT LEG TEMP		571.1619	DEGF
T1114	LOOP 4 HOT LEG TEMP		571.0654	DEGF
T1115	LOOP 1 COLD LEG TEMP		526.9910	DEGF
T1116	LOOP 2 COLD LEG TEMP		527.0466	DEGF
T1117	LOOP 3 COLD LEG TEMP		527.0220	DEGF
T1118	LOOP 4 COLD LEG TEMP		526.9829	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.6994	%
CRQN	03030 NORMALIZED CORE^POWER		.6747	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		743.9170	PSIG
P1025	STM GEN OUTLET PRES LP 2		743.9768	PSIG
P1028	STM GEN OUTLET PRES LP 3		743.9646	PSIG
P1031	STM GEN OUTLET PRES LP 4		744.0068	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.5097	PC
L1207	STM GEN 2 NARROW LEVEL		44.4386	PC
L1210	STM GEN 3 NARROW LEVEL		43.5070	PC
L1213	STM GEN 4 NARROW LEVEL		43.7748	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	509.5100	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	509.0640	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	510.3818	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	510.2202	F
RCBORON	11070 BORON CONC	(001)	755.2310	PPM
RCBORON	11070 BORON CONC	(002)	755.2305	PPM
RCBORON	11070 BORON CONC	(003)	755.2322	PPM

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		84.4595	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		92.0695	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP		93.9124	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		150.7667	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		167.2625	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		168.3832	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		225.9791	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		227.9598	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		281.4966	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		281.8853	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		314.4333	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		314.2578	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		332.4016	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		332.4031	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		391.1245	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		391.1270	F

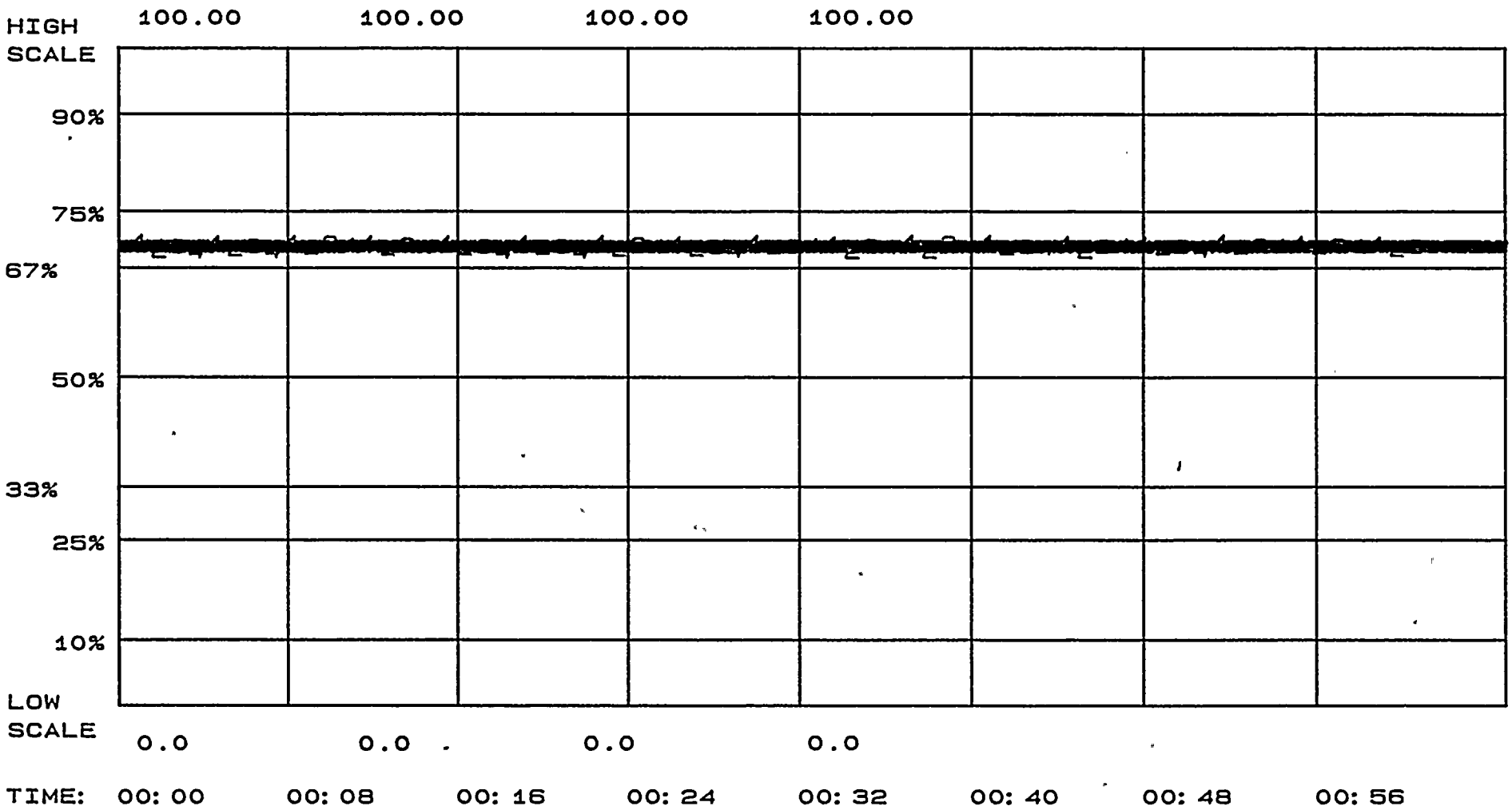
ISD>

DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		254.7866	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		255.6552	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		255.6458	F
CWTAVGIN	03050	COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		59.4917	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		182.9749	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		179.1689	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		246.0309	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		249.0841	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		282.7295	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		282.5759	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		271.6882	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		271.2700	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		342.1951	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		342.1960	F
RDPROD	03030	ROD POSITION/ACTUAL	(045)	211	
RDPROD	03030	ROD POSITION/ACTUAL	(053)	211	

ISD>

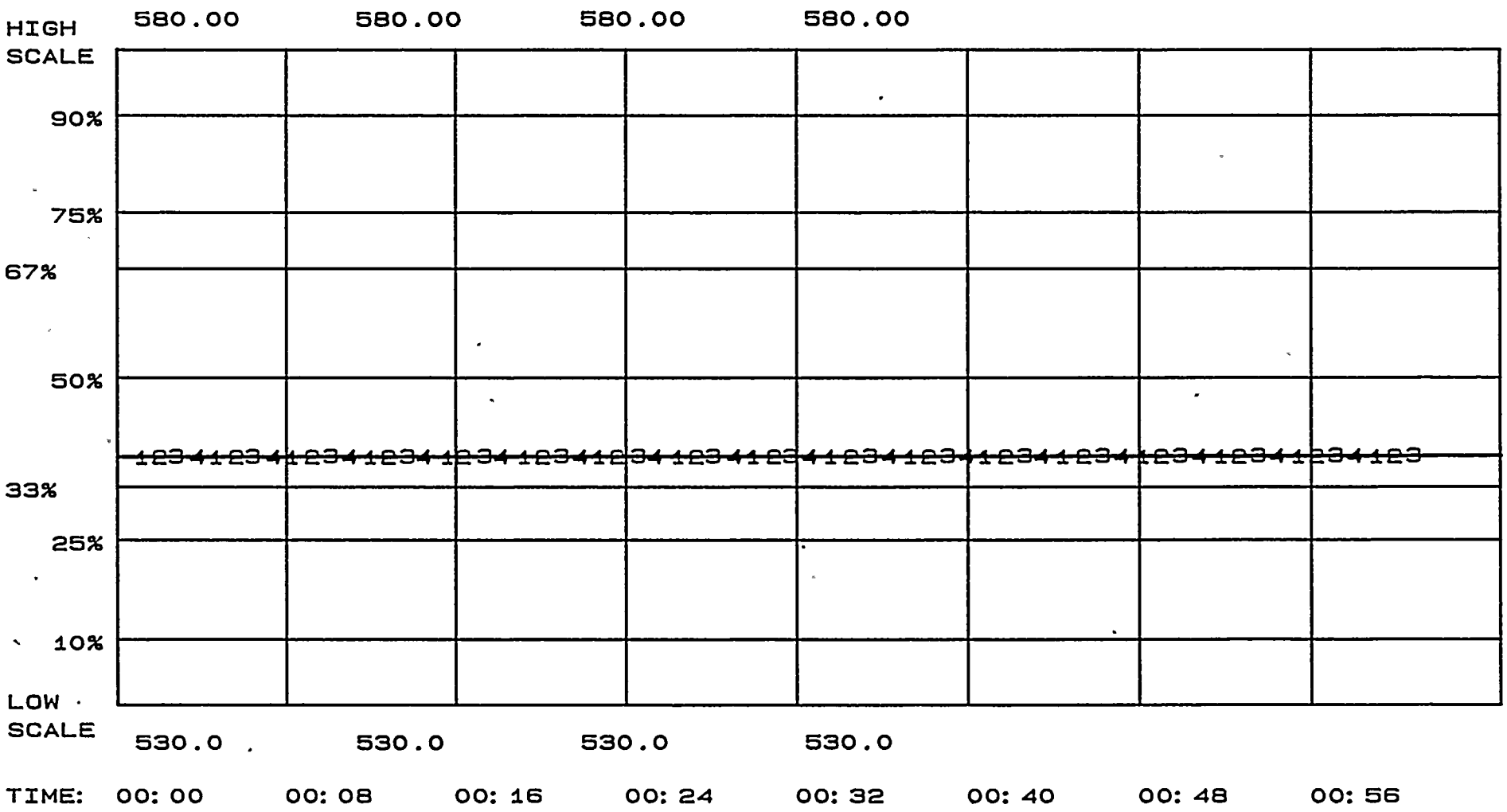
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. N41	PC	TIME
2	N1013	POWER RANGE N.I. N42	PC	START 00: 00: 00
3	N1014	POWER RANGE N.I. N43	PC	STOP 01: 05: 27
4	N1015	POWER RANGE N.I. N44	PC	
5				
6				



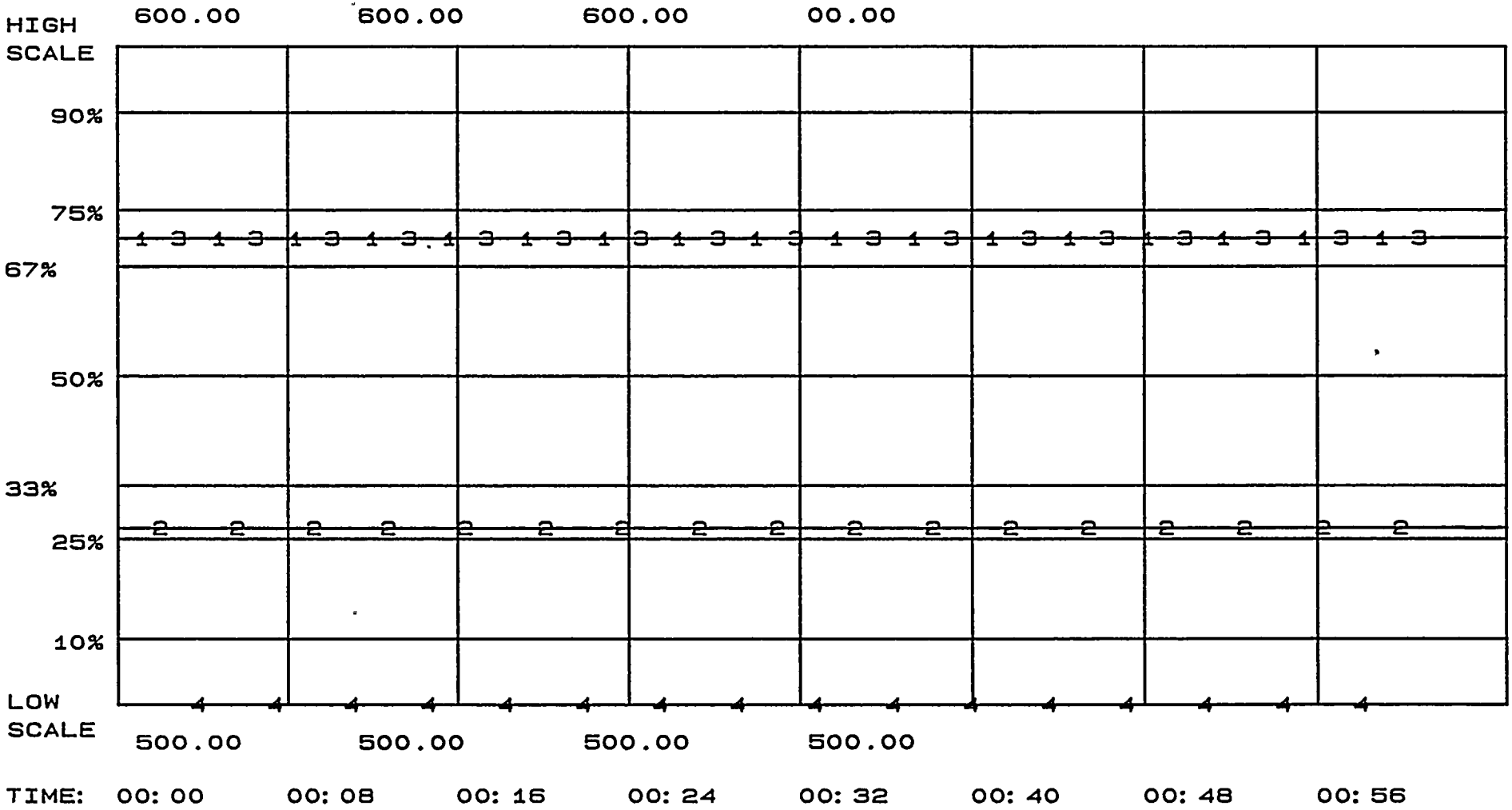
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVERAGE TEMPERATURE	DEG_F	TIME
2	T1102	LOOP 2 AVERAGE TEMPERATURE	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVERAGE TEMPERATURE	DEG_F	STOP 01: 05: 27
4	T1104	LOOP 4 AVERAGE TEMPERATURE	DEG_F	
5				
6				



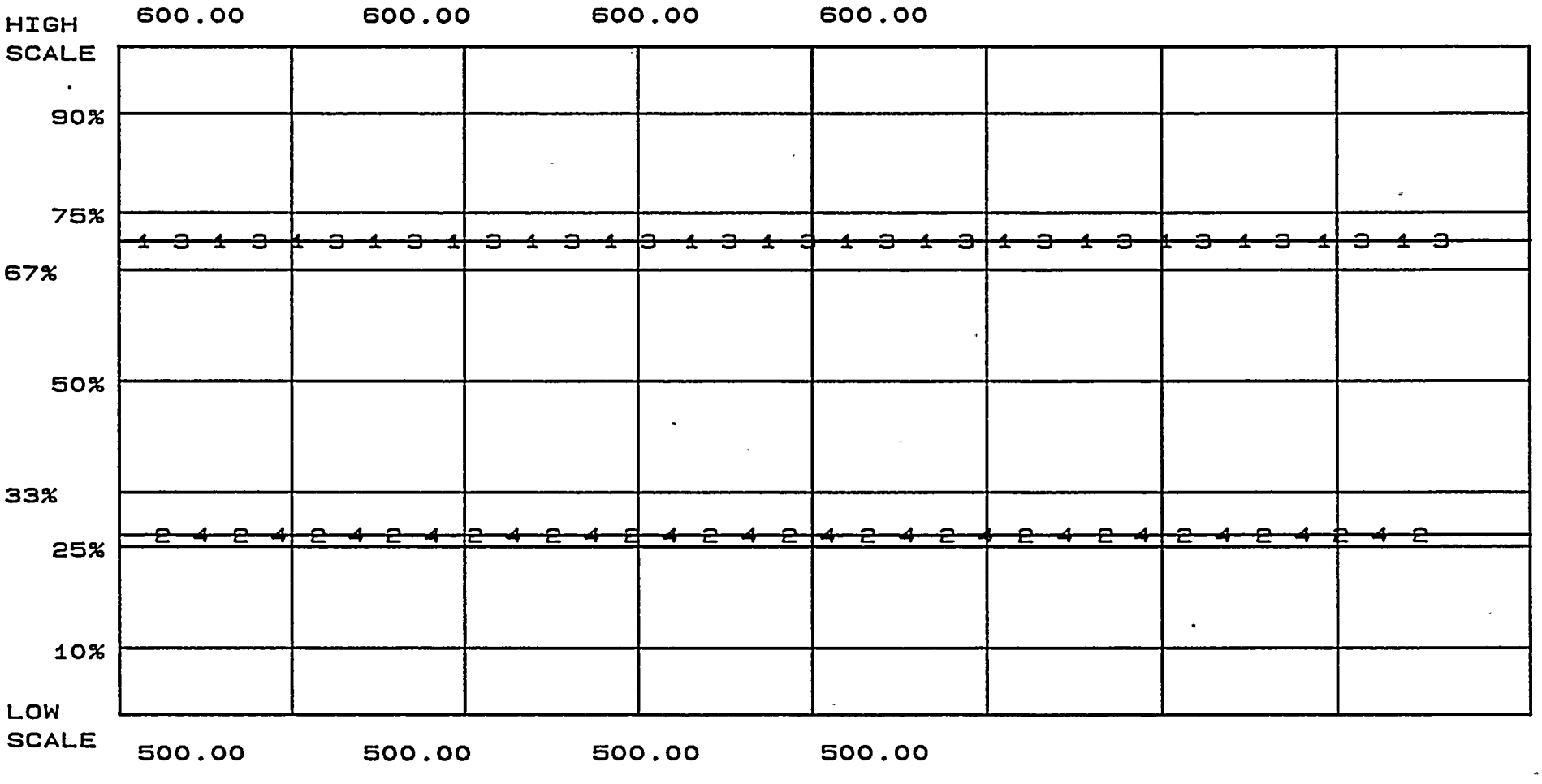
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMPERATURE	DEG_F	TIME
2	T1115	LOOP 1 COLD LEG TEMPERATURE	DEG_F	START 00: 00: 00
3	T1112	LOOP 2 HOT LEG TEMPERATURE	DEG_F	STOP 01: 05: 27
4	T1116	LOOP 2 COLD LEG TEMPERATURE	DEG_F	
5				
6				



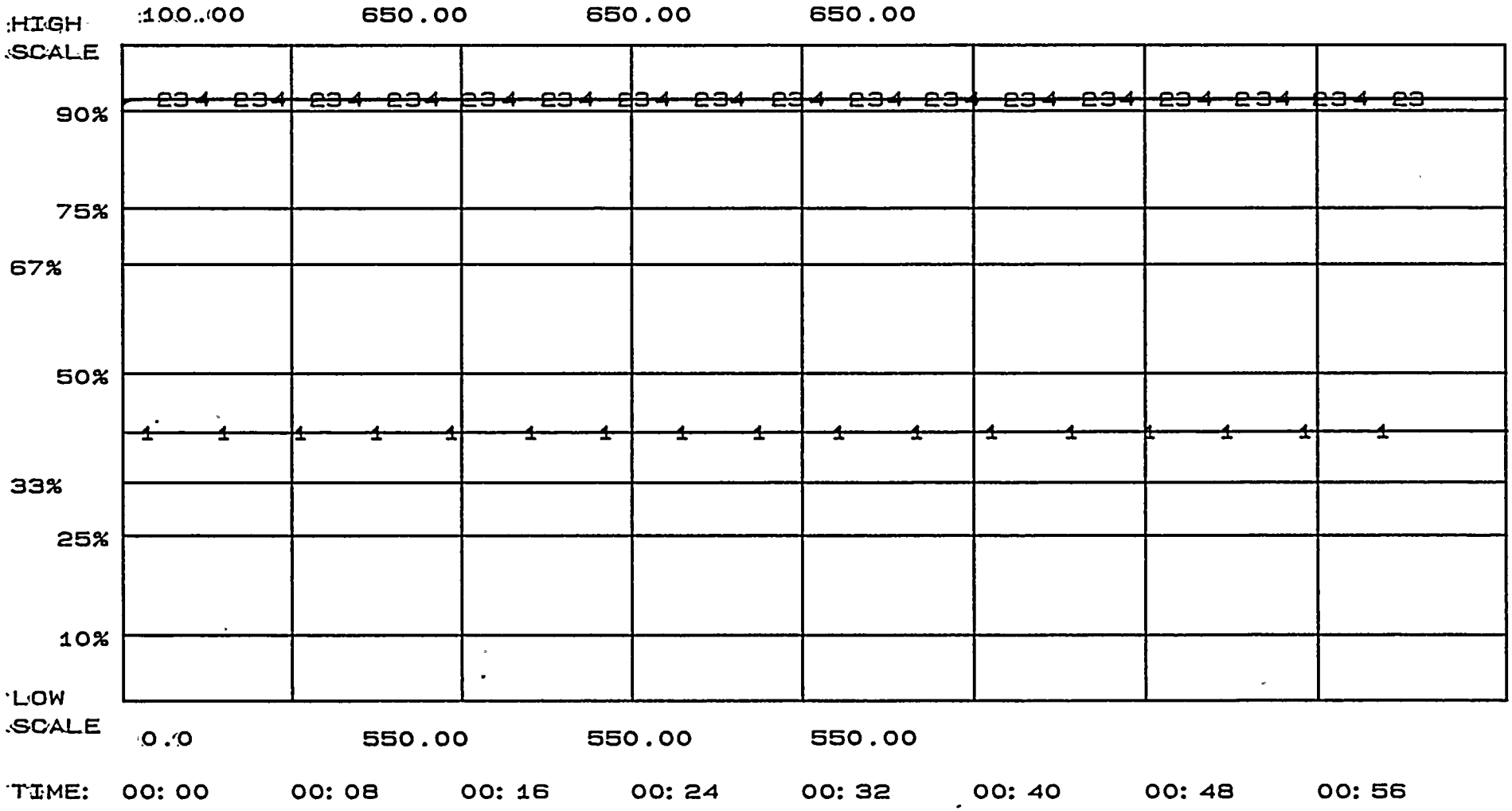
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	LOOP 3 HOT LEG TEMPERATURE	DEG_F	TIME
2	T1117	LOOP 3 COLD LEG TEMPERATURE	DEG_F	START 00: 00: 00
3	T1114	LOOP 4 HOT LEG TEMPERATURE	DEG_F	STOP 01: 05: 27
4	T1118	LOOP 4 COLD LEG TEMPERATURE	DEG_F	
5				
6				



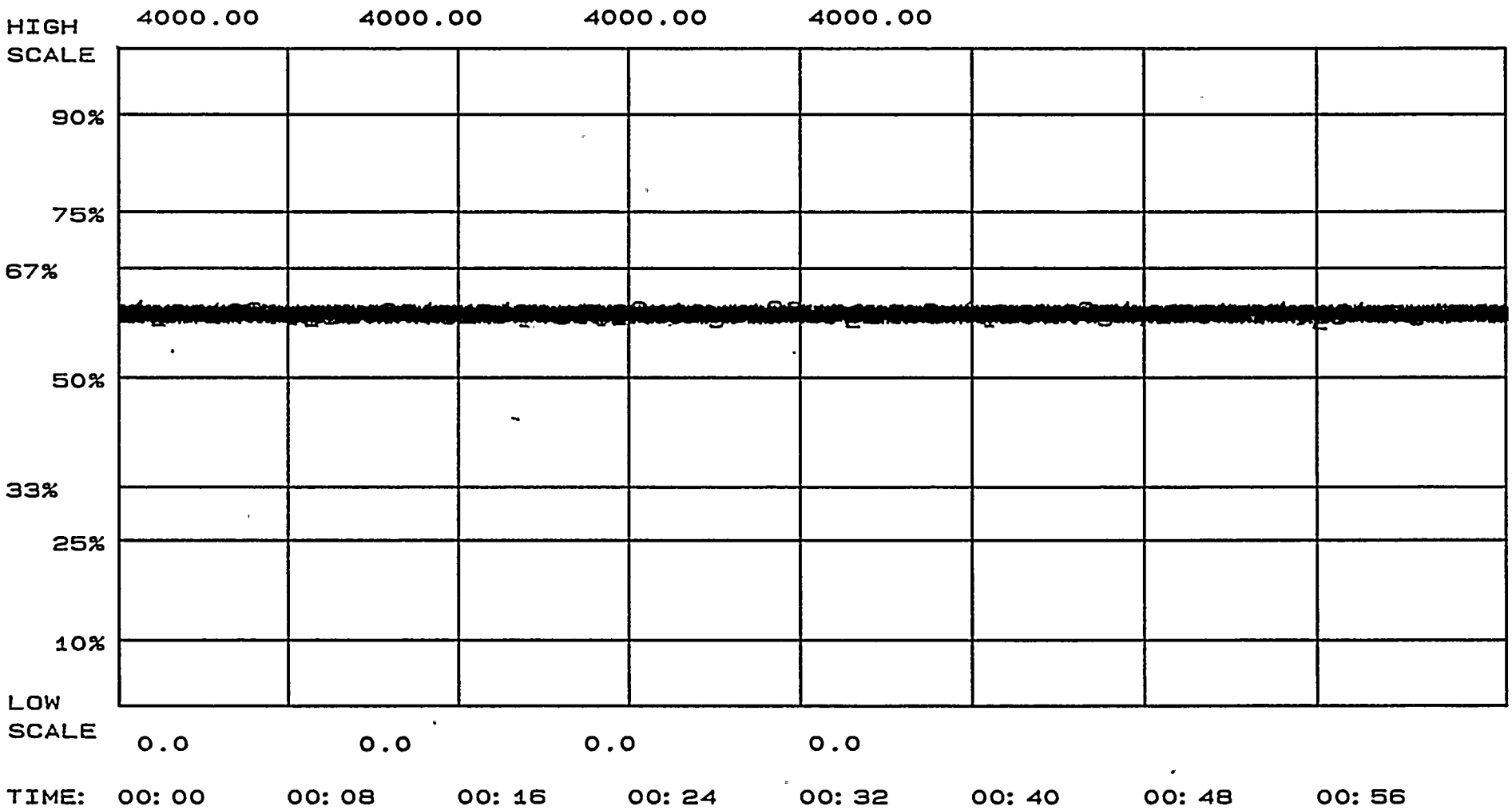
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER WATER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMP	DEG_F	START 00: 00: 00
3	T1005	PRESSURIZER VAPOR TEMP	DEG_F	STOP 01: 05: 27
4	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	
5				
6				



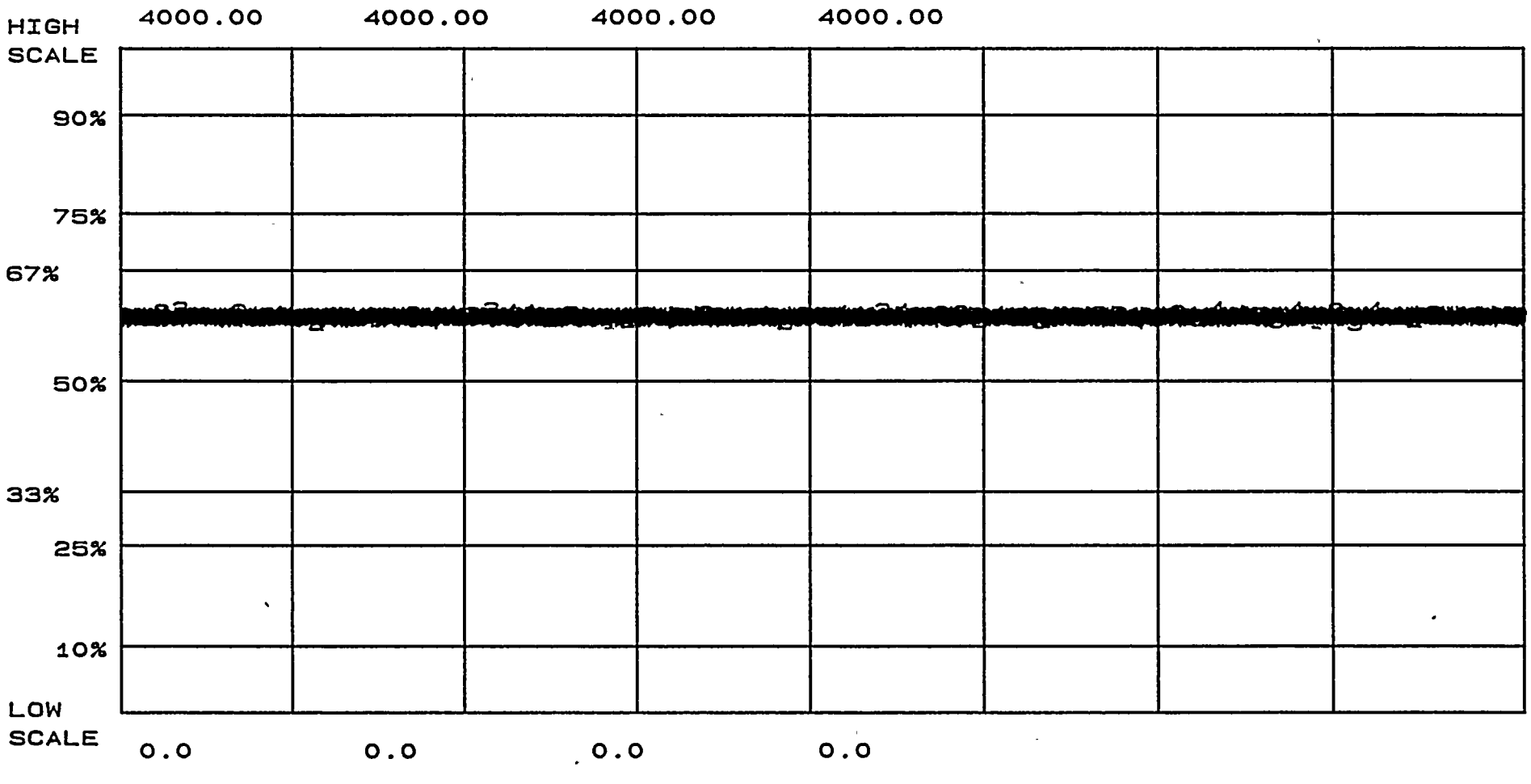
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 01: 05: 27
4	F1054	STEAM FLOW LOOP 4	KBH	
5				
6				



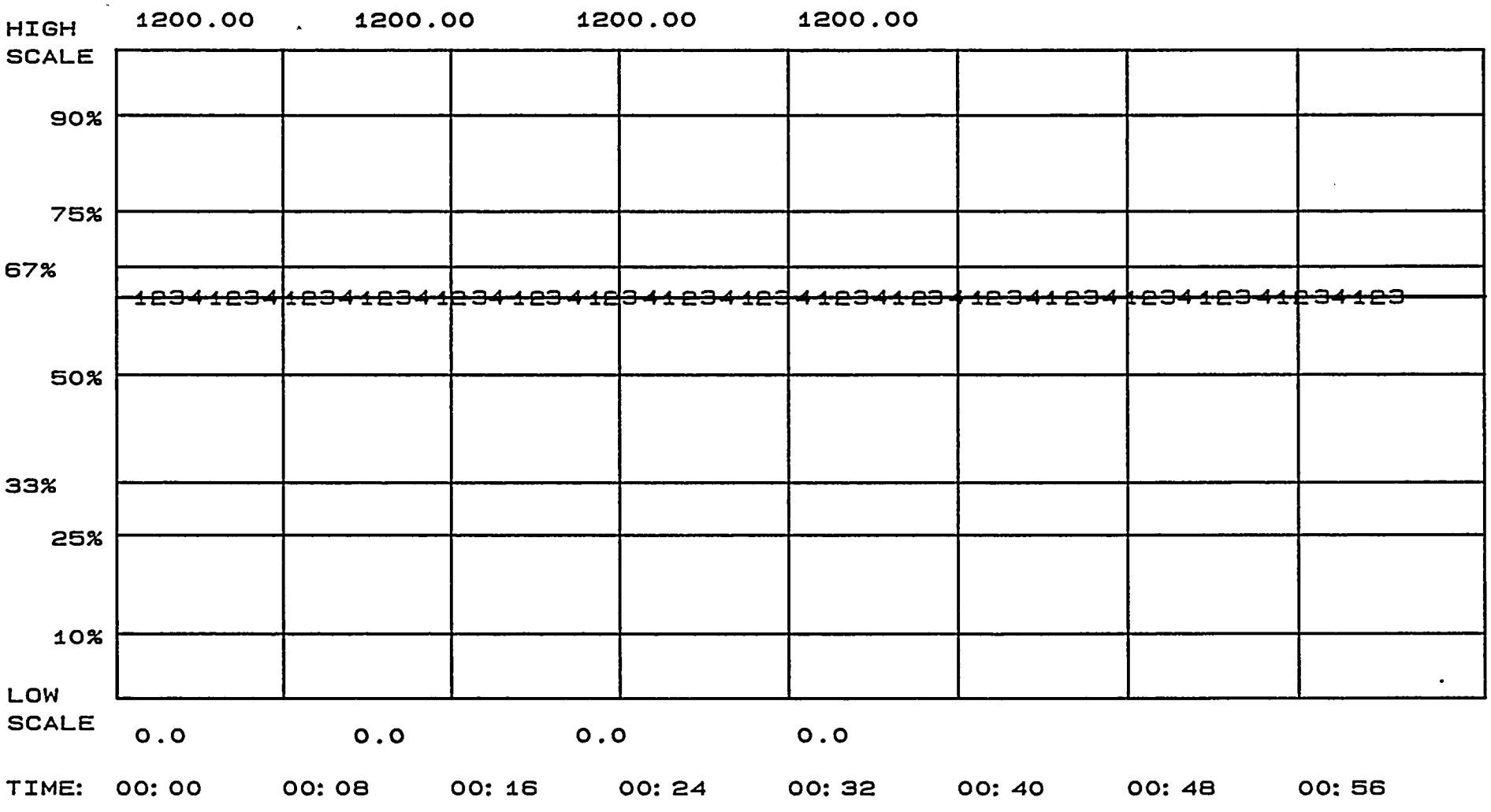
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 00: 00
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 01: 05: 27
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5				
6				



70% POWER STEADY-STATE TEST

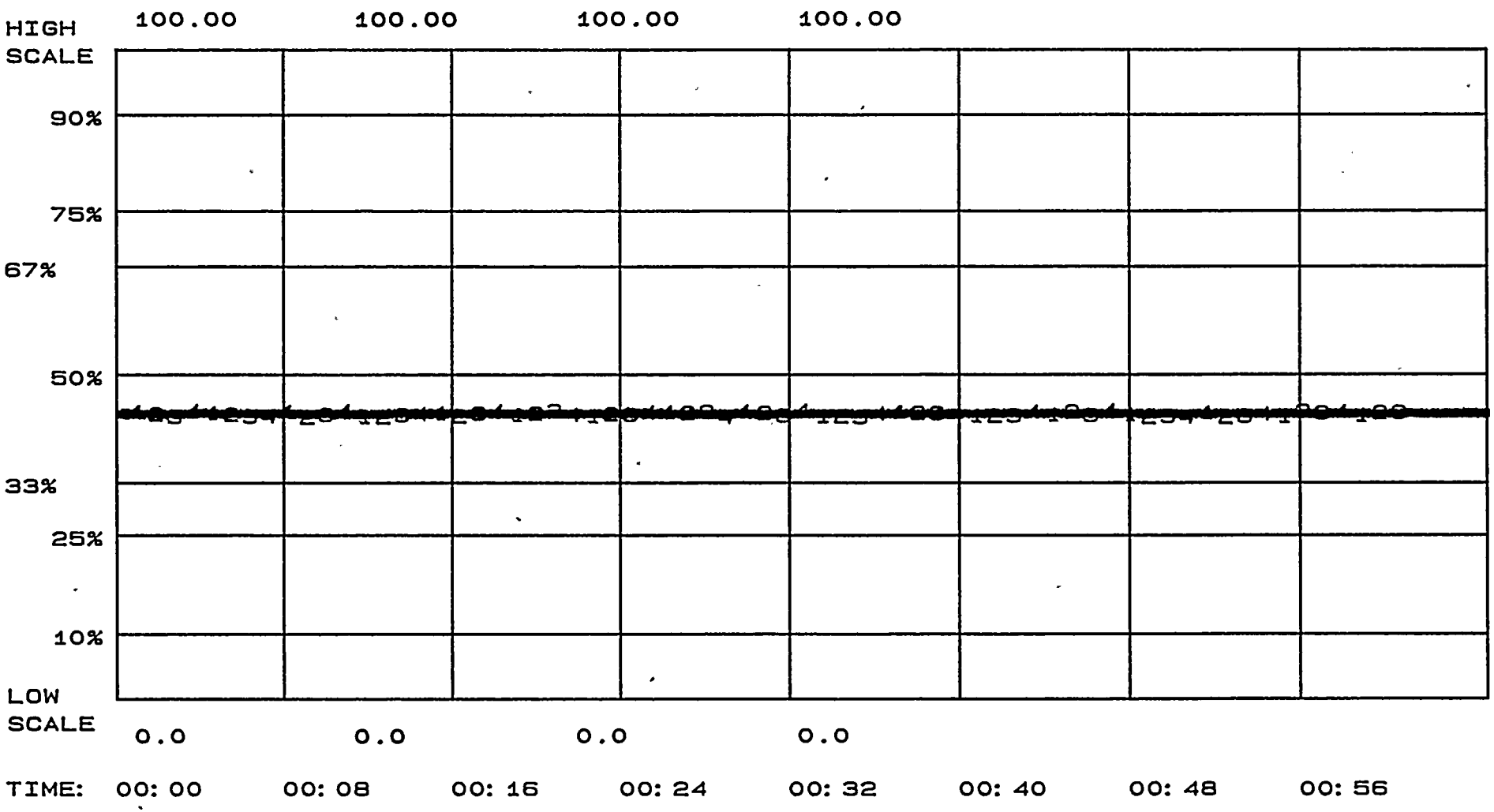
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM PRESSURE LOOP 1	PSIG	TIME
2	P1025	STEAM PRESSURE LOOP 2	PSIG	START 00: 00: 00
3	P1028	STEAM PRESSURE LOOP 3	PSIG	STOP 01: 05: 27
4	P1031	STEAM PRESSURE LOOP 4	PSIG	
5				
6				



70% POWER STEADY-STATE TEST

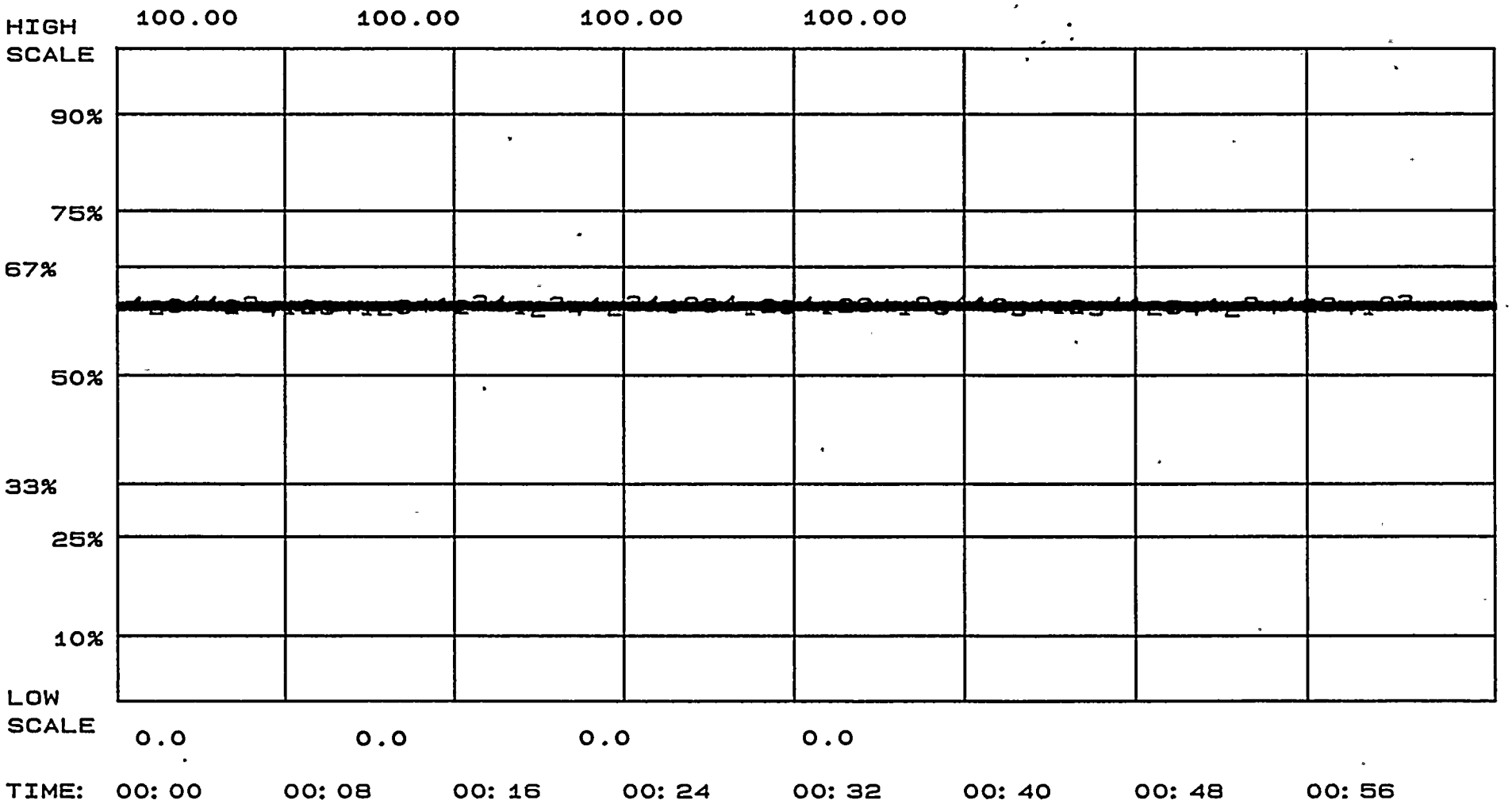
#	POINT ID	DESCRIPTION	UNITS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	01: 05: 27



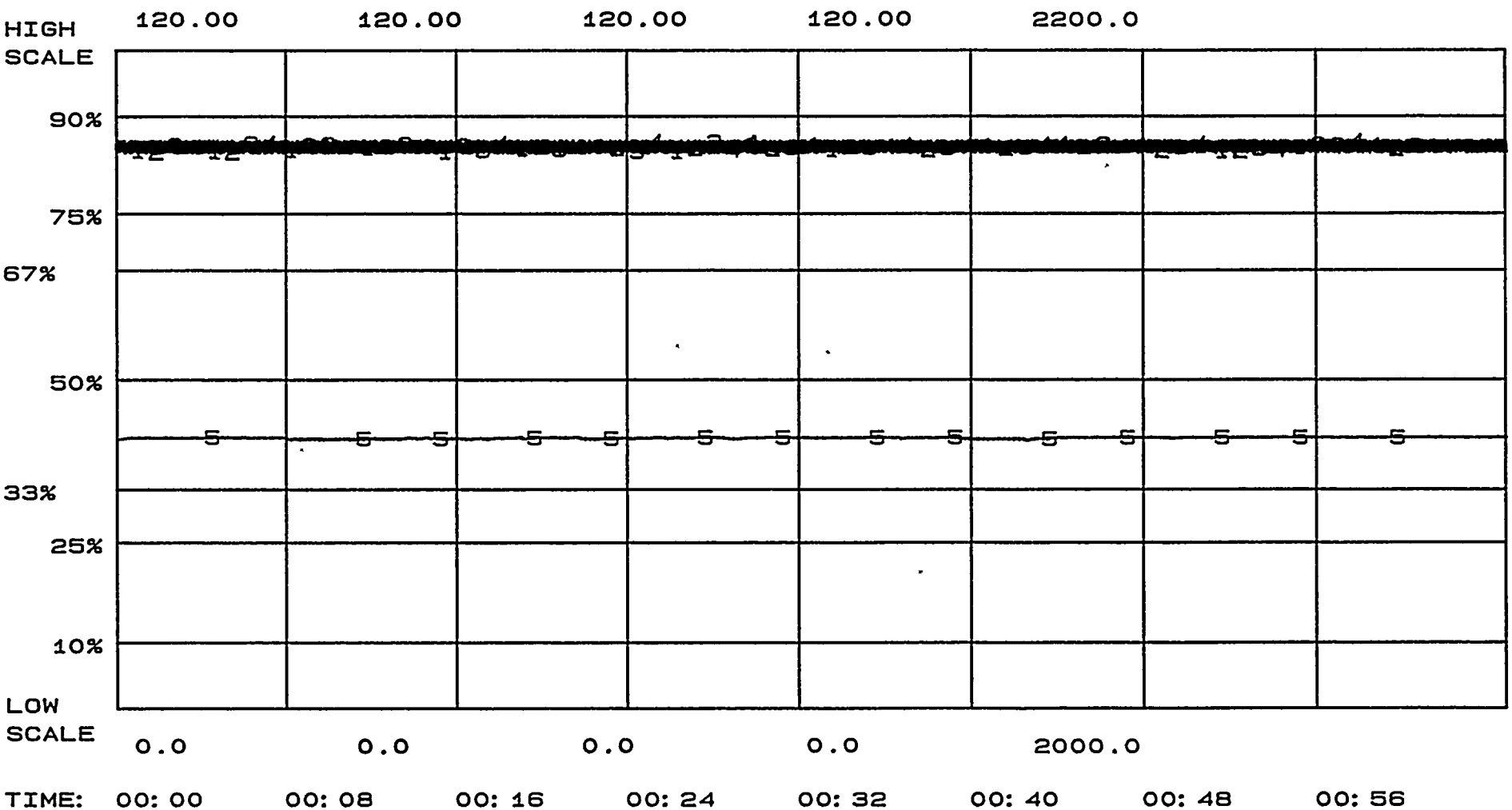
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN 1 WIDE RANGE LEVEL	PC	TIME
2	L1201	STEAM GEN 2 WIDE RANGE LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GEN 3 WIDE RANGE LEVEL	PC	STOP 01: 05: 27
4	L1203	STEAM GEN 4 WIDE RANGE LEVEL	PC	
5				
6				



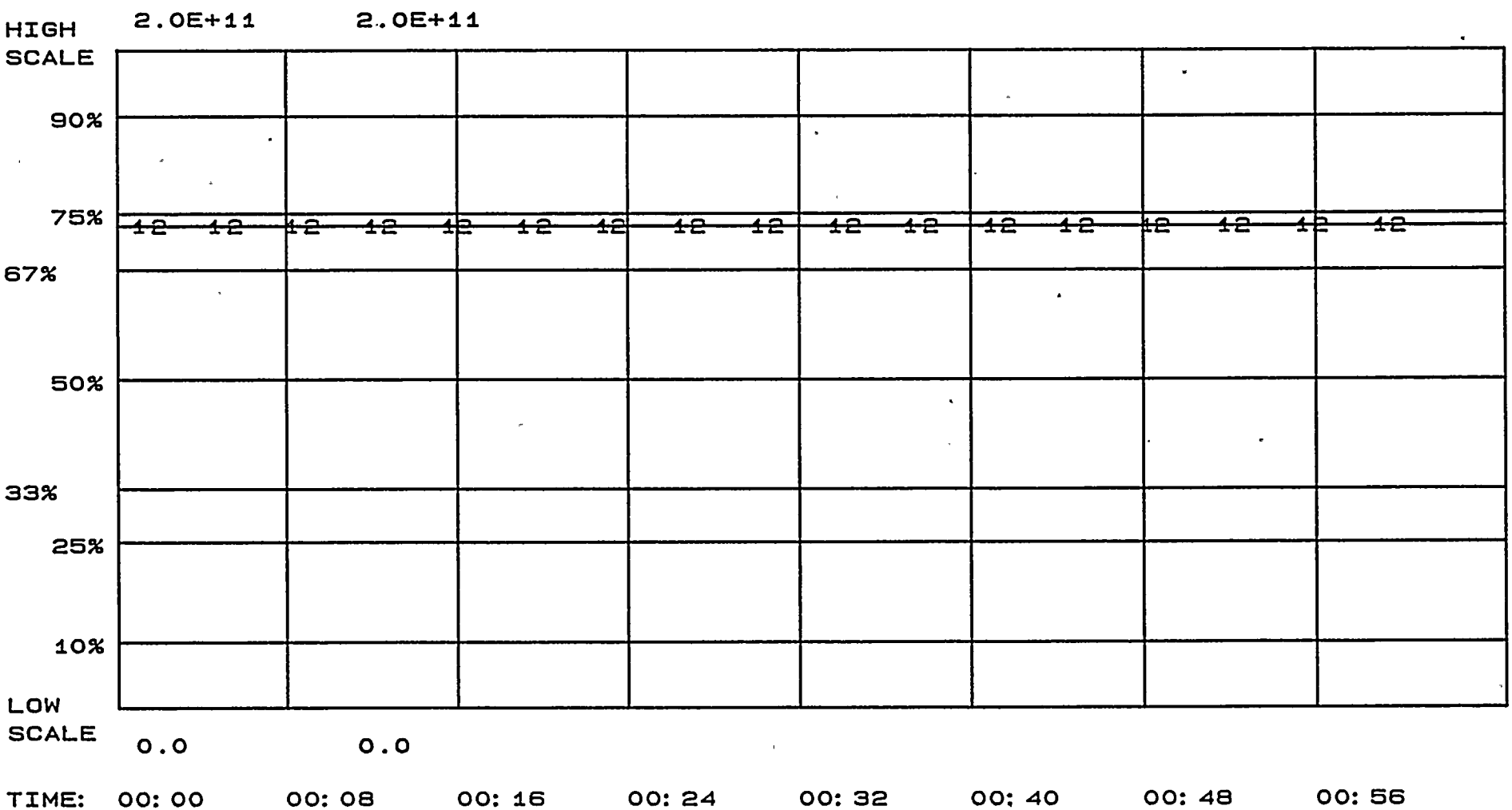
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1089	LOOP 1 REACTOR COOLANT FLOW	PC	TIME
2	F1092	LOOP 2 REACTOR COOLANT FLOW	PC	START 00: 00: 00
3	F1095	LOOP 3 REACTOR COOLANT FLOW	PC	STOP 01: 05: 27
4	F1098	LOOP 4 REACTOR COOLANT FLOW	PC	
5	P1034	RC WIDE RANGE PRESSURE	PSIG	
6				



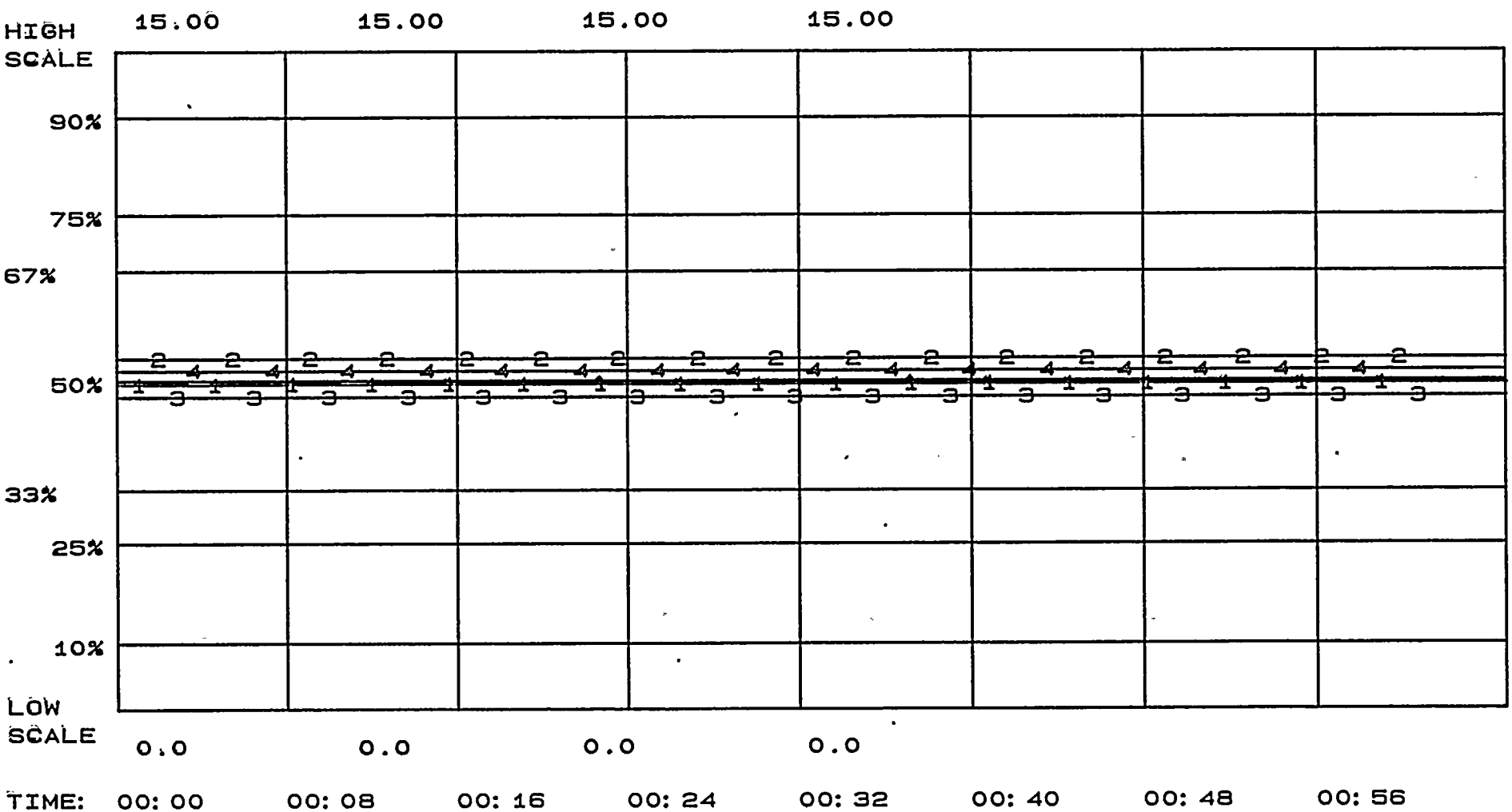
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU(1)	SOURCE RANGE N.I. N31	CPS	TIME
2	NILDTOU(2)	SOURCE RANGE N.I. N32	CPS	START 00:00:00
3				STOP 01:05:27
4				
5				
6				



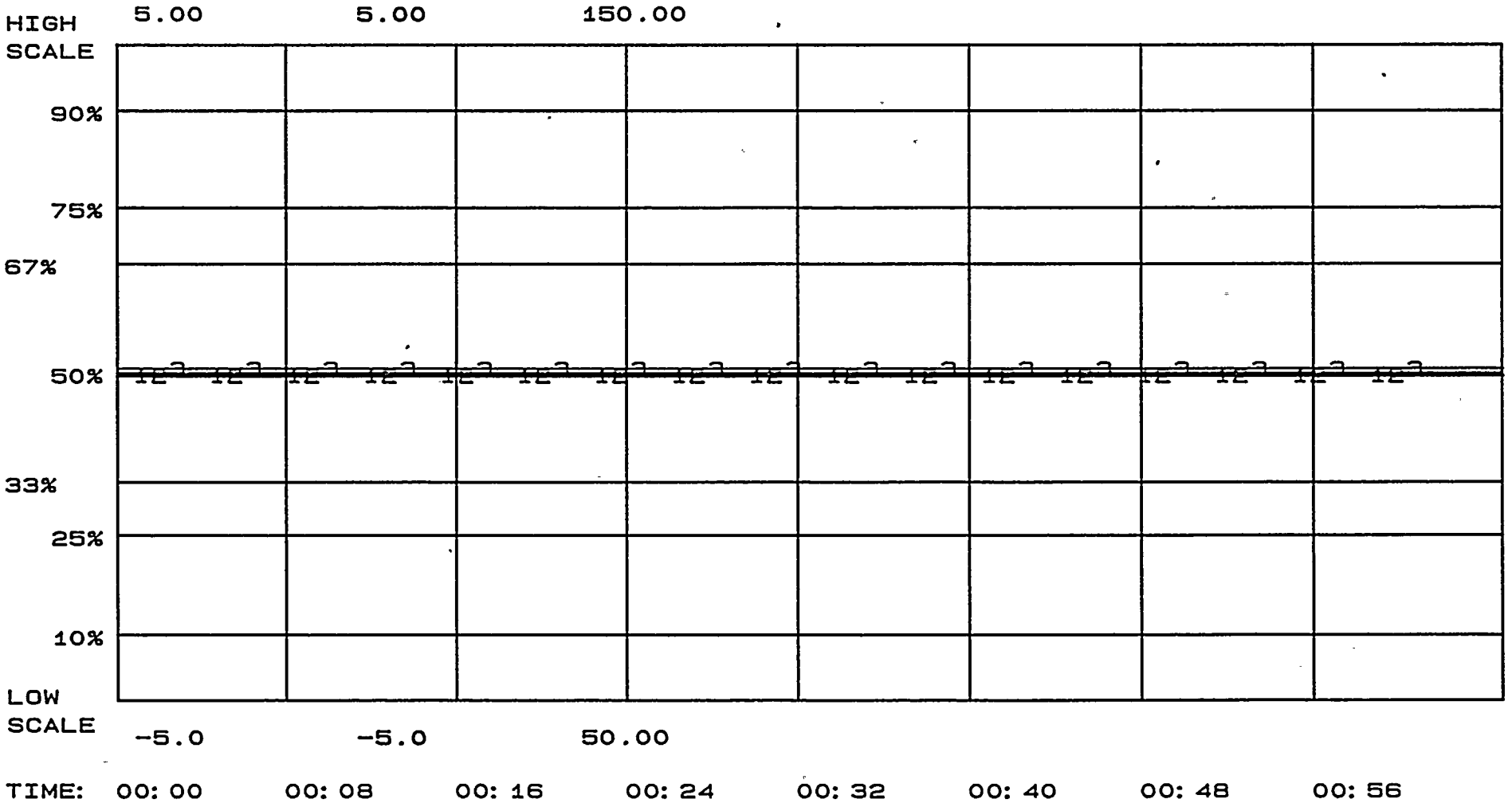
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	RCP SEAL FLOW LOOP 1	GPM	TIME
2	F1001	RCP SEAL FLOW LOOP 2	GPM	START 00: 00: 00
3	F1002	RCP SEAL FLOW LOOP 3	GPM	STOP 01: 05: 27
4	F1003	RCP SEAL FLOW LOOP 4	GPM	
5				
6				



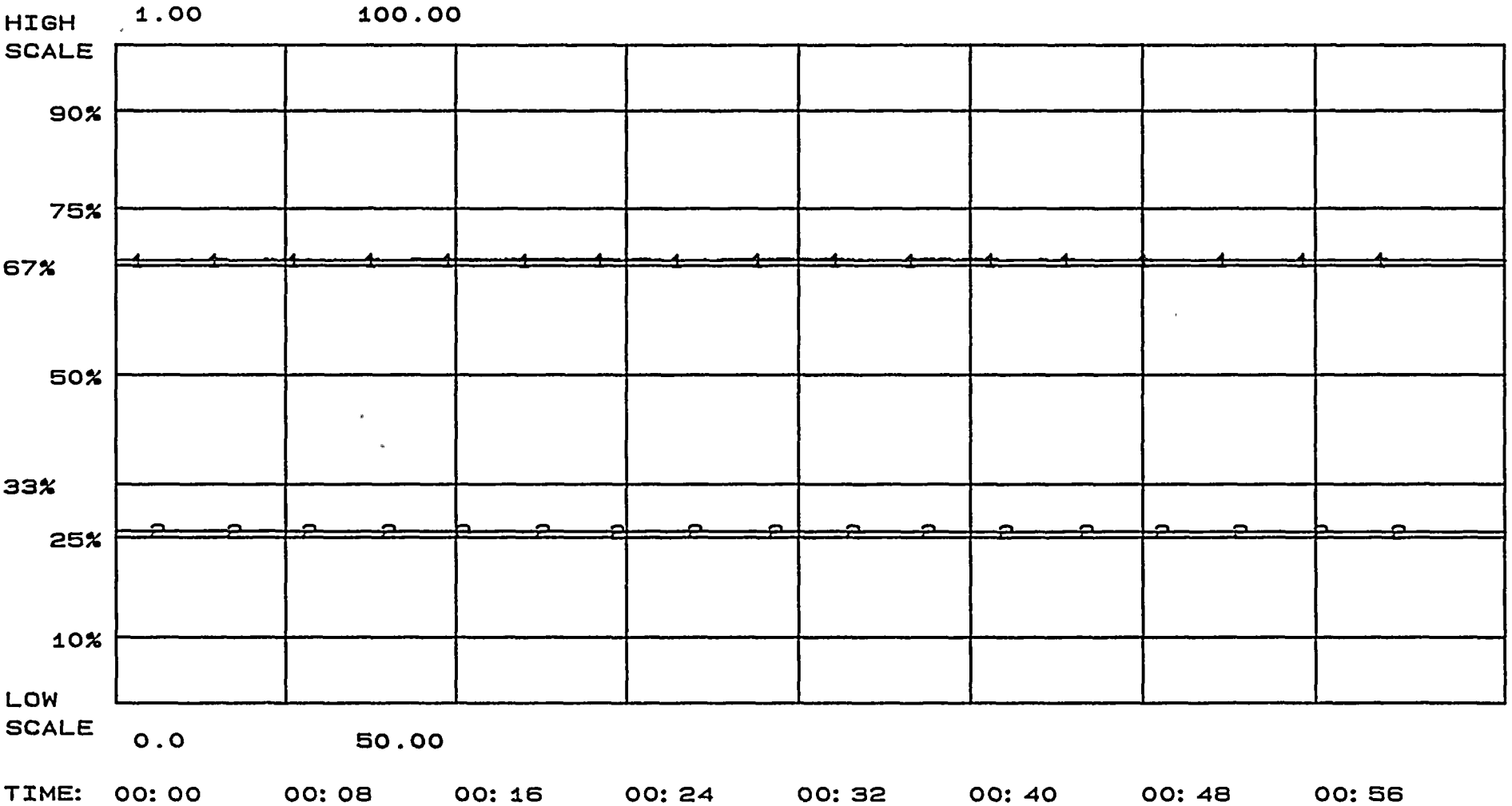
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 00
3	T1162	LONWER CONTAINMENT TEMPERATURE	DEG_F	STOP 01: 05: 27
4				
5				
6				



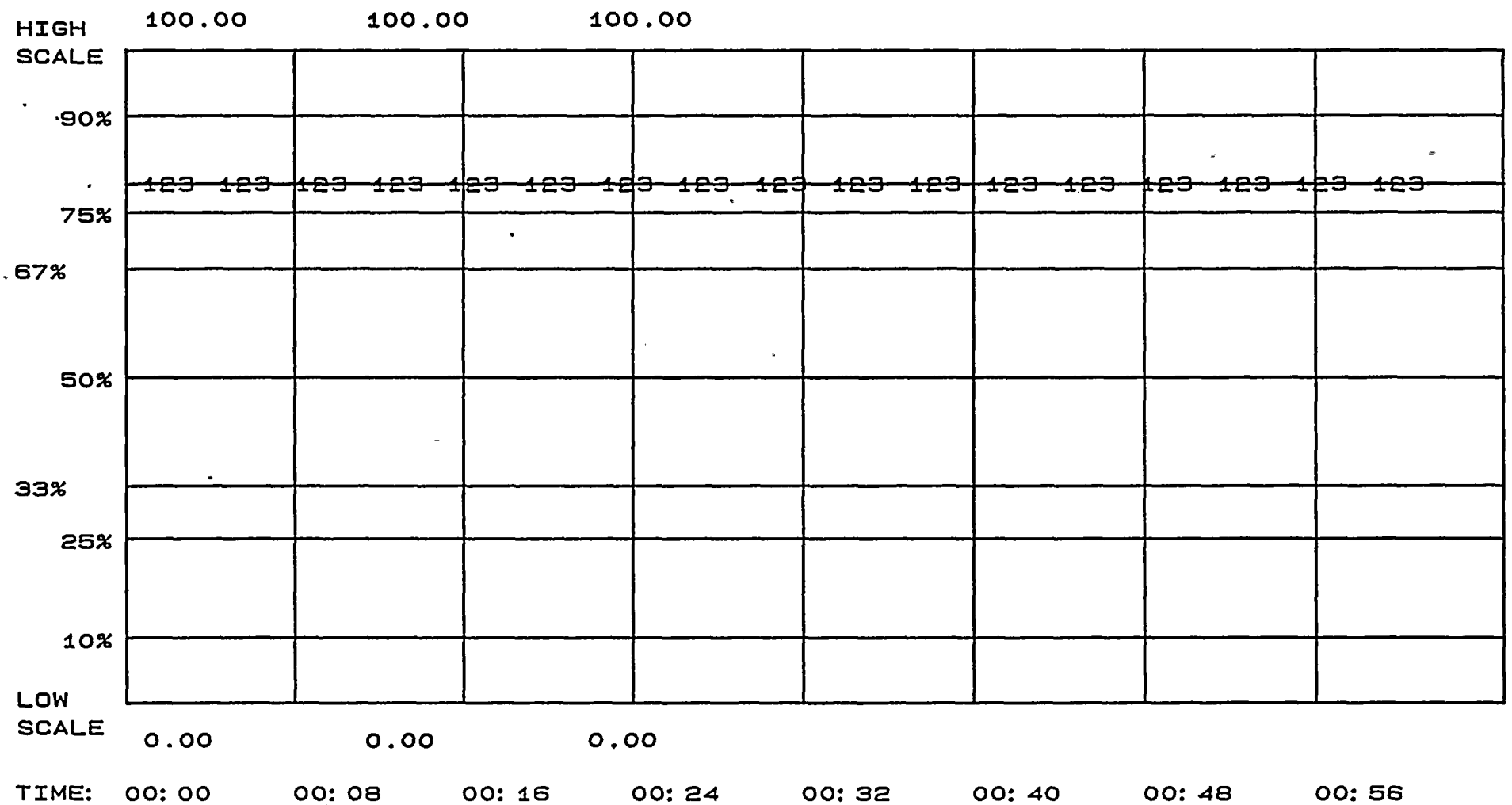
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CRQN	CORE HEAT FLUX	PC	TIME
2	RXTSC	SATURATION MARGIN	DEG_F	START 00: 00: 00
3				STOP 01: 05: 27
4				
5				
6				



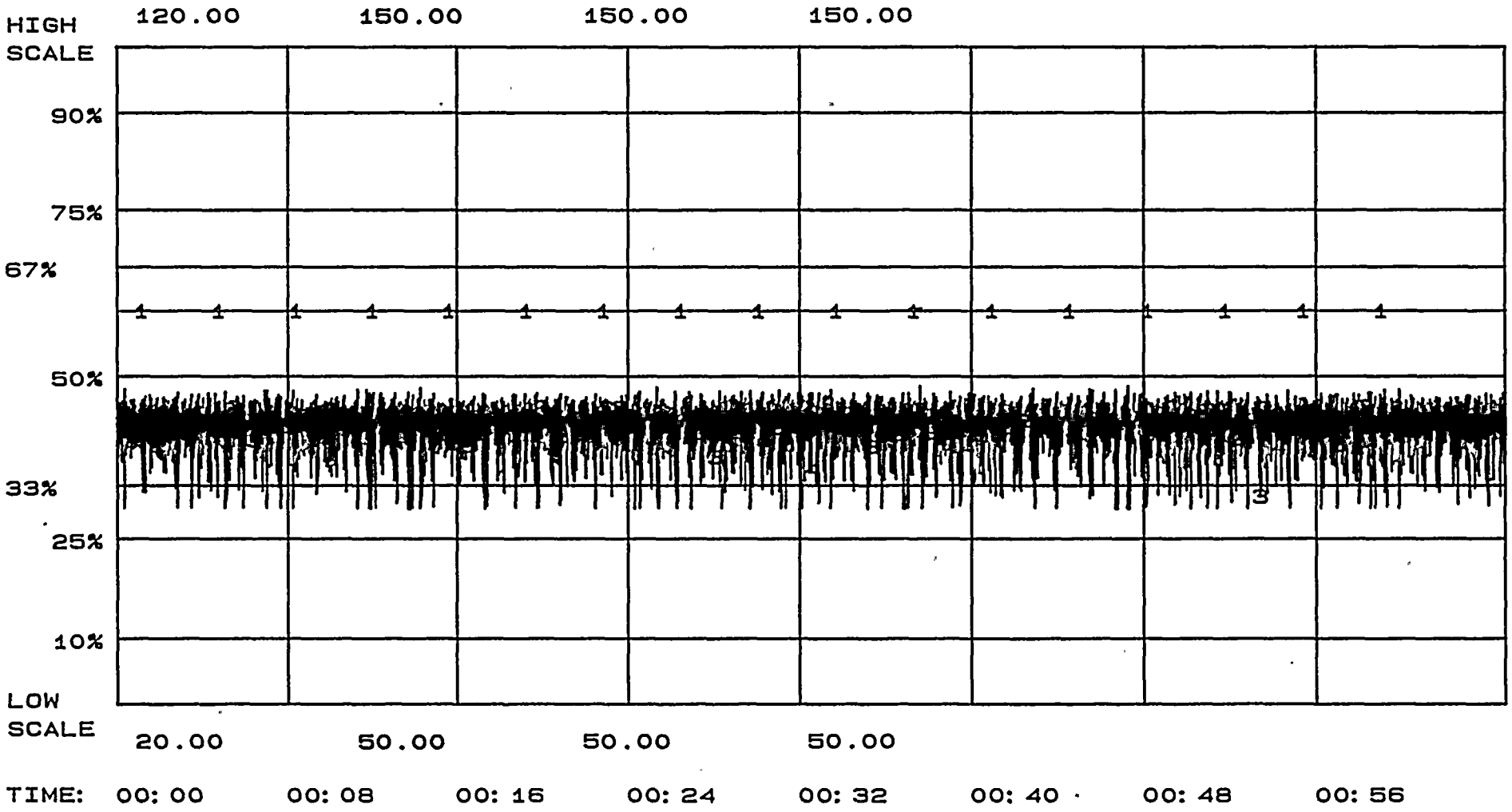
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN (1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN (2)	CONDENSER B TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTCN (3)	CONDENSER C TEMPERATURE	DEG_F	STOP 01: 05: 27
4				
5				
6				



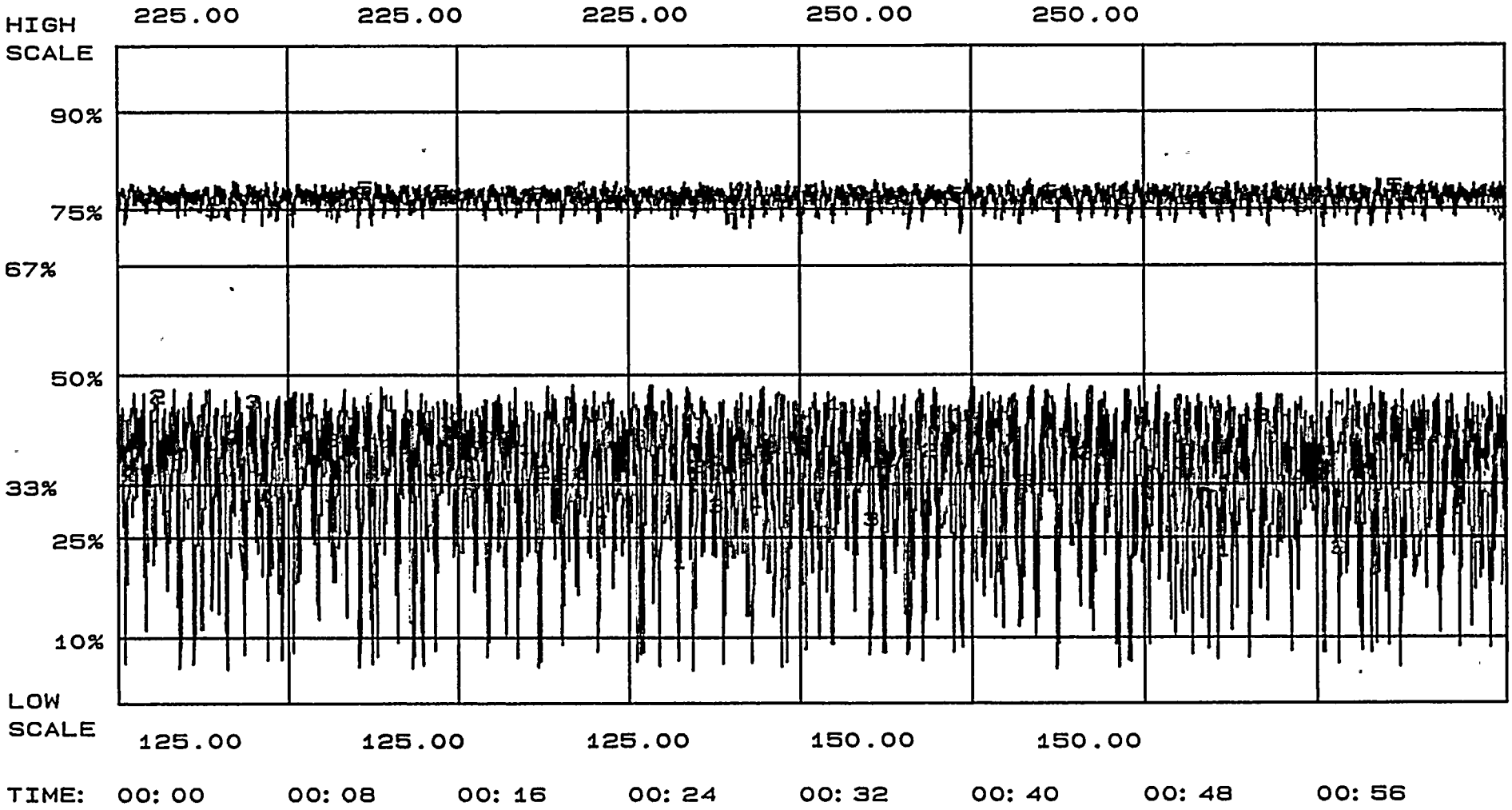
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP DISCH. HDR. TEMP	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 01: 05: 26
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



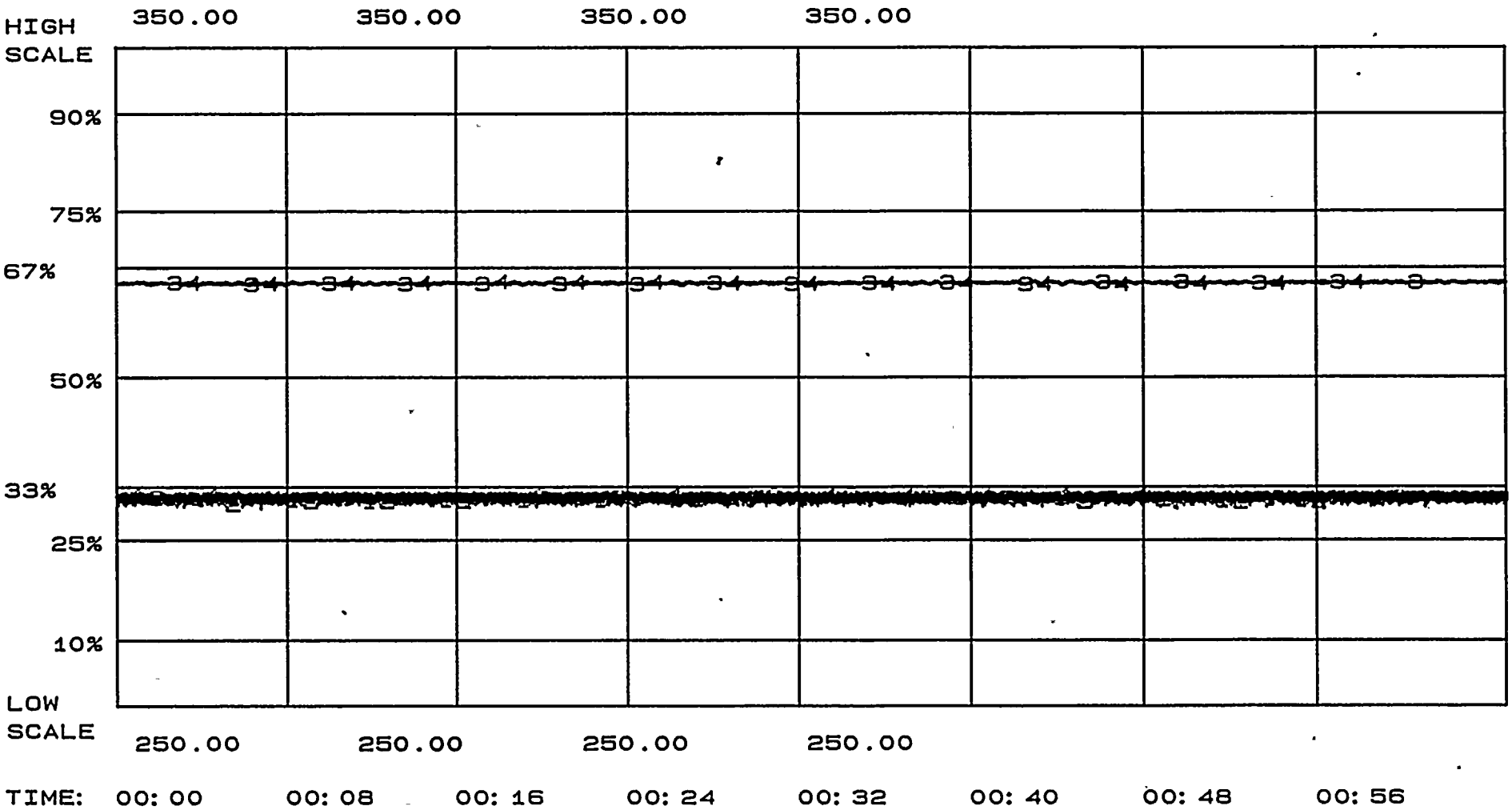
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH1A	HEATER 1A TUBE OUTLET TEMP	DEG_F	TIME
2	FWTTOH1B	HEATER 1B TUBE OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWTTOH1C	HEATER 1C TUBE OUTLET TEMP	DEG_F	STOP 01: 05: 26
4	FWTTOH2A	HEATER 2A TUBE OUTLET TEMP	DEG_F	
5	FWTTOH2B	HEATER 2B TUBE OUTLET TEMP	DEG_F	
6				



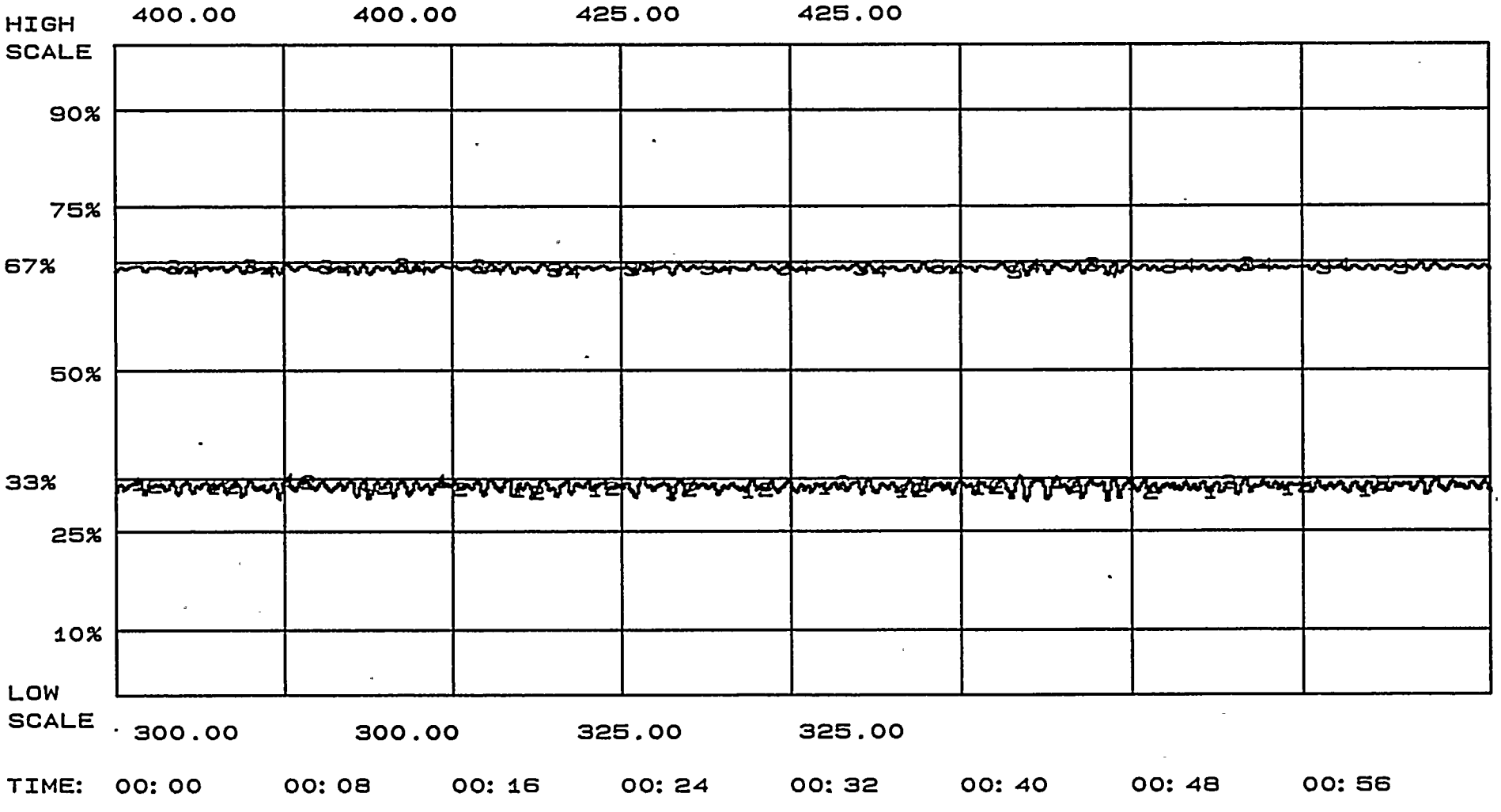
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP	DEG_F	STOP 01: 05: 26
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP	DEG_F	
5				
6				



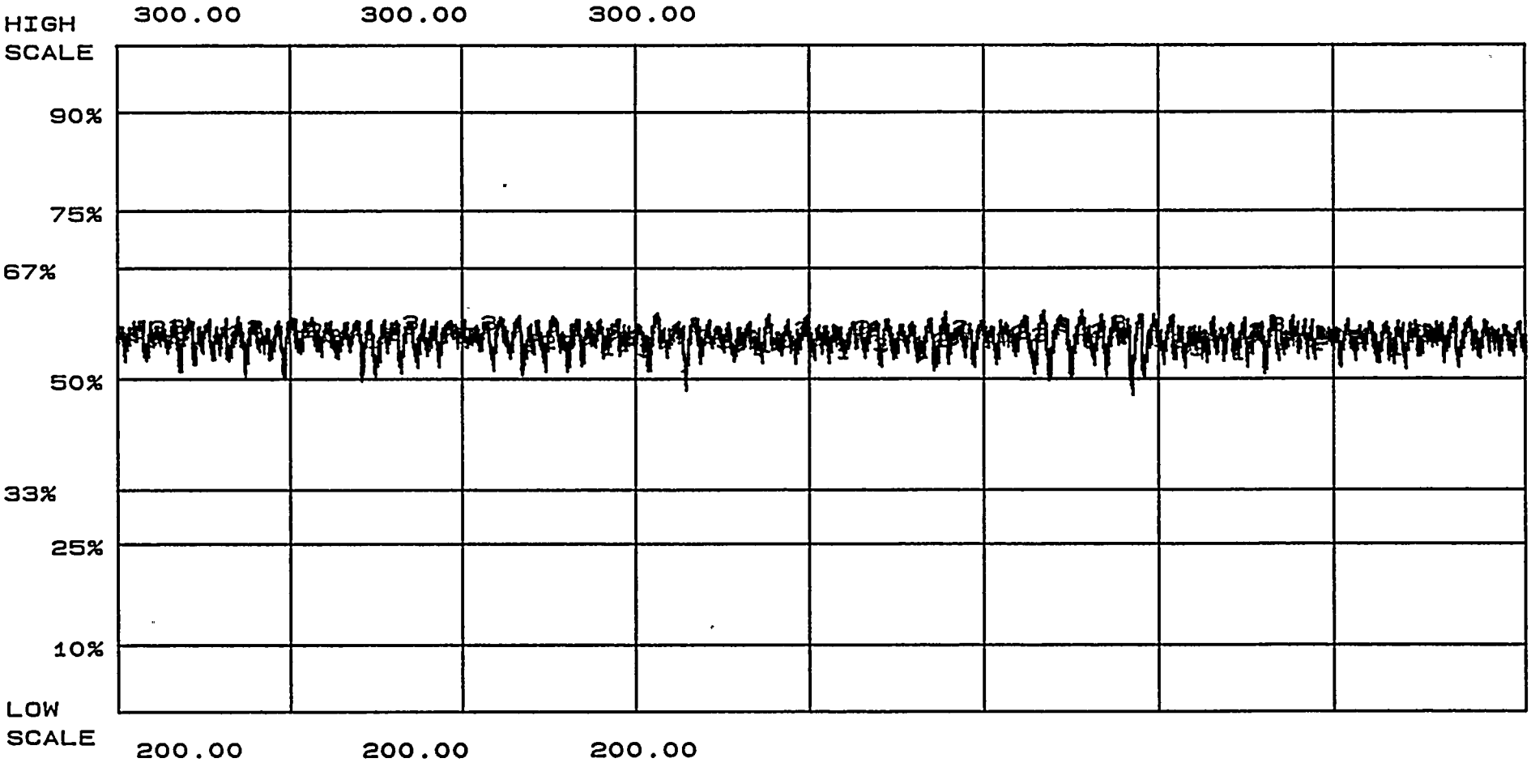
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP	DEG_F	TIME
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP	DEG_F	STOP 01: 05: 26
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP	DEG_F	
5				
6				



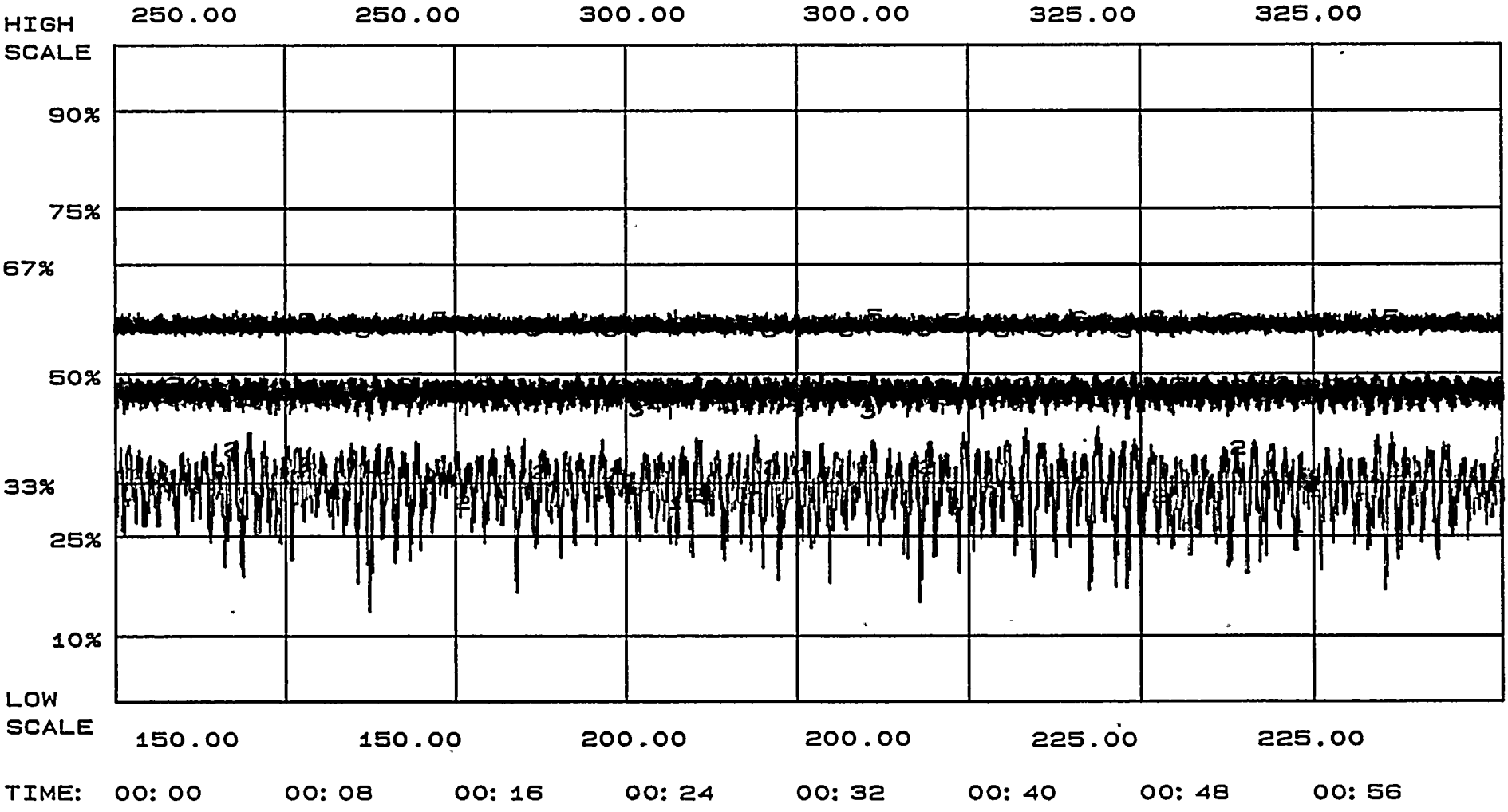
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	FEEDPUMP INLET HEADER TEMP	DEG_F	TIME
2	FWTDEMFP	EAST FEED PUMP OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWTDWMFP	WEST FEED PUMP OUTLET TEMP	DEG_F	STOP 01: 05: 26
4				
5				
6				



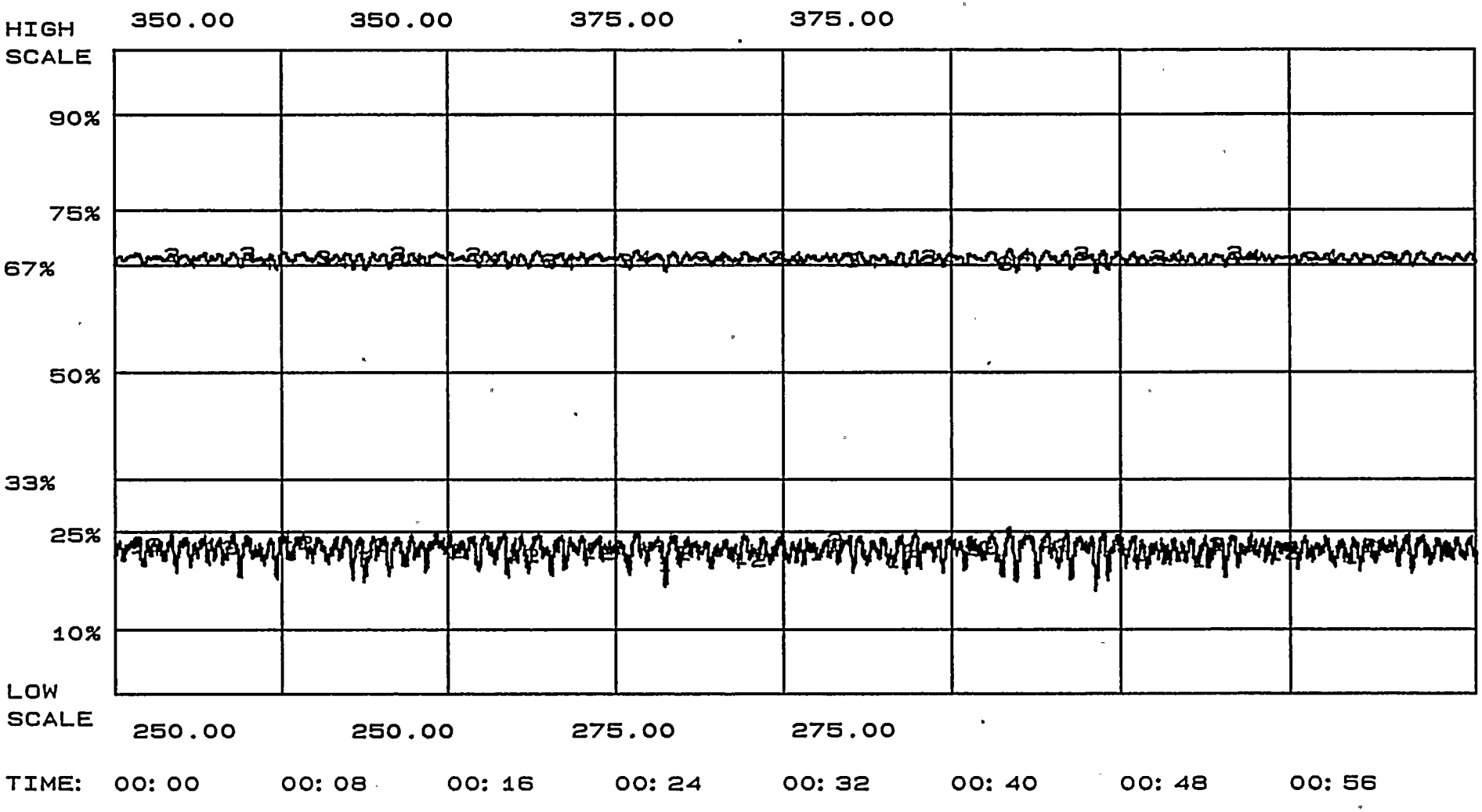
70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F	STOP 01: 05: 26
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F	
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATURE	DEG_F	
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F	



70% POWER STEADY-STATE TEST

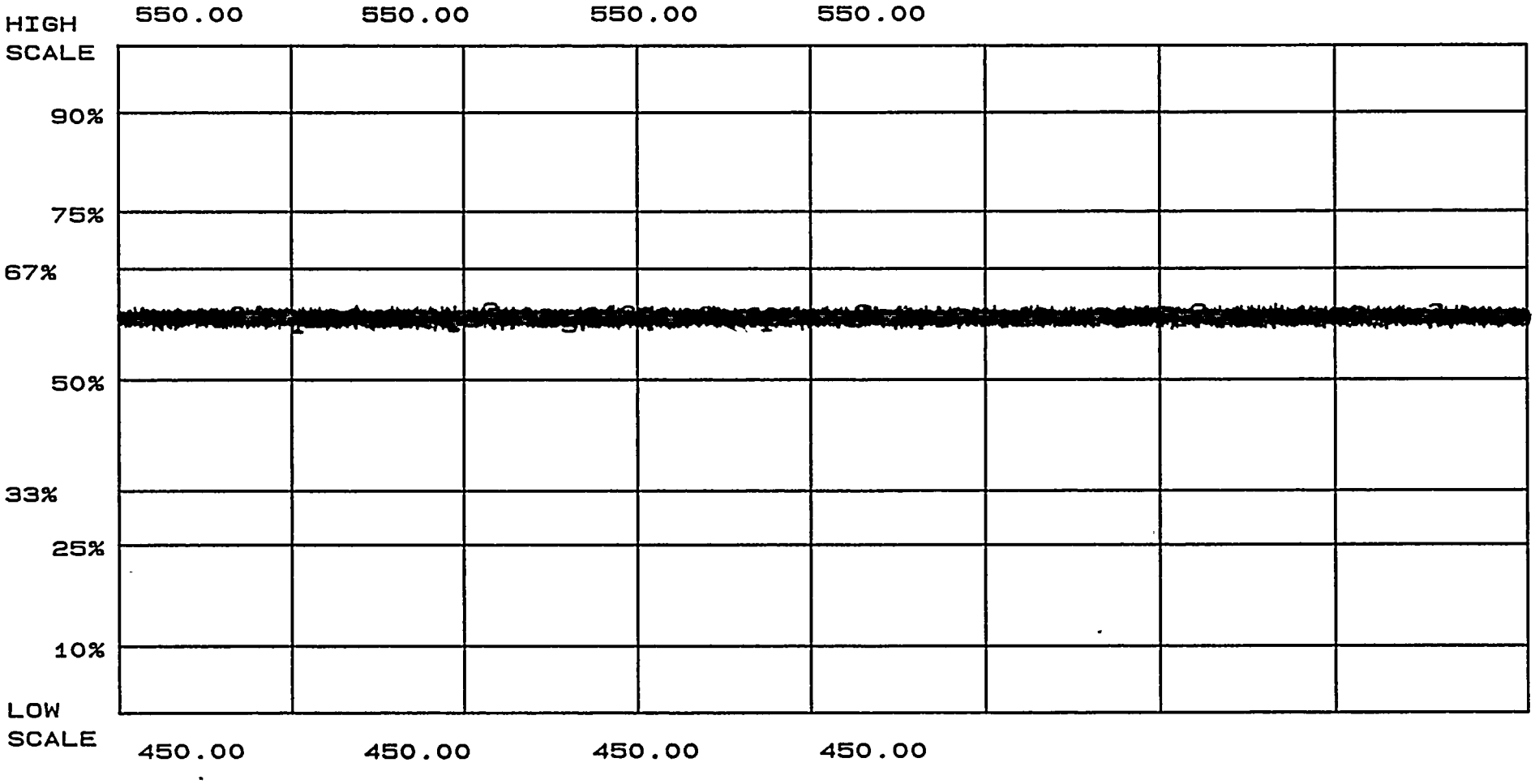
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 01: 05: 26
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



70% POWER STEADY-STATE TEST

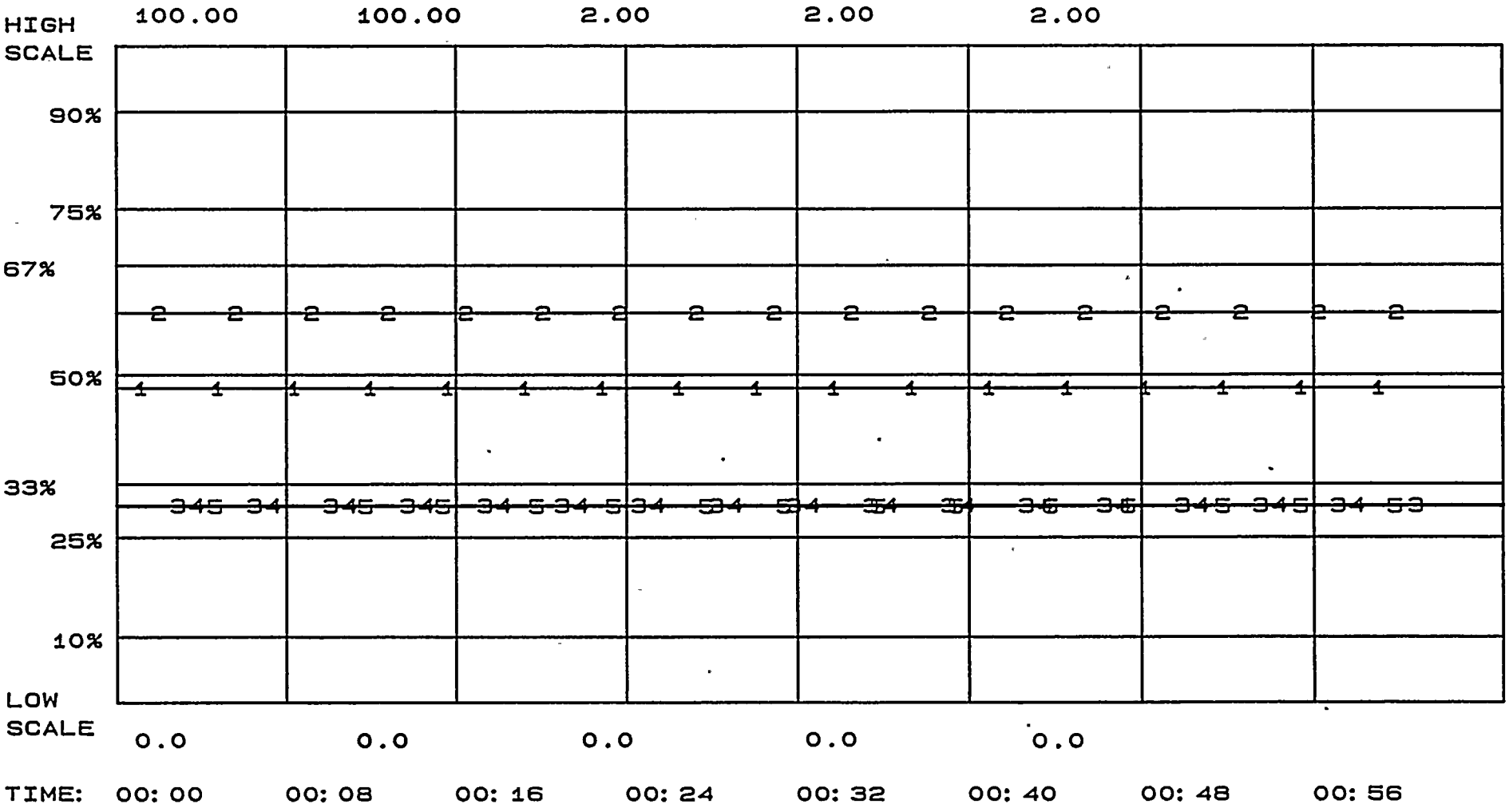
#	POINT ID	DESCRIPTION	UNITS
1	RCTSGDM(1)	STEAM GEN 1 DOME TEMPERATURE	DEG_F
2	RCTSGDM(2)	STEAM GEN 2 DOME TEMPERATURE	DEG_F
3	RCTSGDM(3)	STEAM GEN 3 DOME TEMPERATURE	DEG_F
4	RCTSGDM(4)	STEAM GEN 4 DOME TEMPERATURE	DEG_F
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	01: 05: 26



70% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER AVG INLET TEMP	DEG_F	TIME
2	CWTAVGOUT	CONDENSER AVG OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 01: 05: 27
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



COOK PLANT SIMULATOR

Page 1
90% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
| CRITICAL PARAMETERS |					
Nuclear Power	PR Avg.	Percent	89.8	89.5	0.3
Thermal Power	Calc.	Percent	90	90	0
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	NOT AVAIL	577.2	ERR *
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	NOT AVAIL	521.4	ERR *
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	NOT AVAIL	577.2	ERR *
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	NOT AVAIL	521.4	ERR *
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	NOT AVAIL	577.3	ERR *
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	NOT AVAIL	521.4	ERR *
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	NOT AVAIL	577.2	ERR *
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	NOT AVAIL	521.4	ERR *
Loop 1 Tavg.	NTI-13	Deg. F	549	549.3	-0.1
Loop 2 Tavg.	NTI-23	Deg. F	549.5	549.3	0
Loop 3 Tavg.	NTI-33	Deg. F	548	549.4	-0.3
Loop 4 Tavg.	NTI-43	Deg. F	550	549.3	0.1
Pressurizer Pressure	NPP Avg.	PSIG	2093.7	2094.7	0
Pressurizer Level	NLP Avg.	Percent	40.7	40.3	1
Press. Steam Temperature	NTA-252	Deg. F	635	643.1	-1.3
Press. Liquid Temp.	NTA-251	Deg. F	652	643.1	1.4
Press. Surge Line Temp.	NTA-253	Deg. F	650	641	1.4
Steam Generator #21 Level	BLP Avg.	Percent	45.3	43.9	3.1
Steam Generator #22 Level	BLP Avg.	Percent	47.3	44.1	6.8 *
Steam Generator #23 Level	BLP Avg.	Percent	44.3	44.2	0.2
Steam Generator #24 Level	BLP Avg.	Percent	43.7	43.6	0.2
Steam Generator #21 Press	MPP Avg.	PSIG	665	684.2	-2.9
Steam Generator #22 Press	MPP Avg.	PSIG	656.7	684.2	-4.2
Steam Generator #23 Press	MPP Avg.	PSIG	653.3	684.3	-4.7 *
Steam Generator #24 Press	MPP Avg.	PSIG	660	684.3	-3.7
Total Feedwater Flow		E6 lb/hr	12.8	12.44	2.8
Main Generator Elect Pwr		Megawatts	938	920	1.9

08/13/90 10:38:07 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

D>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.8730	DEGF
T1004	PZR LIQUID TEMP		643.0850	DEGF
PCTNTA253	83000 PRZ SURGE LINE TEMP		638.1919	DEG F
L1091	PRESSURIZER WATER LEVEL		40.1843	PC
PVLCORNC	05350 PRZ COLD CALIB		.2982	%
P1036	PRESSURIZER PRESSURE		2094.1899	PSIG
T1101	LOOP 1 AVG TEMP		549.3936	DEGF
T1102	LOOP 2 AVG TEMP		549.4185	DEGF
T1103	LOOP 3 AVG TEMP		549.4465	DEGF
T1104	LOOP 4 AVG TEMP		549.3899	DEGF
T1111	LOOP 1 HOT LEG TEMP		577.3315	DEGF
T1112	LOOP 2 HOT LEG TEMP		577.3315	DEGF
T1113	LOOP 3 HOT LEG TEMP		577.3699	DEGF
T1114	LOOP 4 HOT LEG TEMP		577.3325	DEGF
T1115	LOOP 1 COLD LEG TEMP		521.4529	DEGF
T1116	LOOP 2 COLD LEG TEMP		521.5083	DEGF
T1117	LOOP 3 COLD LEG TEMP		521.4705	DEGF
T1118	LOOP 4 COLD LEG TEMP		521.4319	DEGF
NTOPRAV	02050 AVG POWER RANGE^FLUX		.8937	%
CORN	03030 NORMALIZED CORE^POWER		.8580	DMLS

TSD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		684.5049	PSIG
P1025	STM GEN OUTLET PRES LP 2		684.5132	PSIG
P1028	STM GEN OUTLET PRES LP 3		684.5640	PSIG
P1031	STM GEN OUTLET PRES LP 4		684.6040	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.6319	PC
L1207	STM GEN 2 NARROW LEVEL		43.4298	PC
L1210	STM GEN 3 NARROW LEVEL		43.6555	PC
L1213	STM GEN 4 NARROW LEVEL		43.8091	PC
PCTSGDM	61190 SG DOME STEAM TEMP	(001)	499.8337	F
PCTSGDM	61190 SG DOME STEAM TEMP	(002)	500.1040	F
PCTSGDM	61190 SG DOME STEAM TEMP	(003)	500.8594	F
PCTSGDM	61190 SG DOME STEAM TEMP	(004)	500.0442	F
PCBORON	11070 BORON CONC	(001)	1212.5225	PPM
PCBORON	11070 BORON CONC	(002)	1212.5200	PPM
PCBORON	11070 BORON CONC	(003)	1212.5251	PPM

TSD>

08/13/90 10:39:28 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

SD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	86.9970	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	86.9983	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	86.9808	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		87.9763	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		98.3366	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		98.9502	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		99.9831	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		181.4671	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		181.8149	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		180.3403	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		241.4561	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		242.1841	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		299.2913	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		297.5173	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		331.8726	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		332.1455	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		352.7178	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		352.6912	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		416.4934	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		416.4961	F

TSD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		273.1069	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		273.9641	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		274.5608	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.2237	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.7377	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.7383	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.7379	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		198.3435	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		199.0172	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		257.9126	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		262.1521	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		299.1855	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		299.0737	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		289.3511	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		289.5938	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		362.8933	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		362.8152	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	218	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	218	

TSD>

08/13/90 10:52:32 TASK # 02000025 COOK1 GOULD C.S.O. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.9509	DEGF
T1004	PZR LIQUID TEMP		643.1306	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		641.1851	DEG F
L1091	PRESSURIZER WATER LEVEL		40.1593	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2981	%
P1036	PRESSURIZER PRESSURE		2095.2710	PSIG
T1101	LOOP 1 AVG TEMP		549.3372	DEGF
T1102	LOOP 2 AVG TEMP		549.3633	DEGF
T1103	LOOP 3 AVG TEMP		549.3918	DEGF
T1104	LOOP 4 AVG TEMP		549.3347	DEGF
T1111	LOOP 1 HOT LEG TEMP		577.2722	DEGF
T1112	LOOP 2 HOT LEG TEMP		577.2722	DEGF
T1113	LOOP 3 HOT LEG TEMP		577.3145	DEGF
T1114	LOOP 4 HOT LEG TEMP		577.2722	DEGF
T1115	LOOP 1 COLD LEG TEMP		521.4019	DEGF
T1116	LOOP 2 COLD LEG TEMP		521.4529	DEGF
T1117	LOOP 3 COLD LEG TEMP		521.4358	DEGF
T1118	LOOP 4 COLD LEG TEMP		521.3833	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8942	%
CRQN	03030 NORMALIZED CORE^POWER		.8578	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		684.2542	PSIG
P1025	STM GEN OUTLET PRES LP 2		684.2100	PSIG
P1028	STM GEN OUTLET PRES LP 3		684.2810	PSIG
P1031	STM GEN OUTLET PRES LP 4		684.2927	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.6955	PC
L1207	STM GEN 2 NARROW LEVEL		44.5190	PC
L1210	STM GEN 3 NARROW LEVEL		44.3989	PC
L1213	STM GEN 4 NARROW LEVEL		43.8454	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	499.8943	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	499.5710	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	499.5293	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	499.5139	F
RCBORON	11070 BORON CONC	(001)	1212.5769	PPM
RCBORON	11070 BORON CONC	(002)	1212.5779	PPM
RCBORON	11070 BORON CONC	(003)	1212.5747	PPM

ISD>

08/13/90 10:53:25 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	86.8472	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	86.7725	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	86.8904	F
FWTDHHWP	11010 .HWP DISC HEADER TEMP		87.8171	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		98.5207	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		96.9337	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		97.1245	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		177.9120	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		172.7891	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		178.7447	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		241.8798	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		241.7163	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		298.5400	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		298.7000	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		331.9846	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		331.7185	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		352.2083	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		352.2041	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		416.1943	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		416.2004	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		273.7351	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		274.6064	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		274.6074	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.1368	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.7375	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.7376	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.7375	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		198.4660	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		196.8898	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		258.5242	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		259.8533	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		299.5906	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		298.8718	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		289.5249	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		289.5640	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		363.1360	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		363.0935	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	218	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	218	

ISD>

08/13/90 11:12:05 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		643.1345	DEGF
T1004	PZR LIQUID TEMP		643.2185	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		641.9797	DEG F
L1091	PRESSURIZER WATER LEVEL		40.1588	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2981	%
P1036	PRESSURIZER PRESSURE		2096.5645	PSIG
T1101	LOOP 1 AVG TEMP		549.3098	DEGF
T1102	LOOP 2 AVG TEMP		549.3333	DEGF
T1103	LOOP 3 AVG TEMP		549.3499	DEGF
T1104	LOOP 4 AVG TEMP		549.3027	DEGF
T1111	LOOP 1 HOT LEG TEMP		577.2383	DEGF
T1112	LOOP 2 HOT LEG TEMP		577.2383	DEGF
T1113	LOOP 3 HOT LEG TEMP		577.2744	DEGF
T1114	LOOP 4 HOT LEG TEMP		577.2383	DEGF
T1115	LOOP 1 COLD LEG TEMP		521.3669	DEGF
T1116	LOOP 2 COLD LEG TEMP		521.4236	DEGF
T1117	LOOP 3 COLD LEG TEMP		521.3799	DEGF
T1118	LOOP 4 COLD LEG TEMP		521.3555	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8916	%
CRQN	03030 NORMALIZED CORE^POWER		.8576	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		684.0093	PSIG
P1025	STM GEN OUTLET PRES LP 2		684.0127	PSIG
P1028	STM GEN OUTLET PRES LP 3		684.1709	PSIG
P1031	STM GEN OUTLET PRES LP 4		684.1011	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.9913	PC
L1207	STM GEN 2 NARROW LEVEL		43.9318	PC
L1210	STM GEN 3 NARROW LEVEL		44.3516	PC
L1213	STM GEN 4 NARROW LEVEL		43.2544	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	499.9968	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	499.8896	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	500.5891	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	499.6680	F
RCBORON	11070 BORON CONC	(001)	1212.6099	PPM
RCBORON	11070 BORON CONC	(002)	1212.6064	PPM
RCBORON	11070 BORON CONC	(003)	1212.6060	PPM

ISD>

08/13/90 11:12:56 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

SD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	86.8143	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	86.7779	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	86.8391	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		87.7898	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		98.1041	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		97.1209	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		98.2736	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		180.9166	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		179.3925	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		181.5990	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		242.3702	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		241.7766	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		299.2661	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		298.3201	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		331.7217	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		331.8518	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		352.6973	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		352.7561	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		416.4673	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		416.4622	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		272.7395	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		273.5964	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		273.8694	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.1404	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.7337	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.7335	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.7320	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		196.7113	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		198.4763	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		259.6123	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		261.1143	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		299.2849	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		298.9465	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		288.7354	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		288.8438	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		362.8159	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		362.8000	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	218	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	218	

ISD>

08/13/90 11:23:13 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		643.2229	DEGF
T1004	PZR LIQUID TEMP		643.0911	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		642.5583	DEG F
L1091	PRESSURIZER WATER LEVEL		40.2731	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2986	%
P1036	PRESSURIZER PRESSURE		2094.1587	PSIG
T1101	LOOP 1 AVG TEMP		549.3103	DEGF
T1102	LOOP 2 AVG TEMP		549.3384	DEGF
T1103	LOOP 3 AVG TEMP		549.3708	DEGF
T1104	LOOP 4 AVG TEMP		549.3049	DEGF
T1111	LOOP 1 HOT LEG TEMP		577.2466	DEGF
T1112	LOOP 2 HOT LEG TEMP		577.2466	DEGF
T1113	LOOP 3 HOT LEG TEMP		577.3132	DEGF
T1114	LOOP 4 HOT LEG TEMP		577.2458	DEGF
T1115	LOOP 1 COLD LEG TEMP		521.3789	DEGF
T1116	LOOP 2 COLD LEG TEMP		521.4358	DEGF
T1117	LOOP 3 COLD LEG TEMP		521.4119	DEGF
T1118	LOOP 4 COLD LEG TEMP		521.3765	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8971	%
CRQN	03030 NORMALIZED CORE^POWER		.8575	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		684.1650	PSIG
P1025	STM GEN OUTLET PRES LP 2		684.1375	PSIG
P1028	STM GEN OUTLET PRES LP 3		684.2253	PSIG
P1031	STM GEN OUTLET PRES LP 4		684.2087	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.4891	PC
L1207	STM GEN 2 NARROW LEVEL		43.7880	PC
L1210	STM GEN 3 NARROW LEVEL		44.4702	PC
L1213	STM GEN 4 NARROW LEVEL		43.6350	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	499.7849	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	500.7039	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	500.8352	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	499.9233	F
RCBORON	11070 BORON CONC	(001)	1212.6094	PPM
RCBORON	11070 BORON CONC	(002)	1212.6062	PPM
RCBORON	11070 BORON CONC	(003)	1212.6106	PPM

ISD>

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	87.0894	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	87.0245	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	87.0611	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		82.0450	F
FWTTODCA	19280 DCA TUBE CUTLET TEMP		95.1251	F
FWTTODCB	19300 DCB TUBE CUTLET TEMP		97.4971	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		97.4130	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		172.7094	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		173.9996	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		176.7976	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		241.0554	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		241.1492	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		298.0081	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		298.1970	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		331.8672	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		331.8552	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		351.9370	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		351.9236	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		416.1431	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		416.1526	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		273.2307	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		274.0881	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		274.0894	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.0275	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.7261	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.7268	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.7269	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		196.8993	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		196.7740	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		260.1323	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		260.0923	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		298.7893	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		299.4443	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		289.8491	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		289.9036	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		362.8745	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		362.8564	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	218	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	218	

ISD>

08/13/90 11:37:34 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

D>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		643.2942	DEGF
T1004	PZR LIQUID TEMP		643.0767	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		640.9861	DEG F
L1091	PRESSURIZER WATER LEVEL		40.3886	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2992	%
P1036	PRESSURIZER PRESSURE		2093.1602	PSIG
T1101	LOOP 1 AVG TEMP		549.3154	DEGF
T1102	LOOP 2 AVG TEMP		549.3445	DEGF
T1103	LOOP 3 AVG TEMP		549.3745	DEGF
T1104	LOOP 4 AVG TEMP		549.3110	DEGF
T1111	LOOP 1 HOT LEG TEMP		577.2520	DEGF
T1112	LOOP 2 HOT LEG TEMP		577.2520	DEGF
T1113	LOOP 3 HOT LEG TEMP		577.3691	DEGF
T1114	LOOP 4 HOT LEG TEMP		577.2534	DEGF
T1115	LOOP 1 COLD LEG TEMP		521.3899	DEGF
T1116	LOOP 2 COLD LEG TEMP		521.4451	DEGF
T1117	LOOP 3 COLD LEG TEMP		521.4148	DEGF
T1118	LOOP 4 COLD LEG TEMP		521.3933	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8933	%
CRQN	03030 NORMALIZED CORE^POWER		.8576	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		684.2446	PSIG
P1025	STM GEN OUTLET PRES LP 2		684.2251	PSIG
P1028	STM GEN OUTLET PRES LP 3		684.2815	PSIG
P1031	STM GEN OUTLET PRES LP 4		684.3289	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.7460	PC
L1207	STM GEN 2 NARROW LEVEL		44.6700	PC
L1210	STM GEN 3 NARROW LEVEL		44.1529	PC
L1213	STM GEN 4 NARROW LEVEL		43.8278	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	500.3269	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	499.6306	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	500.3958	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	500.1755	F
RCBORON	11070 BORON CONC	(001)	1212.5901	PPM
RCBORON	11070 BORON CONC	(002)	1212.5933	PPM
RCBORON	11070 BORON CONC	(003)	1212.5896	PPM

ISD>
ILLEGAL COMMAND
ISD>

08/13/90 11:38:24 TASK # 02000025 COOK1 GOULD C.S.D. MPX-32

D>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	86.4971	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	86.5264	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	86.5691	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		87.5023	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		97.6869	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		98.8466	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		97.4328	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		178.6898	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		181.2024	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		178.6623	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		240.9771	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		241.9689	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		298.6252	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		298.6719	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		331.6509	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		331.9954	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		352.4854	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		352.4663	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		416.3210	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		416.3540	F

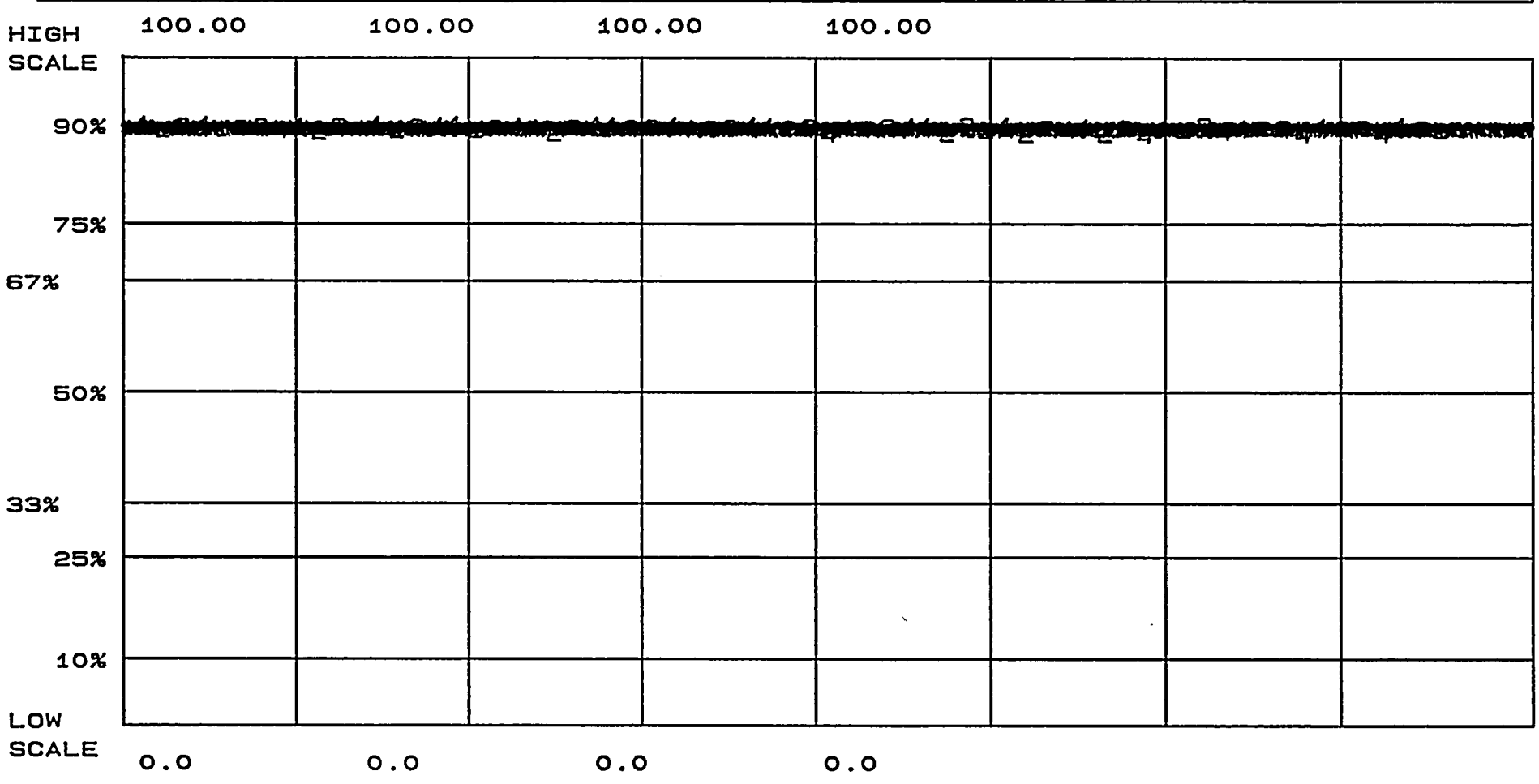
ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		272.9070	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		273.7642	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		273.7954	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.2075	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.7394	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.7381	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.7359	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		195.4158	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		195.5968	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		263.8586	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		259.4917	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		297.9104	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		302.0249	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		289.0908	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		289.0701	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		362.6792	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		362.6838	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	218	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	218	

ISD>

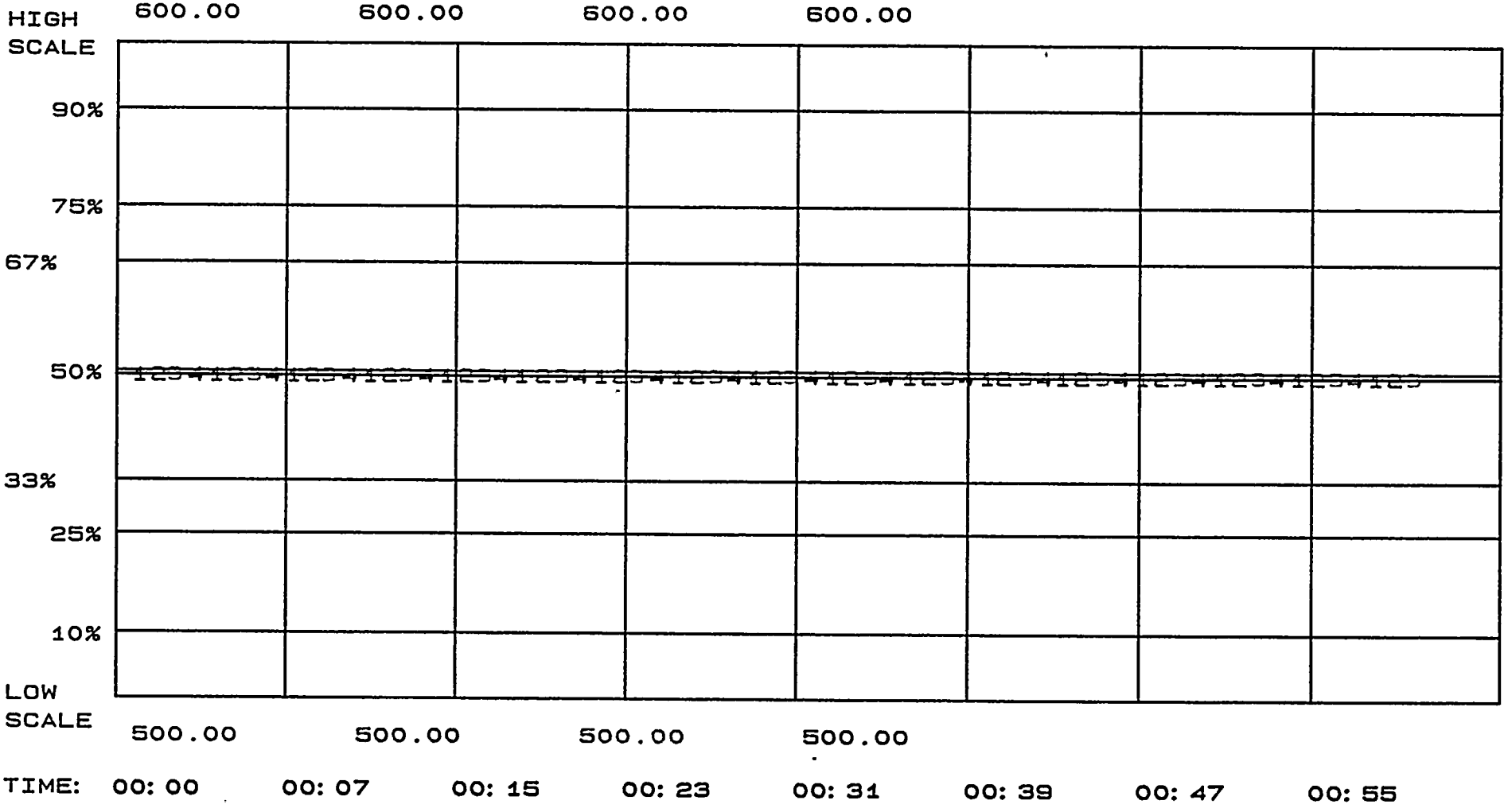
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. N-41	PC	TIME
2	N1013	POWER RANGE N.I. N-42	PC	START 00: 00: 00
3	N1014	POWER RANGE N.I. N-43	PC	STOP 01: 04: 20
4	N1015	POWER RANGE N.I. N-44	PC	
5				
6				



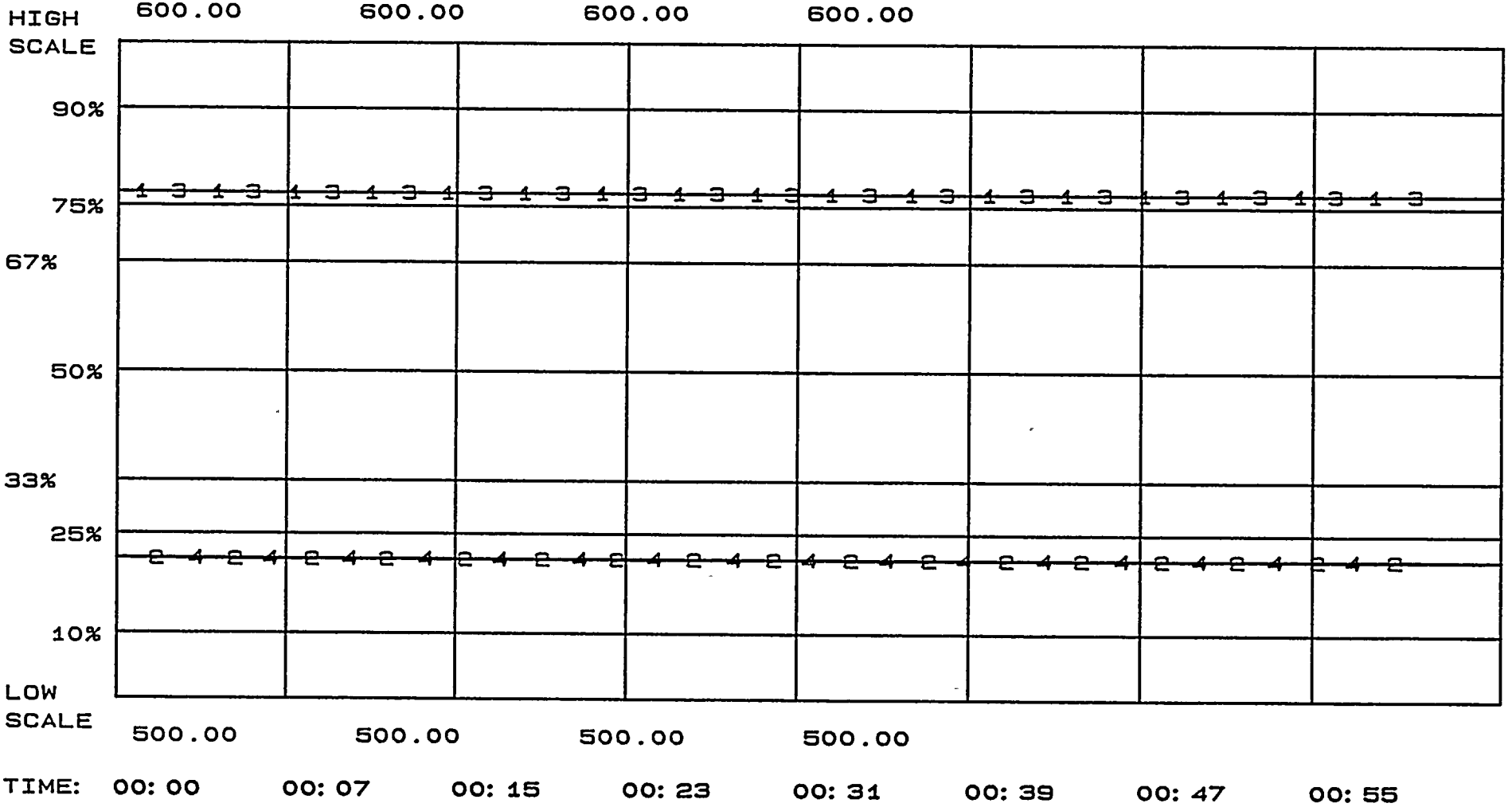
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVERAGE TEMPERATURE	DEG_F	TIME
2	T1102	LOOP 2 AVERAGE TEMPERATURE	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVERAGE TEMPERATURE	DEG_F	STOP 01: 04: 20
4	T1104	LOOP 4 AVERAGE TEMPERATURE	DEG_F	
5				
6				



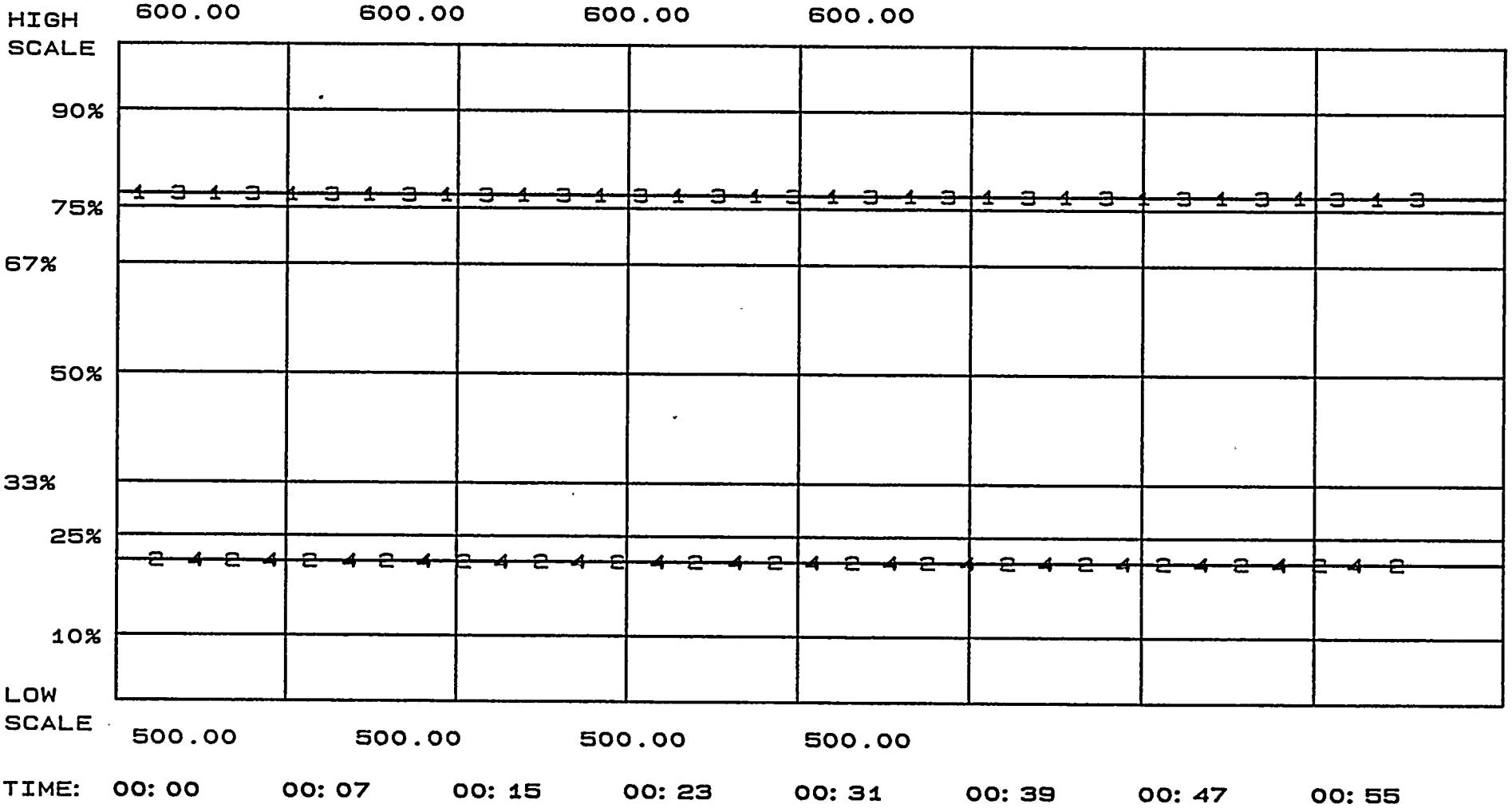
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMPERATURE	DEG_F	TIME
2	T1115	LOOP 1 COLD LEG TEMPERATURE	DEG_F	START 00: 00: 00
3	T1112	LOOP 2 HOT LEG TEMPERATURE	DEG_F	STOP 01: 04: 20
4	T1116	LOOP 2 COLD LEG TEMPERATURE	DEG_F	
5				
6				



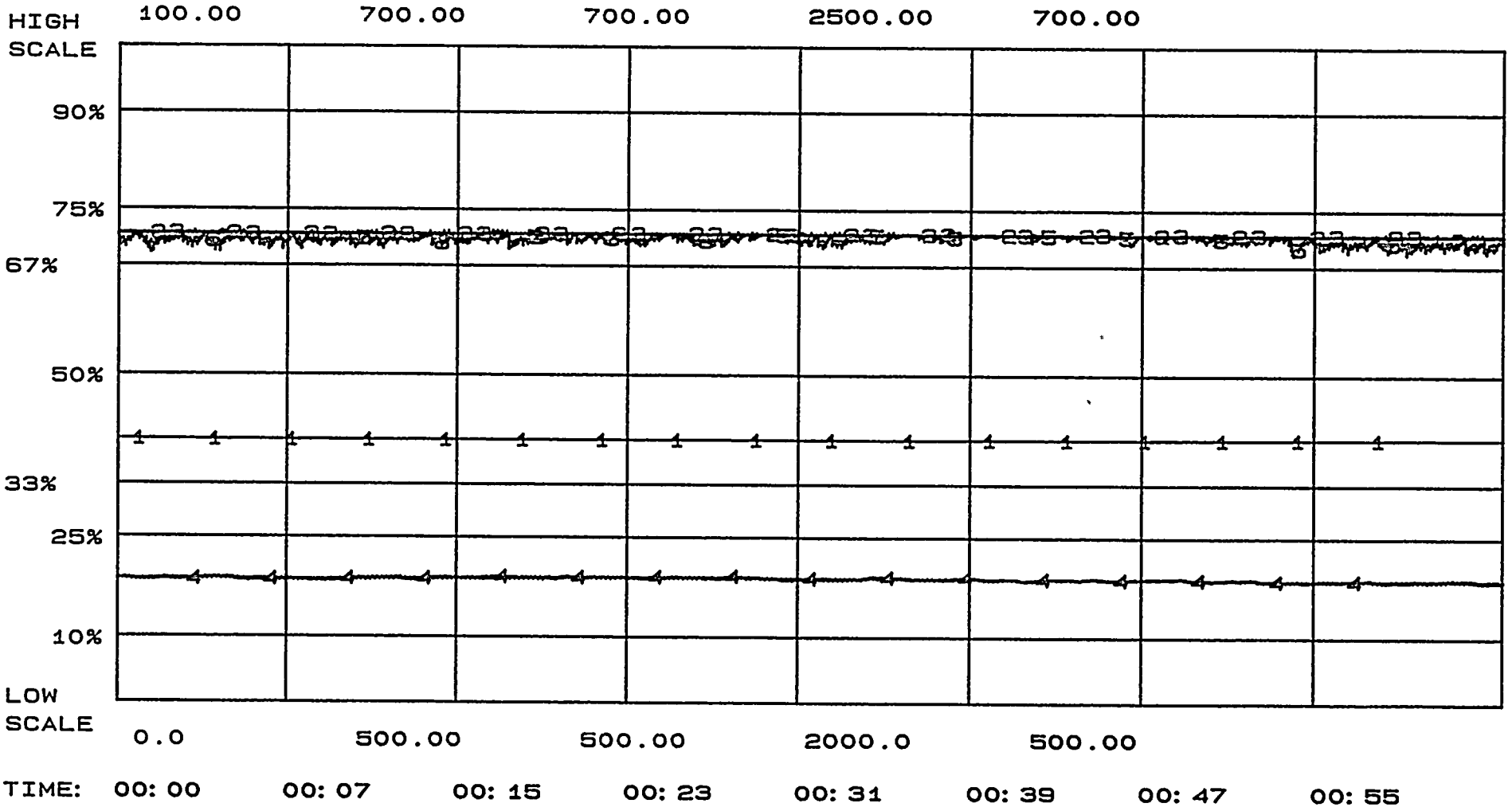
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	LOOP 3 HOT LEG TEMPERATURE	DEG_F	TIME
2	T1117	LOOP 3 COLD LEG TEMPERATURE	DEG_F	START 00: 00: 00
3	T1114	LOOP 4 HOT LEG TEMPERATURE	DEG_F	STOP 01: 04: 20
4	T1118	LOOP 4 COLD LEG TEMPERATURE	DEG_F	
5				
6				



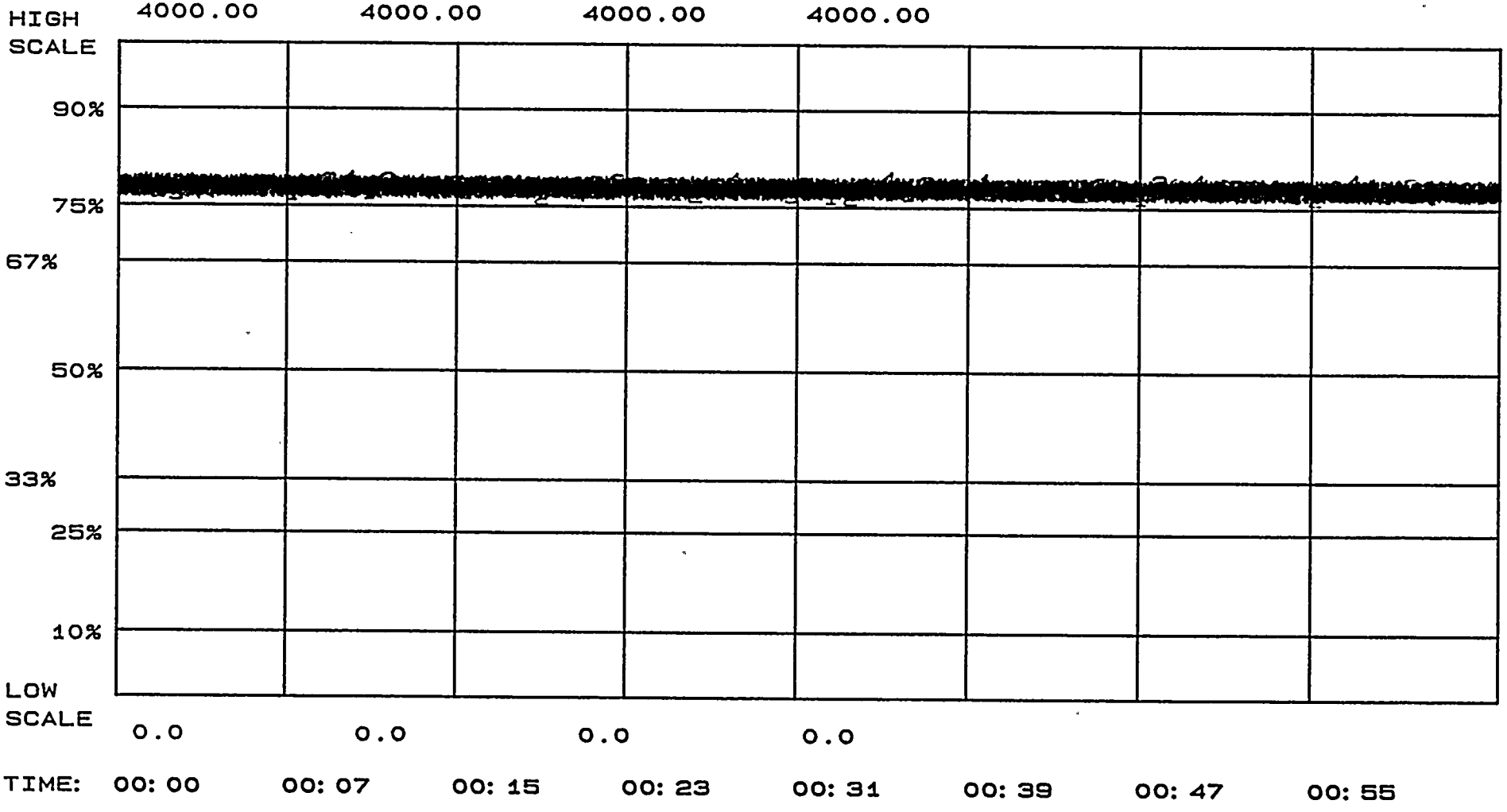
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER WATER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMP	DEG_F	START 00: 00: 00
3	T1005	PRESSURIZER VAPOR TEMP	DEG_F	STOP 01: 04: 20
4	P1036	PRESSURIZER PRESSURE	PSIG	
5	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	
6				



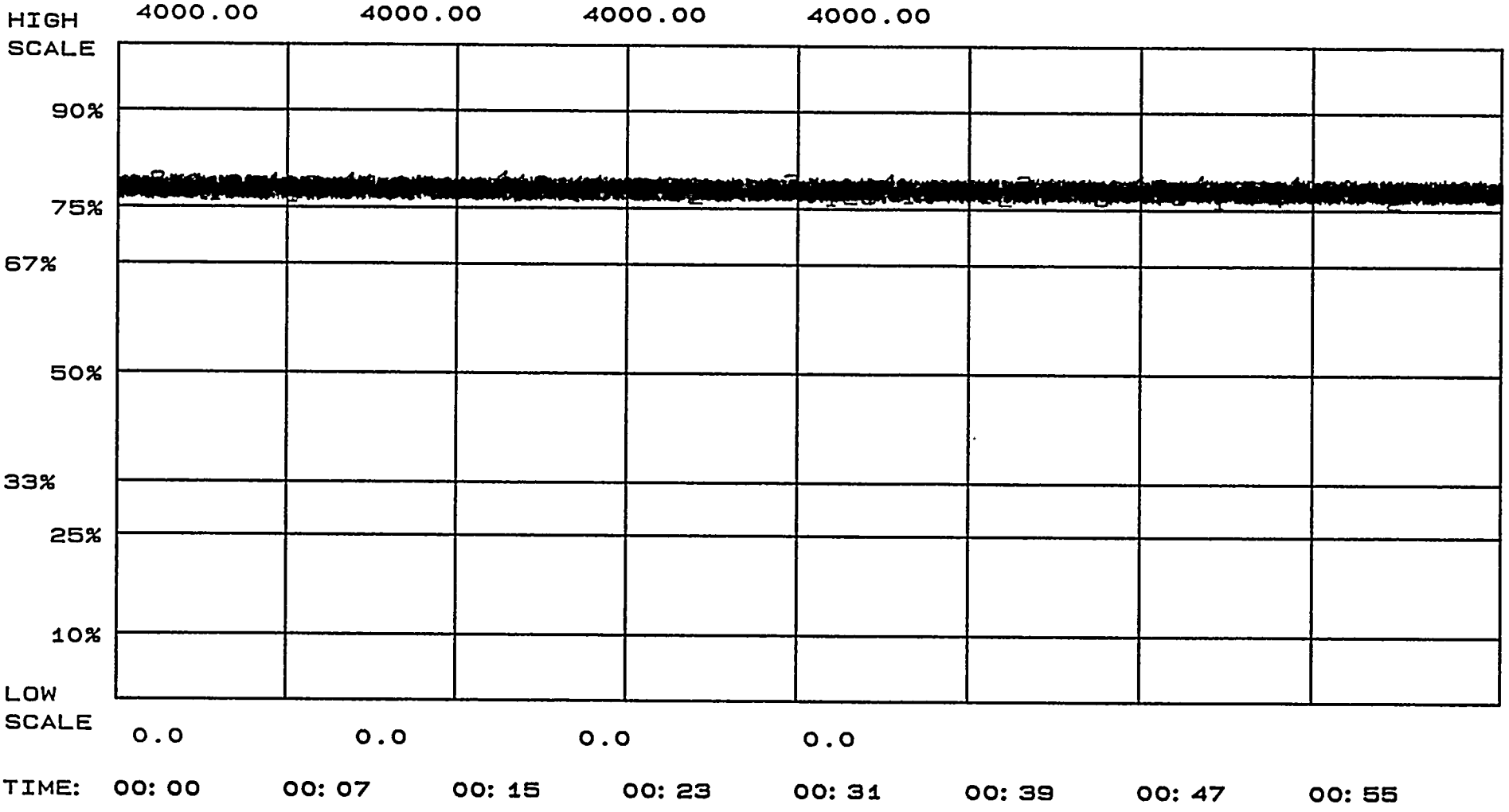
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 01: 04: 20
4	F1054	STEAM FLOW LOOP 4	KBH	
5				
6				



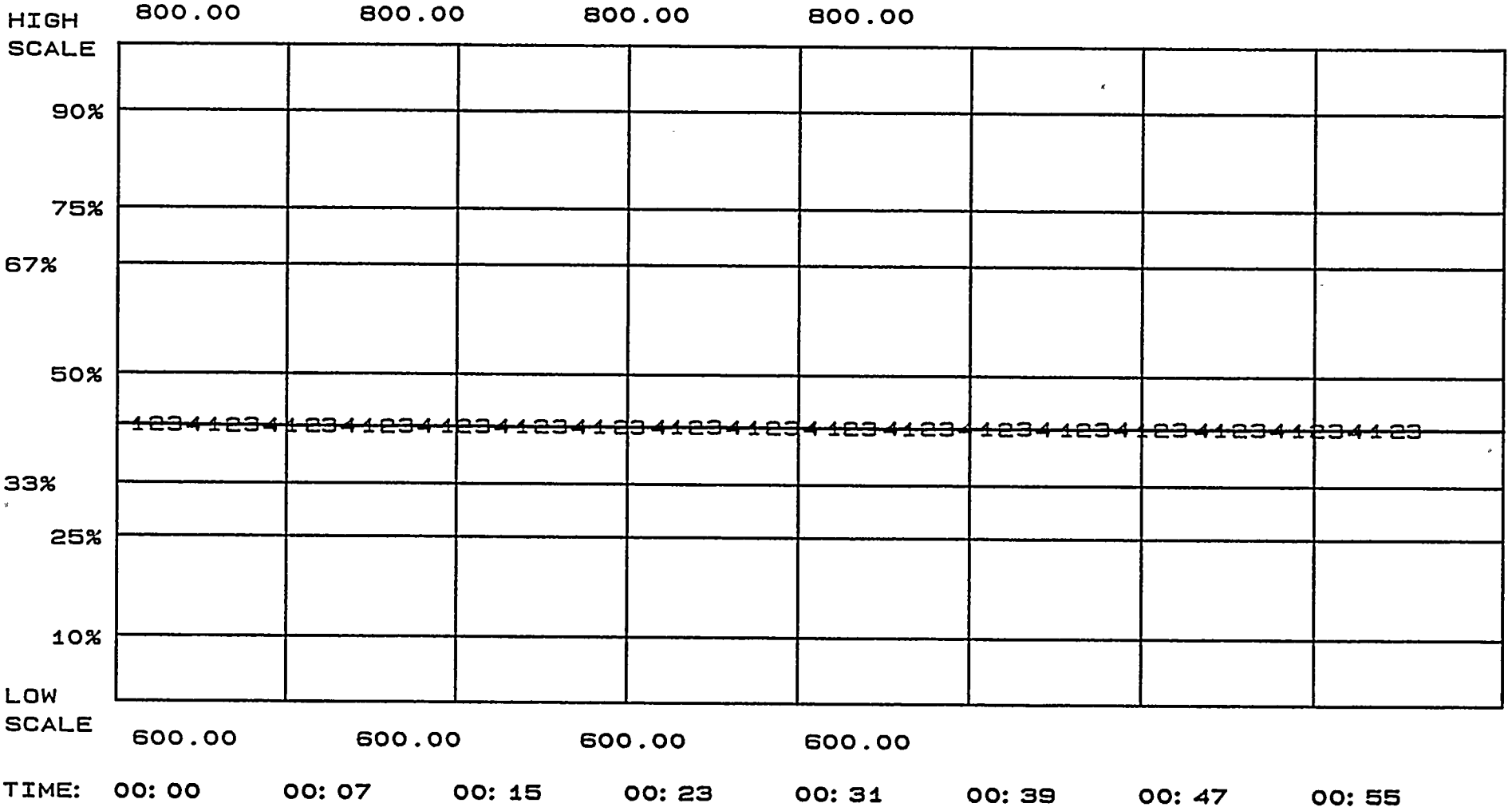
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 00: 00
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 01: 04: 20
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5				
6				



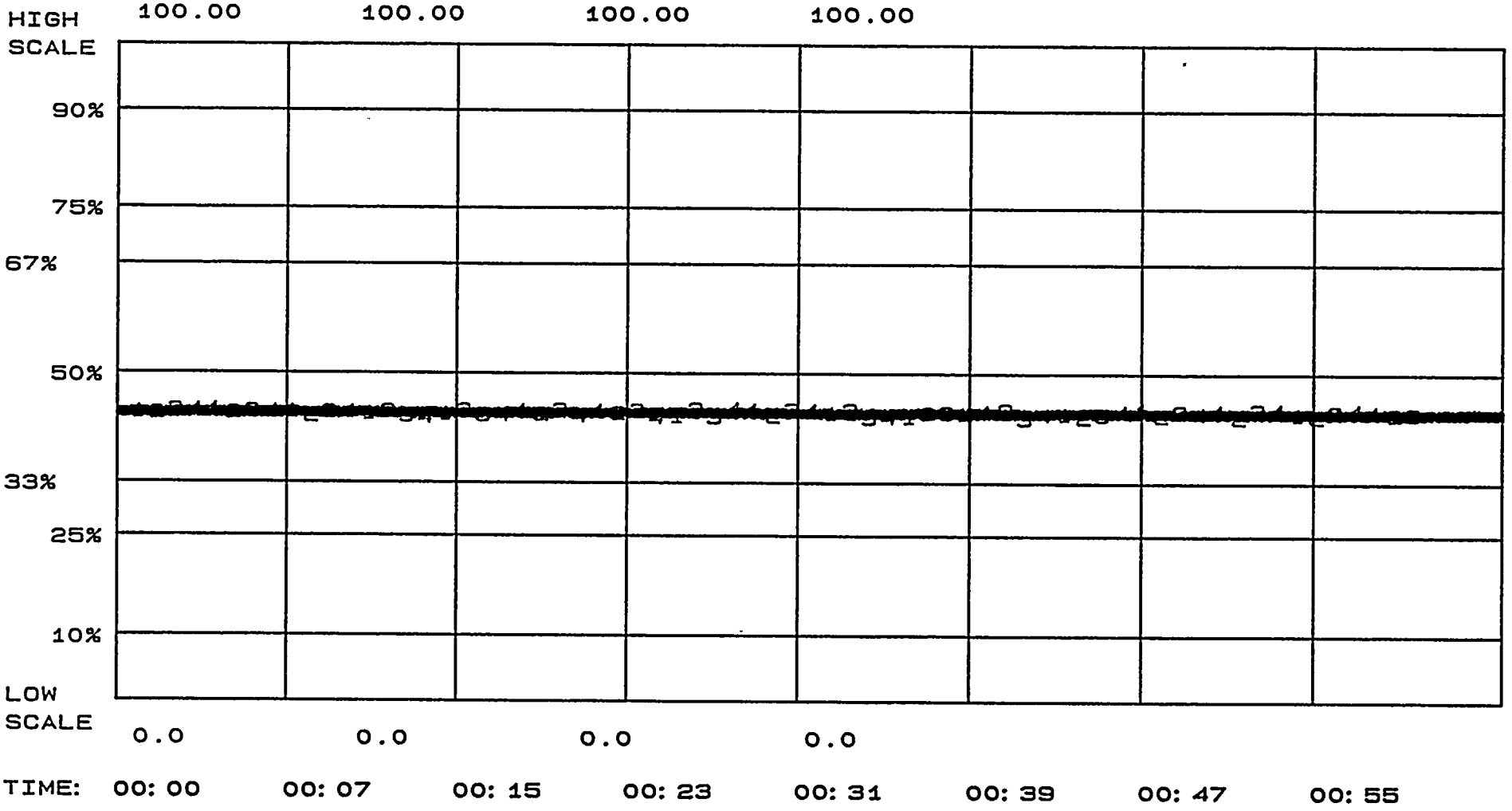
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	LOOP 1 STEAM PRESSURE	PSIG	TIME
2	P1025	LOOP 2 STEAM PRESSURE	PSIG	START 00: 00: 00
3	P1028	LOOP 3 STEAM PRESSURE	PSIG	STOP 01: 04: 20
4	P1031	LOOP 4 STEAM PRESSURE	PSIG	
5				
6				



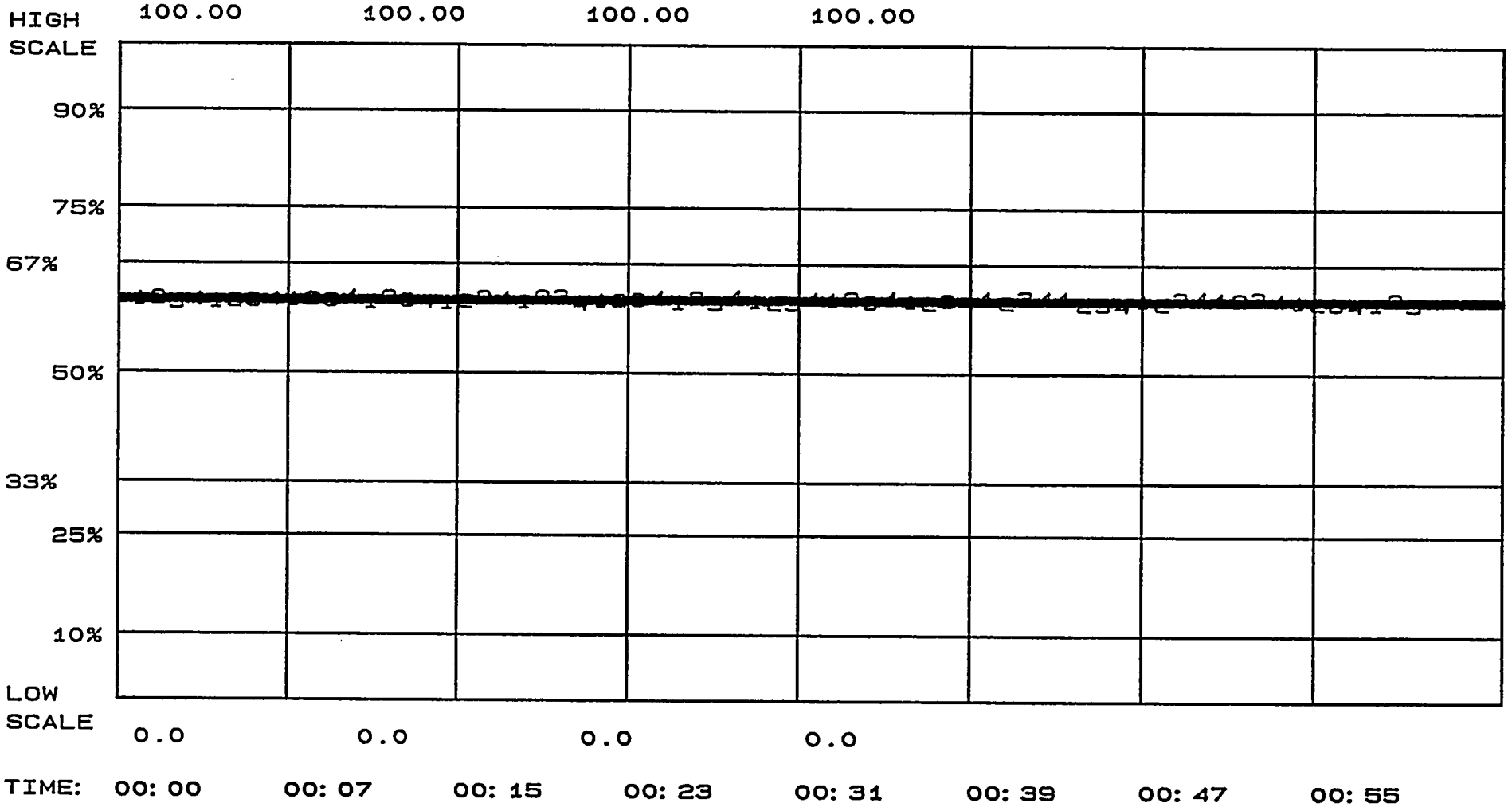
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC	TIME
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC	STOP 01: 04: 20
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC	
5				
6				



90% POWER STEADY-STATE TEST

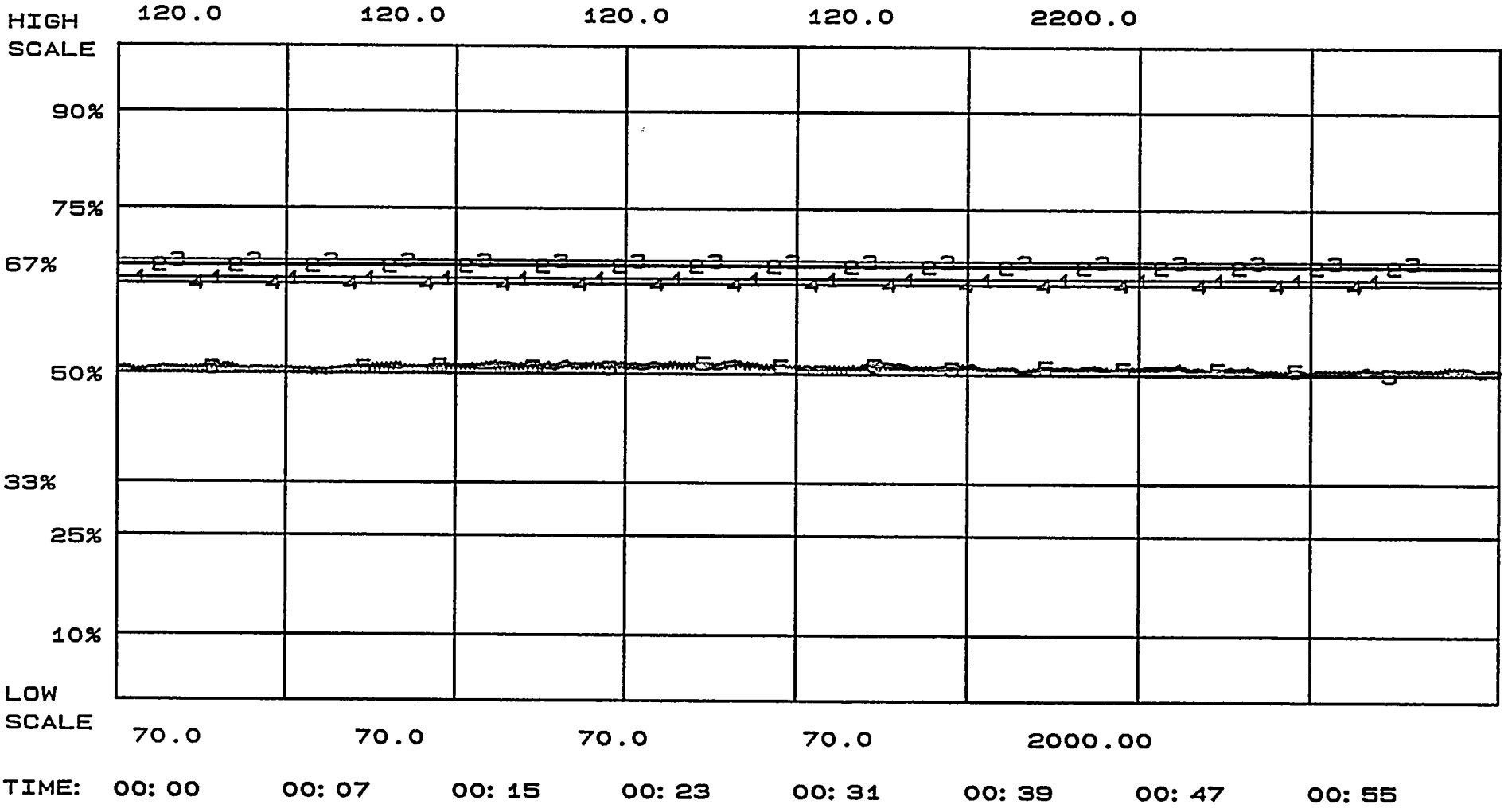
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN 1 WIDE RANGE LEVEL	PC	TIME
2	L1201	STEAM GEN 2 WIDE RANGE LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GEN 3 WIDE RANGE LEVEL	PC	STOP 01: 04: 20
4	L1203	STEAM GEN 4 WIDE RANGE LEVEL	PC	
5				
6				



90% POWER STEADY-STATE TEST

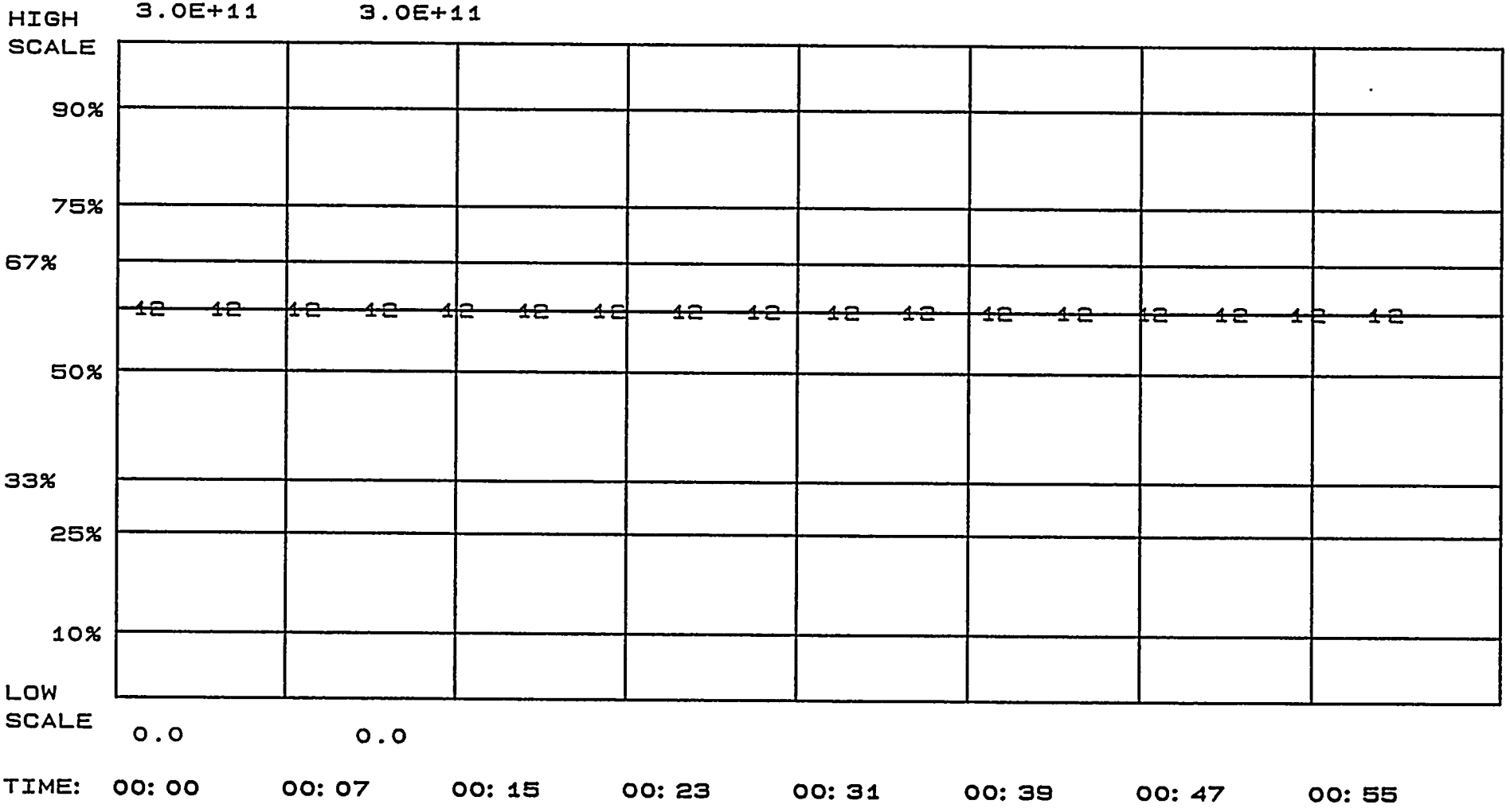
#	POINT ID	DESCRIPTION	UNITS
1	F1089	REACTOR COOLANT FLOW LOOP 1	PC
2	F1092	REACTOR COOLANT FLOW LOOP 2	PC
3	F1095	REACTOR COOLANT FLOW LOOP 3	PC
4	F1098	REACTOR COOLANT FLOW LOOP 4	PC
5	P1034	REACTOR COOLANT WR PRESSURE	PSIG
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	01: 04: 20



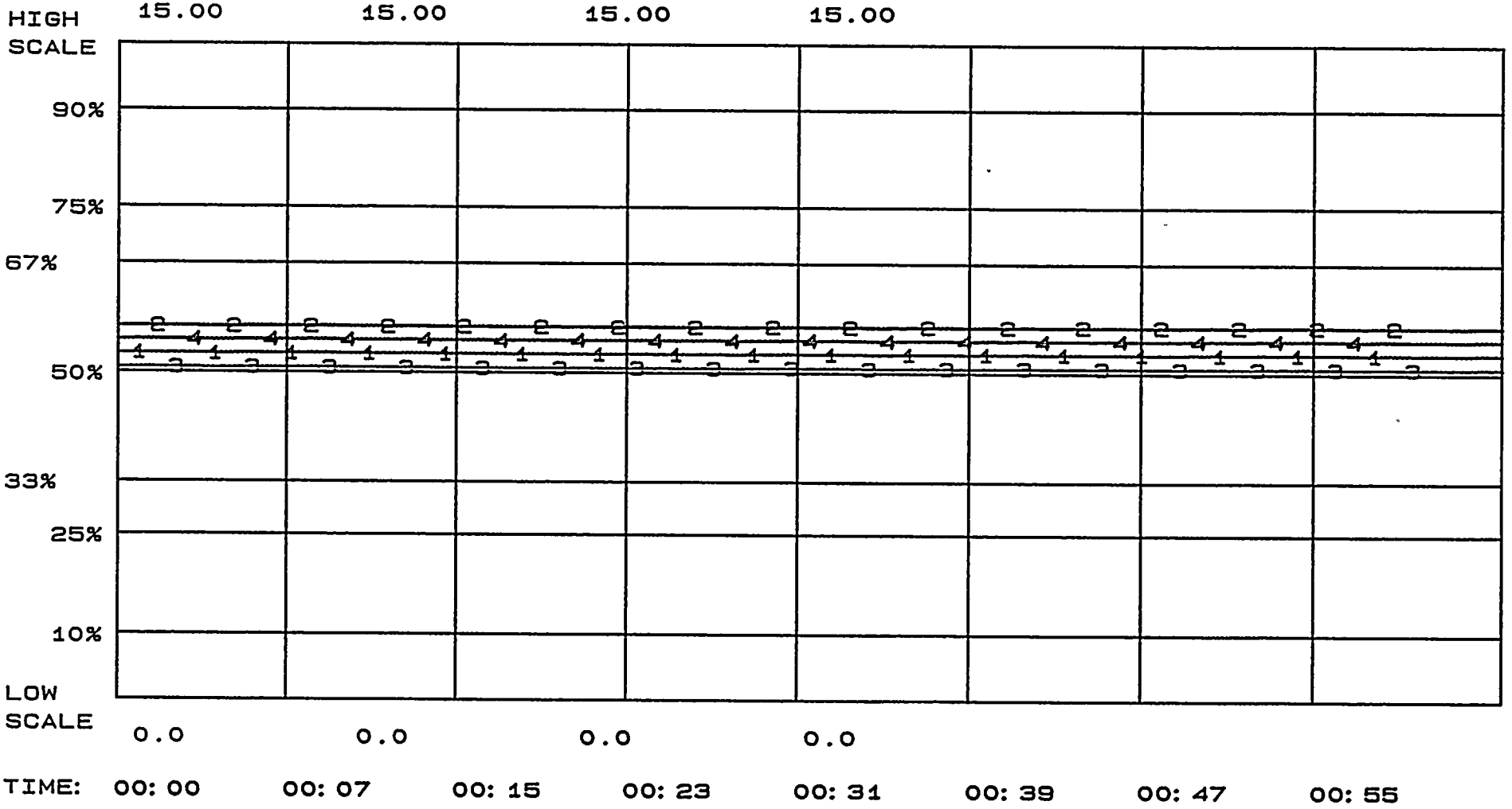
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU (1)	SOURCE RANGE DETECTOR N-31	CPS	TIME
2	NILDTOU (2)	SOURCE RANGE DETECTOR N-32	CPS	START 00: 00: 00
3				STOP 01: 04: 20
4				
5				
6				



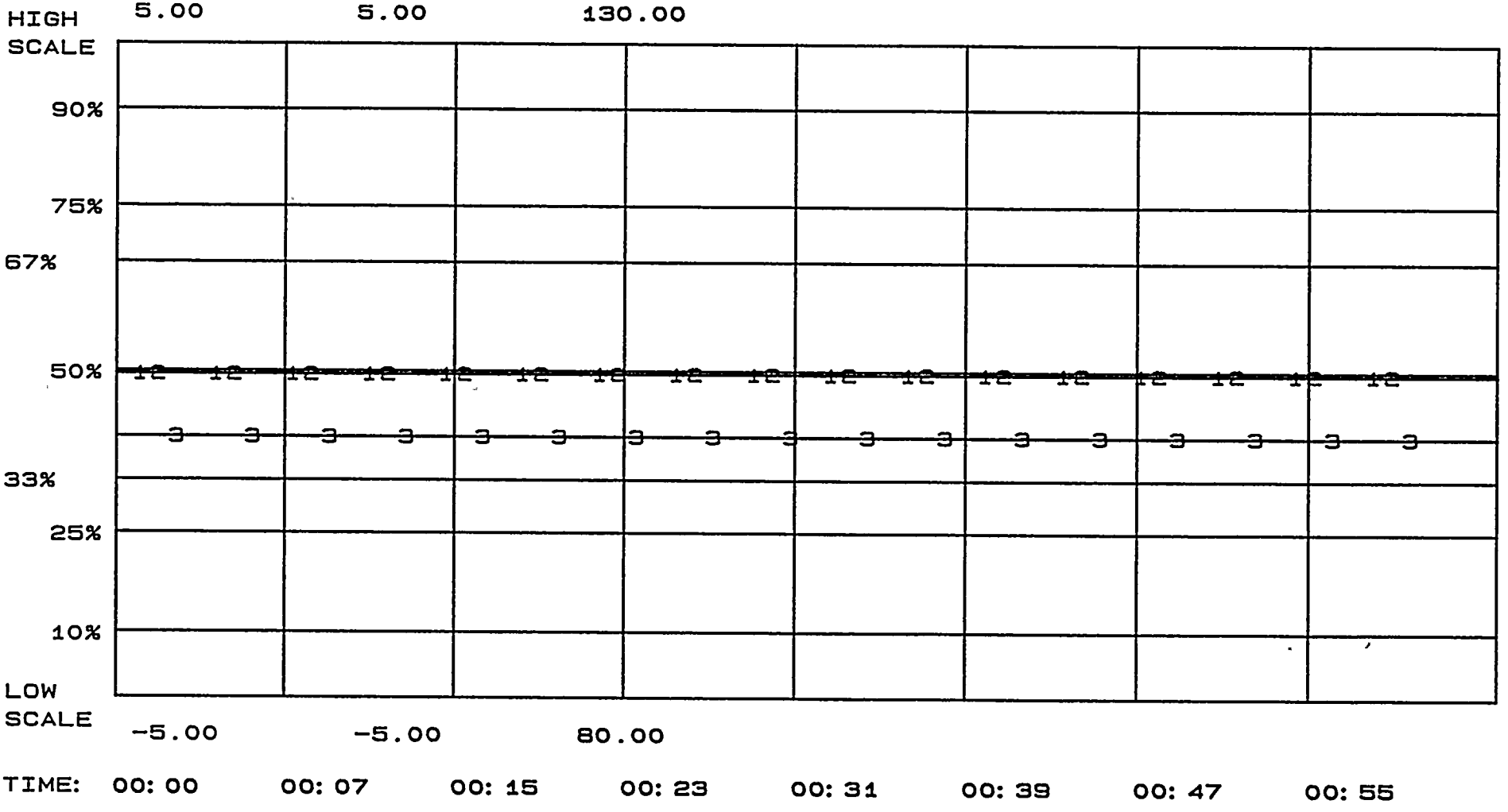
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	RCP SEAL FLOW LOOP 1	GPM	TIME
2	F1001	RCP SEAL FLOW LOOP 2	GPM	START 00: 00: 00
3	F1002	RCP SEAL FLOW LOOP 3	GPM	STOP 01: 04: 20
4	F1003	RCP SEAL FLOW LOOP 4	GPM	
5				
6				



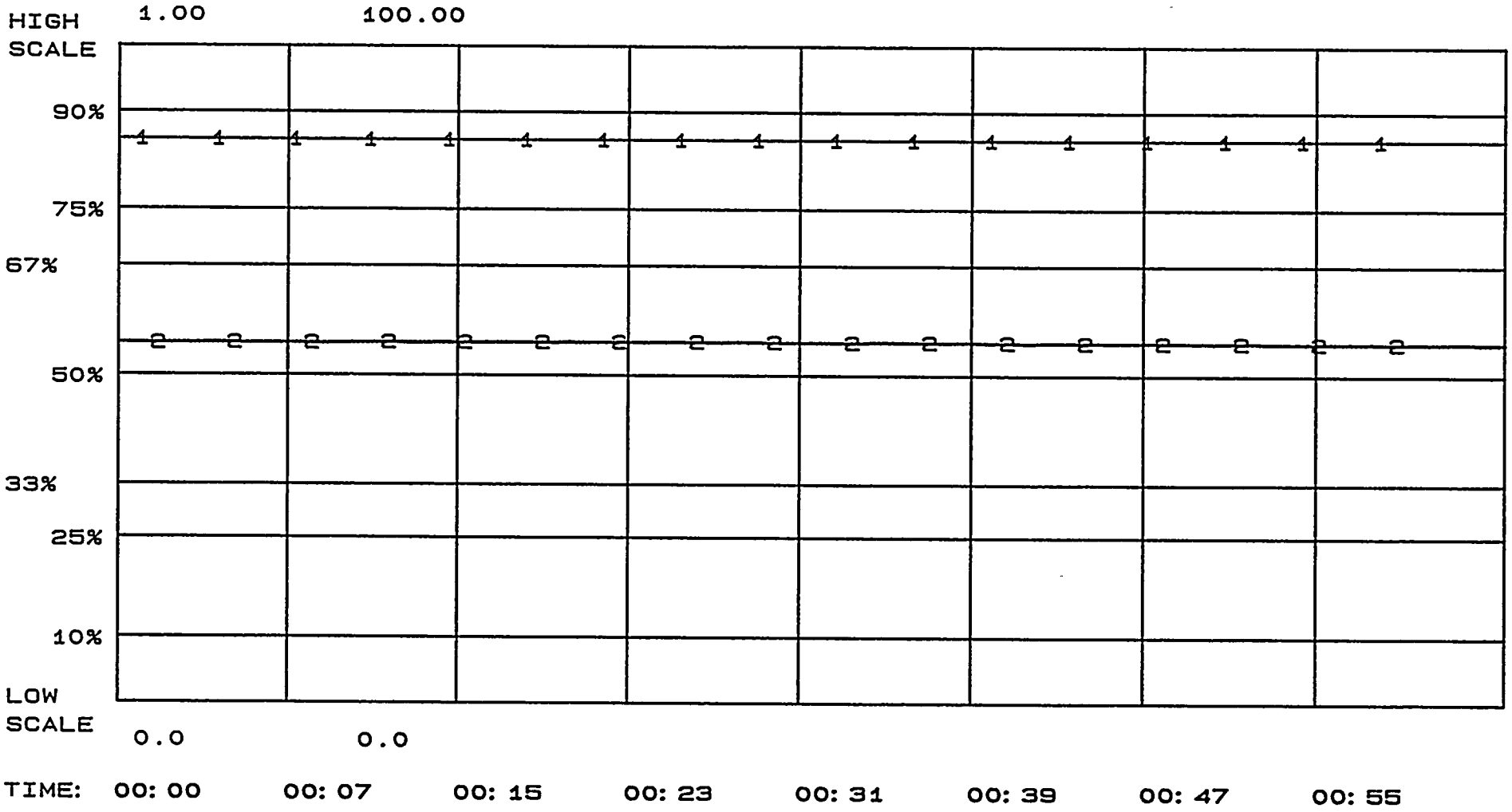
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 00
3	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	STOP 01: 04: 20
4				
5				
6				



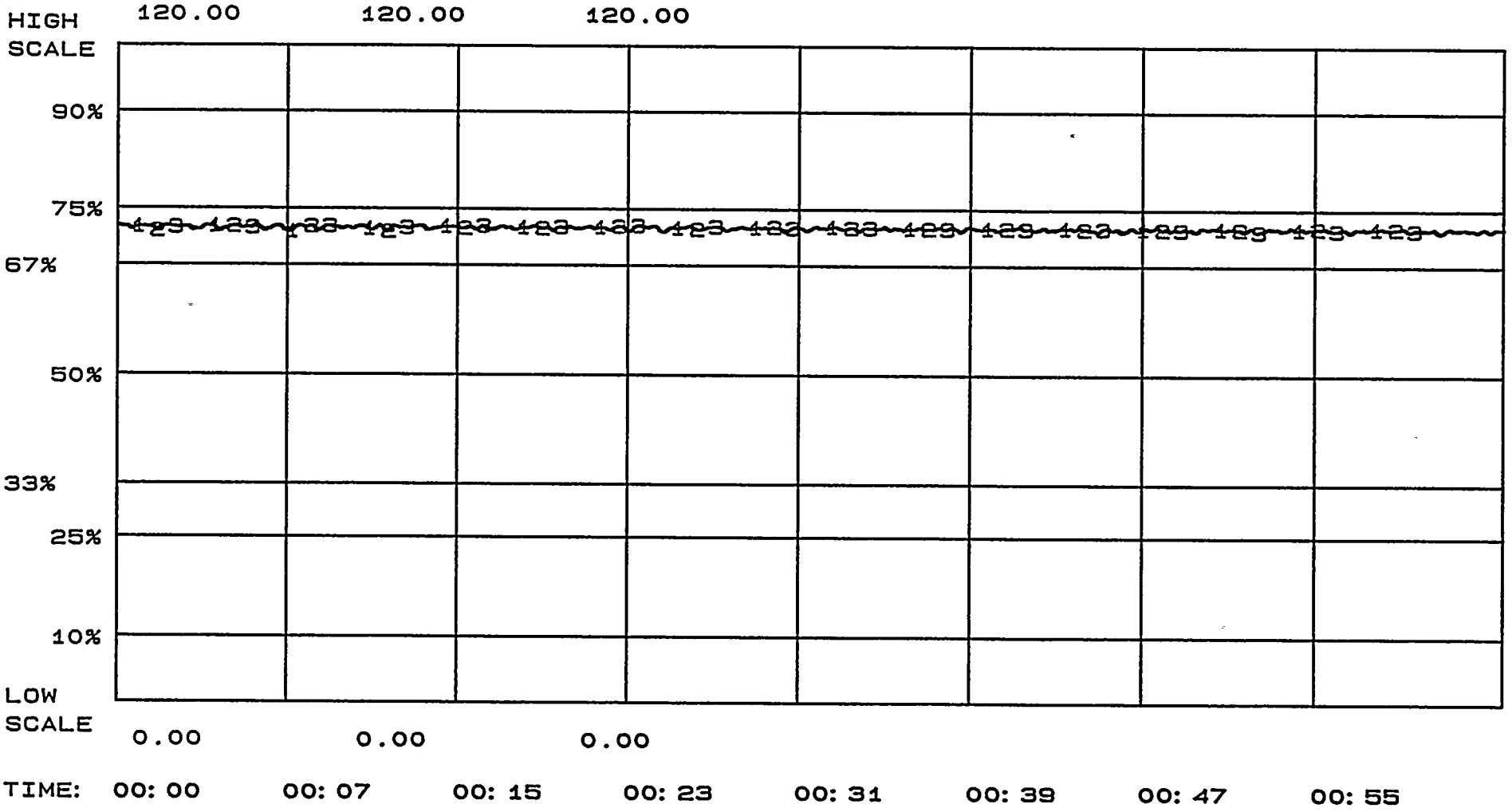
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CRQN	CORE HEAT FLUX	PC	TIME
2	RXTSC	SATURATION MARGIN	DEG_F	START 00: 00: 00
3				STOP 01: 04: 20
4				
5				
6				



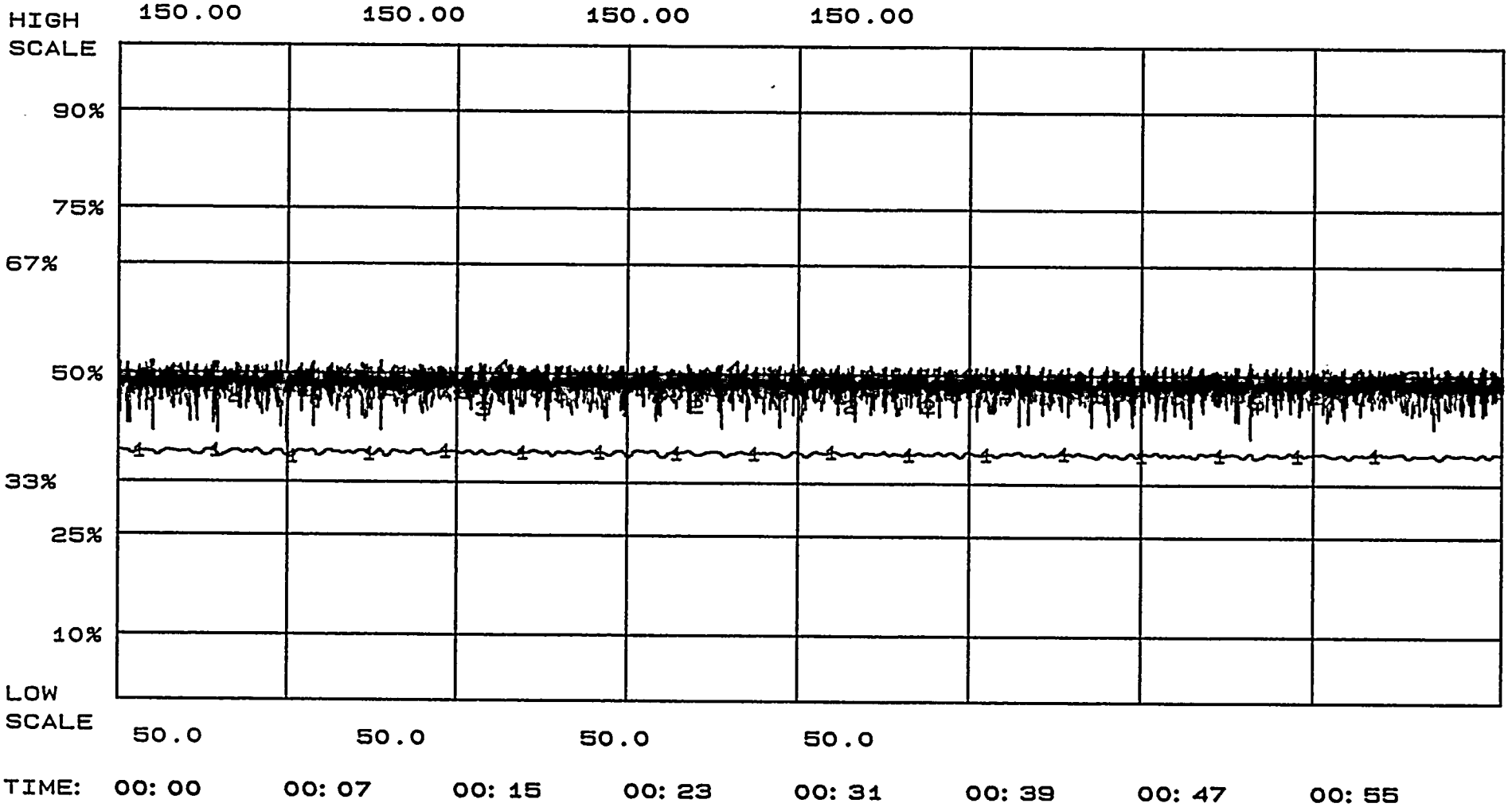
90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN (1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN (2)	CONDENSER B TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTCN (3)	CONDENSER C TEMPERATURE	DEG_F	STOP 01: 04: 20
4				
5				
6				



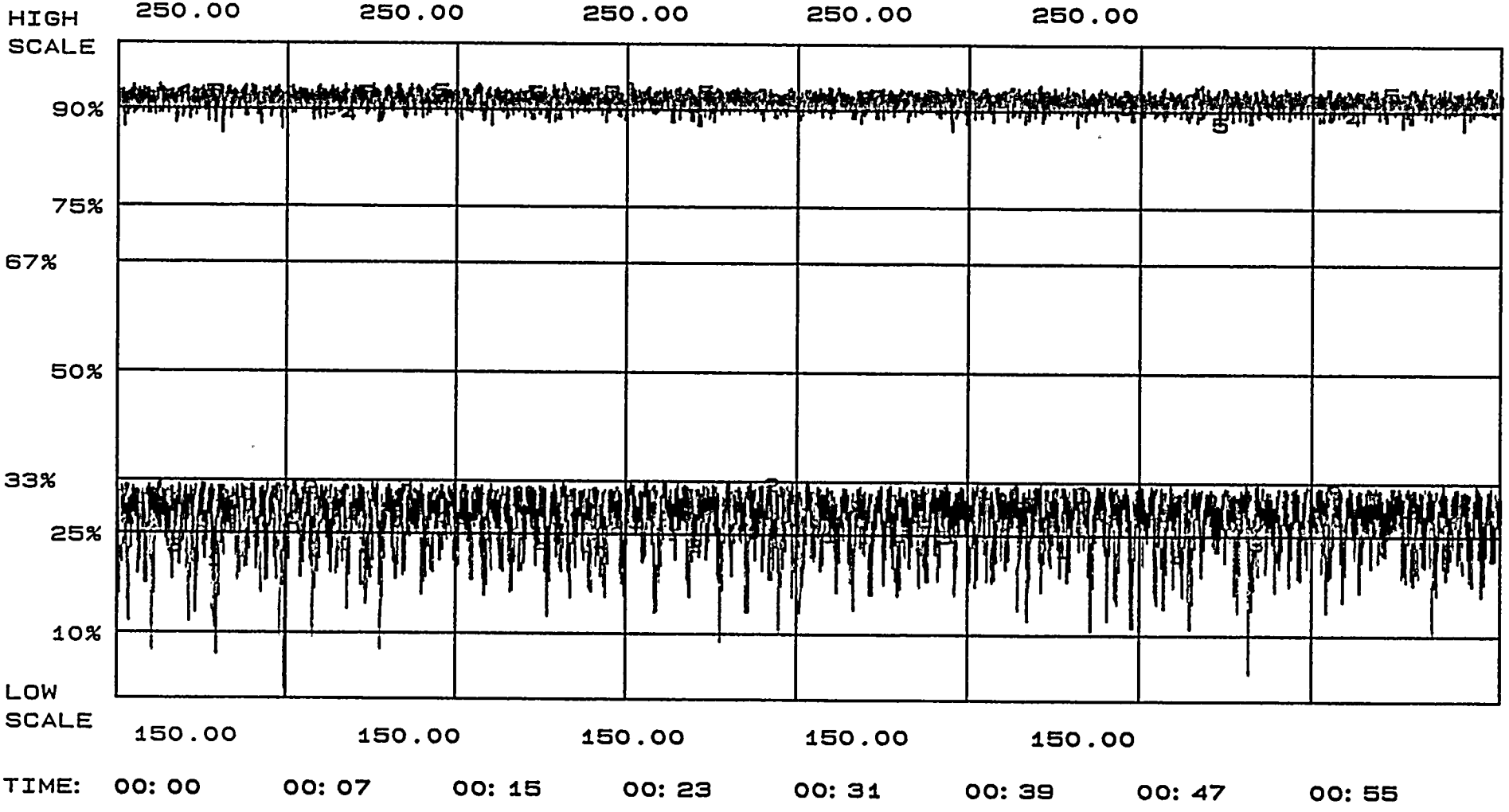
90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP DISC. HDR. TEMP.	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 01: 04: 20
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



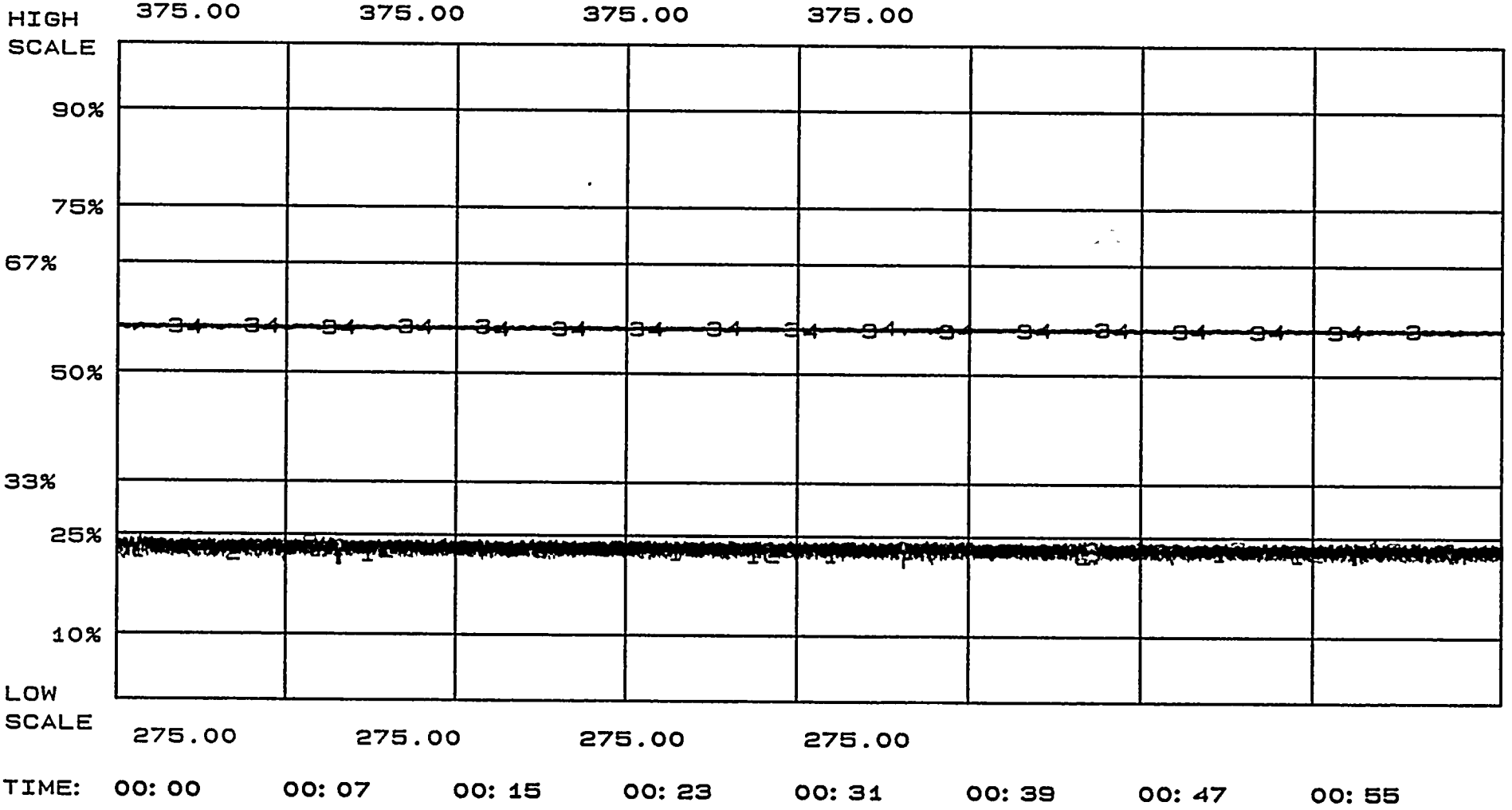
90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH1A	19220 H1A TUBE OUTLET TEMP	DEG_F	TIME
2	FWTTOH1B	19240 H1B TUBE OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWTTOH1C	19260 H1C TUBE OUTLET TEMP	DEG_F	STOP 01: 04: 20
4	FWTTOH2A	19180 H2A TUBE OUTLET TEMP	DEG_F	
5	FWTTOH2B	19200 H2B TUBE OUTLET TEMP	DEG_F	
6				



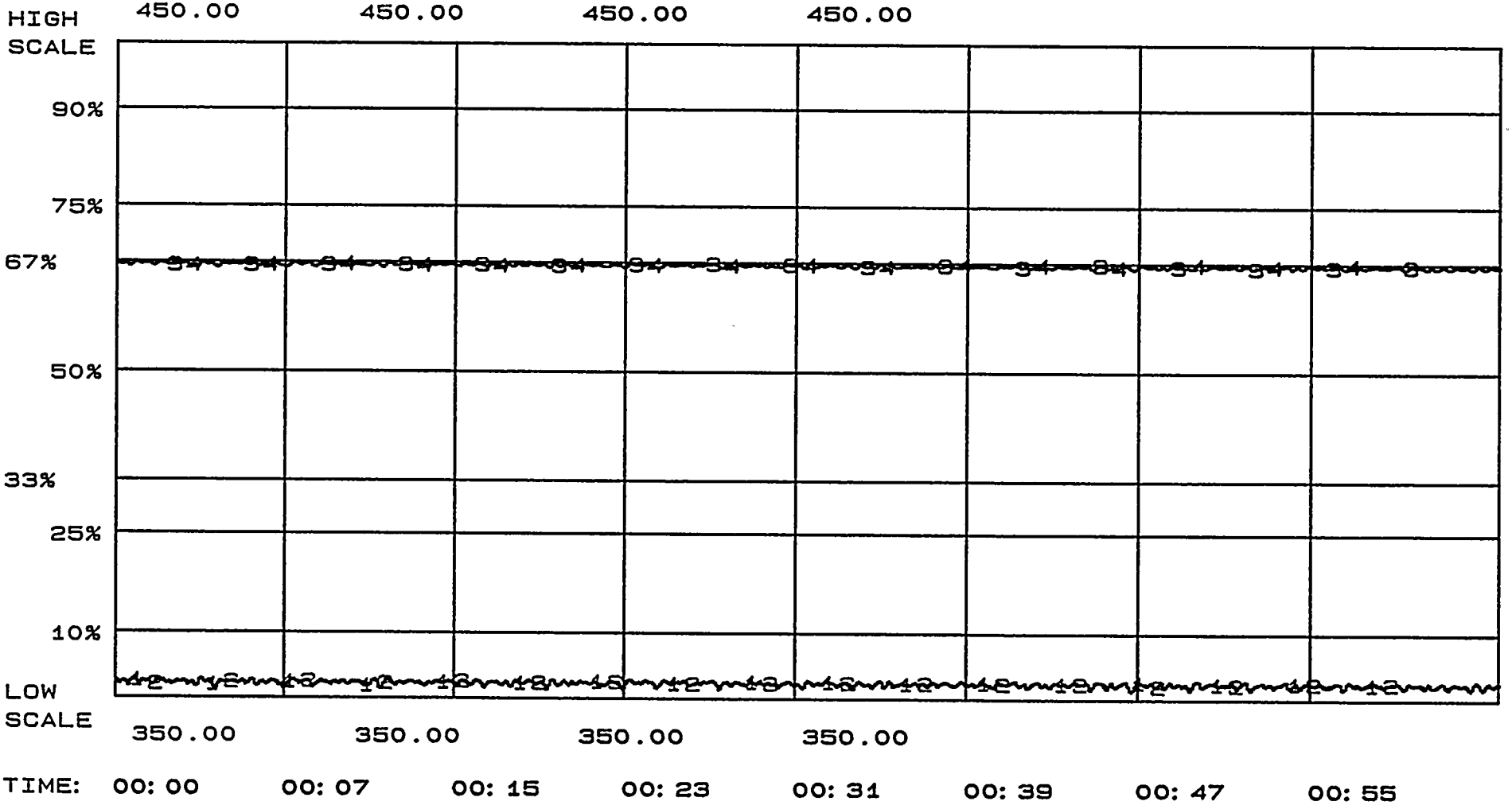
90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP	DEG_F	STOP 01: 04: 20
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP	DEG_F	
5				
6				



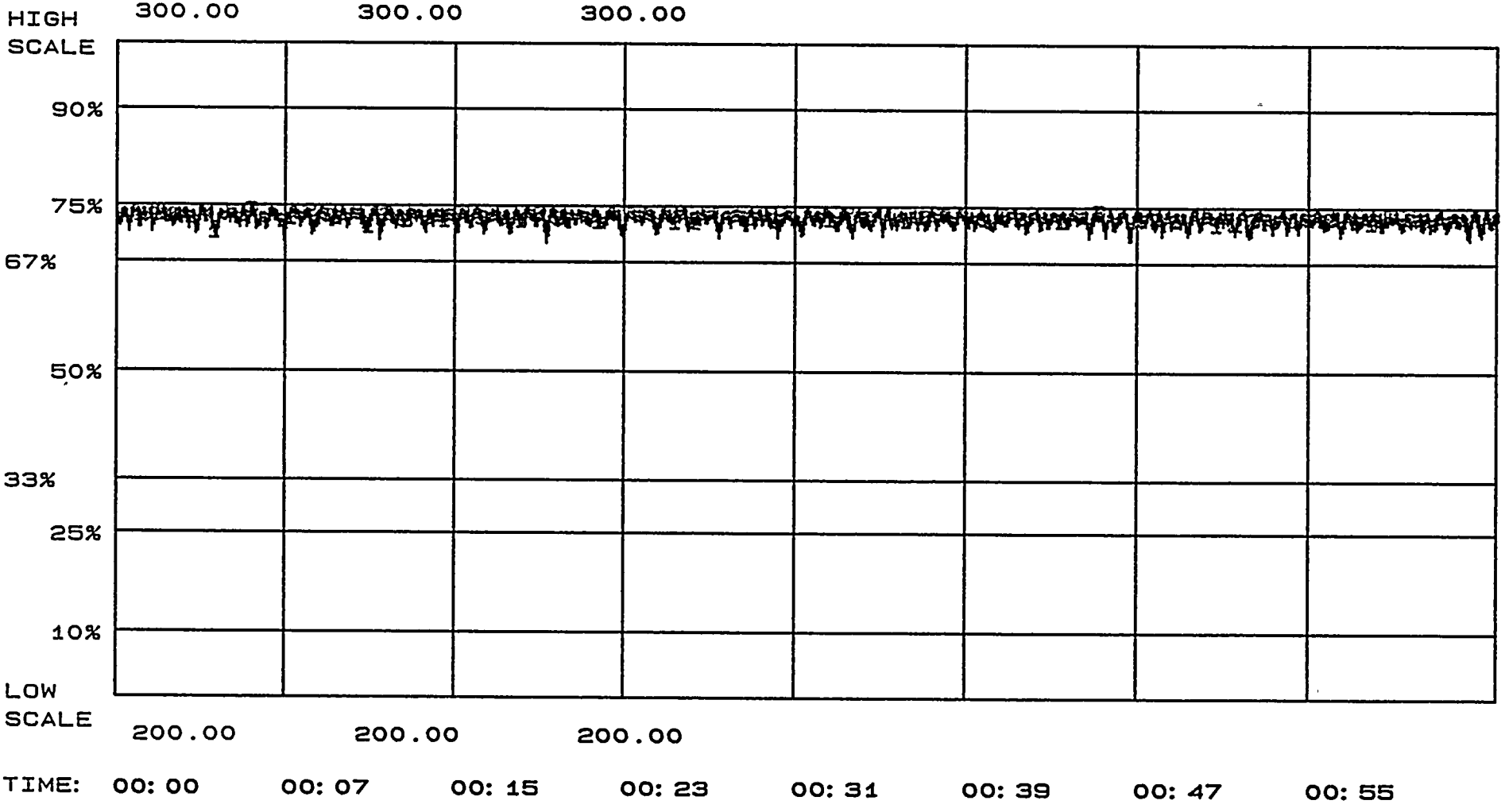
90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP	DEG_F	TIME
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP	DEG_F	START 00: 00: 00
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP	DEG_F	STOP 01: 04: 20
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP	DEG_F	
5				
6				



90% POWER STEADY STATE TEST

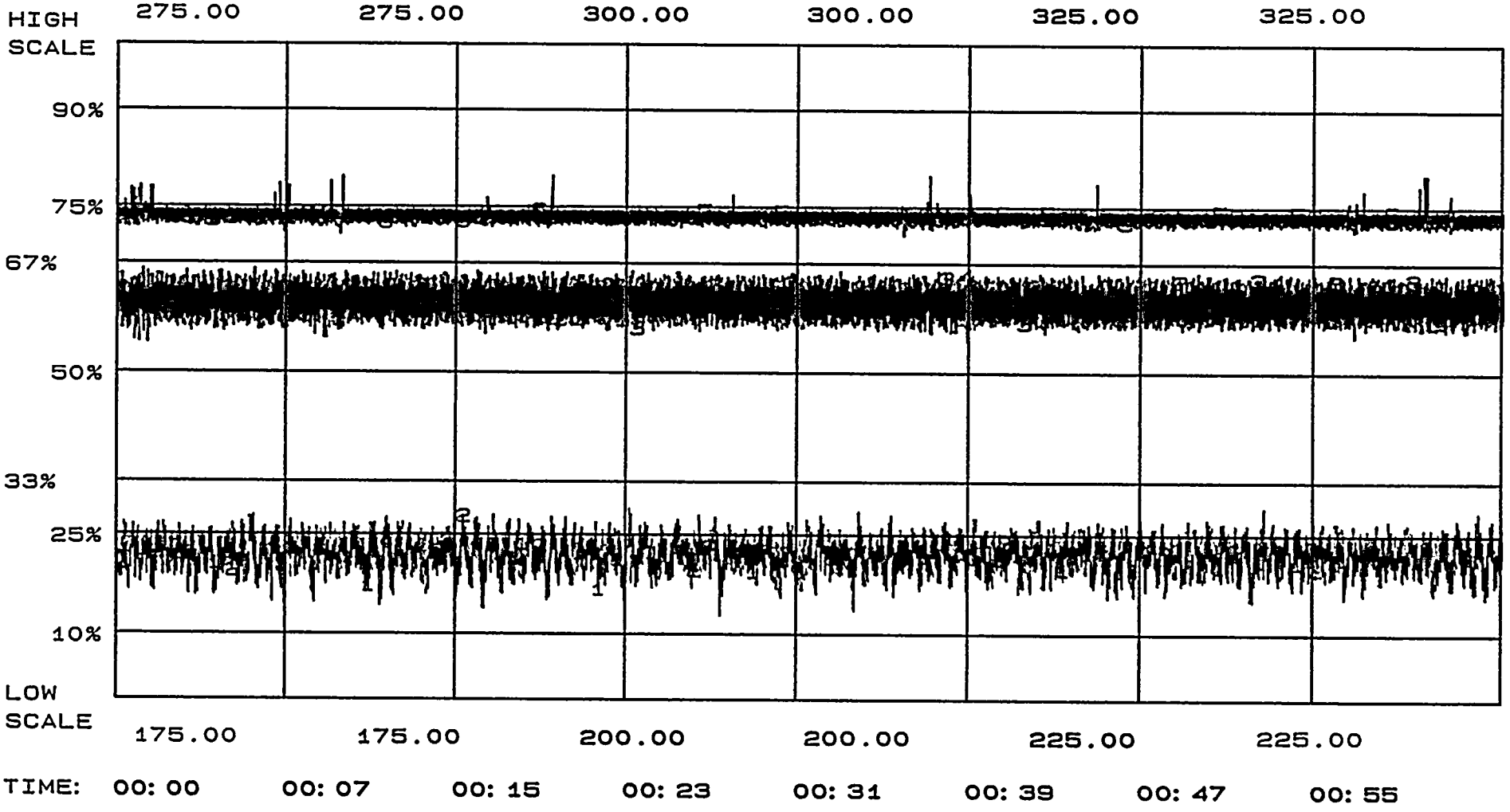
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	FEEDPUMP SUCTION TEMPERATURE	DEG_F	TIME
2	FWTDEMFP	EAST FEEDPUMP DISCH TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDWMFP	WEST FEEDPUMP DISCH TEMPERATURE	DEG_F	STOP 01: 04: 20
4				
5				
6				



90% POWER STEADY STATE TEST

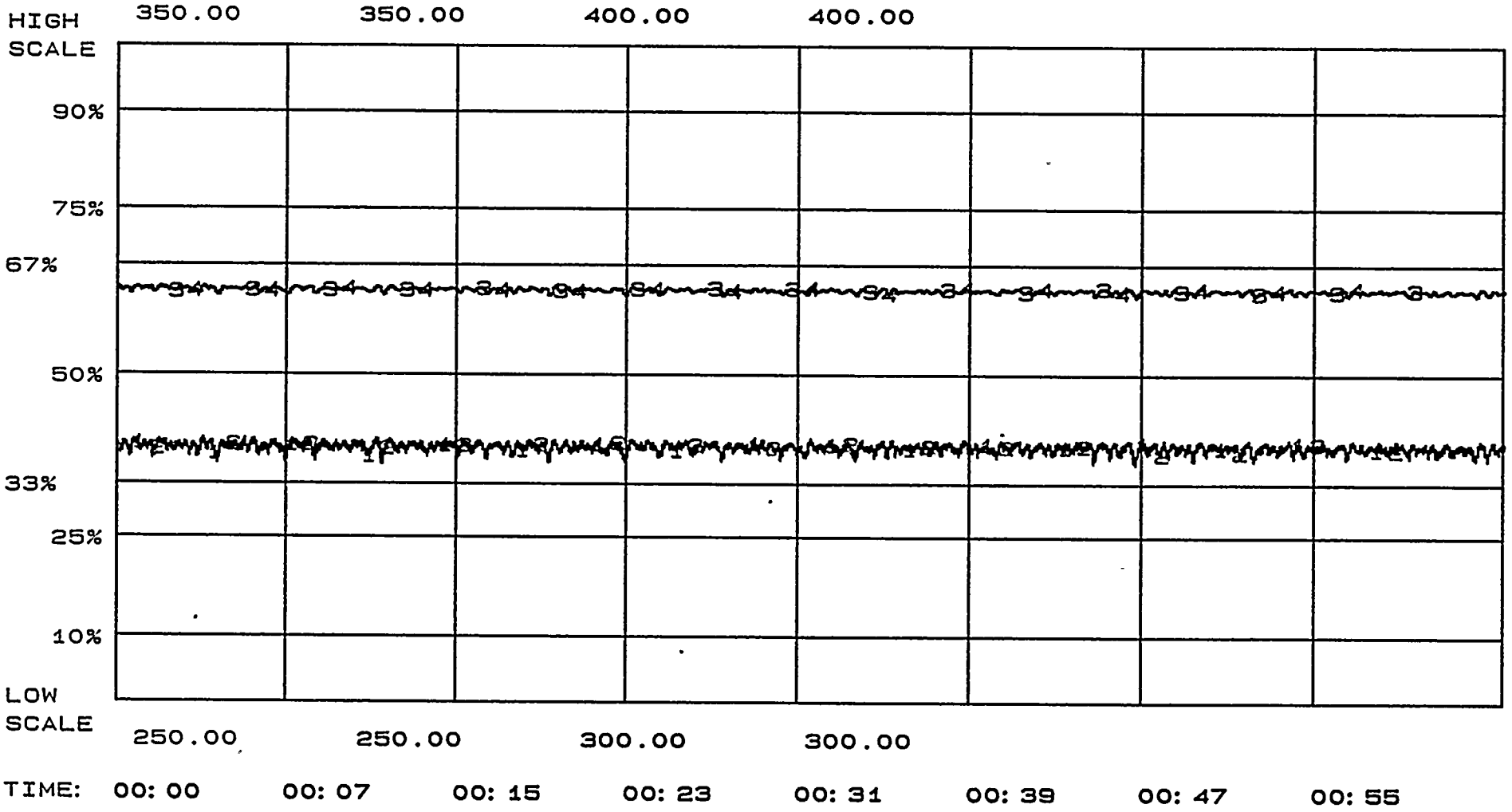
#	POINT ID	DESCRIPTION	UNITS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATURE	DEG_F
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	01: 04: 20



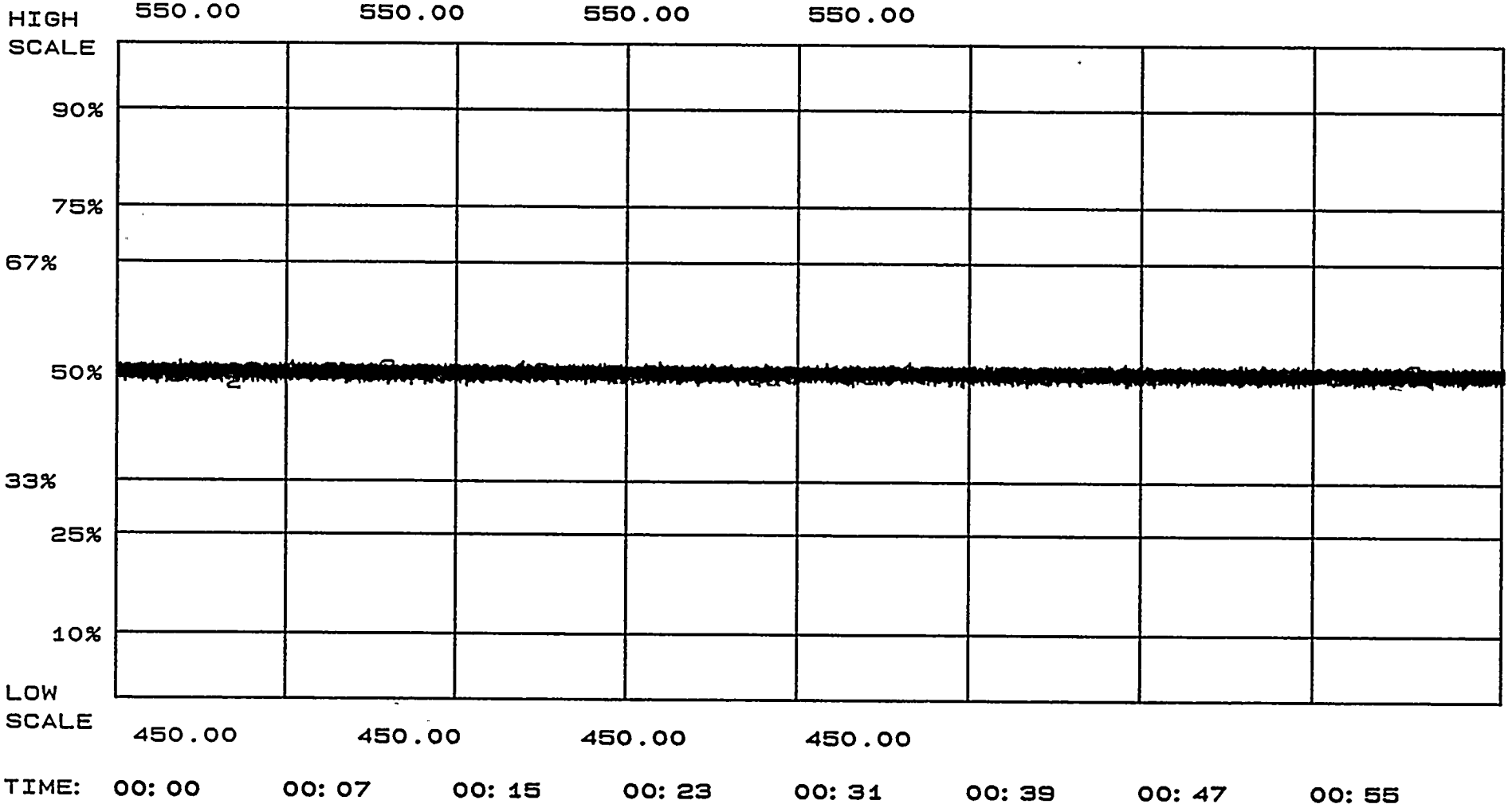
90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 01: 04: 20
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



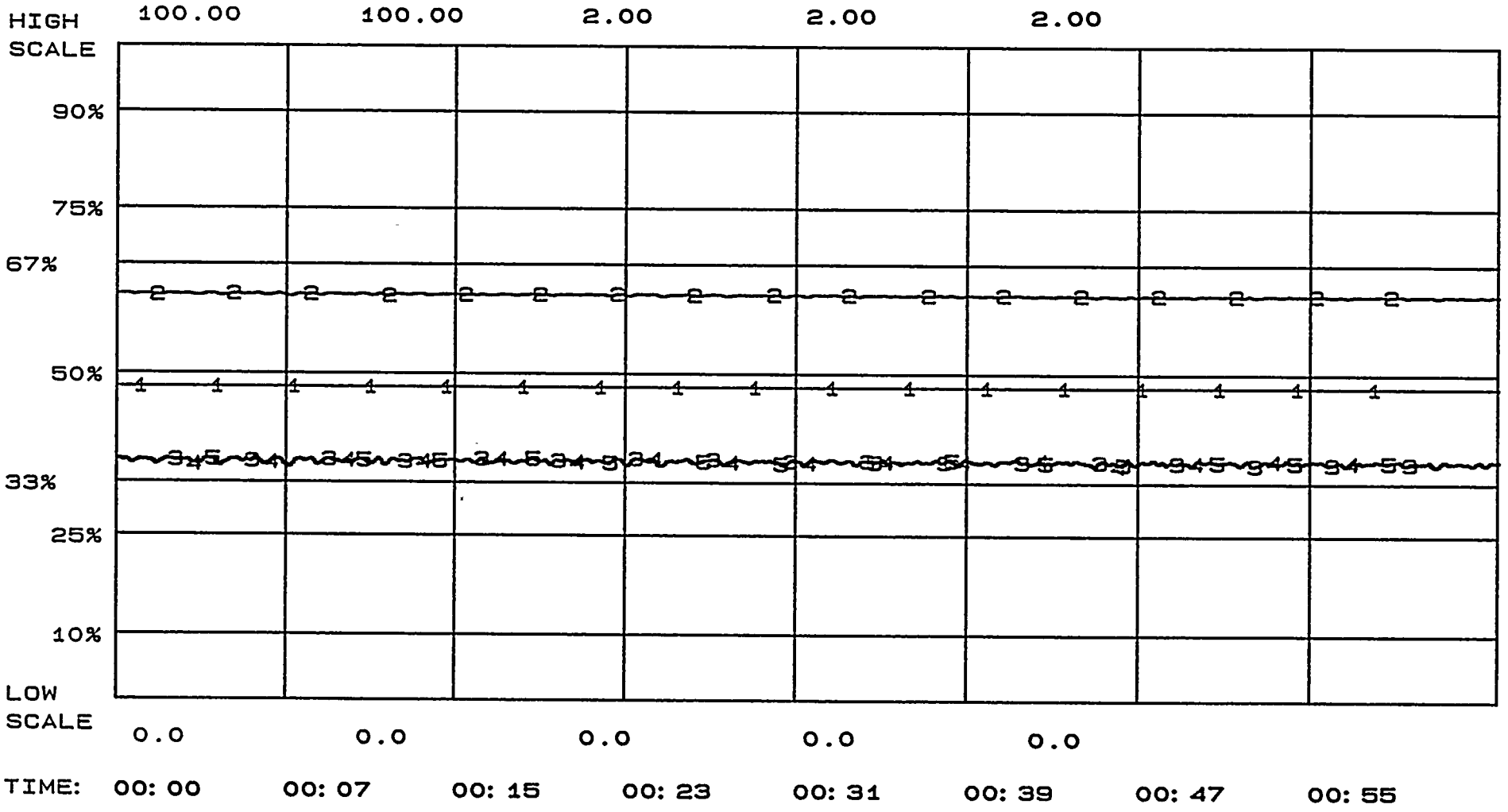
90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCTSGDM (1)	STEAM GEN #1 DOME TEMPERATURE	DEG_F	TIME
2	RCTSGDM (2)	STEAM GEN #2 DOME TEMPERATURE	DEG_F	START 00: 00: 00
3	RCTSGDM (3)	STEAM GEN #3 DOME TEMPERATURE	DEG_F	STOP 01: 04: 20
4	RCTSGDM (4)	STEAM GEN #4 DOME TEMPERATURE	DEG_F	
5				
6				



90% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER INLET TEMPERATURE	DEG_F	TIME
2	CWTAVGOUT	CONDENSER OUTLET TEMPERATURE	DEG_F	START 00: 00: 00
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 01: 04: 20
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
CRITICAL PARAMETERS					
Nuclear Power	PR Avg.	Percent	100	100.2	-0.2
Thermal Power	Calc.	Percent	100	100	0
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	582	580.9	0.2
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	520	519	0.2
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	580	580.9	-0.2
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	522	519	0.6
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	582	581	0.2
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	508	519	-2.2
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	570	580.9	-1.9
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	520	519	0.2
Loop 1 Tavg.	NTI-13	Deg. F	549.5	549.9	-0.1
Loop 2 Tavg.	NTI-23	Deg. F	550	549.9	0
Loop 3 Tavg.	NTI-33	Deg. F	548.5	550	-0.3
Loop 4 Tavg.	NTI-43	Deg. F	549.2	549.9	-0.1
Pressurizer Pressure	NPP Avg.	PSIG	2084.25	2086.3	-0.1
Pressurizer Level	NLP Avg.	Percent	40.33	43.4	-7.6 *
Press. Level Cold Cal.	NLI-151	Percent	30.5	31.4	-3
Press. Steam Temperature	NTA-252	Deg. F	OOS	642.6	ERR *
Press. Liquid Temp.	NTA-251	Deg. F	648	642.6	0.8
Press. Surge Line Temp.	NTA-253	Deg. F	650	642.5	1.2
Steam Generator #21 Level	BLP Avg.	Percent	45	44.1	2
Steam Generator #22 Level	BLP Avg.	Percent	46.67	43.9	5.9 *
Steam Generator #23 Level	BLP Avg.	Percent	44.33	44.22	0.2
Steam Generator #24 Level	BLP Avg.	Percent	44	44	0
Steam Generator #21 Press	MPP Avg.	PSIG	638.33	657.9	-3.1
Steam Generator #22 Press	MPP Avg.	PSIG	625	657.8	-5.2 *
Steam Generator #23 Press	MPP Avg.	PSIG	628.33	658	-4.7 *
Steam Generator #24 Press	MPP Avg.	PSIG	633.33	658	-3.9
East Fp. Suction Flow	CFC-201	E6 lb/hr	7.5	7.4	1.3
West Fp. Suction Flow	CFC-202	E6 lb/hr	7.4	7.2	2.7
Main Generator Elect Pwr		Megawatts	1020	1021	-0.1

COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
NON CRITICAL PARAMETERS					
Steam Gen. #21 Shell Temp	BTI-110	Deg. F	473	478	-1.1
Steam Gen. #22 Shell Temp	BTI-120	Deg. F	461	478	-3.7
Steam Gen. #23 Shell Temp	BTI-130	Deg. F	468	478	-2.1
Steam Gen. #24 Shell Temp	BTI-140	Deg. F	467	478	-2.4
Turbine 1st Stage Press.	MPC Avg.	Percent	99.5	100	-0.5
HP Turbine 1st Stage Press.	MPI-253	Press.	460	599	-30.2 *
Main Steam Header Press	MPI-230	Press.	622	631	-1.4
LP Turbine Inlet Press.	MPR-412	Press.	186	200.9	-8
	SPI-300	Inch. Vac	25.8	28.3	-9.7
Main Turbine Control Valve A Position	CV-A	Percent	83	39	53 *
Main Turbine Control Valve B Position	CV-B	Percent	85	39	54.1 *
Main Turbine Control Valve C Position	CV-C	Percent	83	39	53 *
Main Turbine Control Valve D Position	CV-D	Percent	84	39	53.6 *
East Fpt. Stm Supply Press	API-11	PSIG	179	83	53.6 *
East Fpt. Condenser Vac.	SPI-351	Inch. Vac	25.8	27.8	-7.8
East Fp. Suction Press.	CPI-201	PSIG	275	321	-16.7 *
East Fp. Discharge Press	FPI-260	PSIG	850	920	-8.2
East Fpt. Speed		RPM	4350	4224	2.9
West Fpt. Stm Supply Press	API-12	PSIG	182	83	54.4 *
West Fpt. Condenser Vac.	SPI-352	Inch. Vac	26	27.7	-6.5
West Fp. Suction Press	CPI-202	PSIG	272	328	-20.6 *
West Fp. Discharge Press	FPI-261	PSIG	820	925	-12.8 *
West Fpt. Speed		RPM	4350	4209	3.2
Fp. Discharge Header Press	FPC-250	PSIG	790	795	-0.6
Condensate Booster Pump Discharge Header Press.	CPI-203	PSIG	358	345	3.6
Hotwell Pp.Discharge Press	CPI-101	PSIG	138	133	3.6
Drain Cooler A Shell Press	HPI-111	Inch. Vac	11	13.5	-22.7 *
Drain Cooler B Shell Press	HPI-112	Inch. Vac	10.5	13.6	-29.5 *
Drain Cooler C Shell Press	HPI-113	Inch. Vac	11.7	13.6	-16.2 *
Heater 1A Shell Press.	HPI-101	Inch. Vac	14	12.2	12.9 *
Heater 1B Shell Press.	HPI-102	Inch. Vac	22.7	12	47.1 *

COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE.	SIMULATOR VALUE	% ERROR
Heater 1C Shell Press.	HPI-103	Inch. Vac	27	12	55.6 *
Heater 2A Shell Press.	HPI-201	Inch/PSIG	8.8	14.5	-64.8 *
Heater 2B Shell Press.	HPI-202	Inch/PSIG	4.5	14.5	-222.2 *
Heater 3A Shell Press.	HPI-301	PSIG	58	57.5	0.9
Heater 3B Shell Press.	HPI-302	PSIG	57.5	58	-0.9
Heater 4A Shell Press.	HPI-401	PSIG	105	102	2.9
Heater 4B Shell Press.	HPI-402	PSIG	105	103	1.9
Heater 5A Shell Press.	HPI-501	PSIG	180	165	8.3
Heater 5B Shell Press.	HPI-502	PSIG	185	150	18.9 *
Heater 6A Shell Press.	HPI-601	PSIG	345	335	2.9
Heater 6B Shell Press.	HPI-602	PSIG	345	340	1.4
North Htr. Drain pump Discharge Pressure	CPI-252	PSIG	480	450	6.3
Middle Htr. Drain pump Discharge Pressure	CPI-253	PSIG	570	0	100 *
South Htr. Drain Pump Discharge Pressure	CPI-251	PSIG	205	450	-119.5 *
(Left)	MPI-411	PSIG	600	625	-4.2
(Right)	MPI-412	PSIG	600	625	-4.2
FP Discharge Header Temp.	FTR-258	Deg. F	342	286	16.4 *
Heater 5A Tube Outlet Temp	FTR-250	Deg. F	380	357	6.1
Heater 5B Tube Outlet Temp	FTR-251	Deg. F	380	357	6.1
Heater 6A Tube Outlet Temp	FTR-252	Deg. F	433	424	2.1
Heater 6B Tube Outlet Temp	FTR-253	Deg. F	433	424	2.1
Heater 6A & 6B Outlet Temp	FTR-259	Deg. F	433	424	2.1
Fp Suction Header Temp.	CTR-224	Deg. F	335	293	12.5 *
Main Stm to Left Outer Vlv.	MTR-220	Deg. F	492	499	-1.4
Main Stm to Right Outer Vlv.	MTR-210	Deg. F	492	500	-1.6
Reheat Steam Upstream CIV-1	MTR-415	Deg. F Deg. F	465	458	1.5
Reheat Steam Upstream CIV-2	MTR-414	Deg. F Deg. F	475	458	3.6
Reheat Steam Upstream CIV-3	MTR-413	Deg. F Deg. F	468	458	2.1
Reheat Steam Upstream CIV-4	MTR-403	Deg. F Deg. F	467	459	1.7
Reheat Steam Upstream CIV-5	MTR-404	Deg. F Deg. F	471	459	2.5
Reheat Steam Upstream CIV-6	MTR-405	Deg. F Deg. F	465	459	1.3

COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
Exhaust Hood A - Gen. End	TTR-25	Deg. F	122	96	21.3 *
Exhaust Hood B - Gen. End	TTR-26	Deg. F	122	96	21.3 *
Exhaust Hood C - Gen. End	TTR-27	Deg. F	122	96	21.3 *
Condenser Inlet Avg.	SG-21 P1	Deg. F	71.2	48.6	
Condenser Outlet Avg.	SG-21 P2	Deg. F	91.7	65	29.1 *
Condenser Delta T	SG-21 P3	Deg. F	20.8	16.2	22.1 *
CW Pump #11 Discharge	WTR-11	Deg. F	71.2	48.6	31.7 *
CW Pump #12 Discharge	WTR-12	Deg. F	71.2	48.5	31.9 *
CW Pump #13 Discharge	WTR-13	Deg. F	70.6	48.6	31.2 *
Condenser A Outlet NW	WTR-113	Deg. F	93	65	30.1 *
Condenser A Outlet SW	WTR-117	Deg. F	92.3	65	29.6 *
Condenser B Outlet NW	WTR-213	Deg. F	92.2	65	29.5 *
Condenser B Outlet SW	WTR-217	Deg. F	91.3	64.9	28.9 *
Condenser C Outlet NW	WTR-313	Deg. F	91.9	64.7	29.6 *
Condenser C Outlet SW	WTR-317	Deg. F	92.7	64.8	30.1 *
Bank D Rod Position		Steps	222.5	220	1.1

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.5737	DEGF
T1004	PZR LIQUID TEMP		642.5296	DEGF
RCTMTA255	05300 PRI SURGE LINE TEMP		642.5278	DEG F
L1091	PRESSURIZER WATER LEVEL		43.4095	PC
RXLCOLOC	0050 PRZ COLD CALIB		.5143	%
P1036	PRESSURIZER PRESSURE		2036.7374	PSIG
T1101	LOOP 1 AVG TEMP		549.3694	DEGF
T1102	LOOP 2 AVG TEMP		549.9001	DEGF
T1103	LOOP 3 AVG TEMP		549.9253	DEGF
T1104	LOOP 4 AVG TEMP		549.8640	DEGF
T1111	LOOP 1 HOT LEG TEMP		580.8323	DEGF
T1112	LOOP 2 HOT LEG TEMP		580.8323	DEGF
T1113	LOOP 3 HOT LEG TEMP		580.9065	DEGF
T1114	LOOP 4 HOT LEG TEMP		580.8330	DEGF
T1115	LOOP 1 COLD LEG TEMP		518.9202	DEGF
T1116	LOOP 2 COLD LEG TEMP		518.9736	DEGF
T1117	LOOP 3 COLD LEG TEMP		518.9446	DEGF
T1118	LOOP 4 COLD LEG TEMP		518.9092	DEGF
NIQPRAV	05050 AVG POWER RANGE^FLUX		1.0037	%
CRQN	05050 NORMALIZED CORE^POWER		.9531	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		657.6707	PSIG
P1025	STM GEN OUTLET PRES LP 2		657.6199	PSIG
P1028	STM GEN OUTLET PRES LP 3		657.7275	PSIG
P1031	STM GEN OUTLET PRES LP 4		657.7092	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.1801	PC
L1207	STM GEN 2 NARROW LEVEL		43.6137	PC
L1210	STM GEN 3 NARROW LEVEL		44.4998	PC
L1213	STM GEN 4 NARROW LEVEL		43.2957	PC
RCTSGDM	01190 SG DOME STEAM TEMP	(001)	495.8533	F
RCTSGDM	01190 SG DOME STEAM TEMP	(002)	495.4470	F
RCTSGDM	01190 SG DOME STEAM TEMP	(003)	495.2612	F
RCTSGDM	01190 SG DOME STEAM TEMP	(004)	495.1021	F
RCBORON	11070 BORON CONC	(001)	1194.8301	PPM
RCBORON	11070 BORON CONC	(002)	1194.8284	PPM
RCBORON	11070 BORON CONC	(003)	1194.8291	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	92.1199	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	92.0947	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	92.1336	F
FWTDHHHP	11010 HWP DISC HEADER TEMP		90.2639	F
FWTTODCA	19300 DCA TUBE OUTLET TEMP		103.1913	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		101.2935	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		103.3356	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		175.7376	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		185.4777	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		186.1885	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		243.3541	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		248.1734	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		305.6130	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		305.9189	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		336.2424	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		340.1353	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		360.9646	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		360.9841	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		427.7004	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		427.7307	F

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ATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		280.4741	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		281.3357	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		281.3289	F
CWTAVGIN	65060 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	65050 AVERAGE COND OUTLET TE		64.0432	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.8477	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.8468	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.8474	PSIA
FWTDRNH2A	19160 H2A DRAINS TEMPERATURE		204.1781	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		206.6235	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		270.6208	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		265.5061	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		304.2998	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		306.0627	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		295.5222	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		295.5032	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		371.6409	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		371.6533	F
RDPROD	65030 ROD POSITION/ACTUAL	(045)	220	
RDPROD	65030 ROD POSITION/ACTUAL	(053)	220	

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.6670	DEGF
T1004	PZR LIQUID TEMP		642.5605	DEGF
RCTNTA2??	?000 PRE SURGE LINE TEMP		642.5718	DEG F
L1091	PRESSU-IZER WATER LEVEL		43.4067	PC
RXLCOLOC	?000 PRE COLD CALIB		.5145	M
P1000	PRESSURIZER PRESSURE		2065.3462	PSIG
T1101	LOOP 1 AVG TEMP		549.8877	DEGF
T1102	LOOP 2 AVG TEMP		549.9160	DEGF
T1103	LOOP 3 AVG TEMP		549.9434	DEGF
T1104	LOOP 4 AVG TEMP		549.8811	DEGF
T1111	LOOP 1 HOT LEG TEMP		620.8481	DEGF
T1112	LOOP 2 HOT LEG TEMP		620.8481	DEGF
T1113	LOOP 3 HOT LEG TEMP		620.9451	DEGF
T1114	LOOP 4 HOT LEG TEMP		620.8481	DEGF
T1115	LOOP 1 COLD LEG TEMP		618.9304	DEGF
T1116	LOOP 2 COLD LEG TEMP		618.9932	DEGF
T1117	LOOP 3 COLD LEG TEMP		618.9604	DEGF
T1118	LOOP 4 COLD LEG TEMP		618.9321	DEGF
NIPRAV	02000 AVG POWER RANGE^FLUX		1.0016	%
CRDN	03000 NORMALIZED CORE^POWER		.9533	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		657.7393	PSIG
P1025	STM GEN OUTLET PRES LP 2		657.8963	PSIG
P1028	STM GEN OUTLET PRES LP 3		657.7947	PSIG
P1031	STM GEN OUTLET PRES LP 4		657.7932	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.8490	PC
L1207	STM GEN 2 NARROW LEVEL		44.4913	PC
L1210	STM GEN 3 NARROW LEVEL		44.3225	PC
L1213	STM GEN 4 NARROW LEVEL		43.9845	PC
RCTSGUM	61170 SG DOME STEAM TEMP	(001)	495.7781	F
RCTSGUM	61170 SG DOME STEAM TEMP	(002)	495.1877	F
RCTSGUM	61170 SG DOME STEAM TEMP	(003)	495.3845	F
RCTSGUM	61190 SG DOME STEAM TEMP	(004)	495.7939	F
RCBORON	11070 BORON CONC	(001)	1194.7993	PPM
RCBORON	11070 BORON CONC	(002)	1194.7986	PPM
RCBORON	11070 BORON CONC	(003)	1194.8008	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	92.3263	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	92.2875	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	92.3205	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		93.4746	F
FWTTOOCA	17210 OOA TUBE OUTLET TEMP		101.4372	F
FWTTOOCB	17230 OOB TUBE OUTLET TEMP		103.5273	F
FWTTOOCC	17250 OOC TUBE OUTLET TEMP		103.3.21	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		185.3024	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		186.5594	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		184.9276	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		248.3468	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		247.6697	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		305.7490	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		305.9226	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		340.3025	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		335.3442	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		361.0125	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		360.9792	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		427.8252	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		427.8159	F

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		230.2410	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		281.1042	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		281.1018	F
CWTAVGIN	15050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	15050 AVERAGE COND OUTLET TE		84.0917	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.8505	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.8496	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.8503	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		205.0307	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		206.9908	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		266.7349	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		261.3862	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		304.2568	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		305.3623	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		295.4160	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		295.4741	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		371.6318	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		371.7158	F
RDPROD	03010 ROD POSITION/ACTUAL	(045)	220	
RDPROD	03010 ROD POSITION/ACTUAL	(053)	220	

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1000	PZR VAPOR TEMP		642.7004	DEGF
T1004	PZR LIQUID TEMP		642.6133	DEGF
RCTMTA00	0000 PRZ SURGE LINE TEMP		642.6238	DEG F
L1091	PRESSURIZER WATER LEVEL		43.4228	PC
XXL00L00	0000 0 PZR COLD CELLS		.3144	%
P1000	PRESSURIZER PRESSURE		2086.0961	PSIG
T1101	LOOP 1 AVG TEMP		549.9214	DEGF
T1102	LOOP 2 AVG TEMP		549.9473	DEGF
T1103	LOOP 3 AVG TEMP		549.9790	DEGF
T1104	LOOP 4 AVG TEMP		549.9143	DEGF
T1111	LOOP 1 HOT LEG TEMP		580.3909	DEGF
T1112	LOOP 2 HOT LEG TEMP		580.3914	DEGF
T1113	LOOP 3 HOT LEG TEMP		581.0103	DEGF
T1114	LOOP 4 HOT LEG TEMP		580.3911	DEGF
T1115	LOOP 1 COLD LEG TEMP		518.9771	DEGF
T1116	LOOP 2 COLD LEG TEMP		519.0156	DEGF
T1117	LOOP 3 COLD LEG TEMP		518.9332	DEGF
T1118	LOOP 4 COLD LEG TEMP		518.9590	DEGF
NIQPRAV	0000 AVG POWER RANGE^FLUX		.9984	%
CRWN	0000 NORMALIZED CORE^POWER		.9535	OMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		557.9027	PSIG
P1023	STM GEN OUTLET PRES LP 2		557.9362	PSIG
P1024	STM GEN OUTLET PRES LP 3		557.9061	PSIG
P1031	STM GEN OUTLET PRES LP 4		557.9939	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.3996	PC
L1207	STM GEN 2 NARROW LEVEL		43.6023	PC
L1210	STM GEN 3 NARROW LEVEL		44.3423	PC
L1213	STM GEN 4 NARROW LEVEL		44.6201	PC
RCTSGDM	01190 SG DOME STEAM TEMP	(001)	495.9517	F
RCTSGDM	01190 SG DOME STEAM TEMP	(002)	495.9732	F
RCTSGDM	01190 SG DOME STEAM TEMP	(003)	495.6299	F
RCTSGDM	01190 SG DOME STEAM TEMP	(004)	495.3677	F
RCBORDN	11070 BORON CONC	(001)	1194.7749	PPM
RCBORDN	11070 BORON CONC	(002)	1194.7764	PPM
RCBORDN	11070 BORON CONC	(003)	1194.7764	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	92.1315	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	92.1340	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	92.1683	F
FWTDHWHP	11010 HW DISC HEADER TEMP		93.3196	F
FWTTDDCA	17270 DCA TUBE OUTLET TEMP		103.3942	F
FWTTDDCB	17300 DCB TUBE OUTLET TEMP		103.3166	F
FWTTDDCC	17320 DCC TUBE OUTLET TEMP		103.3867	F
FWTTDH1A	19220 H1A TUBE OUTLET TEMP		185.3538	F
FWTTDH1B	19240 H1B TUBE OUTLET TEMP		185.9362	F
FWTTDH1C	19260 H1C TUBE OUTLET TEMP		185.0511	F
FWTTDH2A	19150 H2A TUBE OUTLET TEMP		247.3110	F
FWTTDH2B	19200 H2B TUBE OUTLET TEMP		248.5079	F
FWTTDH3A	19140 H3A TUBE OUTLET TEMP		306.2852	F
FWTTDH3B	19160 H3B TUBE OUTLET TEMP		304.6511	F
FWTTDH4A	19100 H4A TUBE OUTLET TEMP		333.3921	F
FWTTDH4B	19120 H4B TUBE OUTLET TEMP		335.5527	F
FWTTDH5A	17060 H5A TUBE OUTLET TEMP		361.0195	F
FWTTDH5B	17080 H5B TUBE OUTLET TEMP		361.0225	F
FWTTDH6A	17020 H6A TUBE OUTLET TEMP		427.7854	F
FWTTDH6B	17040 H6B TUBE OUTLET TEMP		427.8120	F

ISO>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11080 MFP SUCTION TEMPERATUR		280.2910	F
FWTDMFP	11070 A MFP DISCH TEMPERATUR		281.1541	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		281.1536	F
CWTAVGIN	03050 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03060 AVERAGE COND OUTLET TE		84.0706	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.8486	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.8476	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.8484	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		203.8813	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		204.6383	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		266.0039	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		266.6111	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		306.6351	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		306.6409	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		295.4756	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		295.3999	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		371.7634	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		371.6572	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	220	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	220	

ISO>

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		642.5251	DEGF
T1006	PZR LIQUID TEMP		642.6240	DEGF
RCTNTA25	25000 PRZ SURGE LINE TEMP		642.6184	DEG F
L1091	PRESSURIZER WATER LEVEL		43.4422	PC
RXLCOLOC	00500 PRE COLD CALIB		.3145	%
P1036	PRESSURIZER PRESSURE		2006.7095	PSIG
T1101	LOOP 1 AVG TEMP		549.9597	DEGF
T1102	LOOP 2 AVG TEMP		549.9673	DEGF
T1103	LOOP 3 AVG TEMP		550.0171	DEGF
T1104	LOOP 4 AVG TEMP		549.9543	DEGF
T1111	LOOP 1 HOT LEG TEMP		580.9375	DEGF
T1112	LOOP 2 HOT LEG TEMP		580.9375	DEGF
T1113	LOOP 3 HOT LEG TEMP		581.0068	DEGF
T1114	LOOP 4 HOT LEG TEMP		580.9375	DEGF
T1115	LOOP 1 COLD LEG TEMP		519.0042	DEGF
T1116	LOOP 2 COLD LEG TEMP		519.0547	DEGF
T1117	LOOP 3 COLD LEG TEMP		519.0320	DEGF
T1118	LOOP 4 COLD LEG TEMP		518.9939	DEGF
NIQPRAV	02000 AVG POWER RANGE^FLUX		1.0081	%
CRQN	00000 NORMALIZED CORE^POWER		.9537	DMLS

ISO>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		658.0654	PSIG
P1025	STM GEN OUTLET PRES LP 2		658.0425	PSIG
P1028	STM GEN OUTLET PRES LP 3		658.1379	PSIG
P1031	STM GEN OUTLET PRES LP 4		658.1389	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.8918	PC
L1207	STM GEN 2 NARROW LEVEL		44.0201	PC
L1210	STM GEN 3 NARROW LEVEL		43.4131	PC
L1213	STM GEN 4 NARROW LEVEL		44.3009	PC
RCTSGDM	01170 SG DOME STEAM TEMP	(001)	494.8835	F
RCTSGDM	01170 SG DOME STEAM TEMP	(002)	495.7007	F
RCTSGDM	01170 SG DOME STEAM TEMP	(003)	495.6052	F
RCTSGDM	01190 SG DOME STEAM TEMP	(004)	495.4854	F
RCBORON	11070 BORON CONC	(001)	1194.7317	PPM
RCBORON	11070 BORON CONC	(002)	1194.7344	PPM
RCBORON	11070 BORON CONC	(003)	1194.7339	PPM

ISO>

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	92.1835	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	92.1484	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	92.1784	F
FWTDHMFP	11010 MFP DISC HEADER TEMP		93.3309	F
FWTTDDCA	19430 DCA TUBE OUTLET TEMP		103.4351	F
FWTTDDCB	19330 DCB TUBE OUTLET TEMP		103.3627	F
FWTTDDCC	19320 DCC TUBE OUTLET TEMP		103.3147	F
FWTTDH1A	19240 H1A TUBE OUTLET TEMP		185.0975	F
FWTTDH1B	19340 H1B TUBE OUTLET TEMP		184.4557	F
FWTTDH1C	19260 H1C TUBE OUTLET TEMP		185.7616	F
FWTTDH2A	19120 H2A TUBE OUTLET TEMP		247.9637	F
FWTTDH2B	19220 H2B TUBE OUTLET TEMP		247.9917	F
FWTTDH3A	19140 H3A TUBE OUTLET TEMP		305.5227	F
FWTTDH3B	19160 H3B TUBE OUTLET TEMP		304.2493	F
FWTTDH4A	19100 H4A TUBE OUTLET TEMP		338.1135	F
FWTTDH4B	19120 H4B TUBE OUTLET TEMP		338.5752	F
FWTTDH5A	17060 H5A TUBE OUTLET TEMP		360.9626	F
FWTTDH5B	17080 H5B TUBE OUTLET TEMP		360.9851	F
FWTTDH6A	17020 H6A TUBE OUTLET TEMP		427.7295	F
FWTTDH6B	17040 H6B TUBE OUTLET TEMP		427.7544	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11000 MFP SUCTION TEMPERATUR		279.9673	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		280.8318	F
FWTDAMFP	11070 A MFP DISCH TEMPERATUR		280.8308	F
CWTAVGIN	15000 COND AVERAGE INLET TE		43.0008	F
CWTAVGOUT	15090 AVERAGE COND OUTLET TE		64.0581	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.8489	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.8480	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.8487	PSIA
FWTDRNH2A	19120 H2A DRAINS TEMPERATURE		198.6836	F
FWTDRNH2B	19220 H2B DRAINS TEMPERATURE		199.2648	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		264.5352	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		264.0913	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		305.1182	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		305.7937	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		295.5530	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		295.5037	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		371.6001	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		371.4541	F
RDPROD	05030 ROD POSITION/ACTUAL	(045)	220	
RDPROD	05030 ROD POSITION/ACTUAL	(053)	220	

ISD>

07/31/90 11:57:01 TASK # 07000154 COCK1 GOULD C.S.D. MPX-32

ISD>
DA ITEM NOT IN MDD
ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1006	PZR VAPOR TEMP		642.5027	DEGF
T1004	PZR LIQUID TEMP		642.6230	DEGF
RCTNTA25	03000 PRZ SURGE LINE TEMP		642.3518	DEG F
L1091	PRESSURIZER WATER LEVEL		43.4478	PC
RXLCOLDC	03350 PRZ C-L-D CALIB		.3145	%
P1036	PRESSURIZER PRESSURE		2036.6545	PSIG
T1101	LOOP 1 AVG TEMP		549.9302	DEGF
T1102	LOOP 2 AVG TEMP		550.0083	DEGF
T1103	LOOP 3 AVG TEMP		550.0405	DEGF
T1104	LOOP 4 AVG TEMP		549.9741	DEGF
T1111	LOOP 1 HOT LEG TEMP		590.9563	DEGF
T1112	LOOP 2 HOT LEG TEMP		590.9566	DEGF
T1113	LOOP 3 HOT LEG TEMP		591.0203	DEGF
T1114	LOOP 4 HOT LEG TEMP		590.9563	DEGF
T1115	LOOP 1 COLD LEG TEMP		519.0120	DEGF
T1116	LOOP 2 COLD LEG TEMP		519.0681	DEGF
T1117	LOOP 3 COLD LEG TEMP		519.0342	DEGF
T1118	LOOP 4 COLD LEG TEMP		518.9958	DEGF
NIQPRAV	02000 AVG POWER RANGE^FLUX		.9984	%
C[illegible]N	03030 NORMALIZED CORE^POWER		.9539	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		658.1106	PSIG
P1025	STM GEN OUTLET PRES LP 2		658.0696	PSIG
P1028	STM GEN OUTLET PRES LP 3		658.1584	PSIG
P1031	STM GEN OUTLET PRES LP 4		658.1621	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.4549	PC
L1207	STM GEN 2 NARROW LEVEL		43.9844	PC
L1210	STM GEN 3 NARROW LEVEL		44.5790	PC
L1213	STM GEN 4 NARROW LEVEL		43.7718	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	493.9495	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	495.0125	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	495.3188	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	494.8103	F
RCBORON	11070 BORON CONC	(001)	1194.6933	PPM
RCBORON	11070 BORON CONC	(002)	1194.6958	PPM
RCBORON	11070 BORON CONC	(003)	1194.6956	PPM

ISD>

07/31/90 22:57:46 TASK # 07000036 COOK1 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	92.5324	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	92.3105	F
FWTCN	15170 CONDENSER TEMPERATURE	(003)	92.3542	F
FWTDHMMP	11010 MFP DISC HEADER TEMP		93.4902	F
FWTTDDCA	19200 DCA TUBE OUTLET TEMP		183.5263	F
FWTTDDCB	19200 DCB TUBE OUTLET TEMP		183.4994	F
FWTTDDCC	19320 DCC TUBE OUTLET TEMP		183.5978	F
FWTTDH1A	19240 H1A TUBE OUTLET TEMP		183.2520	F
FWTTDH1B	19240 H1B TUBE OUTLET TEMP		183.7984	F
FWTTDH1C	19240 H1C TUBE OUTLET TEMP		183.7829	F
FWTTDH2A	19100 H2A TUBE OUTLET TEMP		247.4223	F
FWTTDH2B	19200 H2B TUBE OUTLET TEMP		245.2745	F
FWTTDH3A	19140 H3A TUBE OUTLET TEMP		305.5964	F
FWTTDH3B	19120 H3B TUBE OUTLET TEMP		305.2246	F
FWTTDH4A	19100 H4A TUBE OUTLET TEMP		339.2722	F
FWTTDH4B	19120 H4B TUBE OUTLET TEMP		337.2516	F
FWTTDH5A	17060 H5A TUBE OUTLET TEMP		360.8374	F
FWTTDH5B	17030 H5B TUBE OUTLET TEMP		360.8342	F
FWTTDH6A	17020 H6A TUBE OUTLET TEMP		427.7544	F
FWTTDH6B	17040 H6B TUBE OUTLET TEMP		427.7598	F

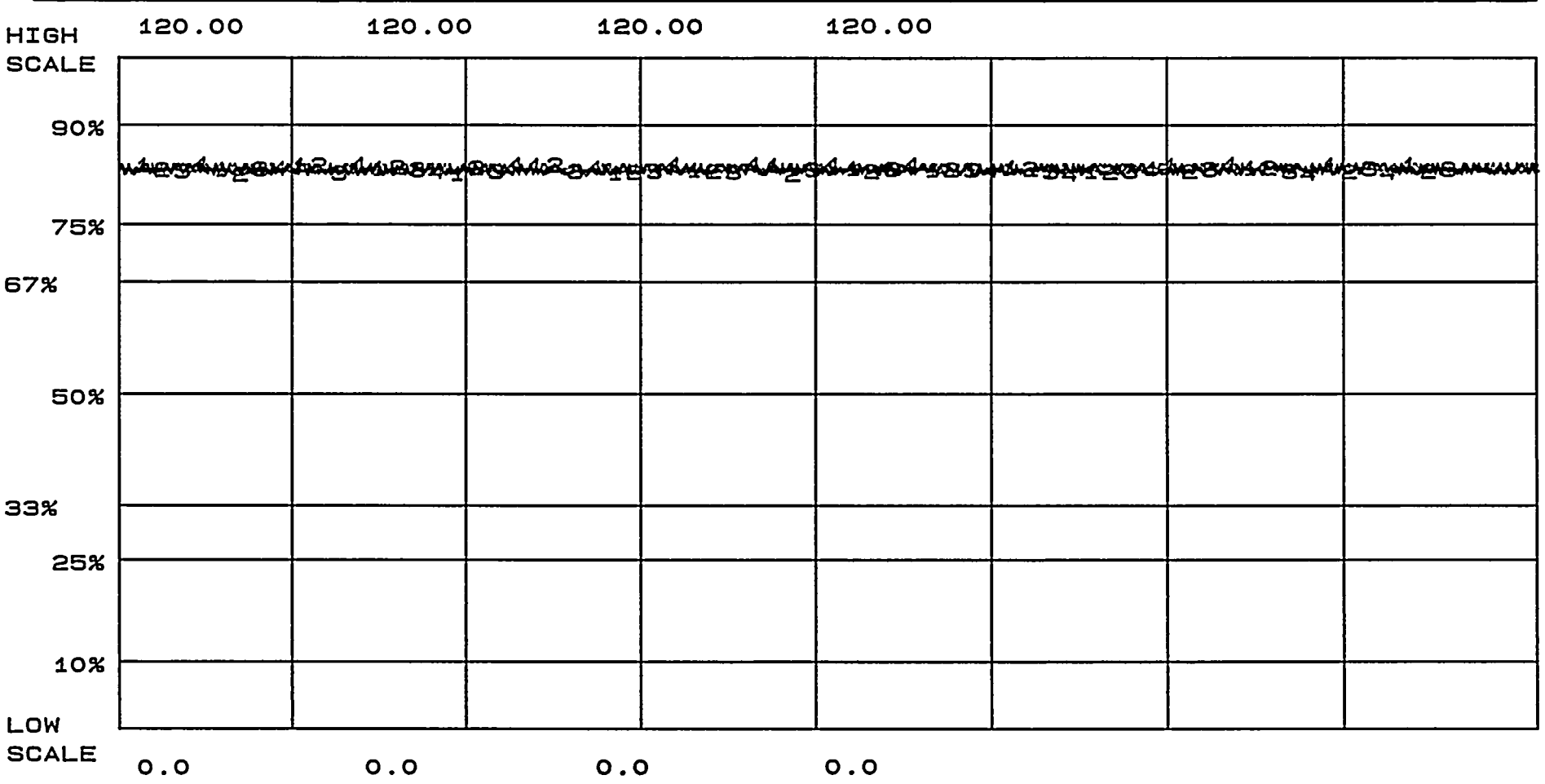
ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11000 MFP SUCTION TEMPERATUR		279.8103	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		280.6743	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		280.6733	F
CWTAVGIN	03000 COND AVERAGE INLET TE		48.0008	F
CWTAVGOUT	03000 AVERAGE COND OUTLET TE		54.1397	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.8523	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.8518	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.8523	PSIA
FWTDRNH2A	19120 H2A DRAINS TEMPERATURE		202.2793	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		201.1844	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		269.2524	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		262.2227	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		304.6709	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		307.6753	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		294.9587	F
FWTDRNH5B	17030 H5B DRAINS TEMPERATURE		294.8926	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		371.4327	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		371.3523	F
RDPR00	03000 R00 POSITION/ACTUAL	(045)	220	
RDPR0D	03000 R0D POSITION/ACTUAL	(053)	220	

ISD>

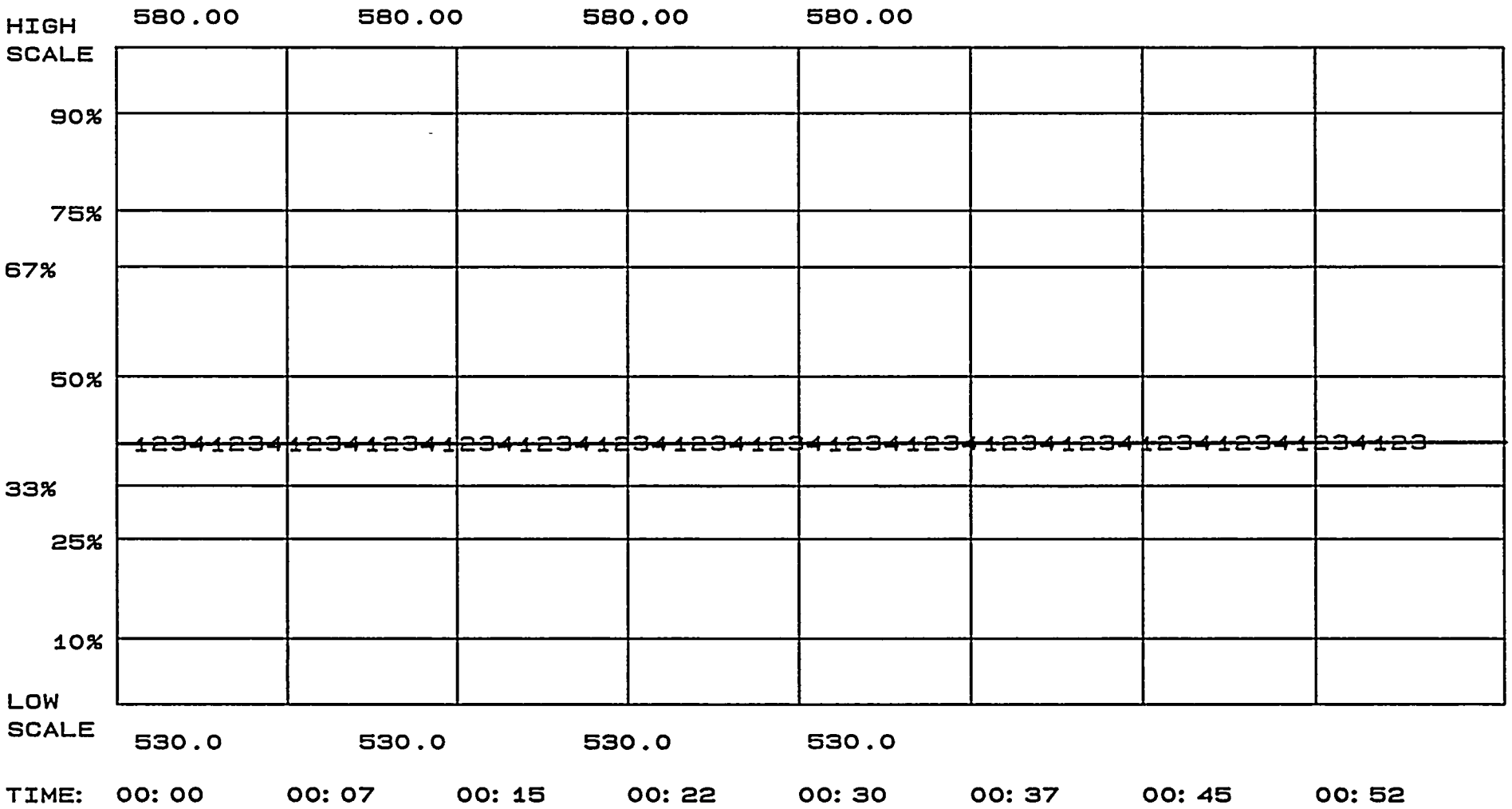
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N-41	PC	TIME
2	N1013	POWER RANGE N-42	PC	START 00: 00: 00
3	N1014	POWER RANGE N-43	PC	STOP 01: 00: 44
4	N1015	POWER RANGE N-44	PC	
5				
6				



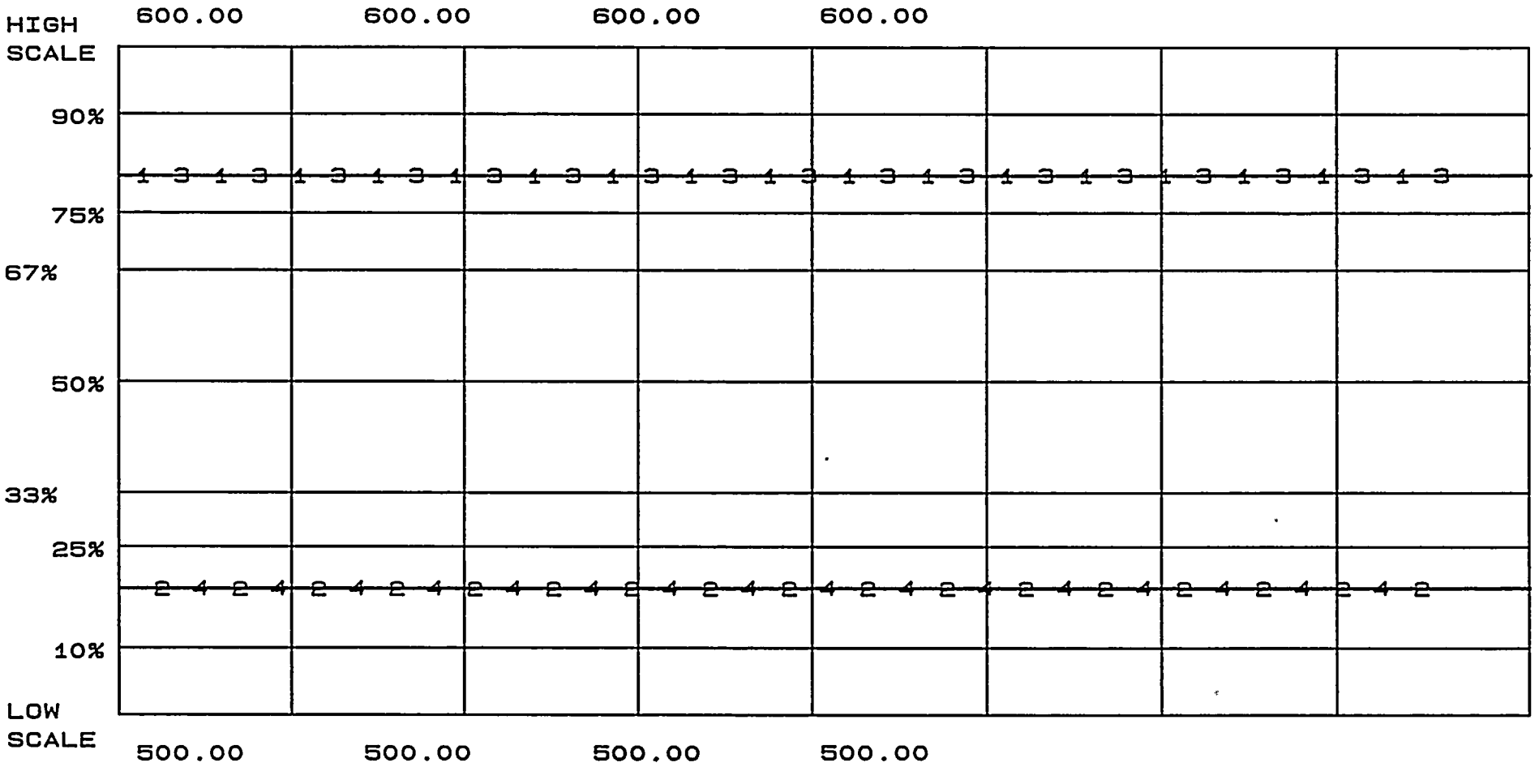
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVERAGE TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVERAGE TEMP	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVERAGE TEMP	DEG_F	STOP 01: 00: 44
4	T1104	LOOP 4 AVERAGE TEMP	DEG_F	
5				
6				



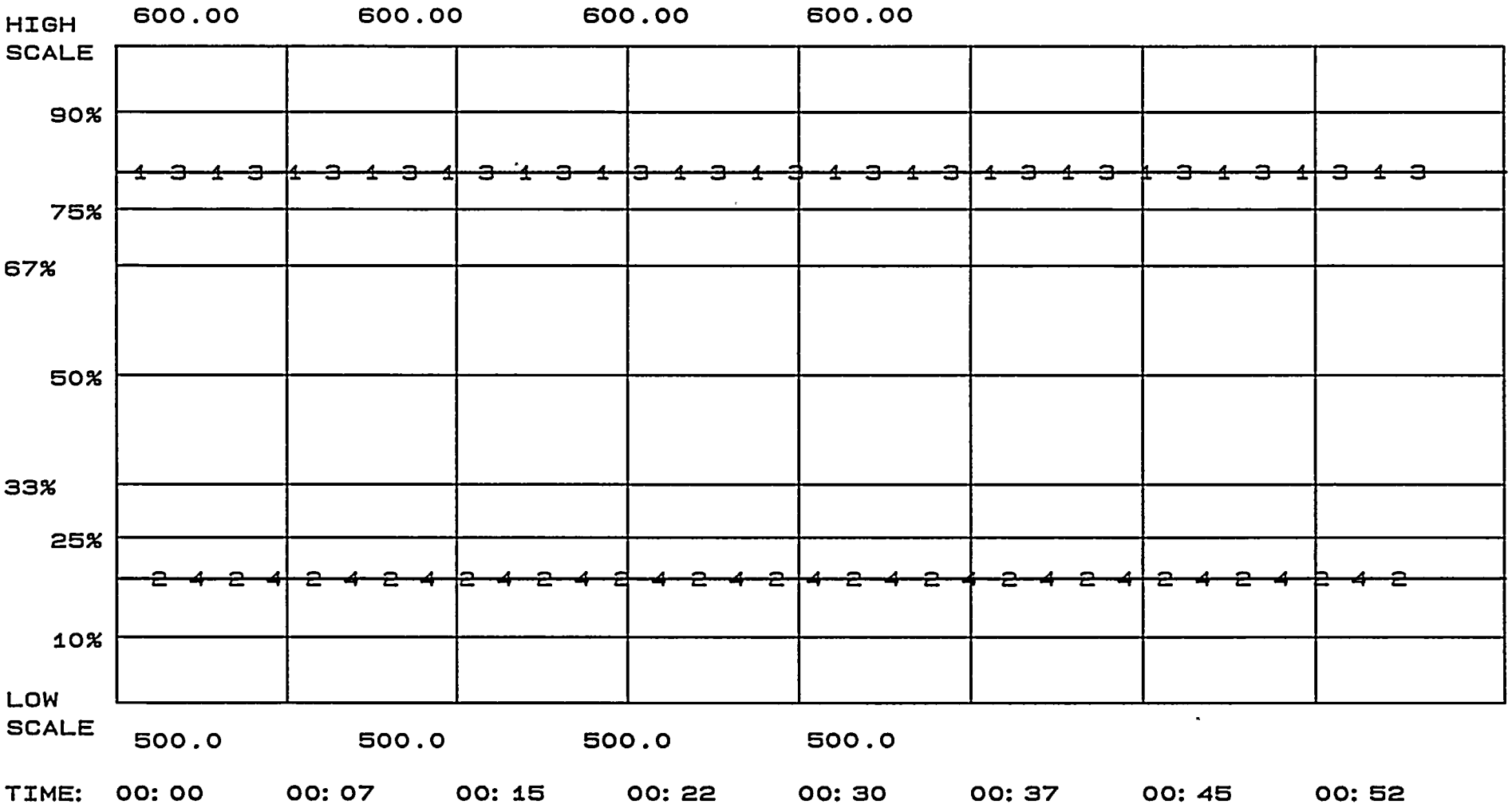
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1115	LOOP 1 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1112	LOOP 2 HOT LEG TEMP	DEG_F	STOP 01: 00: 44
4	T1116	LOOP 2 COLD LEG TEMP	DEG_F	
5				
6				



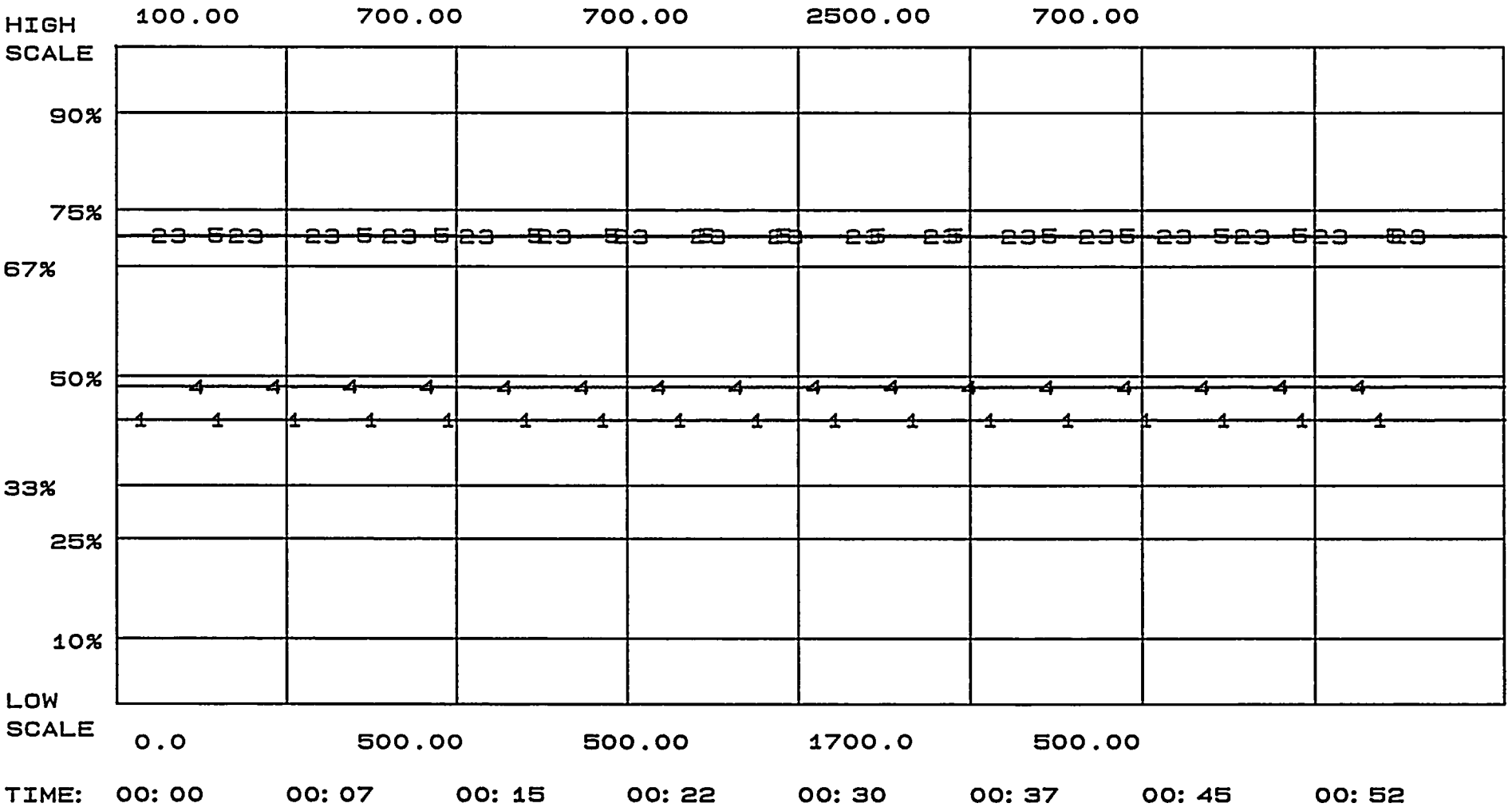
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	LOOP 3 HOT LEG TEMPERATURE	DEG_F	TIME
2	T1117	LOOP 3 COLD LEG TEMPERATURE	DEG_F	START 00: 00: 00
3	T1114	LOOP 4 HOT LEG TEMPERATURE	DEG_F	STOP 01: 00: 44
4	T1118	LOOP 4 COLD LEG TEMPERATURE	DEG_F	
5				
6				



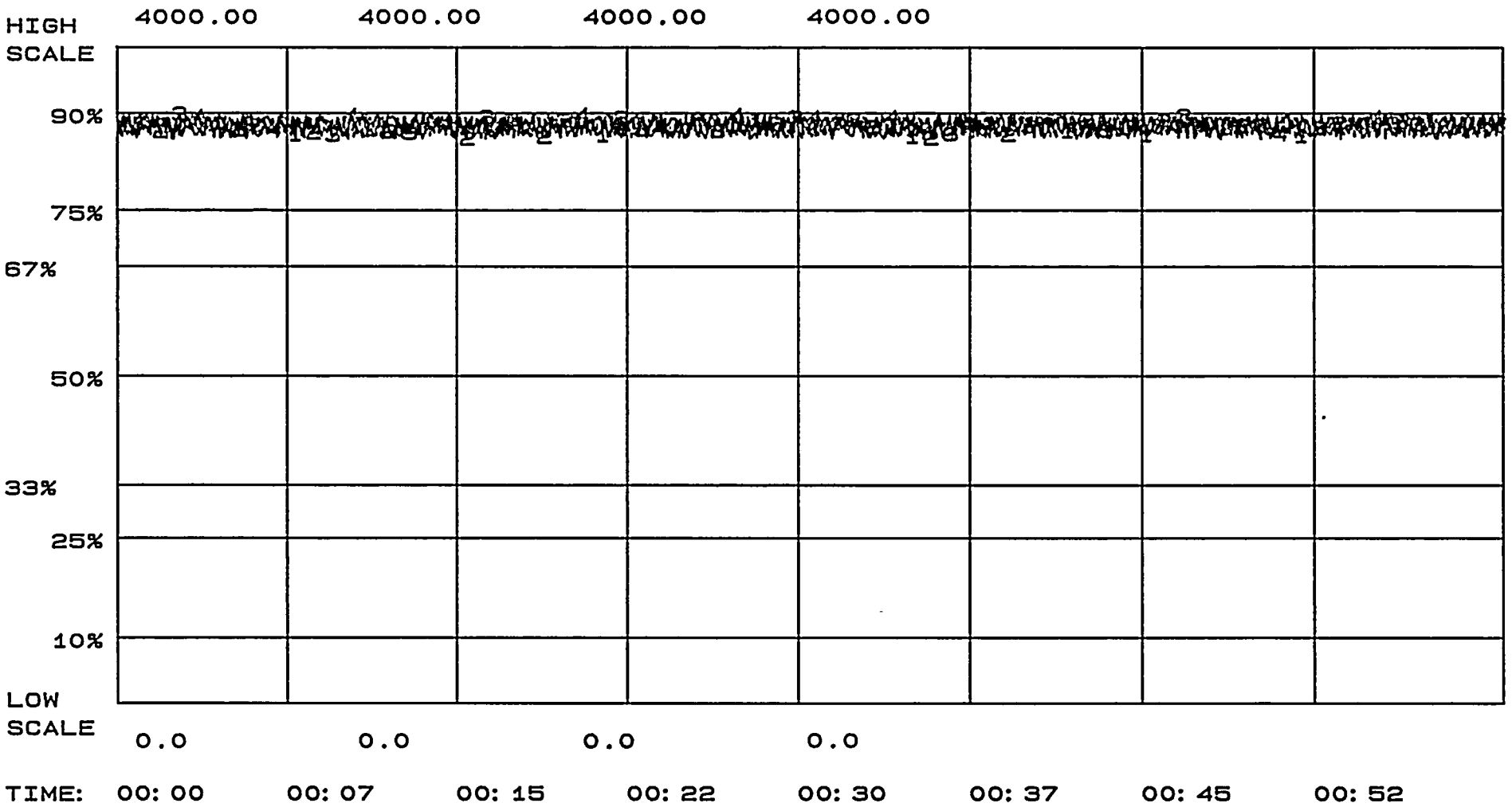
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	START 00: 00: 00
3	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	STOP 01: 00: 44
4	P1036	PRESSURIZER PRESSURE	PSIG	
5	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	
6				



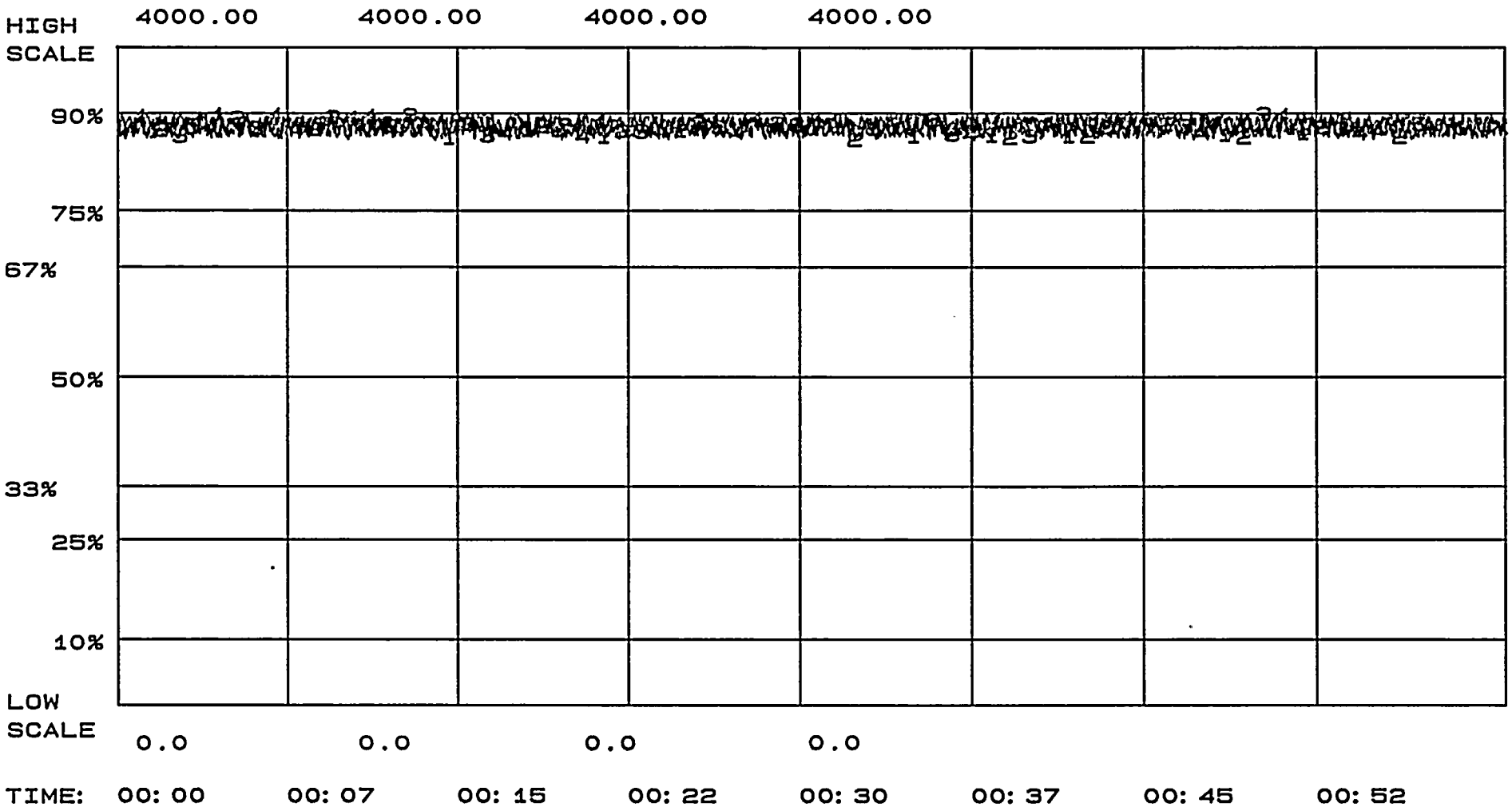
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 01: 00: 44
4	F1054	STEAM FLOW LOOP 4	KBH	
5				
6				



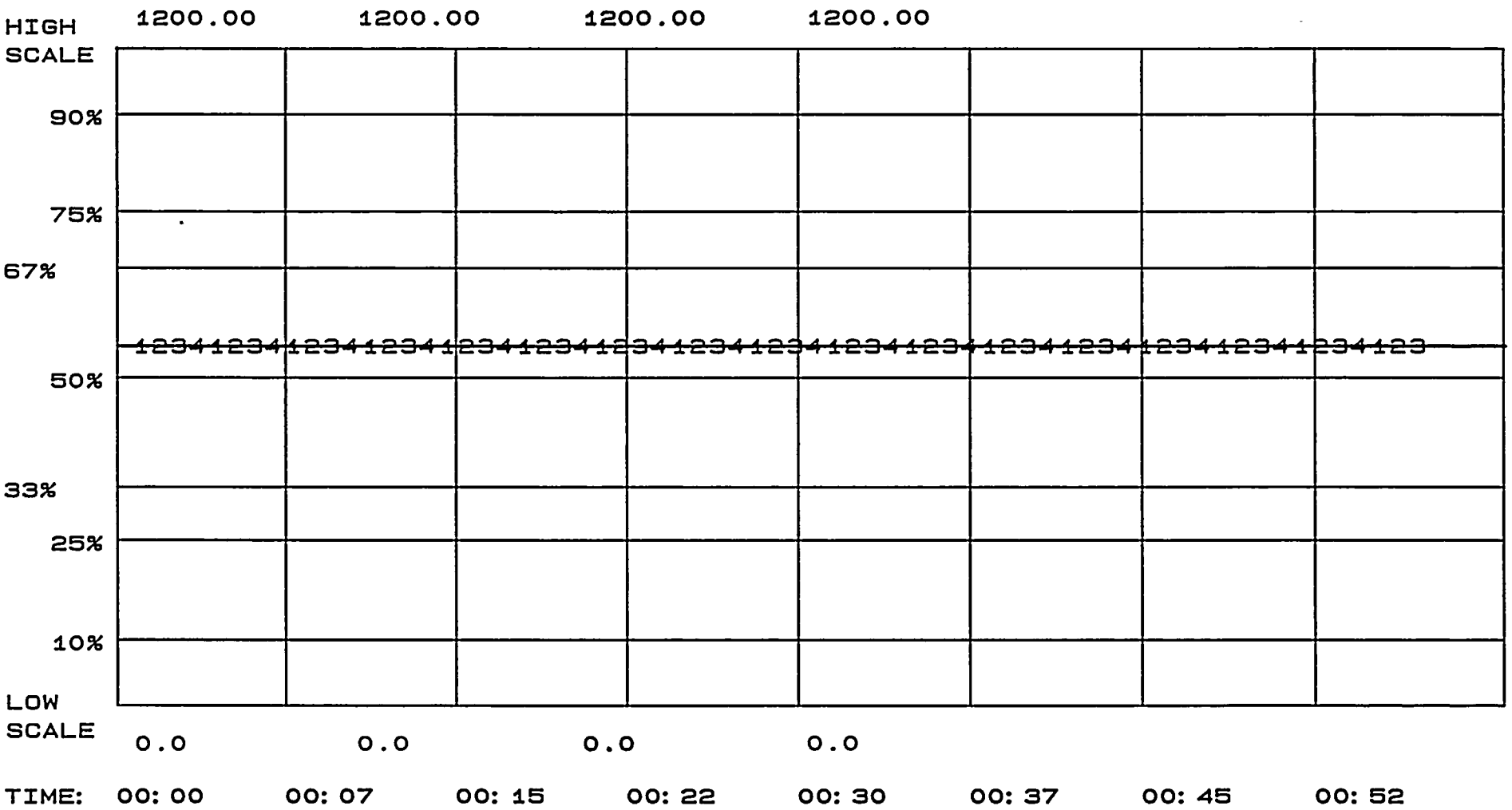
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	LOOP 1 FEEDWATER FLOW	KBH	TIME
2	F1201	LOOP 2 FEEDWATER FLOW	KBH	START 00: 00: 00
3	F1202	LOOP 3 FEEDWATER FLOW	KBH	STOP 01: 00: 44
4	F1203	LOOP 4 FEEDWATER FLOW	KBH	
5				
6				



100% POWER STEADY-STATE TEST

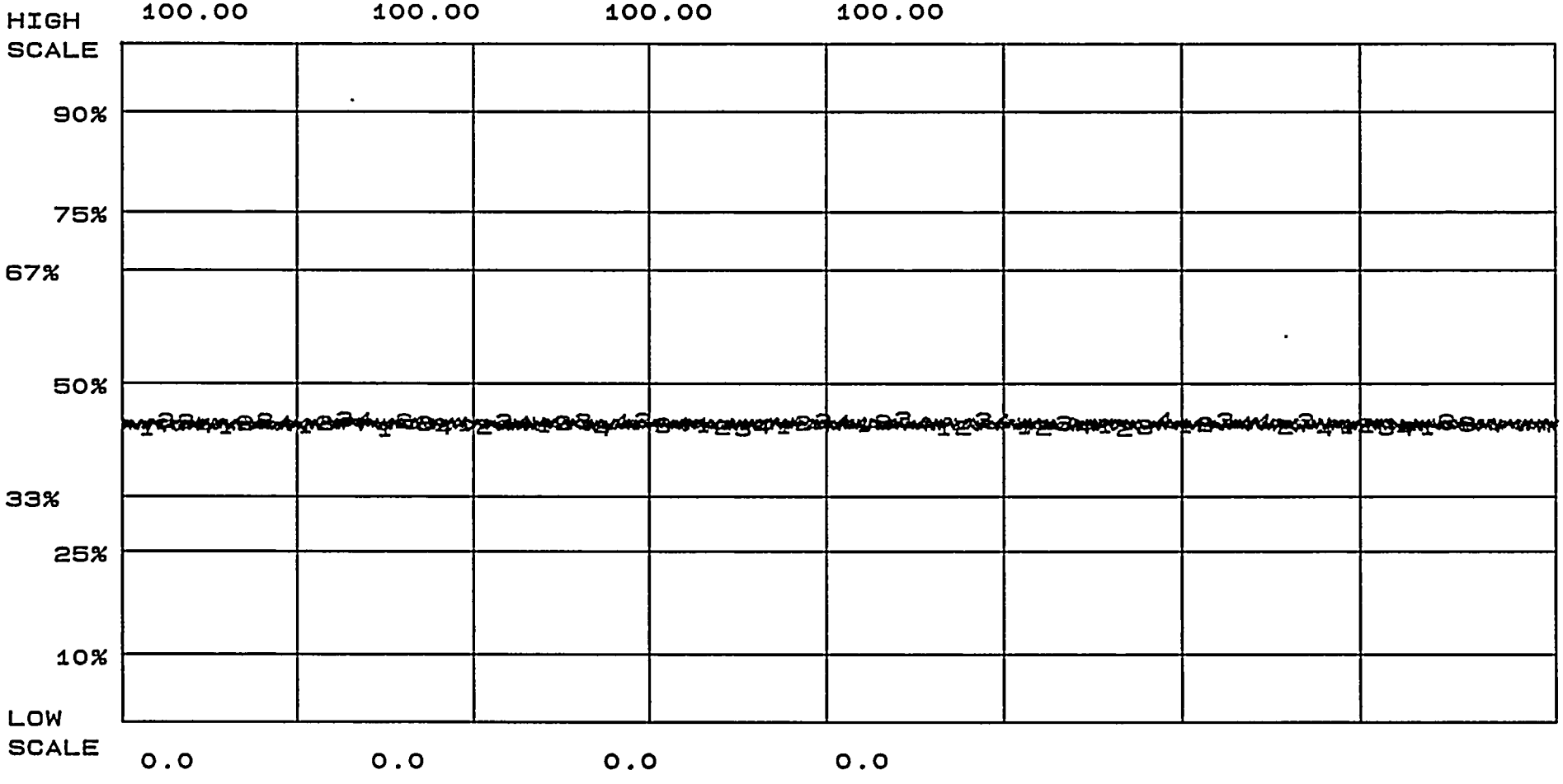
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 01: 00: 44
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



100% POWER STEADY-STATE TEST

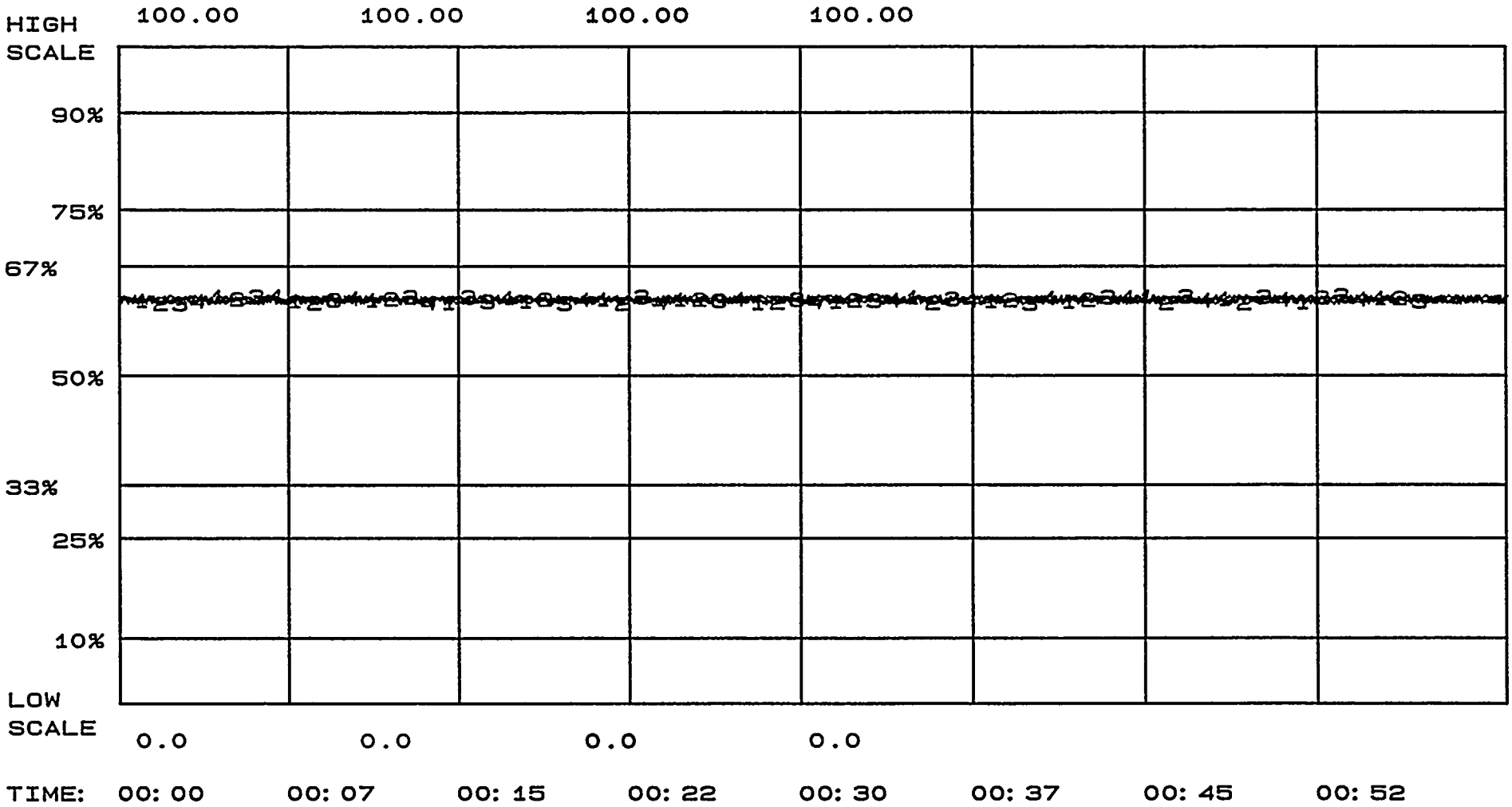
#	POINT ID	DESCRIPTION	UNITS
1	L1204	STEAM GEN #1 NARROW RANGE LEVEL	PC
2	L1207	STEAM GEN #2 NARROW RANGE LEVEL	PC
3	L1210	STEAM GEN #3 NARROW RANGE LEVEL	PC
4	L1213	STEAM GEN #4 NARROW RANGE LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	01: 00: 44



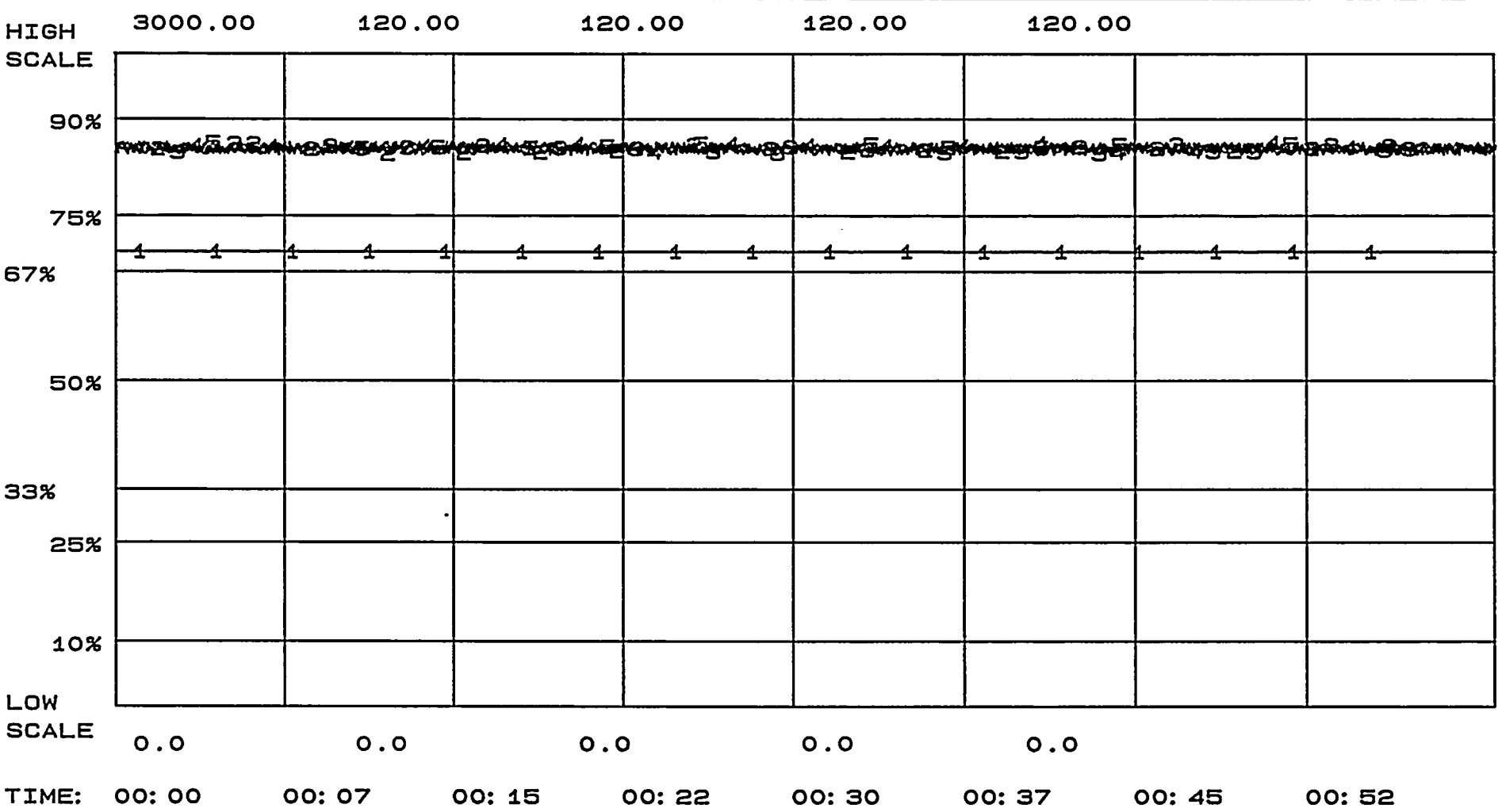
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN. #1 WIDE RANGE LEVEL	PC	TIME
2	L1201	STEAM GEN. #2 WIDE RANGE LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GEN. #3 WIDE RANGE LEVEL	PC	STOP 01: 00: 44
4	L1203	STEAM GEN. #4 WIDE RANGE LEVEL	PC	
5				
6				



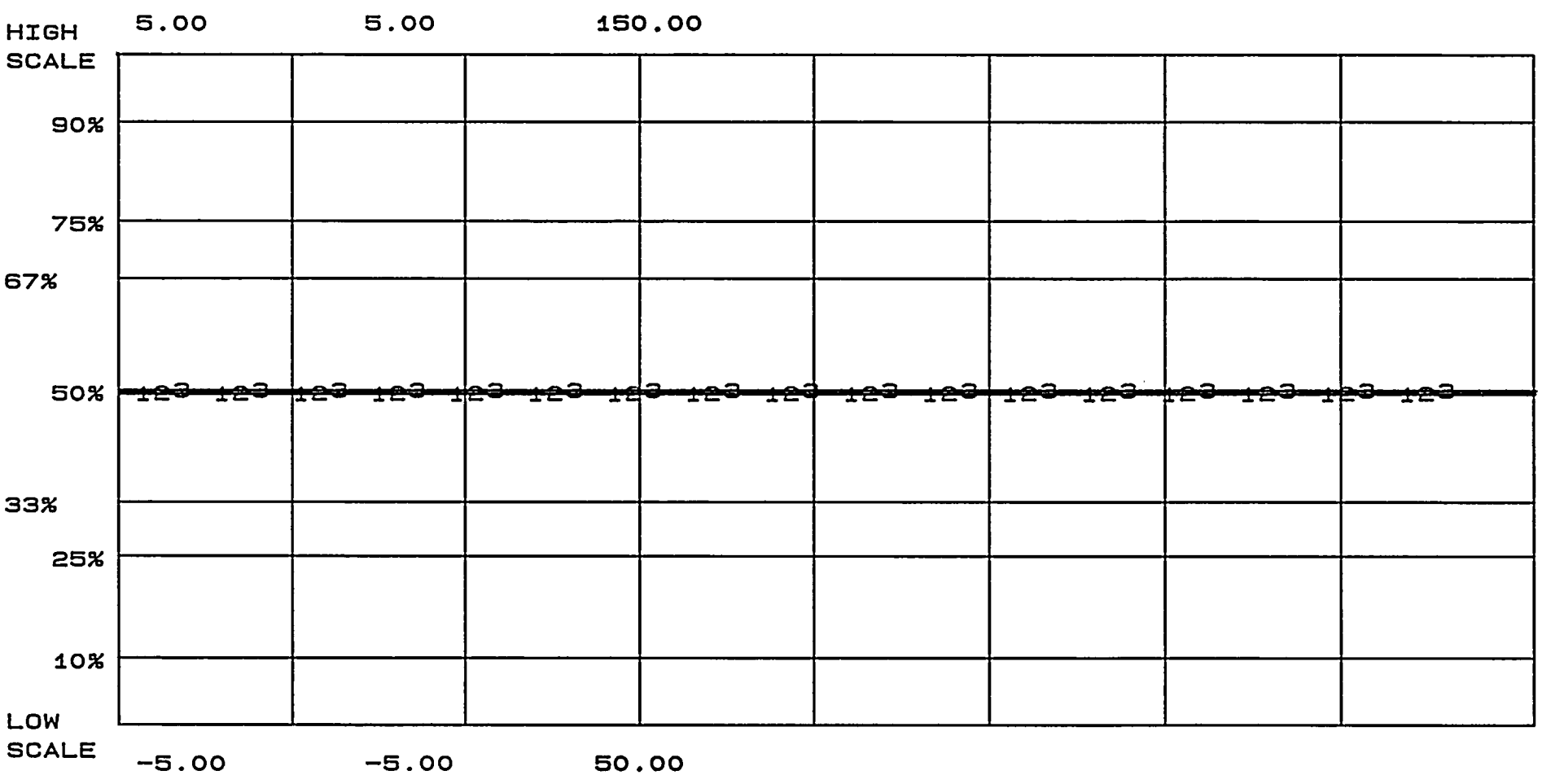
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	F1089	RCS FLOW LOOP 1	PC	START 00: 00: 00
3	F1092	RCS FLOW LOOP 2	PC	STOP 01: 00: 44
4	F1095	RCS FLOW LOOP 3	PC	
5	F1098	RCS FLOW LOOP 4	PC	
6				



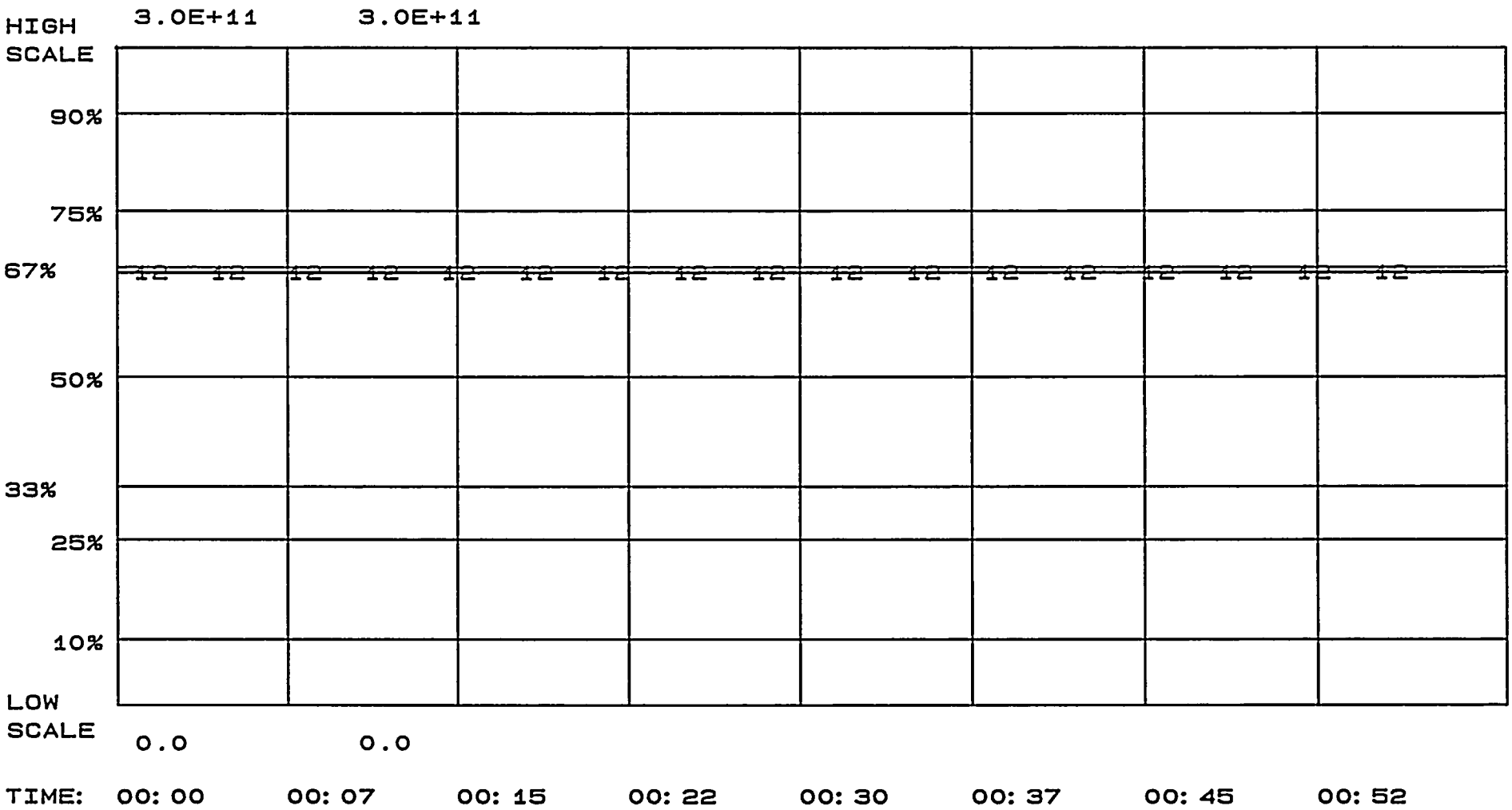
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 00
3	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	STOP 01: 00: 44
4				
5				
6				



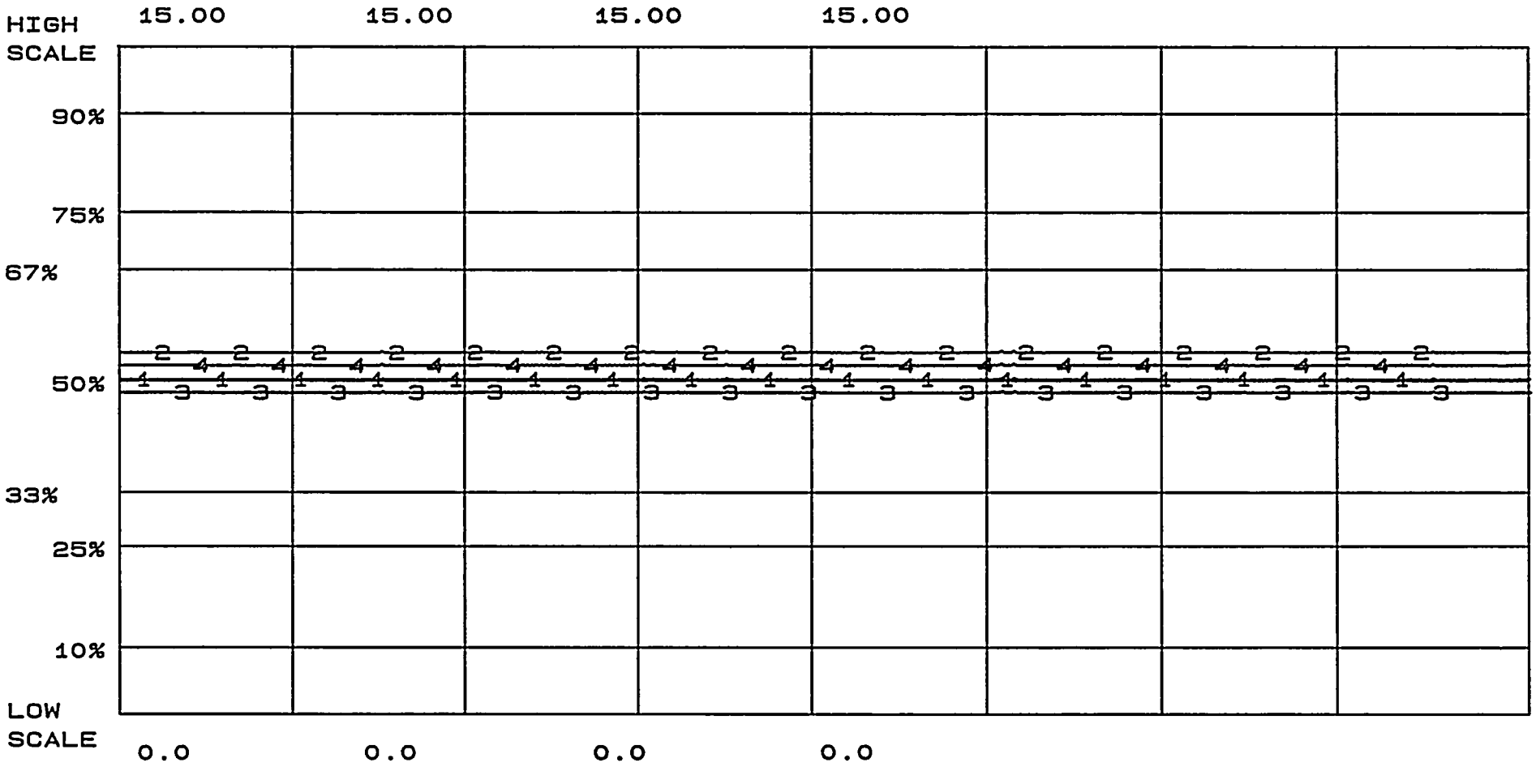
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU(1)	SOURCE RANGE N-31	CPS	TIME
2	NILDTOU(2)	SOURCE RANGE N-32	CPS	START 00:00:00
3				STOP 01:00:44
4				
5				
6				



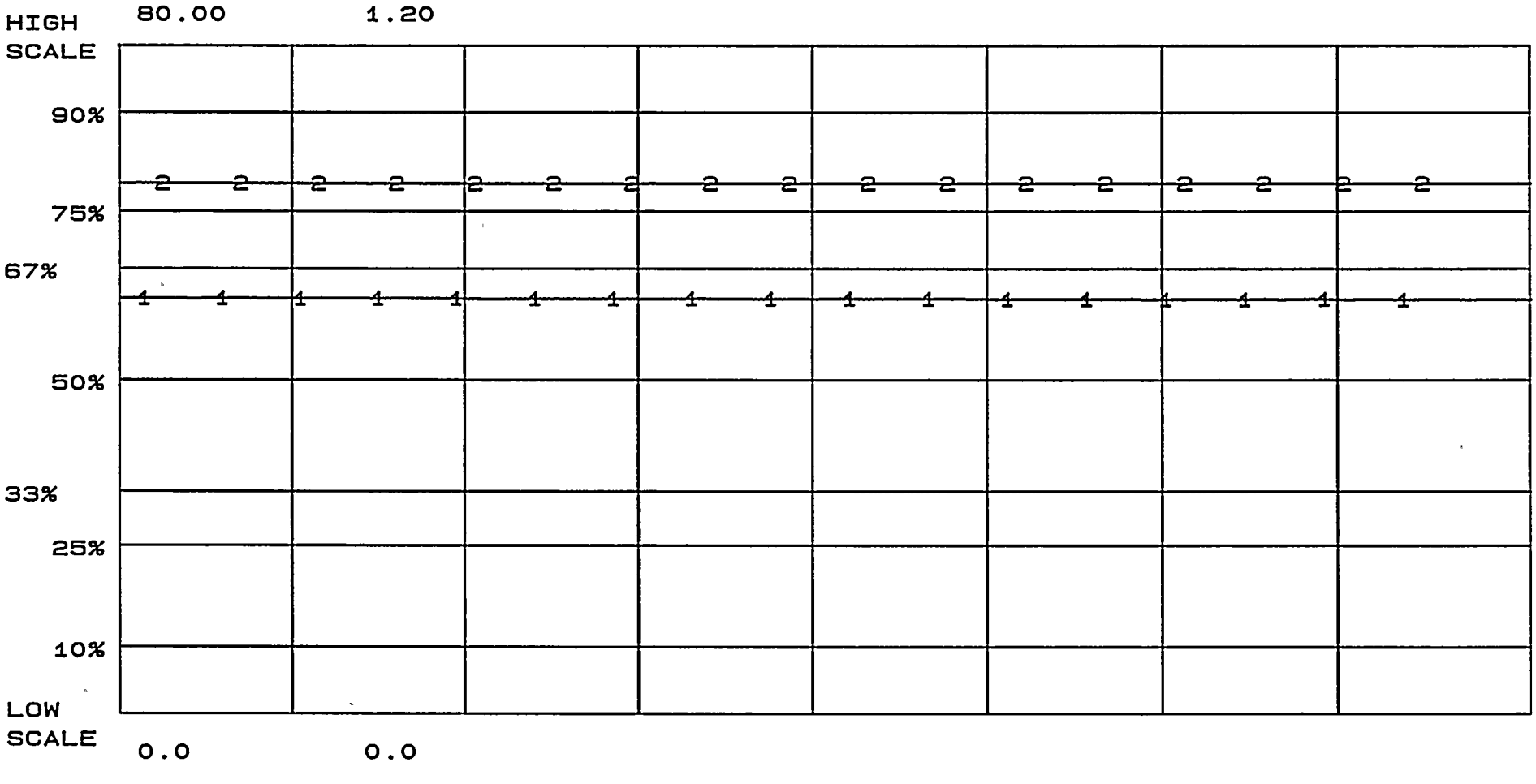
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	LOOP 1 RCP SEAL FLOW	GPM	TIME
2	F1001	LOOP 2 RCP SEAL FLOW	GPM	START 00: 00: 00
3	F1002	LOOP 3 RCP SEAL FLOW	GPM	STOP 01: 00: 44
4	F1003	LOOP 4 RCP SEAL FLOW	GPM	
5				
6				



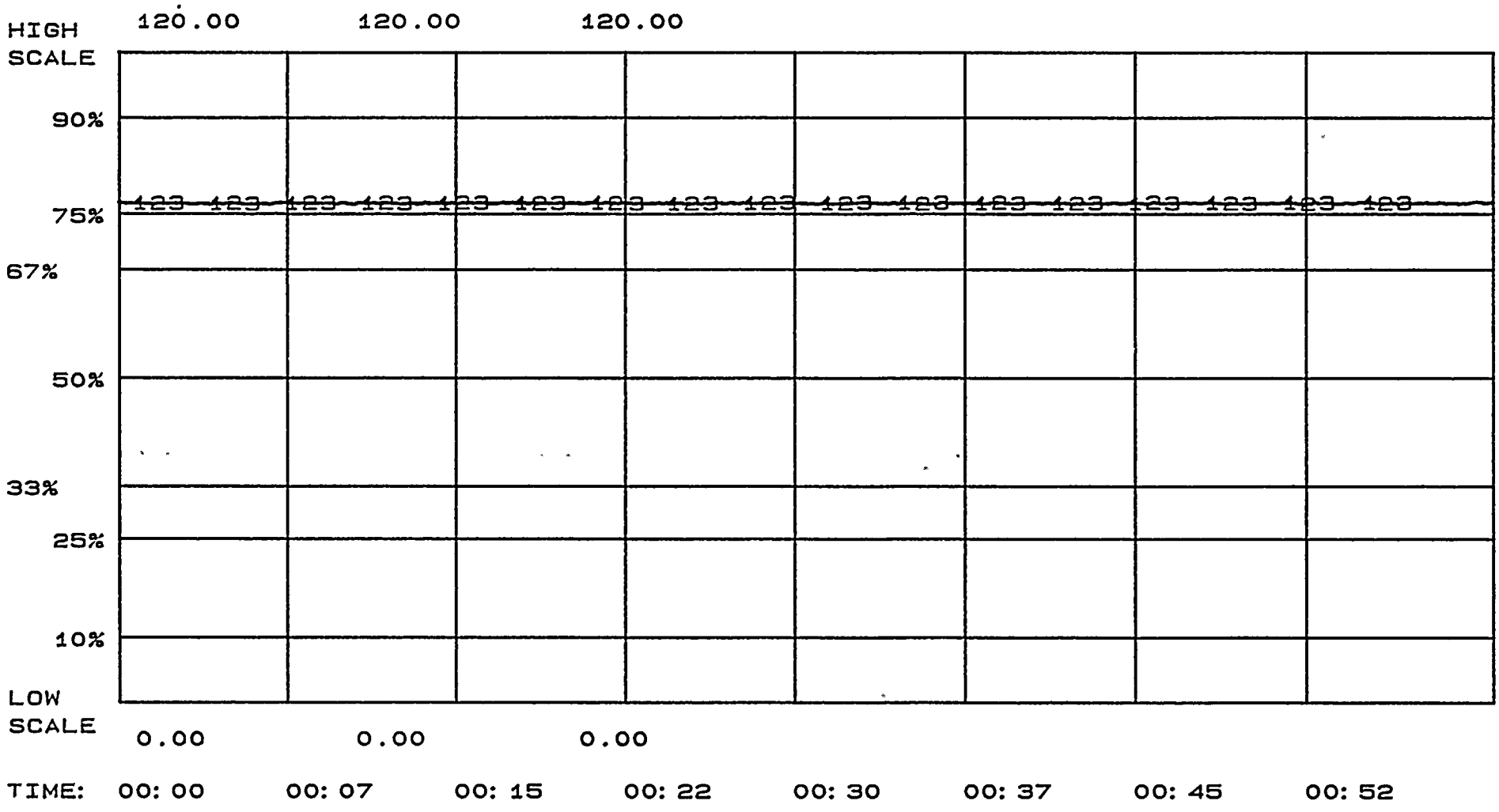
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RXTSC	SATURATION MARGIN	DEG_F	TIME
2	CRQN	CORE HEAT FLUX	PC	START 00: 00: 00
3				STOP 01: 00: 44
4				
5				
6				



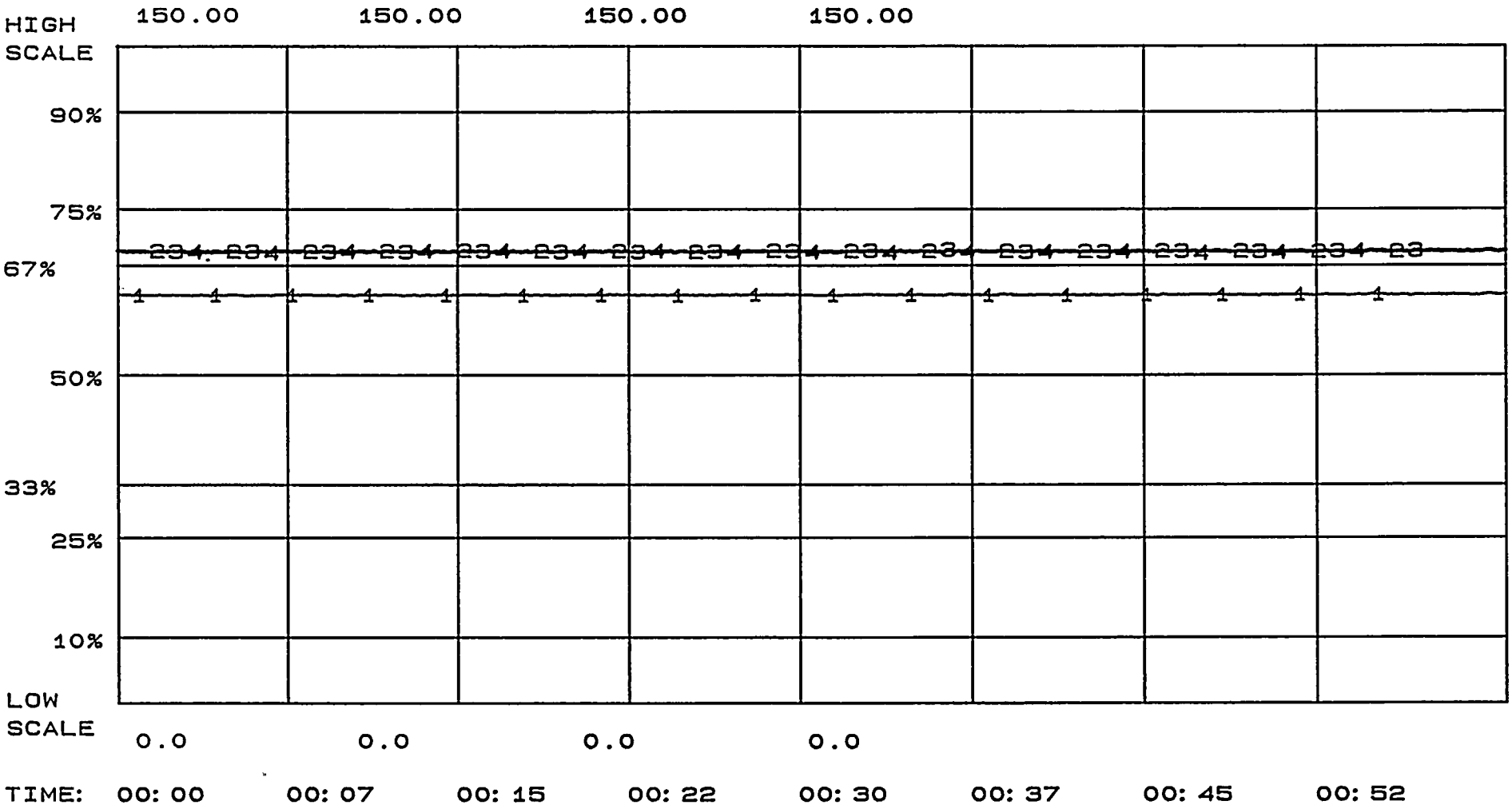
100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN (1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN (2)	CONDENSER B TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTCN (3)	CONDENSER C TEMPERATURE	DEG_F	STOP 01: 00: 44
4				
5				
6				



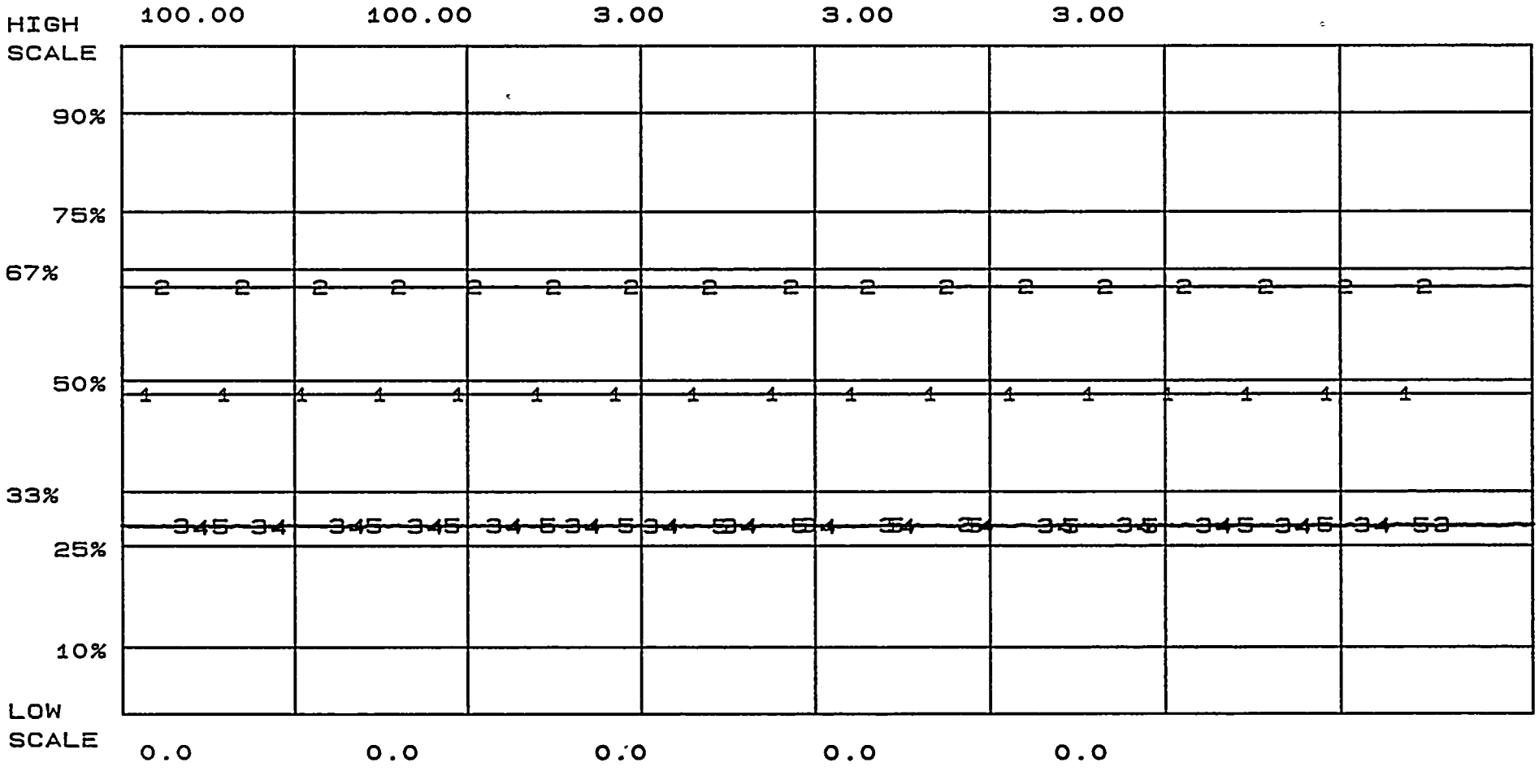
100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP DISC. HDR. TEMP.	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 01: 00: 44
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



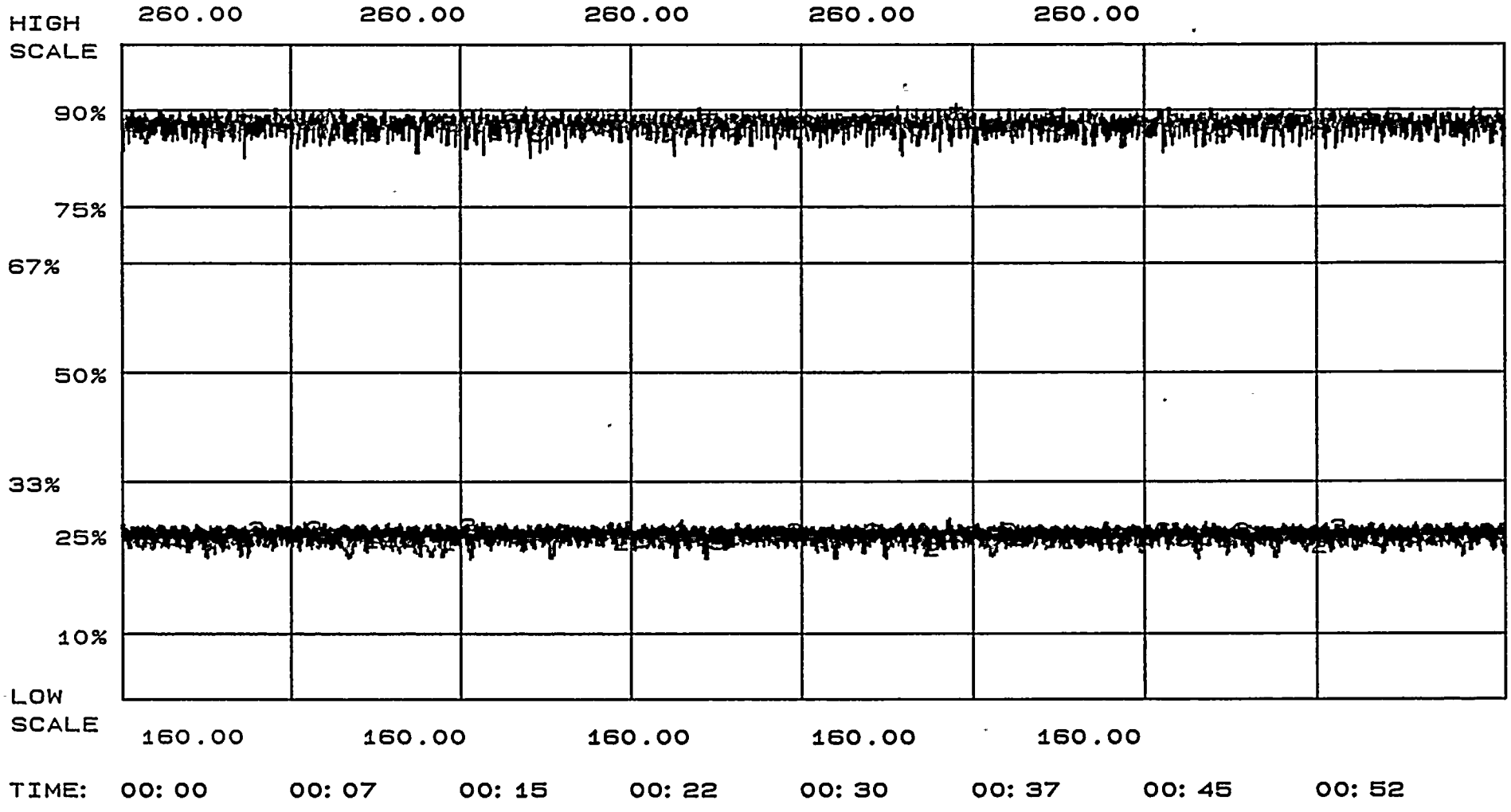
100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER AVG. INLET TEMP.	DEG_F	TIME
2	CWTAVGOUT	CONDENSER AVG. OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 01: 00: 44
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



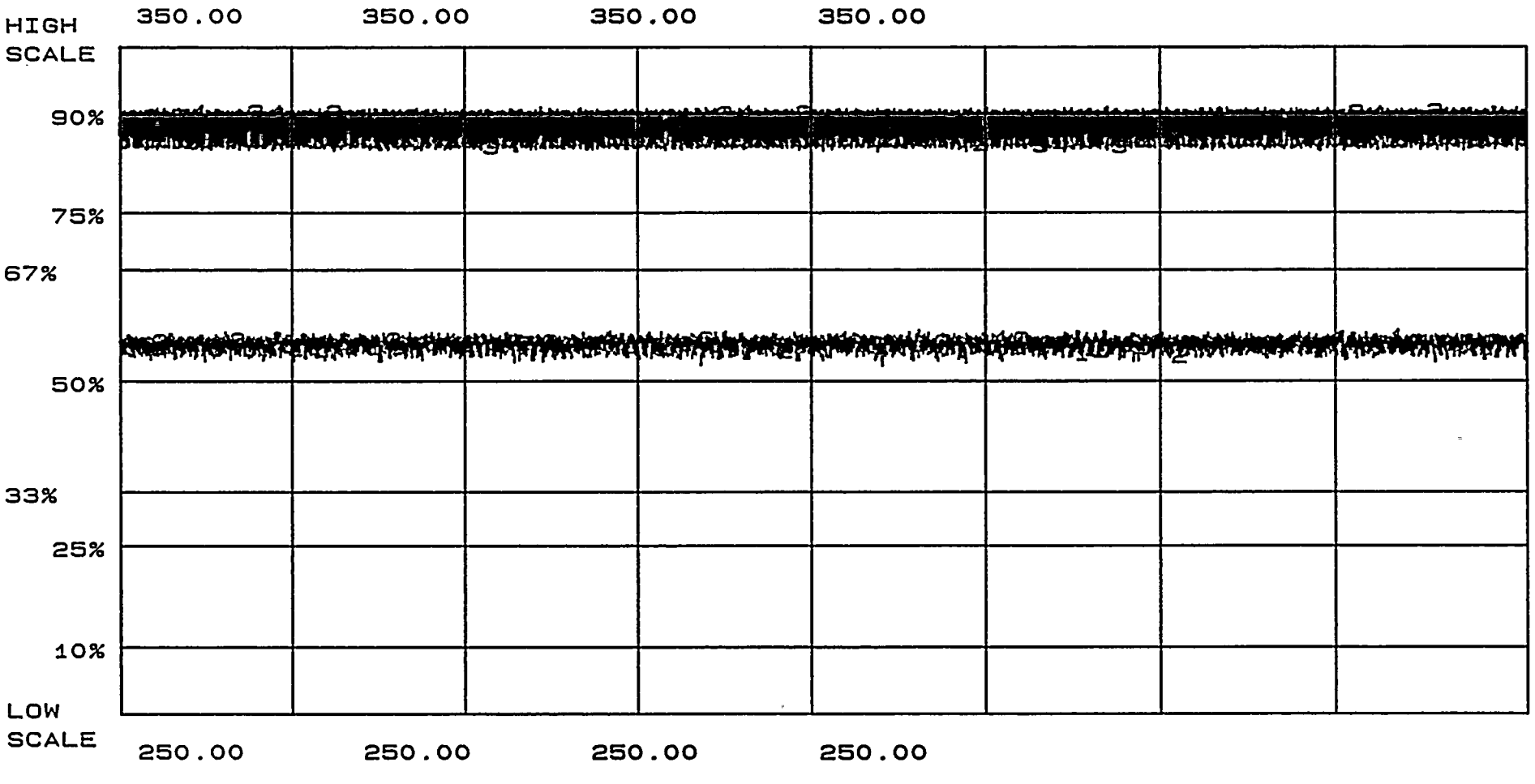
100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH1A	HEATER 1A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH1B	HEATER 1B TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTOH1C	HEATER 1C TUBE OUTLET TEMP.	DEG_F	STOP 01: 00: 44
4	FWTTOH2A	HEATER 2A TUBE OUTLET TEMP.	DEG_F	
5	FWTTOH2B	HEATER 2B TUBE OUTLET TEMP.	DEG_F	
6				



100% POWER STEADY STATE TEST

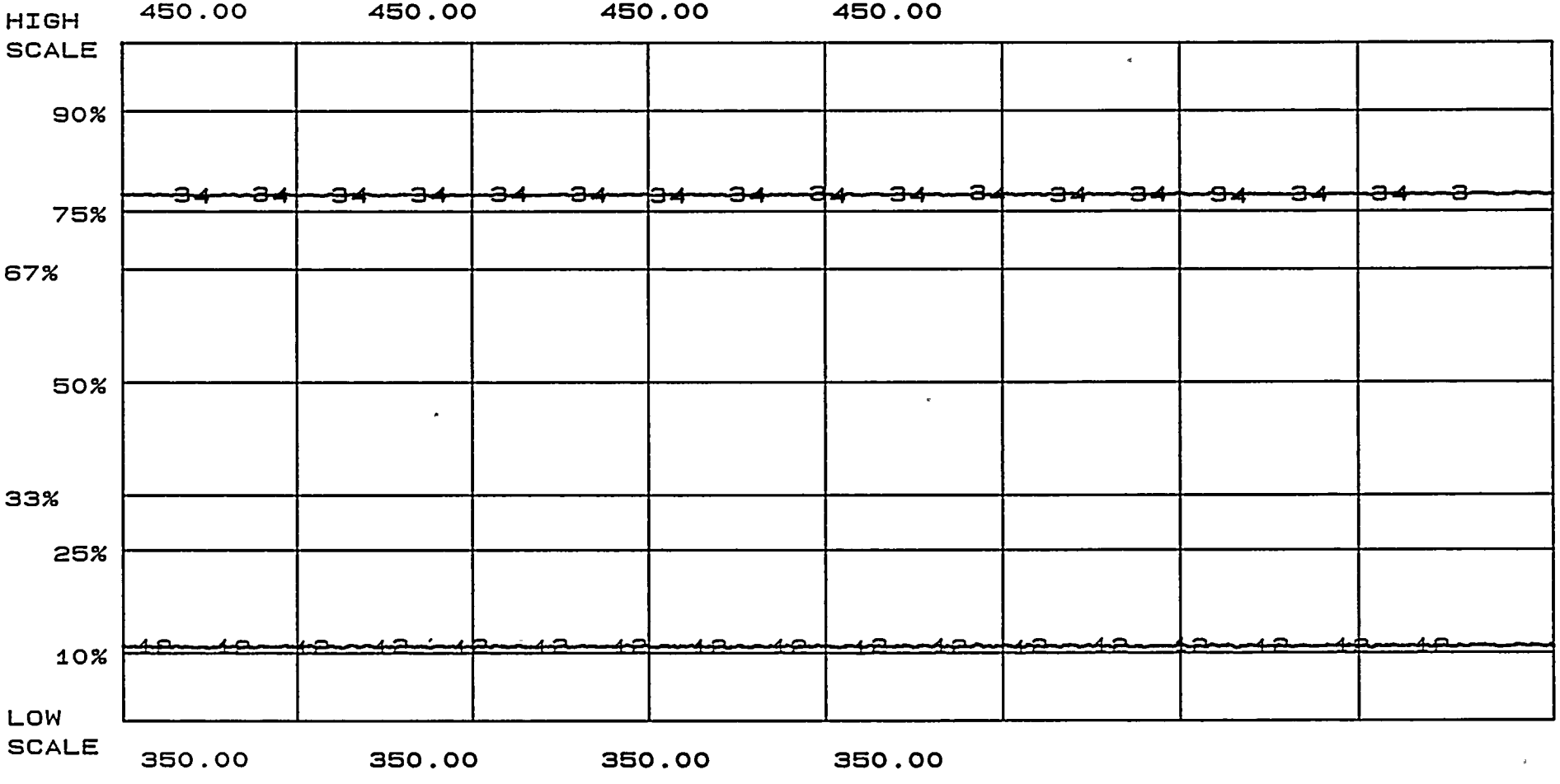
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP.	DEG_F	START 00: 00: 00
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP.	DEG_F	STOP 01: 00: 44
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP.	DEG_F	
5				
6				



100% POWER STEADY STATE TEST

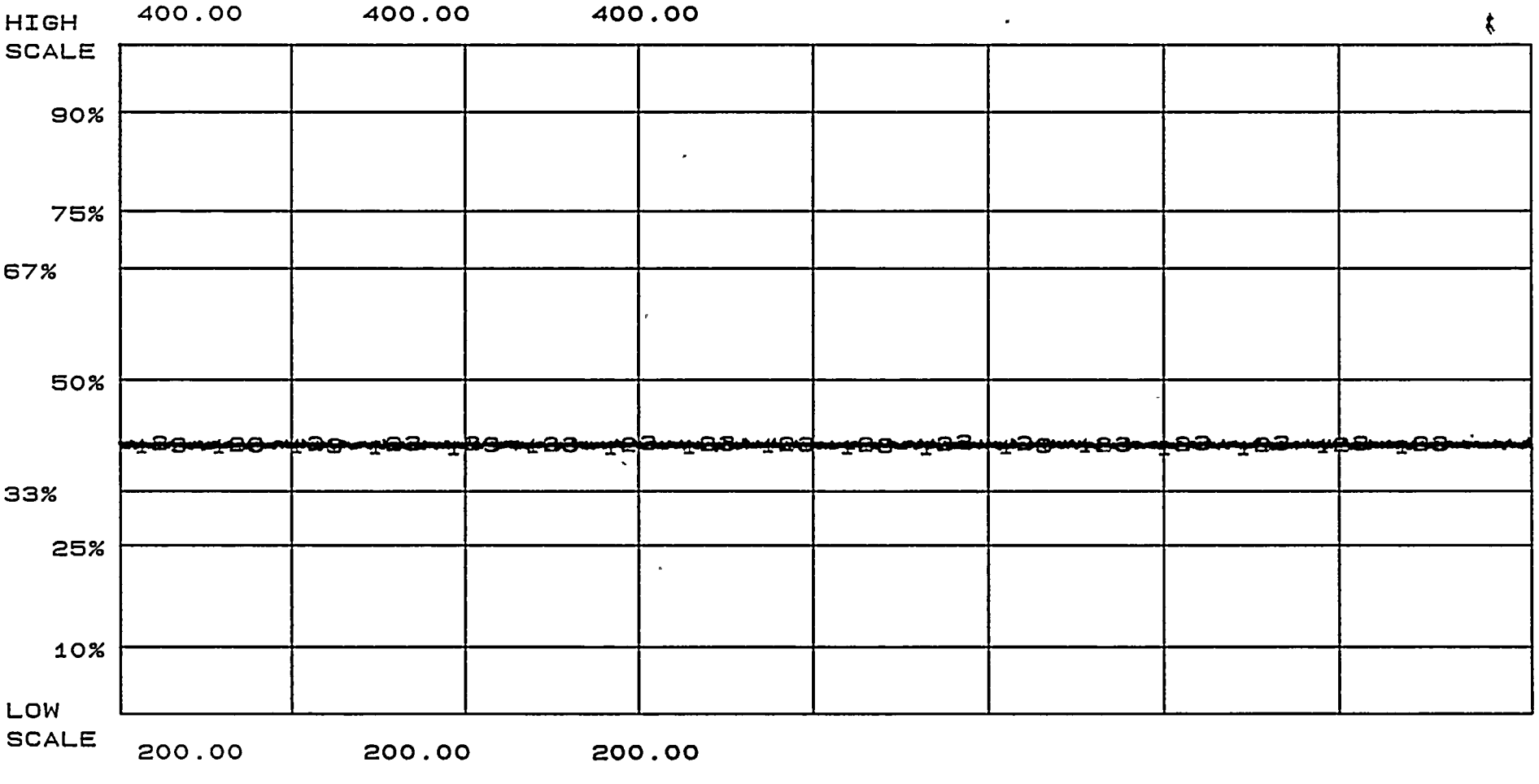
#	POINT ID	DESCRIPTION	UNITS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP.	DEG_F
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP.	DEG_F
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP.	DEG_F
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP.	DEG_F
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	01: 00: 44



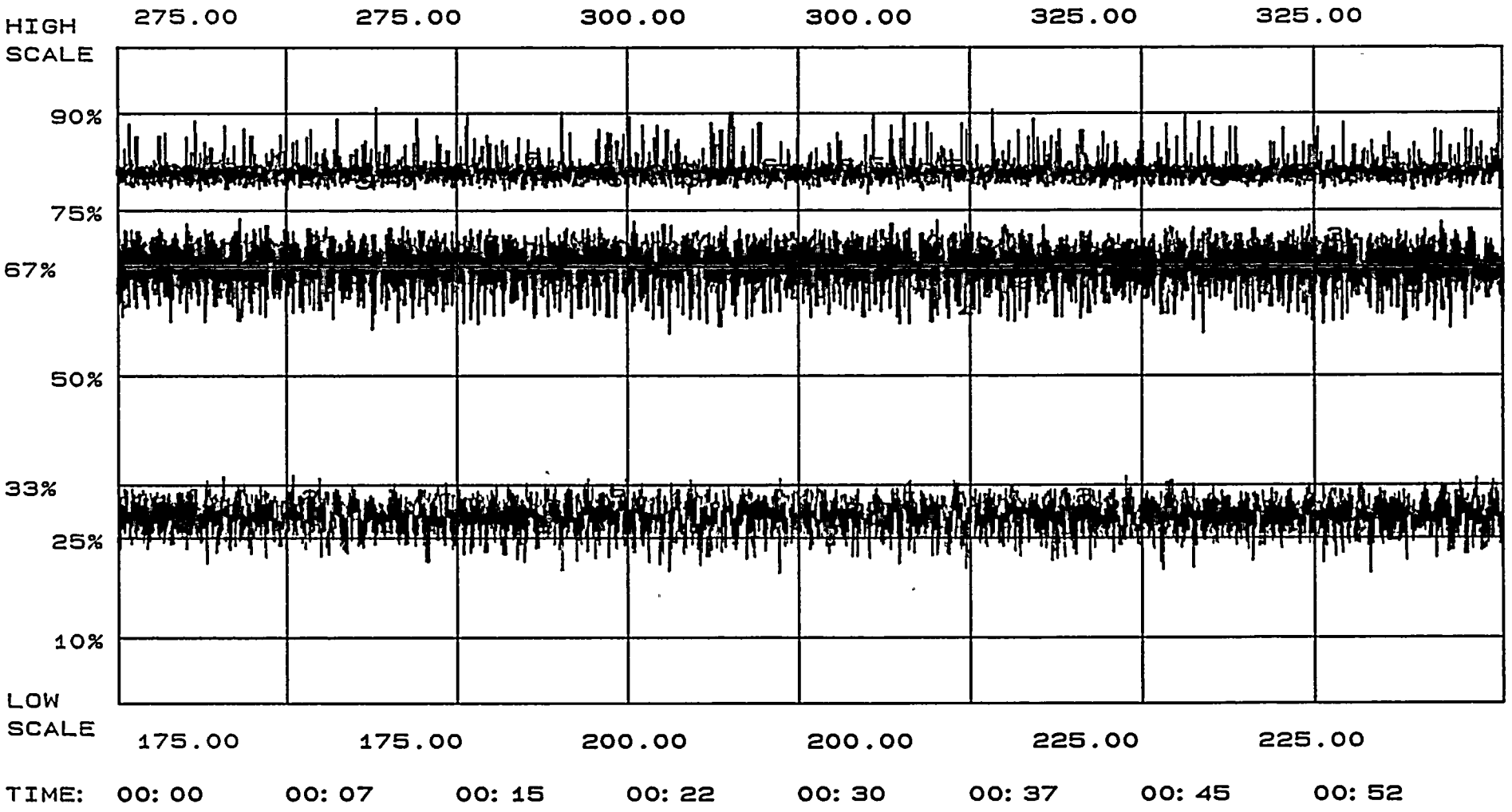
100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	MAIN FEEDPUMP SUCTION TEMP.	DEG_F	TIME
2	FWTDEMFP	EAST MAIN FEEDPUMP DISCH. TEMP	DEG_F	START 00: 00: 00
3	FWTDWMFP	WEST MAIN FEEDPUMP DISCH. TEMP	DEG_F	STOP 01: 00: 44
4				
5				
6				



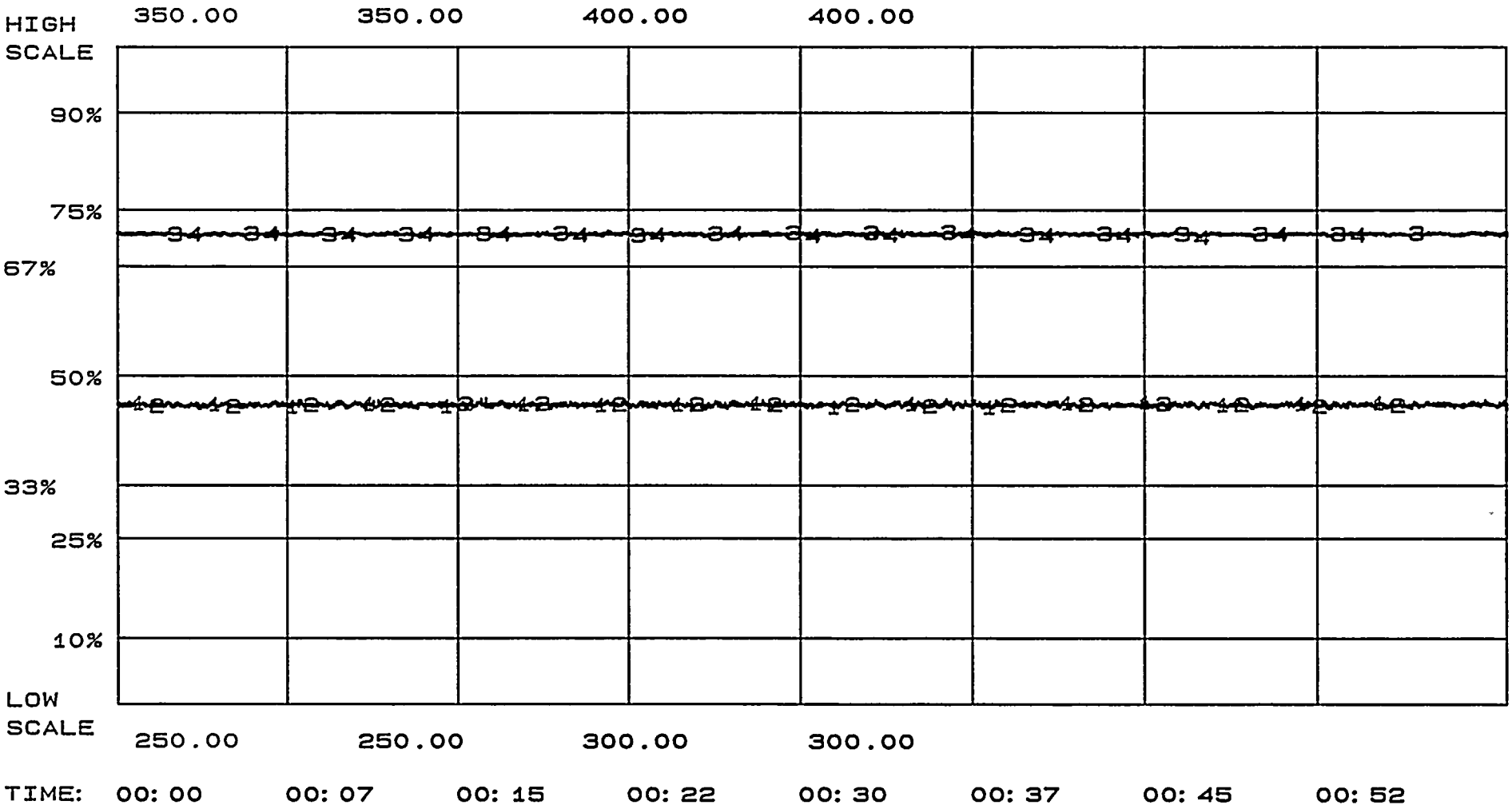
100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F	STOP 01: 00: 44
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F	
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATURE	DEG_F	
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F	



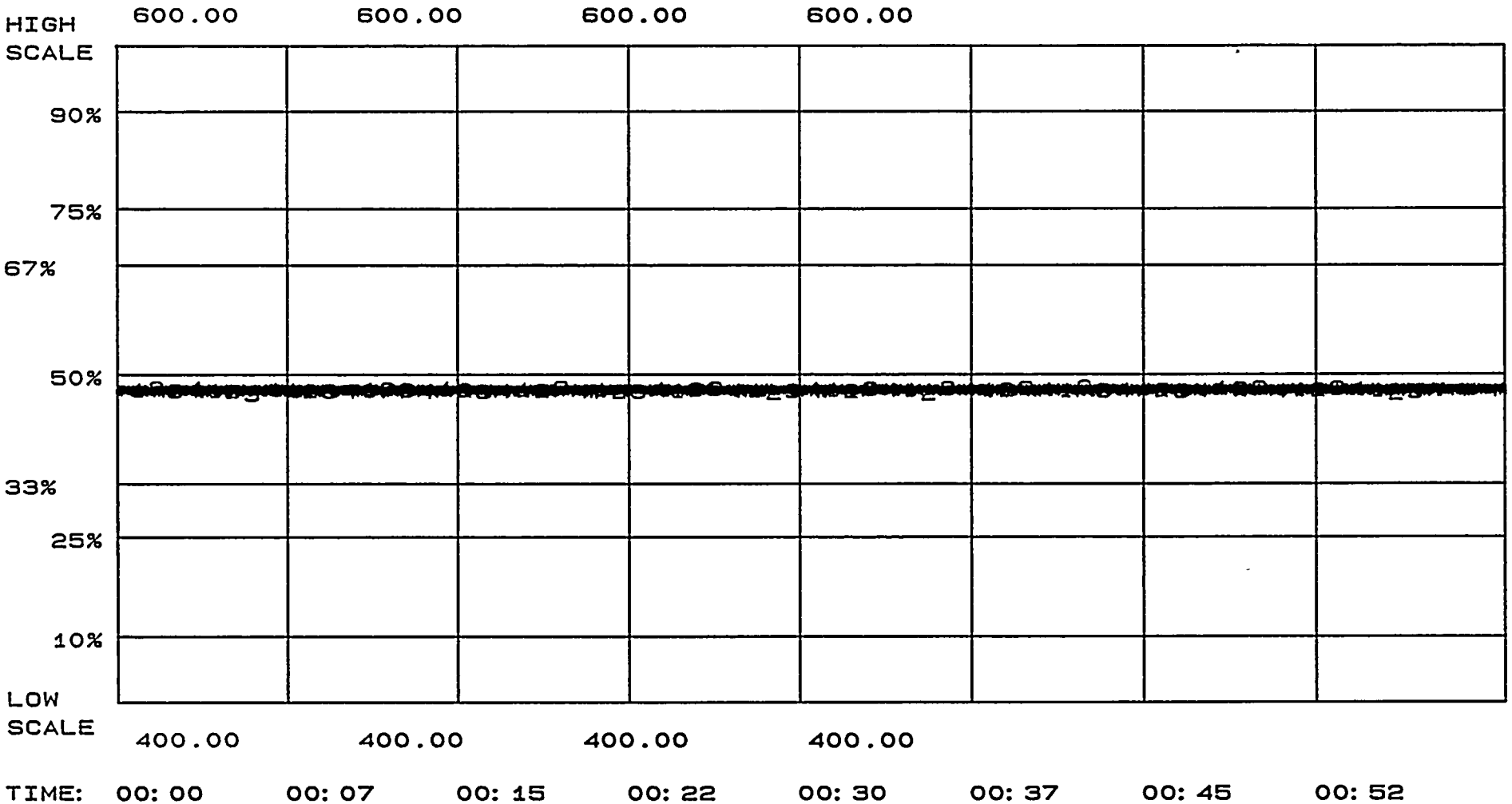
100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 00: 00: 00
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 01: 00: 44
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



100% POWER STEADY STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCTSGDM (1)	STEAM GEN. #1 DOME TEMPERATURE	DEG_F	TIME
2	RCTSGDM (2)	STEAM GEN. #2 DOME TEMPERATURE	DEG_F	START 00: 00: 00
3	RCTSGDM (3)	STEAM GEN. #3 DOME TEMPERATURE	DEG_F	STOP 01: 00: 44
4	RCTSGDM (4)	STEAM GEN. #4 DOME TEMPERATURE	DEG_F	
5				
6				



COOK PLANT SIMULATOR

TRANSIENT TEST ABSTRACT

I. Introduction (ANS 3.5 - 4)

Section 4 of the standard addresses simulator tests to ensure that simulator response:

1) Is the same as plant startup test data

2) Observable change in the parameters correspond in direction to those expected from best estimate of the simulated transient and do not violate the physical laws of nature

3) Does not fail to cause an alarm or automatic action if the reference plant would not cause an alarm or automatic action.

II. Transient Operation (ANS 3.5 - 4.2.1)

All transient tests in accordance with Appendix B section B.2.2 were conducted on the simulator and compared to data where existing data was available. In all other cases, the tests were reviewed by a team of subject matter experts (attachment 1) to ensure that the criteria of the standard were met.

All data was collected at a minimum resolution of every one half second.

All discrepancies identified from the test results will be corrected by the end of 1991.

COMPOSITION OF SUBJECT MATTER EXPERT PANEL

LAST NAME	FIRST NAME	RO DATE	SRO DATE	PRESENT POSITION
Anderson	Roger	11/22/78	12/11/82	Requal Program Admin.
Dolby	David	09/30/87	07/24/90	Reactor Operator
Fish	Michael	08/09/89		Reactor Operator
Garrison	Timothy			Certified Instructor
Hehl	Scott	09/30/87		Instructor
Hnanicek	Clarence	09/30/87		Reactor Operator
Johnson	Frank	06/20/86	02/12/90	Reactor Operator
McCullough	George	02/11/82	05/31/83	Test Supervisor
O'Neil	James	01/20/84	04/07/86	Unit Supervisor
Russell	Mark	01/20/84	04/07/86	Unit Supervisor
Tatrault	Elizabeth	01/12/83	03/15/85	Instructor

COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MANUAL REACTOR TRIP

I. Introduction (ANS 3.5 - B.2.2(1))

The purpose of this test is to:

1) Test the simulator response to a manual reactor trip per ANS 3.5 - B.2.2(1).

2) Ensure that the simulator functions properly to a manual reactor trip and all parameters respond in a timely manner.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, and pressurizer level in manual.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Pressurizer safety valves shall not lift.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted the following discrepancies:

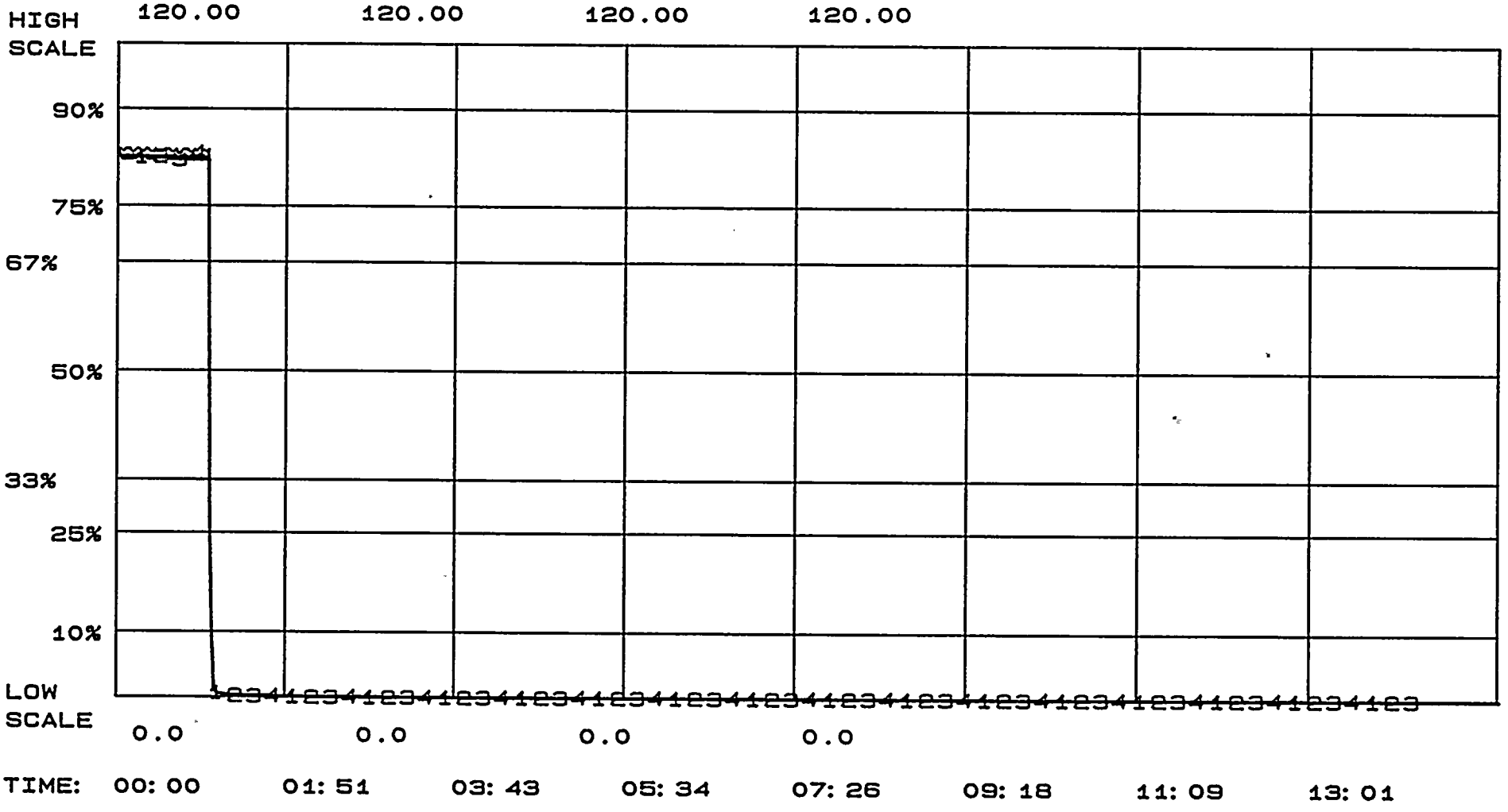
a) Pressurizer surge line temperature drops lower than hot leg temperature during initial cooldown.

b) Steam generator #2 level increases significantly prior to the other steam generators.

Discrepancy reports have been initiated to investigate and correct these conditions.

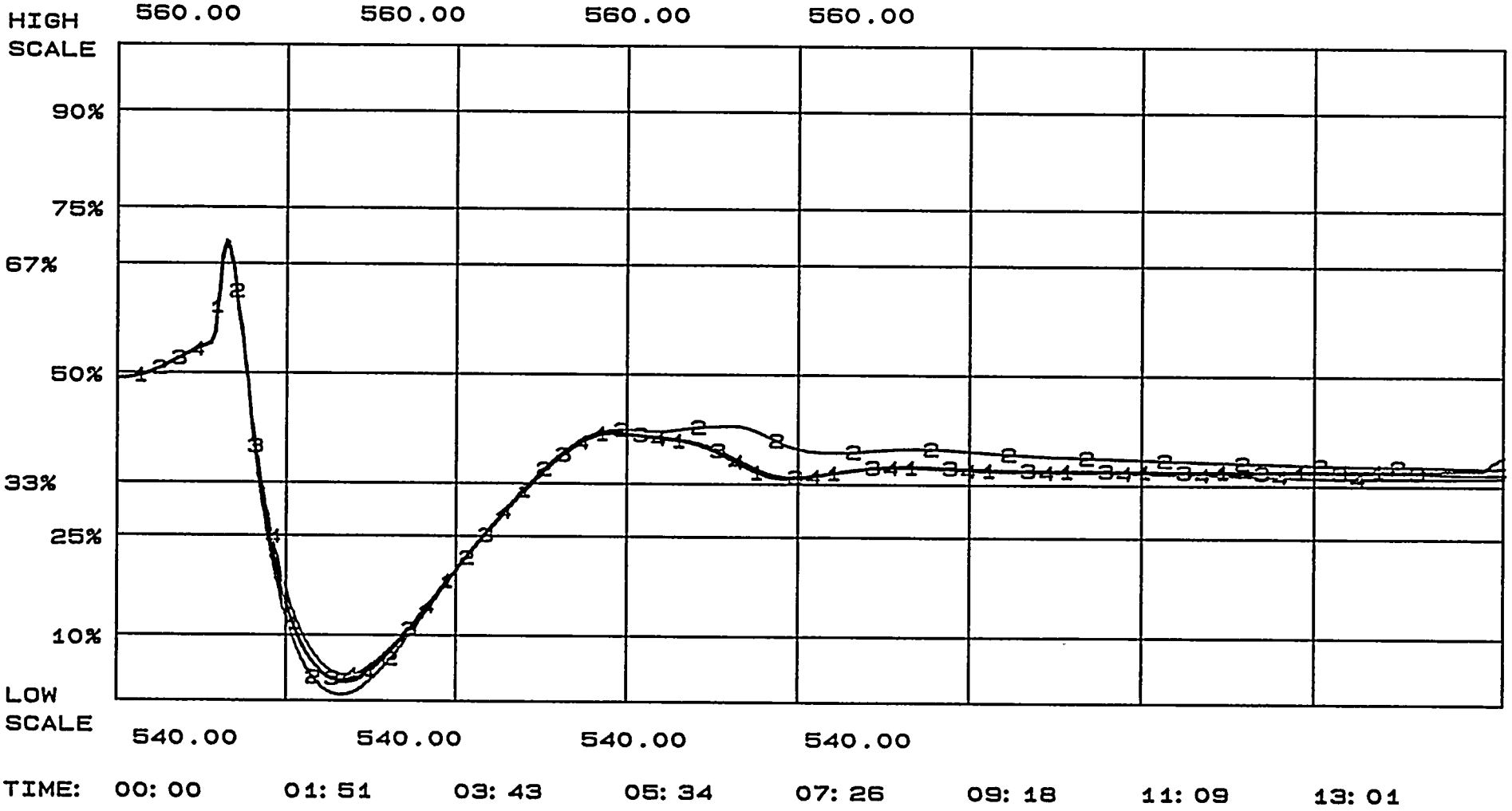
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	PWR RNG CH1 AVG	PC	TIME
2	N1013	PWR RNG CH2 AVG	PC	START 00: 00: 00
3	N1014	PWR RNG CH3 AVG	PC	STOP 00: 15: 03
4	N1015	PWR RNG CH4 AVG	PC	
5				
6				



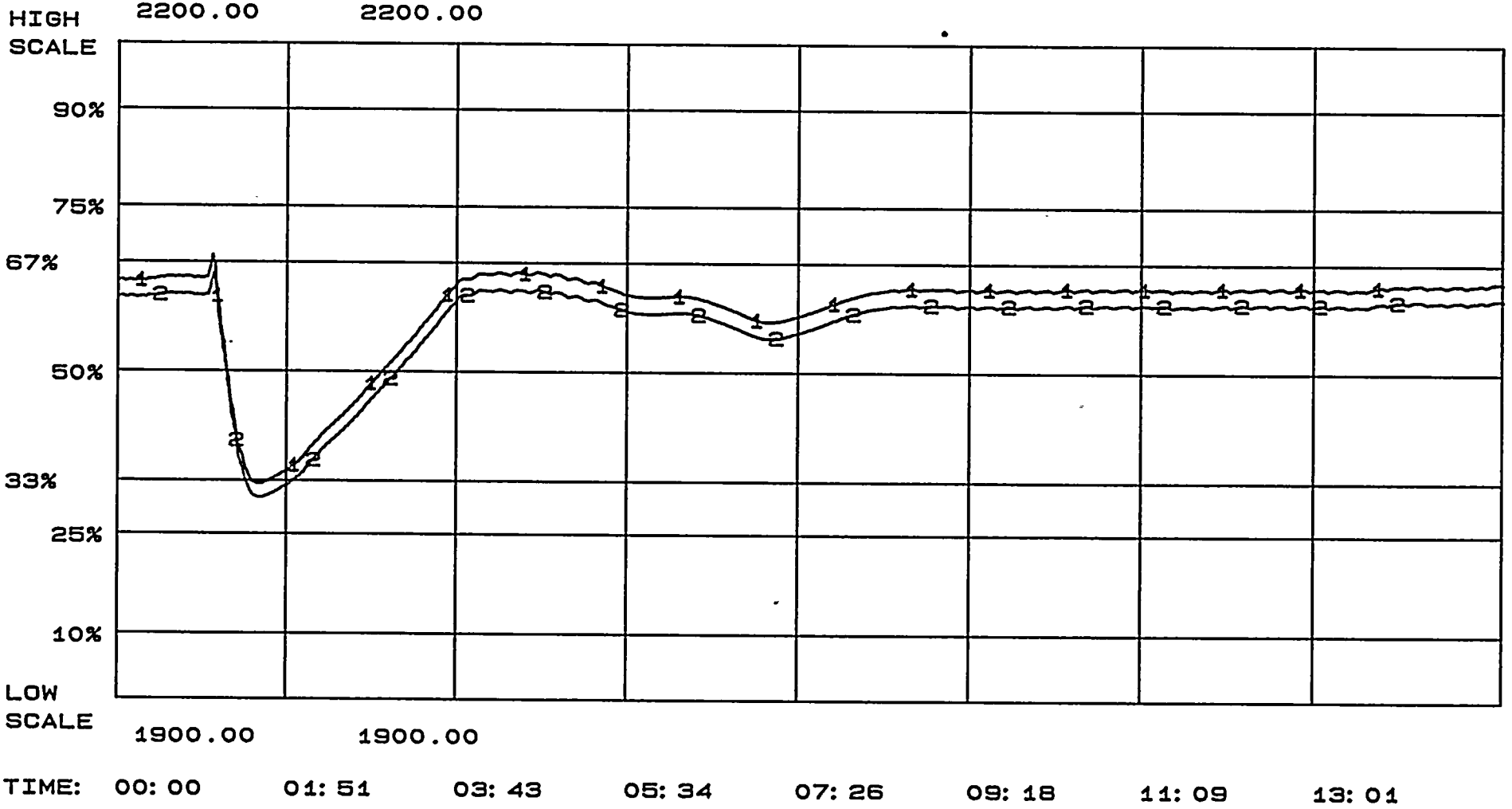
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVG TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVG TEMP	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVG TEMP	DEG_F	STOP 00: 15: 03
4	T1104	LOOP 4 AVG TEMP	DEG_F	
5				
6				



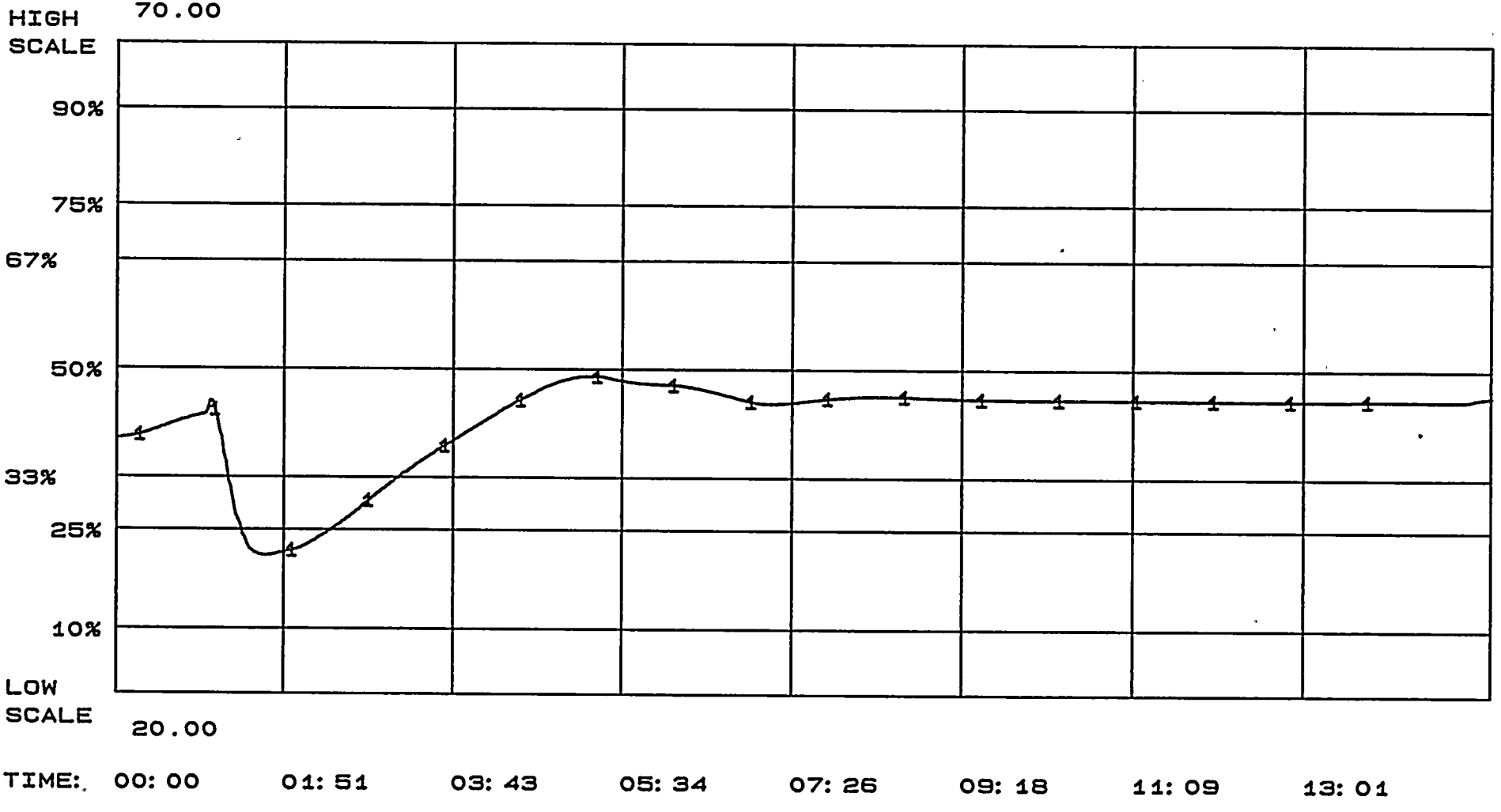
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RC WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 15: 03
4				
5				
6				



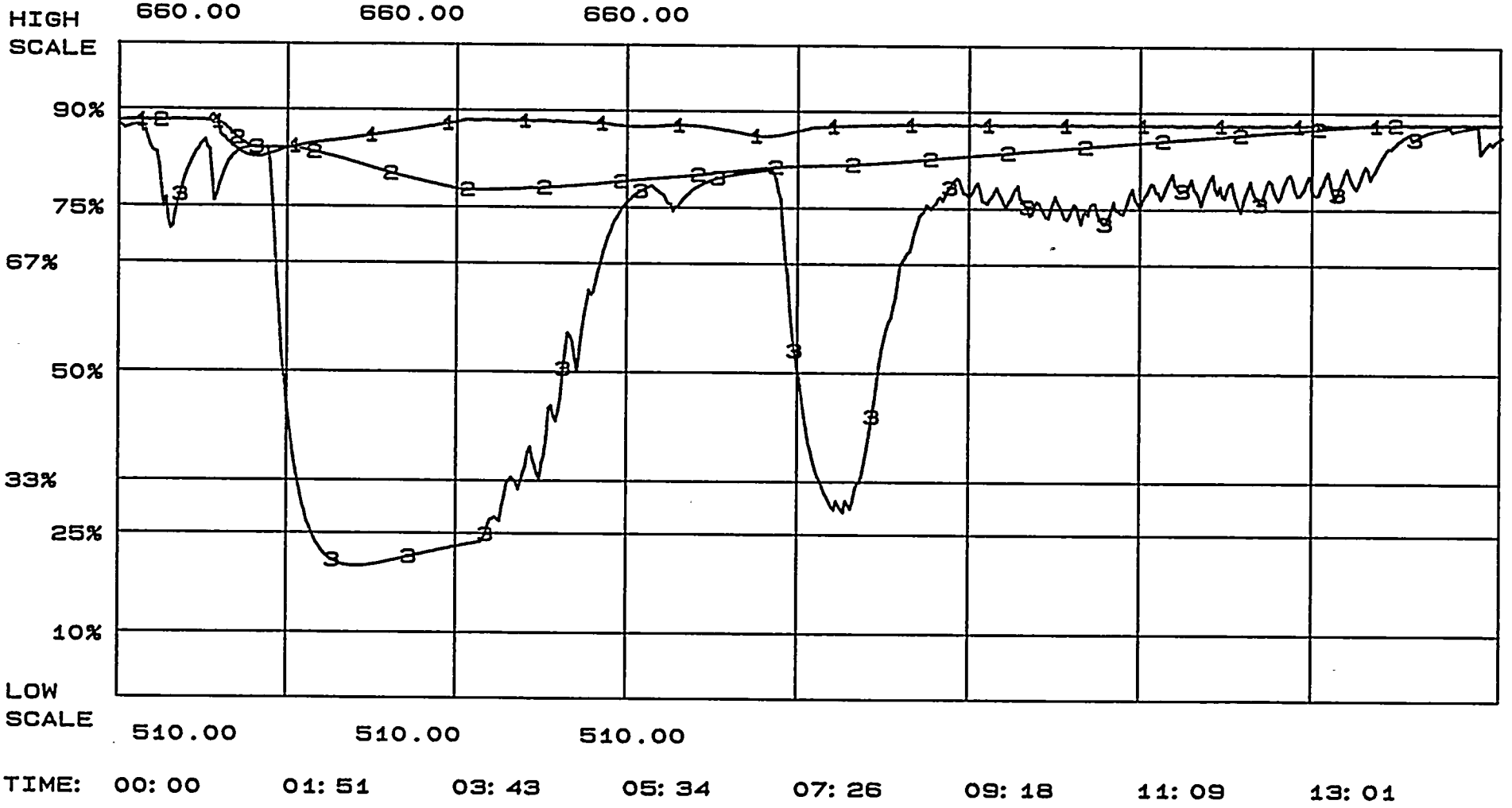
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER WATER LEVEL	PC	TIME START 00: 00: 00 STOP 00: 15: 03
2				
3				
4				
5				
6				



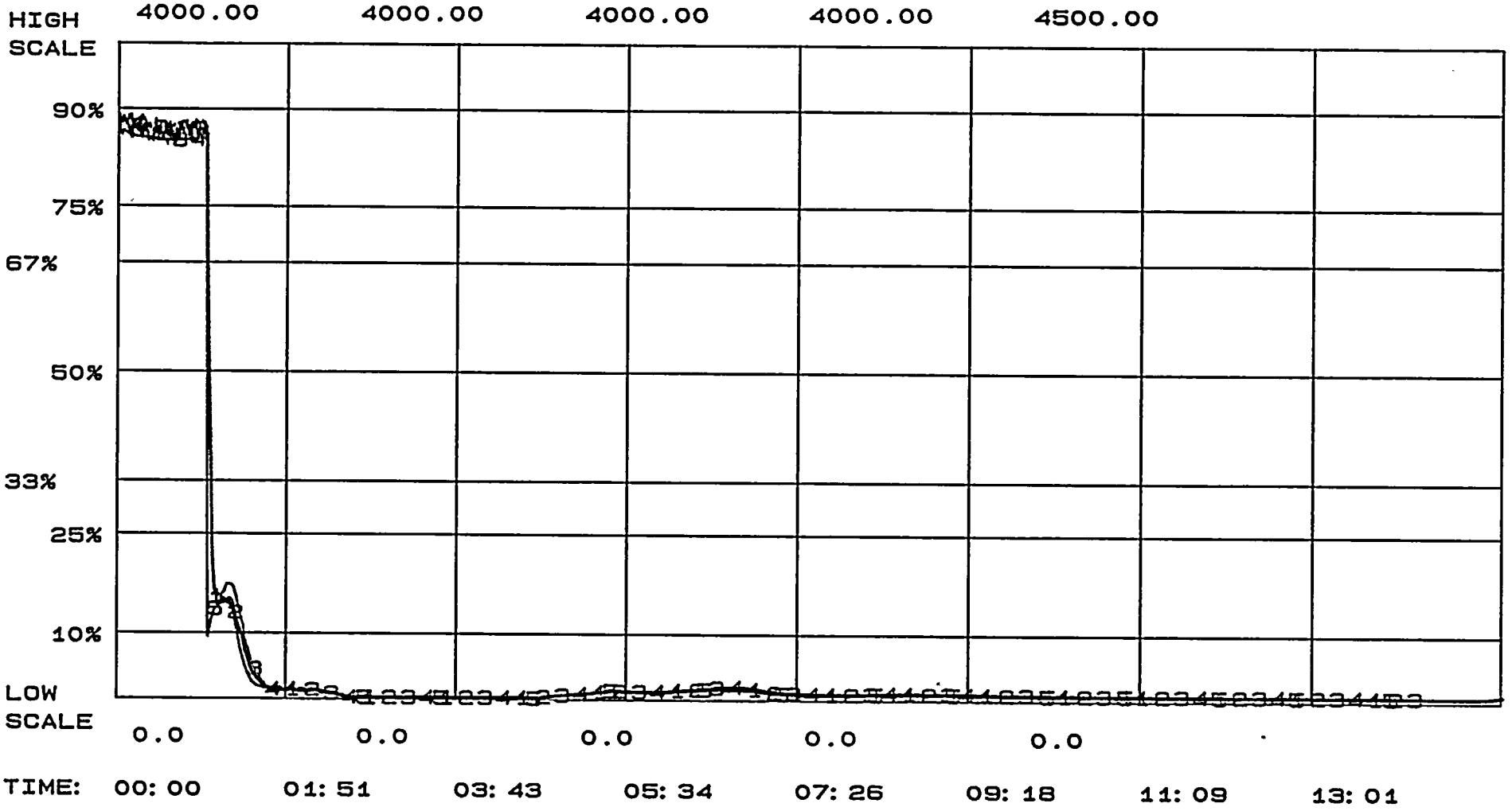
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PZR VAPOR TEMP	DEG_F	TIME
2	T1004	PZR LIQUID TEMP	DEG_F	START 00: 00: 00
3	RCTNTA253	PZR SURGE LINE TEMP	DEG_F	STOP 00: 15: 03
4				
5				
6				



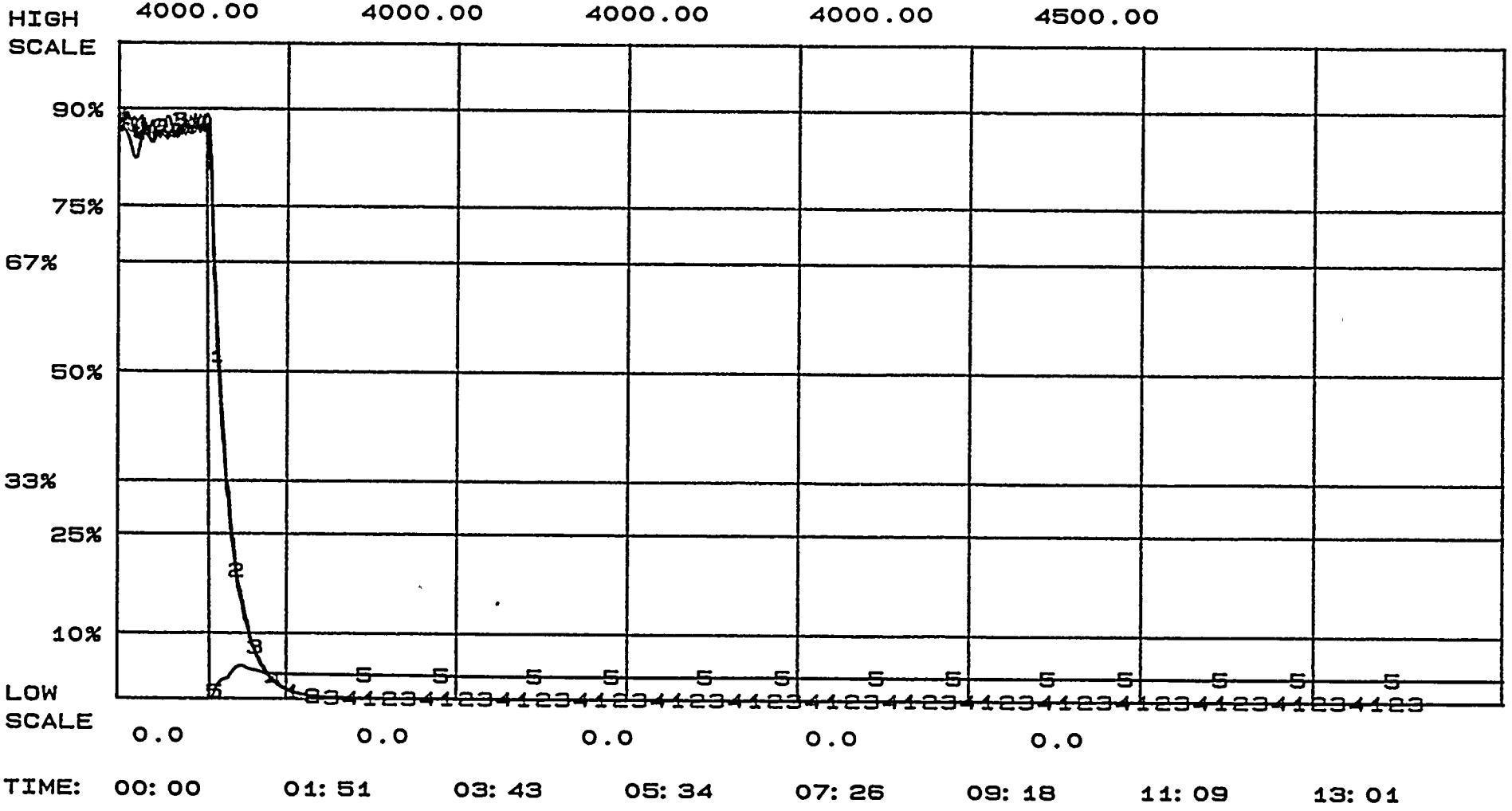
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 00: 15: 03
4	F1054	STEAM FLOW LOOP 4	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



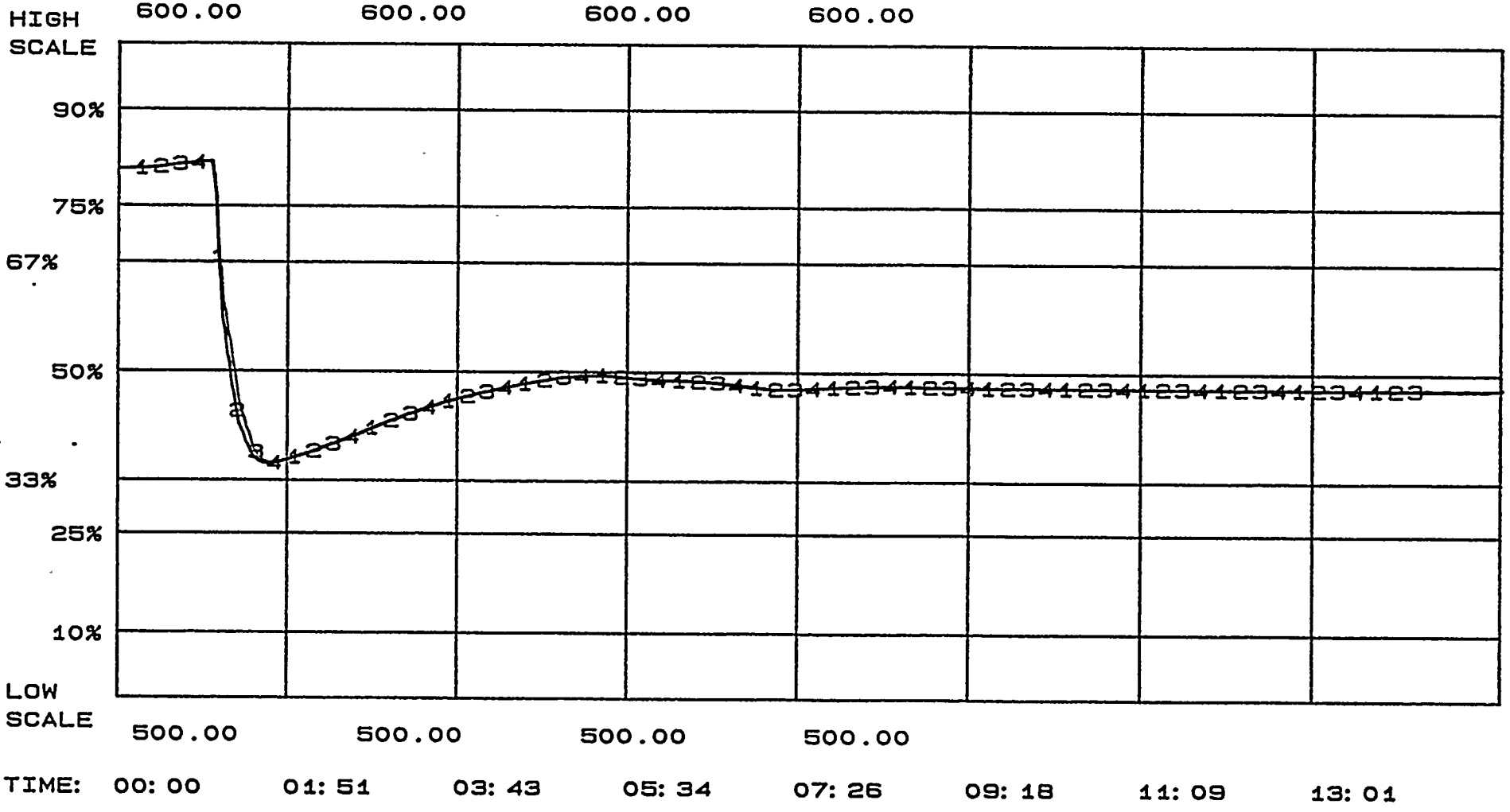
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 00: 00
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 00: 15: 03
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S	
6				



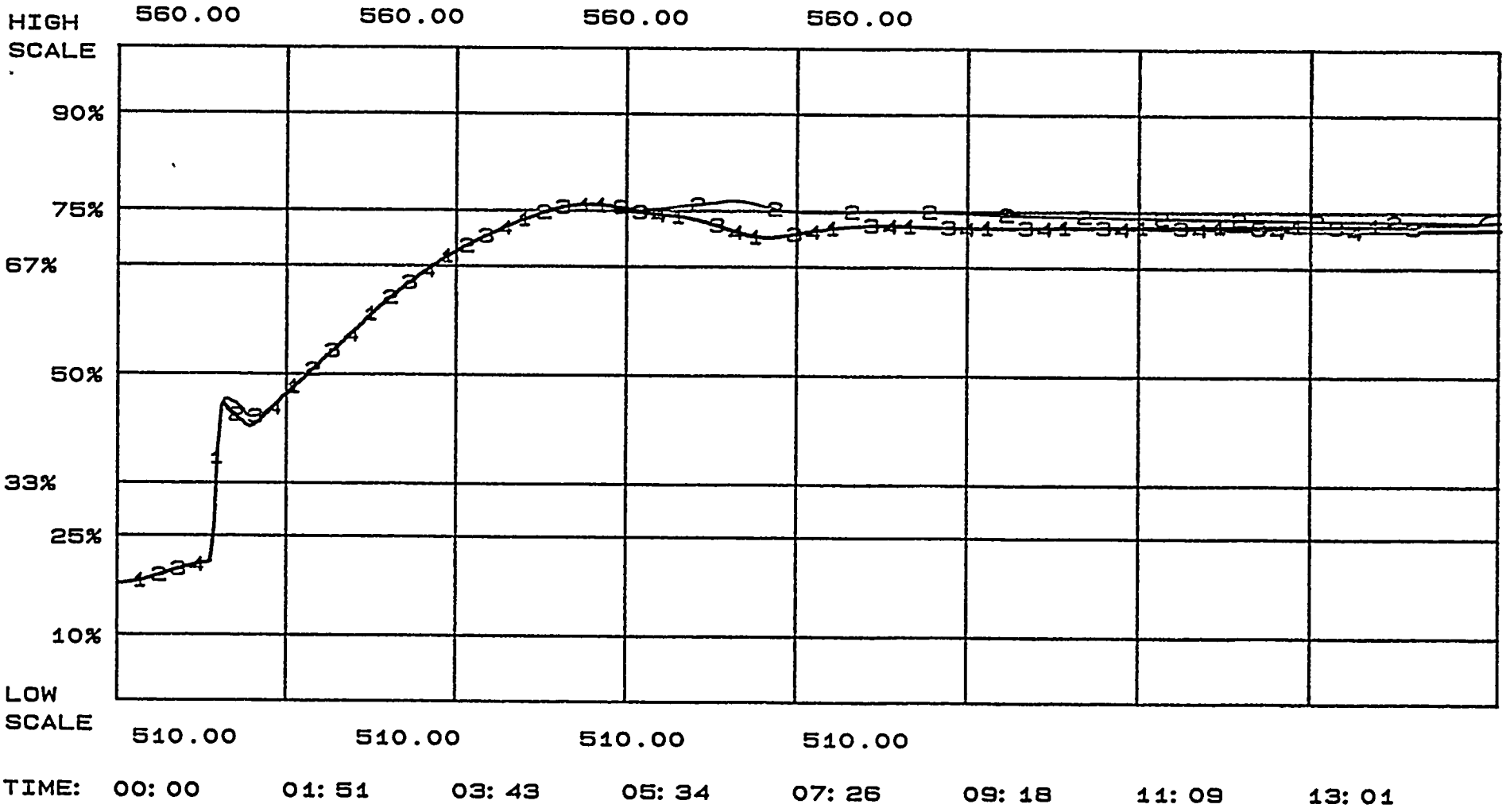
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F	STOP 00: 15: 03
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F	
5				
6				



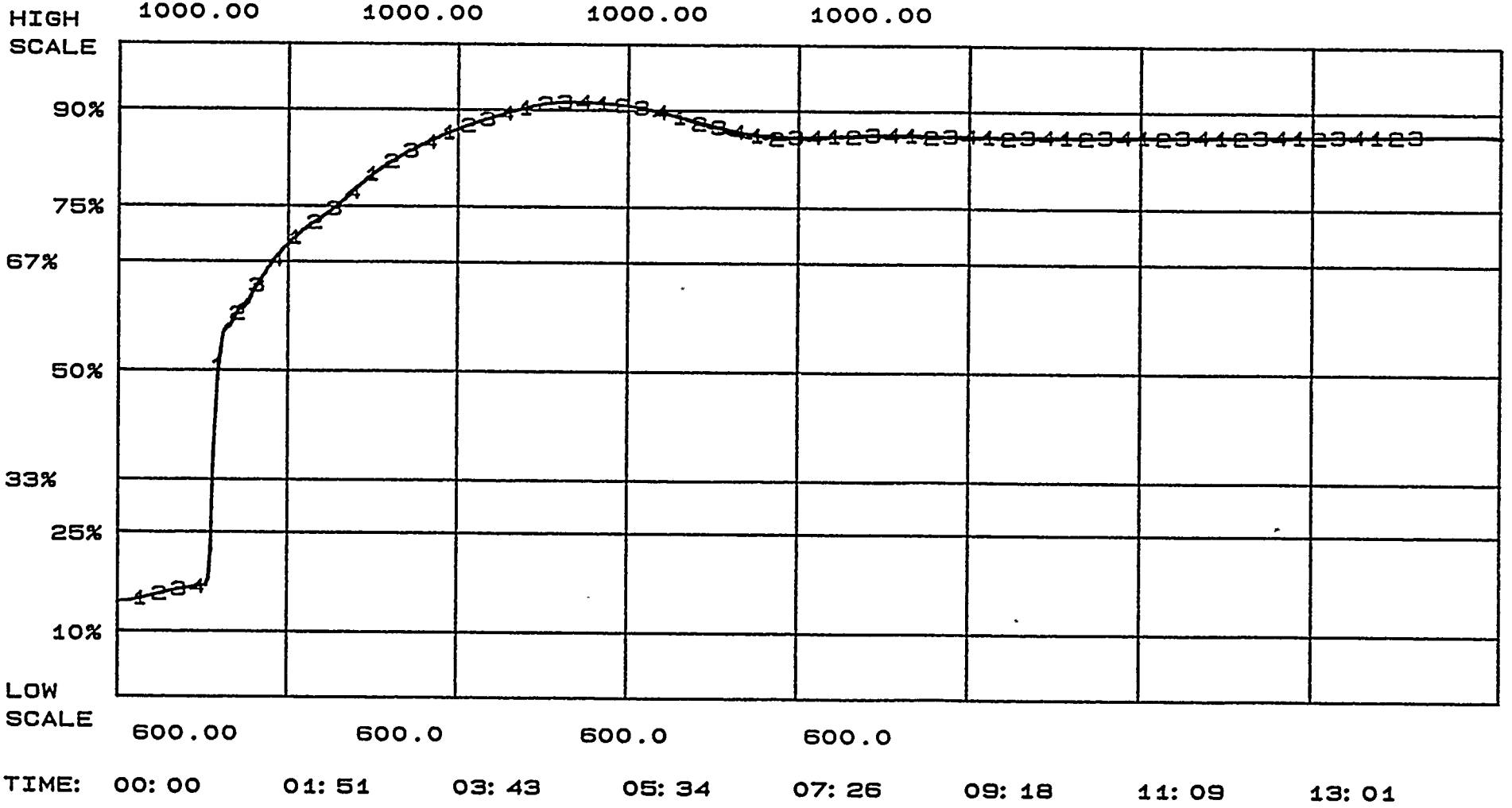
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 COLD LEG TEMP	DEG_F	TIME
2	T1116	LOOP 2 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 COLD LEG TEMP	DEG_F	STOP 00: 15: 03
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



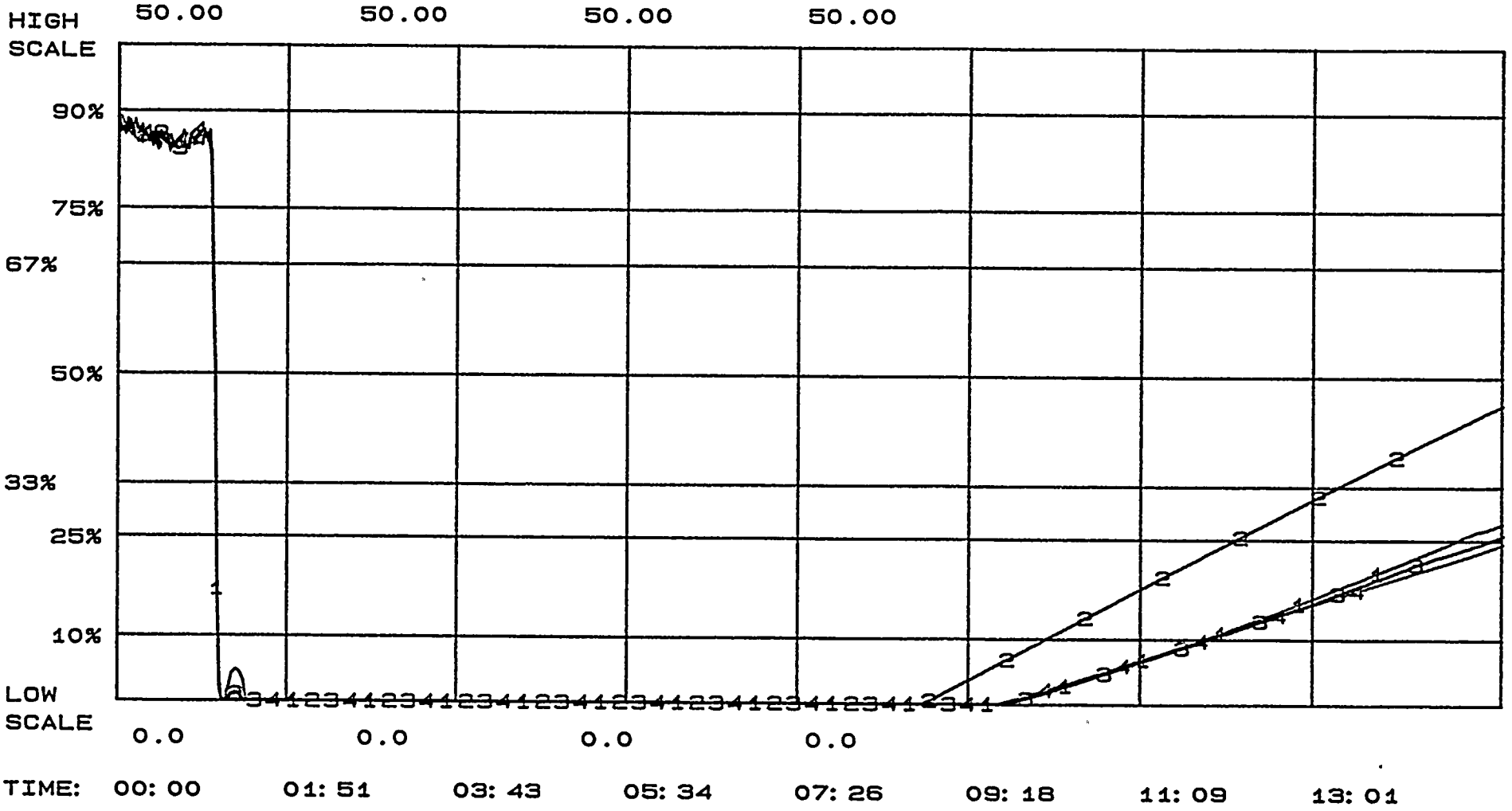
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STM GEN OUTLET PRESS LOOP 1	PSIG	TIME
2	P1025	STM GEN OUTLET PRESS LOOP 2	PSIG	START 00: 00: 00
3	P1028	STM GEN OUTLET PRESS LOOP 3	PSIG	STOP 00: 15: 03
4	P1031	STM GEN OUTLET PRESS LOOP 4	PSIG	
5				
6				



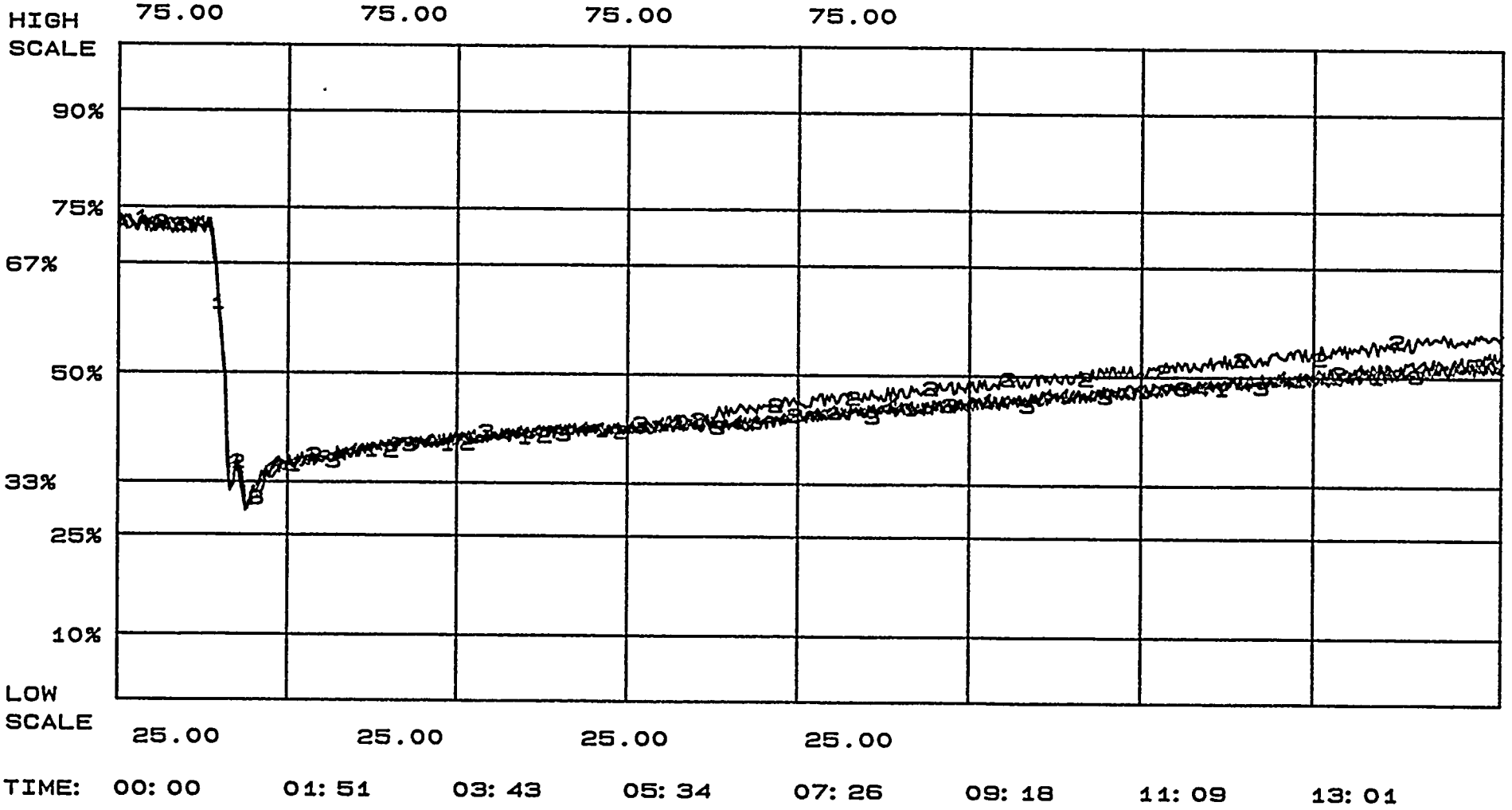
MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STM GEN 1 NARROW RNG LEVEL	PC	TIME
2	L1207	STM GEN 2 NARROW RNG LEVEL	PC	START 00: 00: 00
3	L1210	STM GEN 3 NARROW RNG LEVEL	PC	STOP 00: 15: 03
4	L1213	STM GEN 4 NARROW RNG LEVEL	PC	
5				
6				



MANUAL REACTOR TRIP FROM 100 % POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STM GEN 1 WIDE RNG LEVEL	PC	TIME
2	L1201	STM GEN 2 WIDE RNG LEVEL	PC	START 00: 00: 00
3	L1202	STM GEN 3 WIDE RNG LEVEL	PC	STOP 00: 15: 03
4	L1203	STM GEN 4 WIDE RNG LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SIMULTANEOUS TRIP OF ALL MAIN FEEDWATER PUMPS

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a simultaneous trip of all main feedwater pumps per ANS 3.5 - B2.2.

2) Ensure that the simulator's auxiliary feedwater system functions properly to restore steam generator level in a timely manner following the reactor trip.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, and pressurizer level in manual.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer level
4) Pressurizer pressure
5) Pressurizer temperature
6) Feedwater flow
7) Steam flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Pressurizer safety valves shall not lift.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

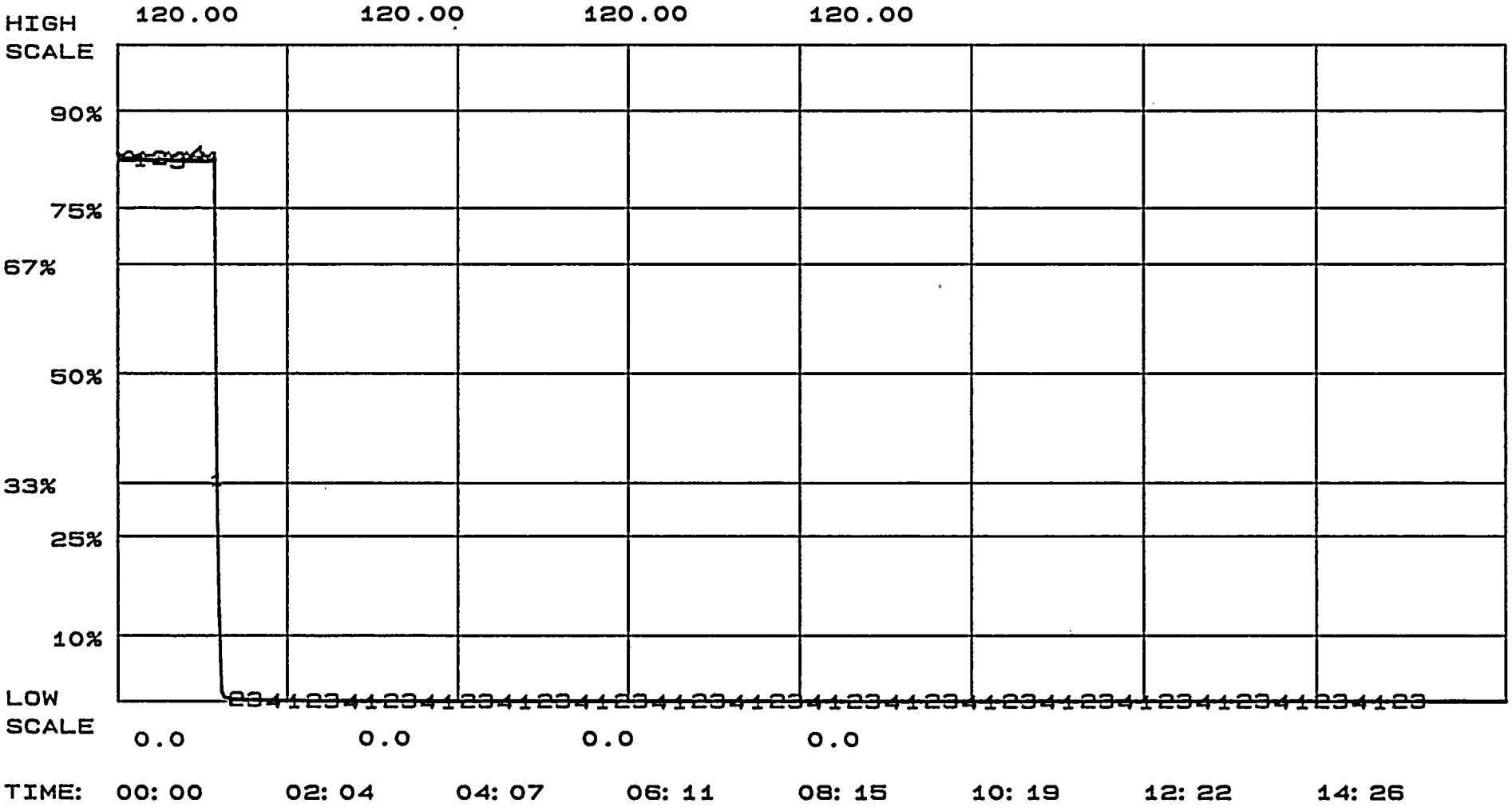
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

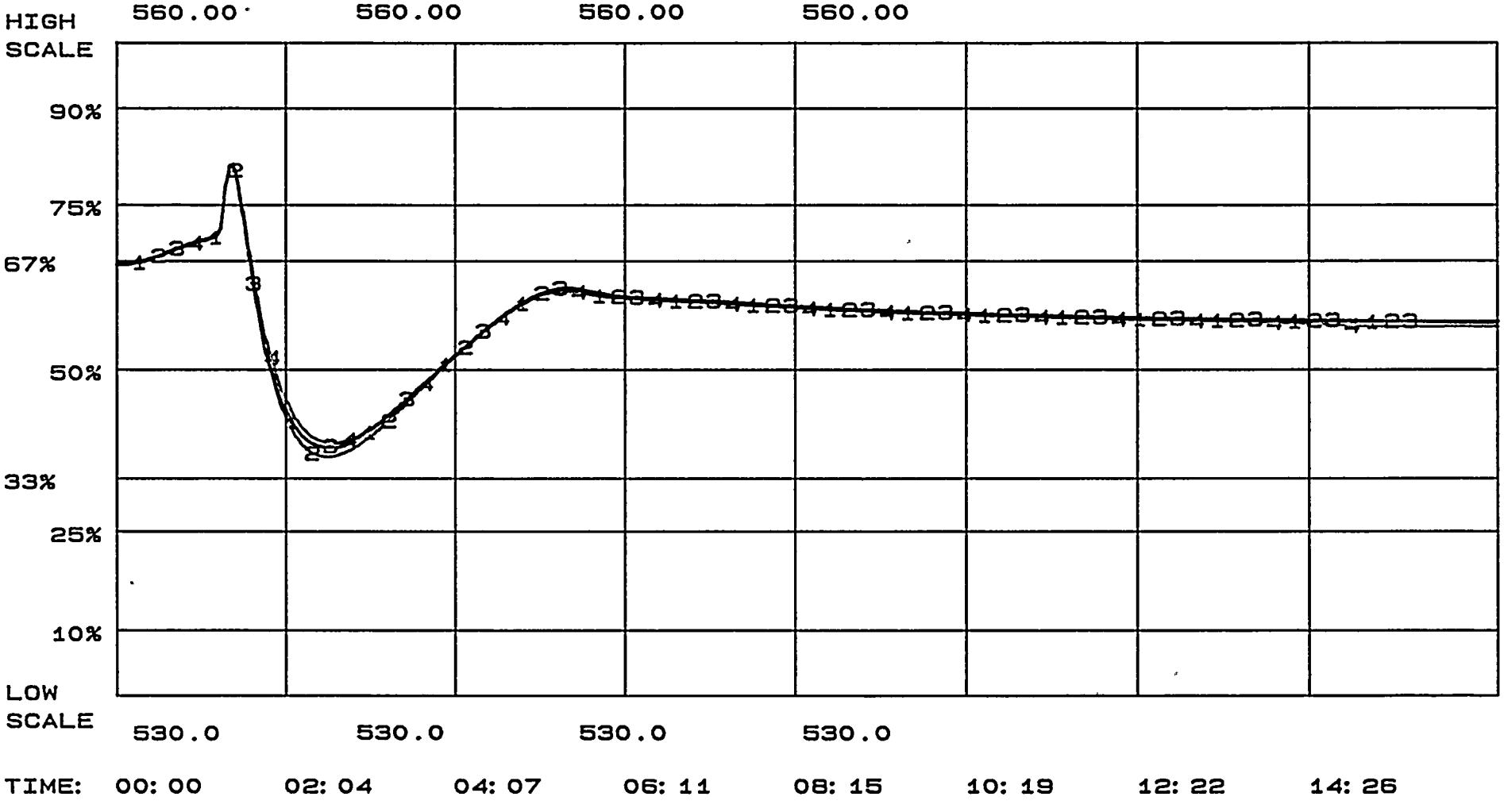
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE CHANNEL N41	PC	TIME
2	N1013	POWER RANGE CHANNEL N42	PC	START 00: 00: 00
3	N1014	POWER RANGE CHANNEL N43	PC	STOP 00: 16: 42
4	N1015	POWER RANGE CHANNEL N44	PC	
5				
6				



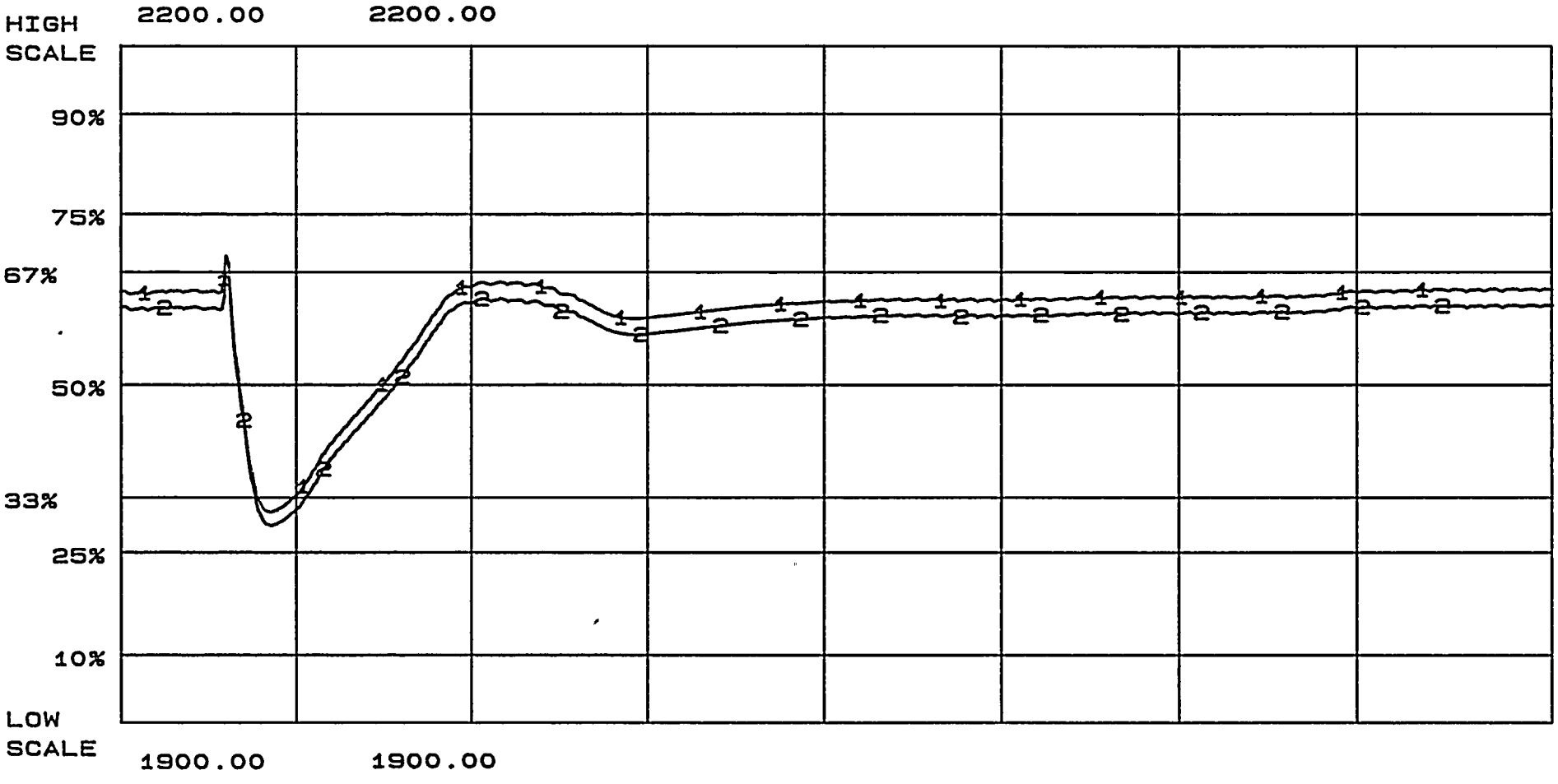
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVG TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVG TEMP	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVG TEMP	DEG_F	STOP 00: 16: 42
4	T1104	LOOP 4 AVG TEMP	DEG_F	
5				
6				



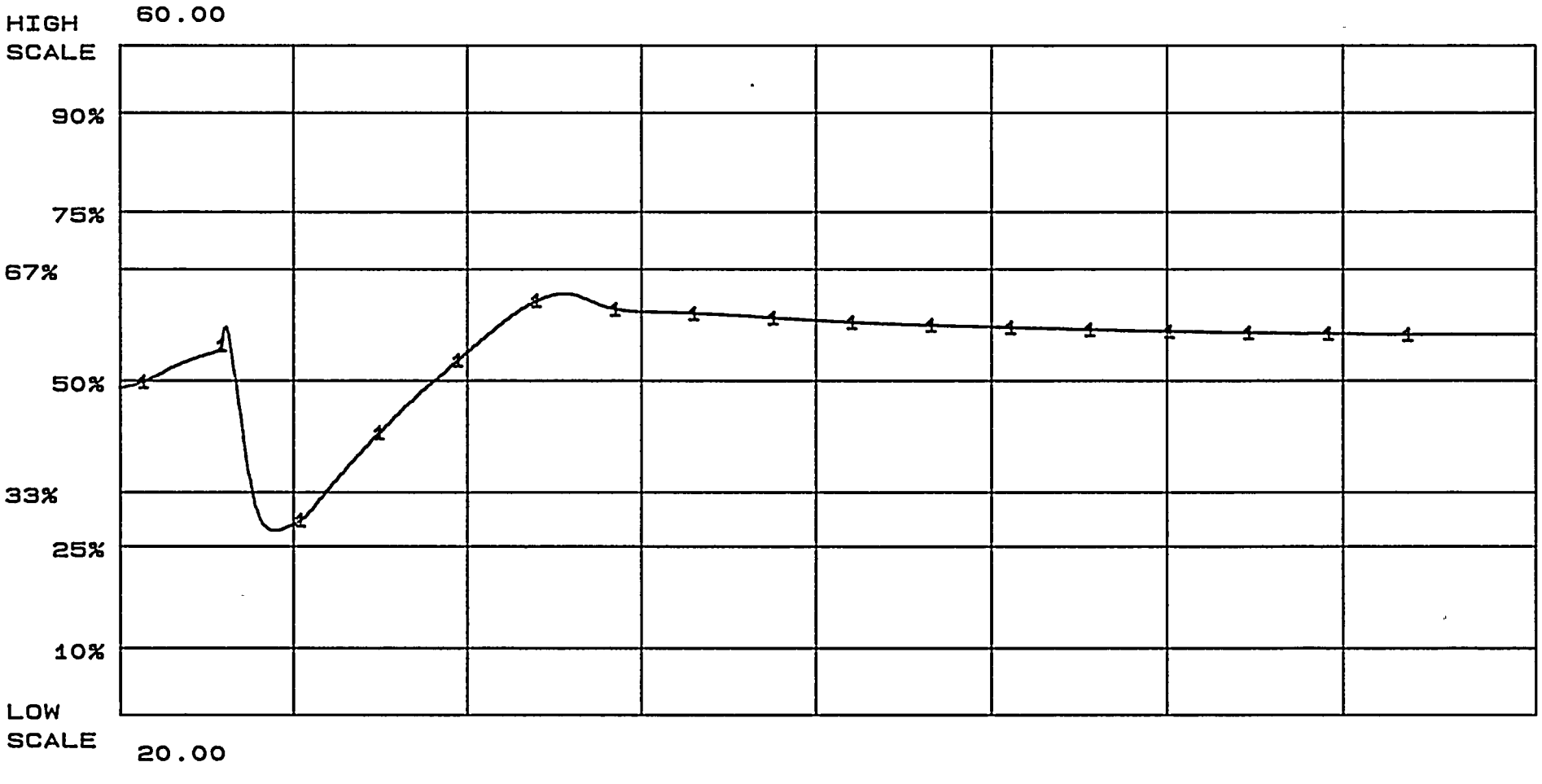
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURUZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 16: 42
4				
5				
6				



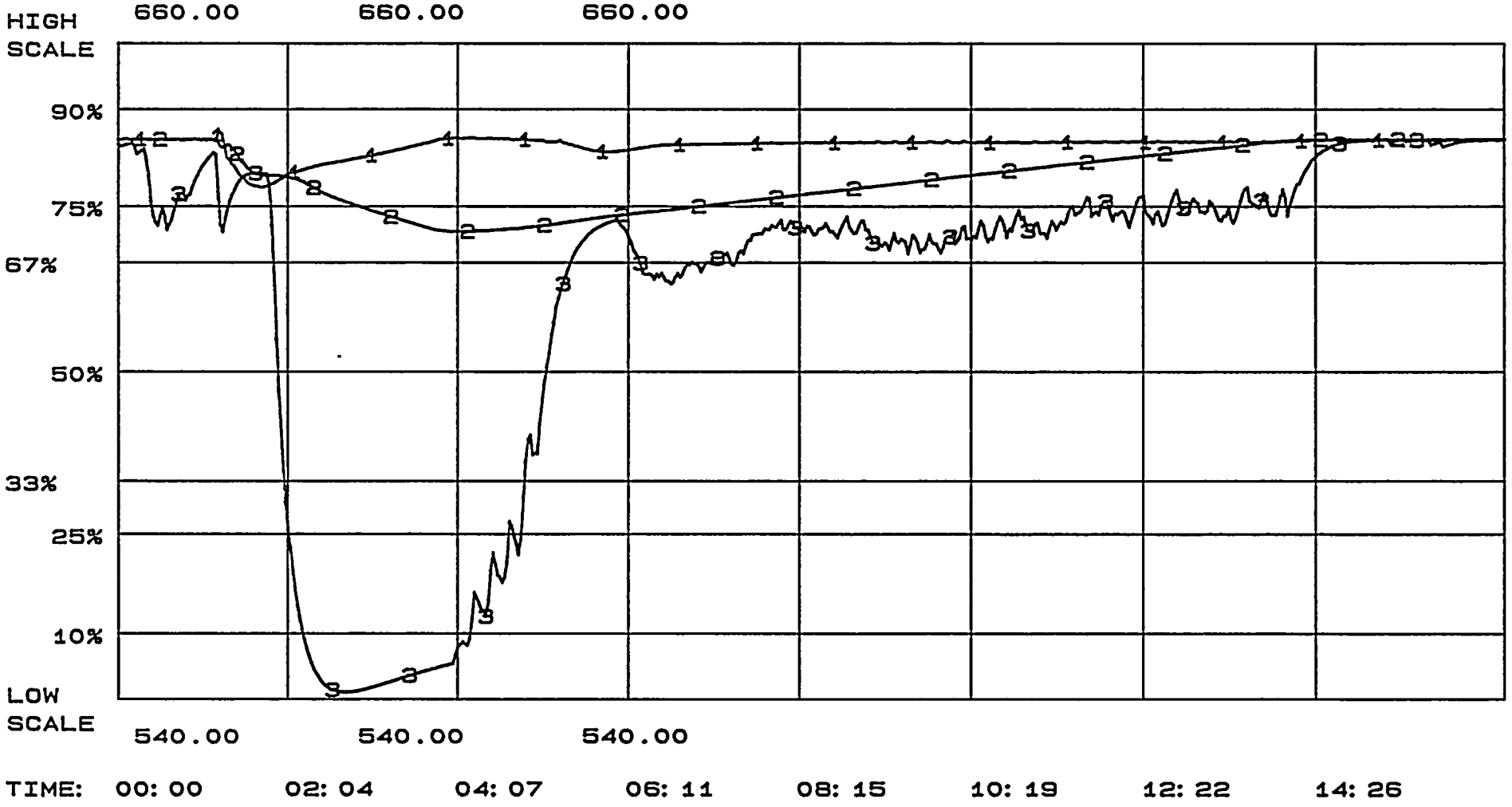
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 16: 42
4				
5				
6				



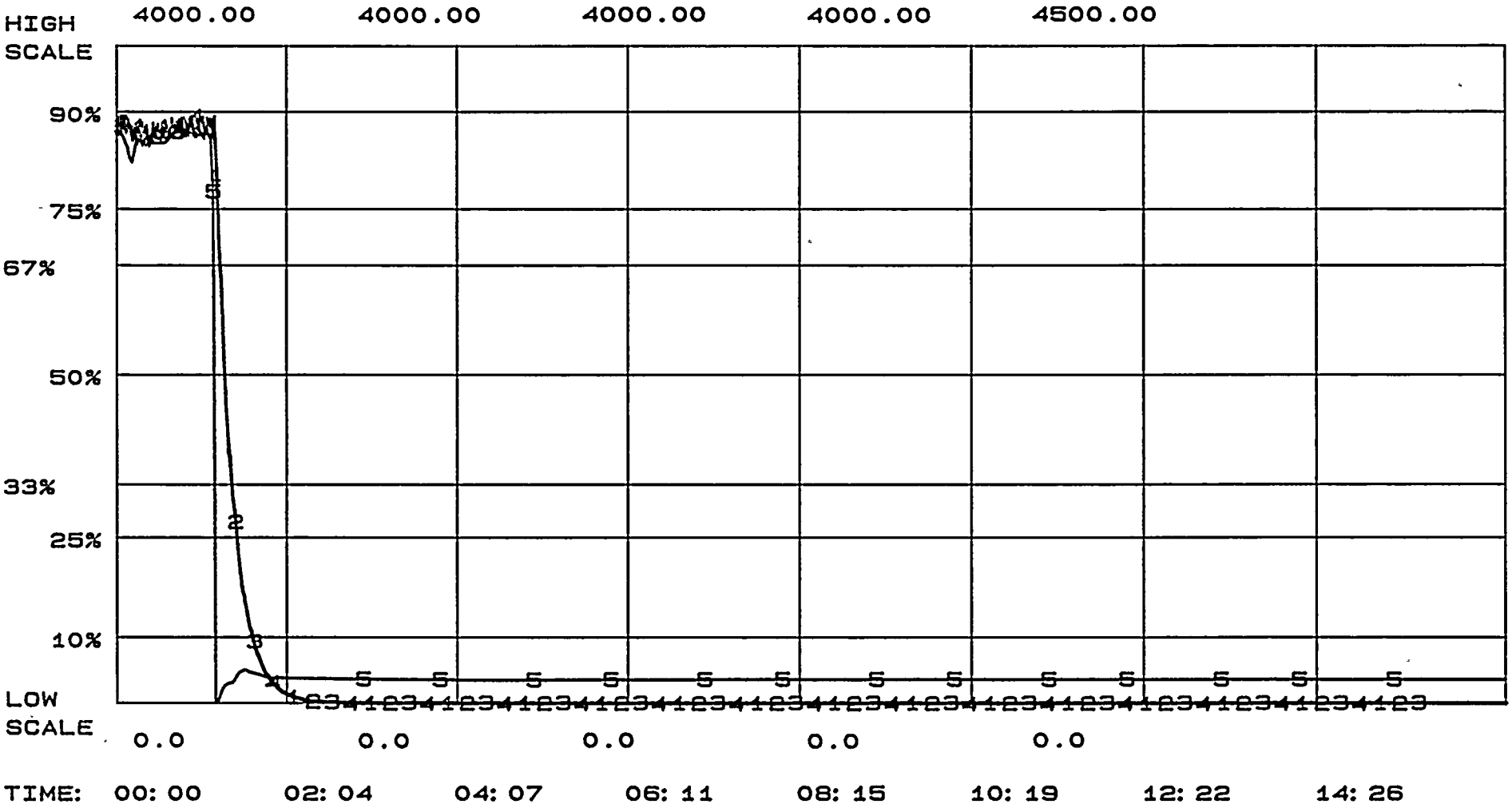
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	TIME
2	T1004	PRESSURIZER LIQUID TEMP	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 16: 42
4				
5				
6				



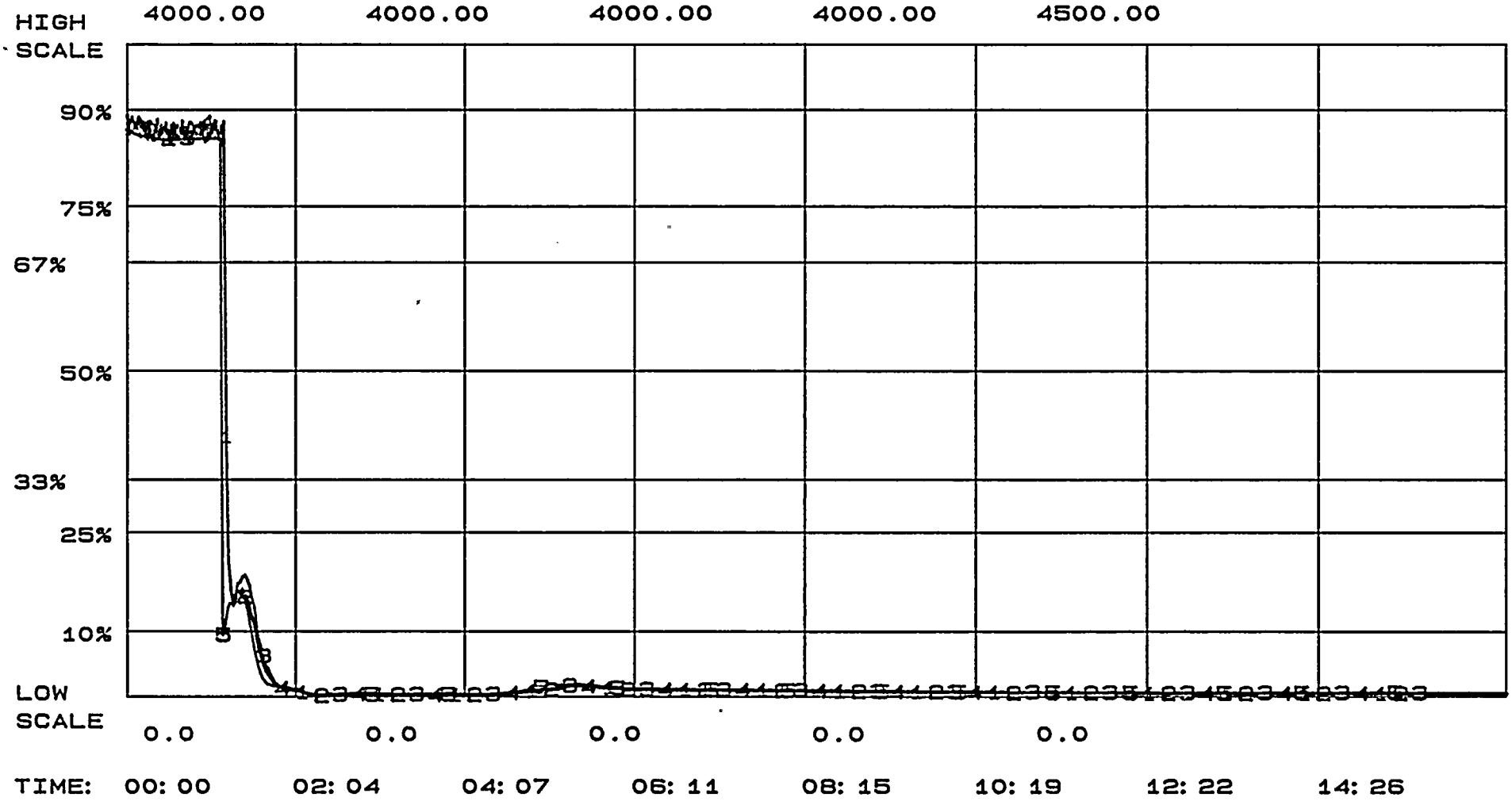
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 00: 00
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 00: 16: 42
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S	
6				



SIMULTANEOUS TRIP OF ALL FEED PUMPS

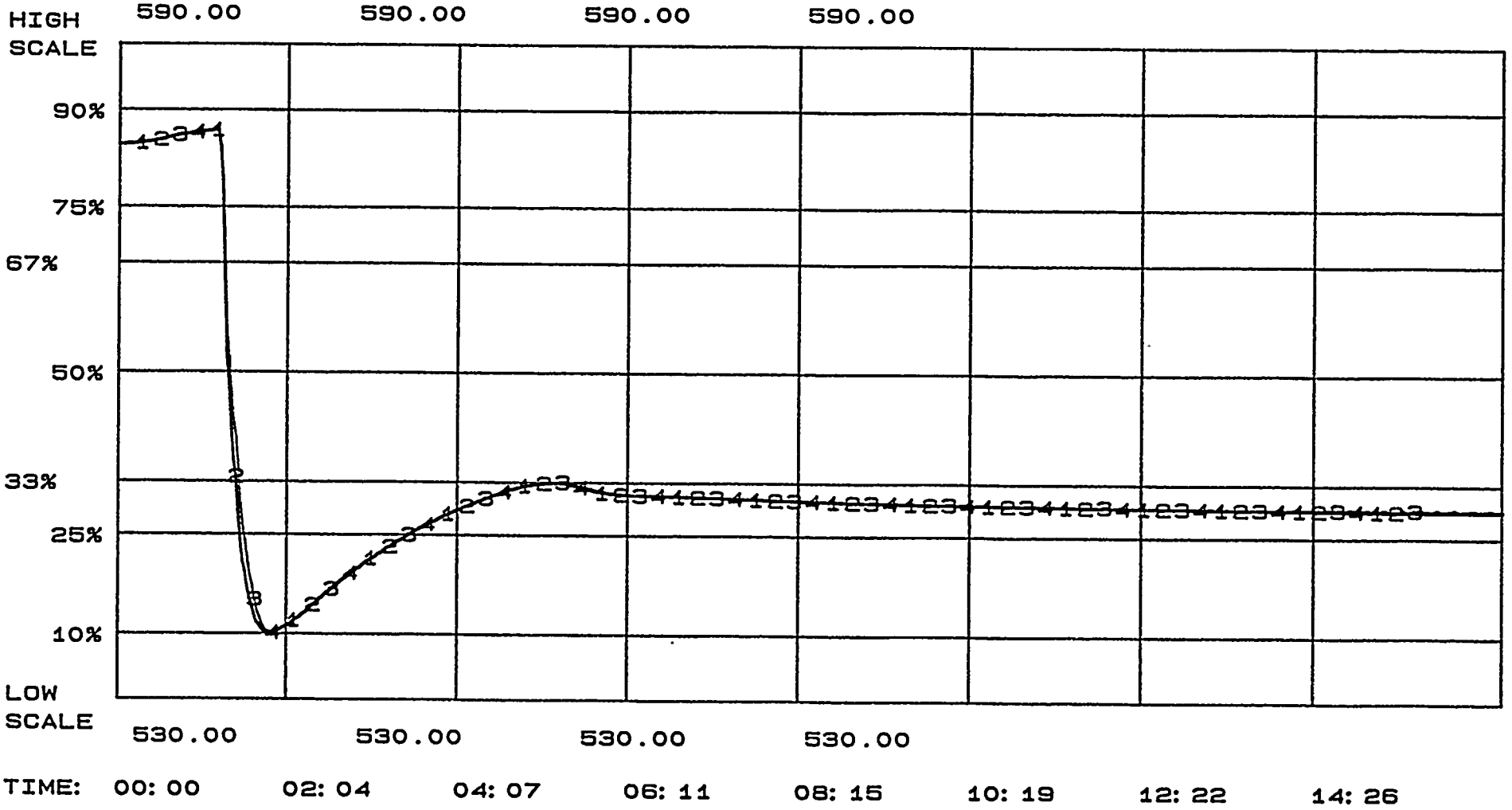
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR 1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR 2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	STEAM GENERATOR 3 STEAM FLOW	KBH	STOP 00: 16: 42
4	F1054	STEAM GENERATOR 4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F
5			
6			

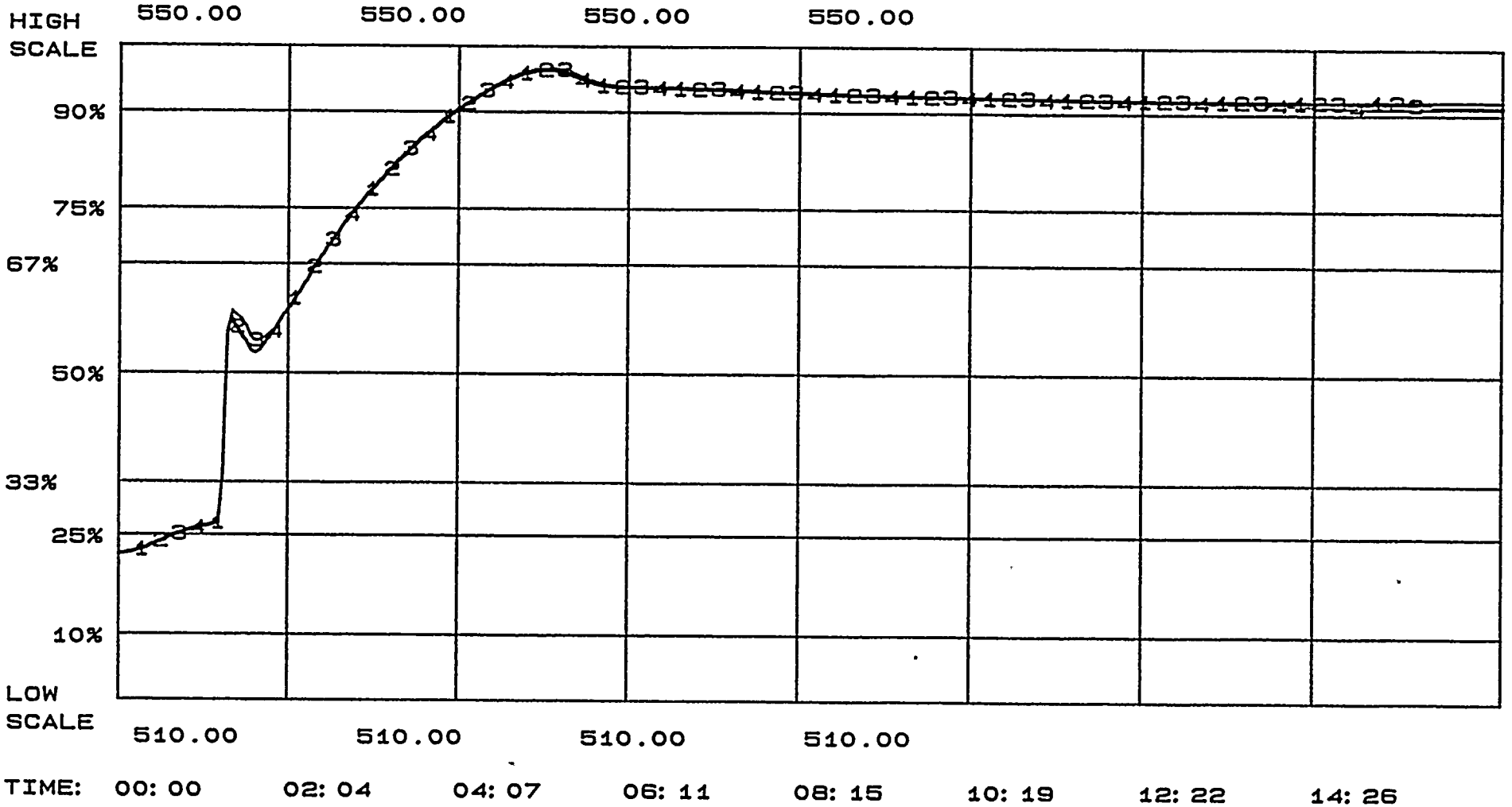
EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 16: 42



SIMULTANEOUS TRIP OF ALL FEED PUMPS

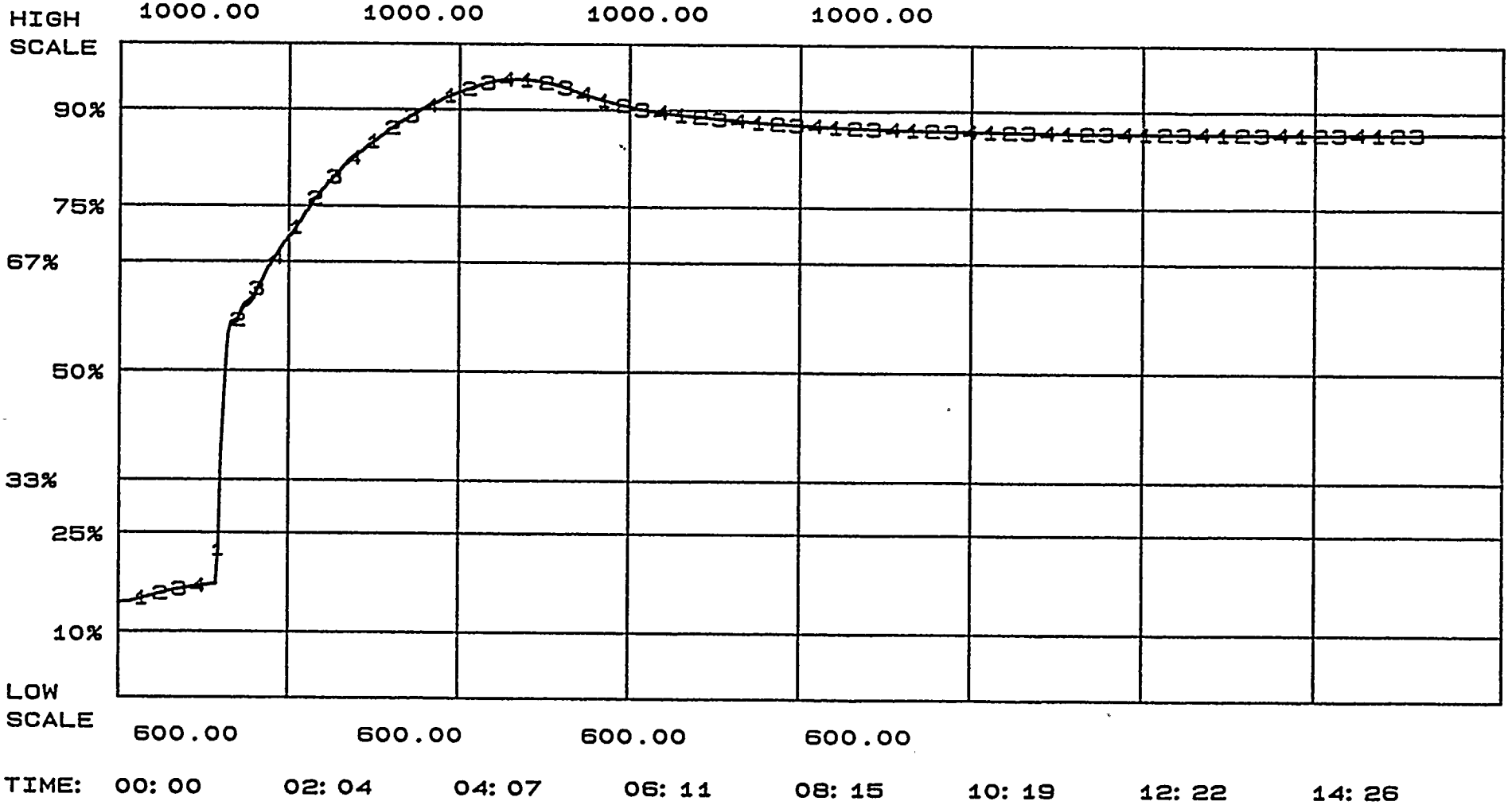
#	POINT ID	DESCRIPTION	UNITS
1	T1115	LOOP 1 COLD LEG TEMP	DEG_F
2	T1116	LOOP 2 COLD LEG TEMP	DEG_F
3	T1117	LOOP 3 COLD LEG TEMP	DEG_F
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 16: 42



SIMULTANEOUS TRIP OF ALL FEED PUMPS

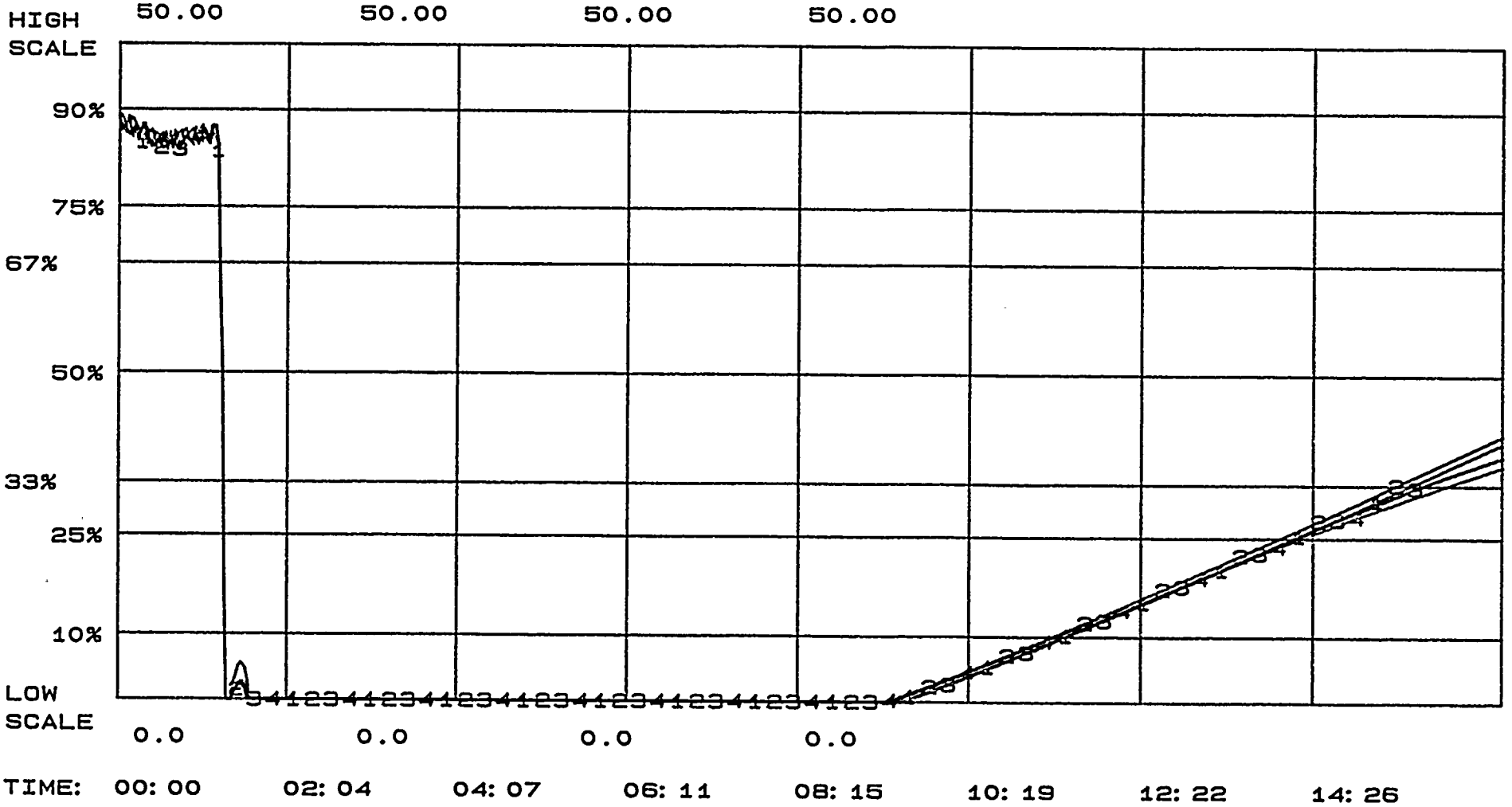
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GEN OUTLET PRESS LOOP 1	PSIG	TIME
2	P1025	STEAM GEN OUTLET PRESS LOOP 2	PSIG	START 00: 00: 00
3	P1028	STEAM GEN OUTLET PRESS LOOP 3	PSIG	STOP 00: 16: 42
4	P1031	STEAM GEN OUTLET PRESS LOOP 4	PSIG	
5				
6				



SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC
5			
6			

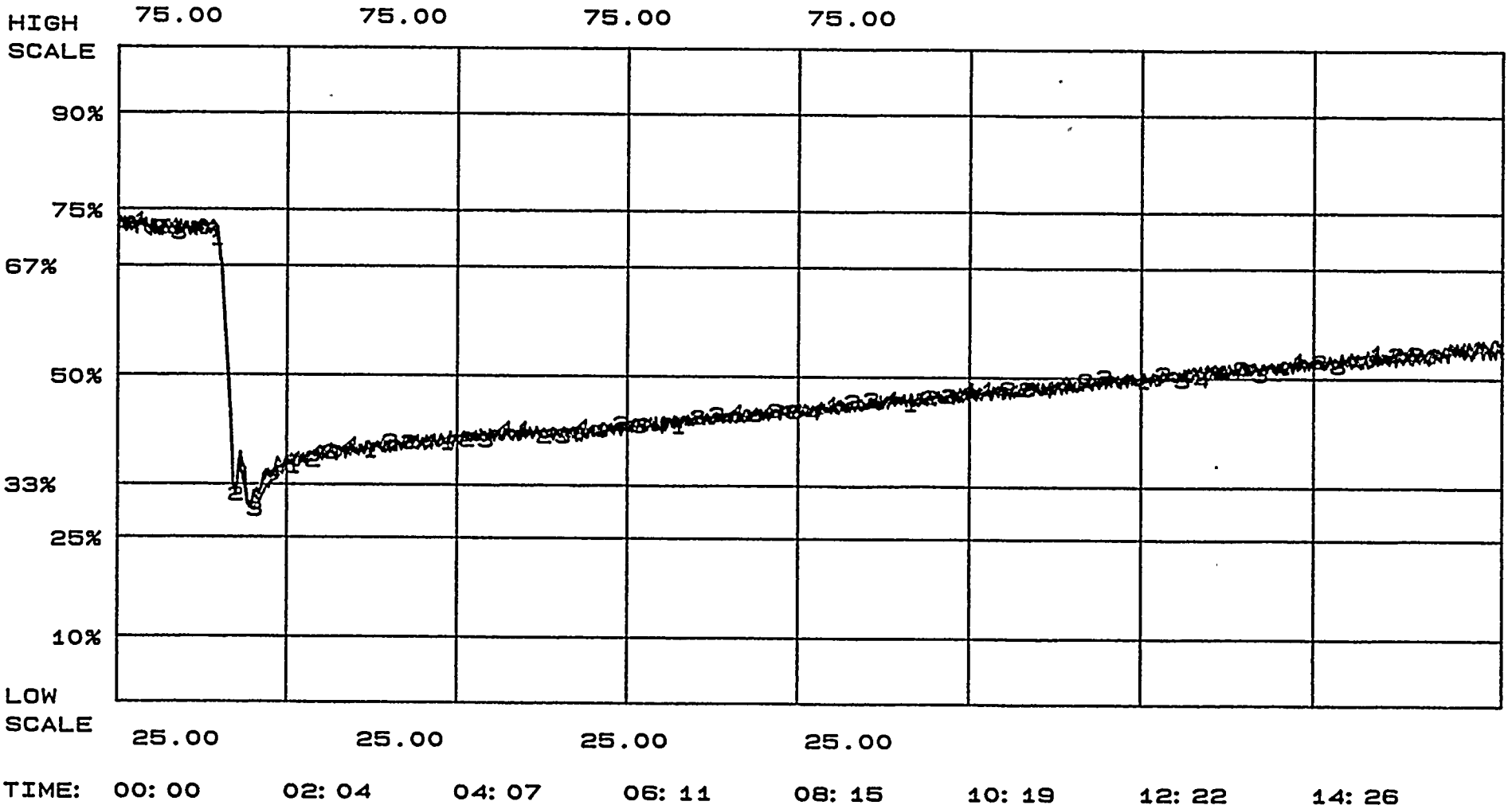
EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 16: 42



SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS
1	L1200	STEAM GEN 1 WIDE RANGE LEVEL	PC
2	L1201	STEAM GEN 2 WIDE RANGE LEVEL	PC
3	L1202	STEAM GEN 3 WIDE RANGE LEVEL	PC
4	L1203	STEAM GEN 4 WIDE RANGE LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 16: 42

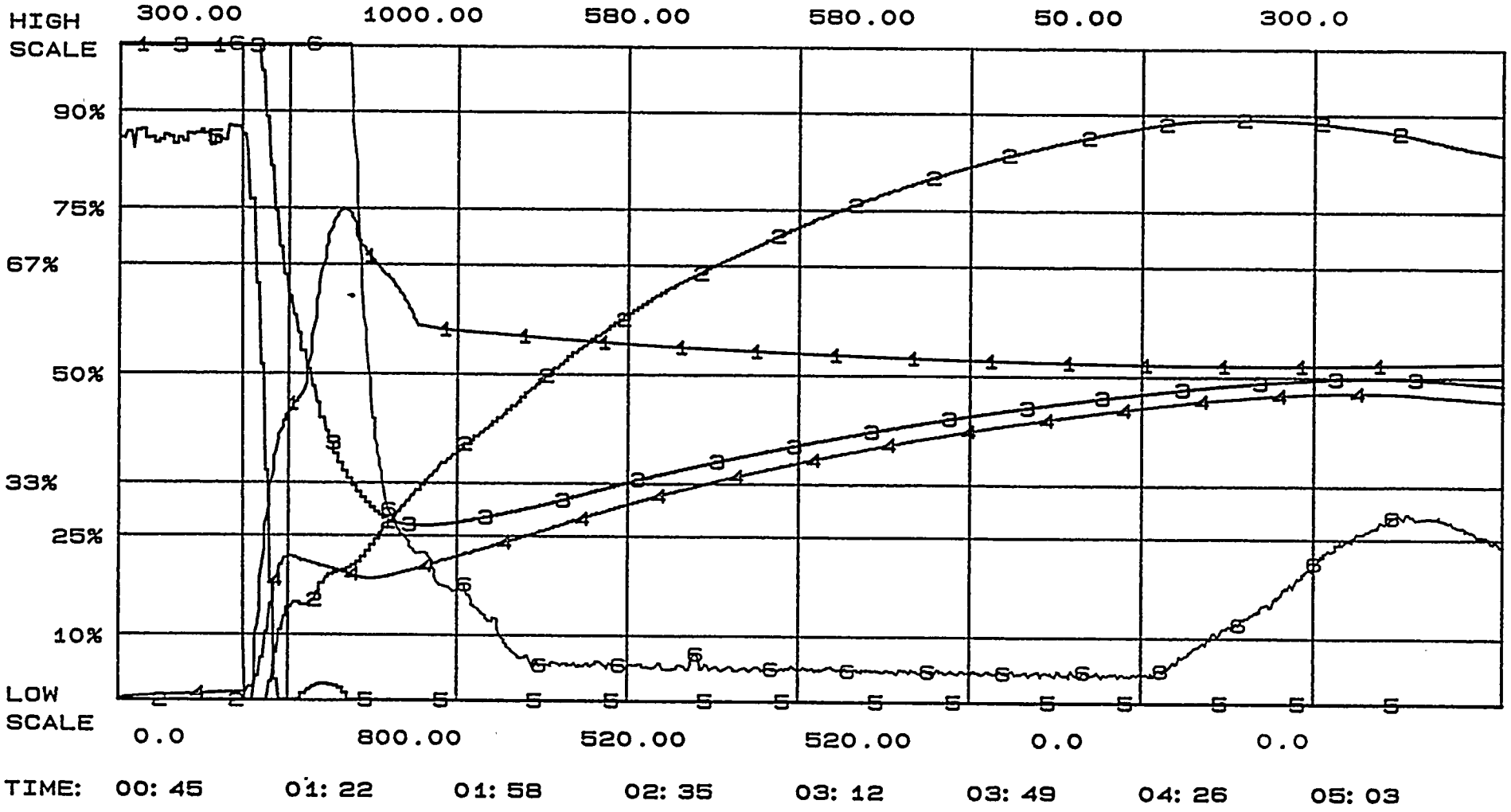


SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS
1	FWFTOTAL	TOTAL FEEDWATER FLOW (INCL AFW)	LBS_S
2	P1022	STEAM GEN OUTLET PRESS LOOP 1	PSIG
3	T1111	LOOP 1 HOT LEG TEMPERATURE	DEG_F
4	T1115	LOOP 1 COLD LEG TEMPERATURE	DEG_F
5	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC
6	MSFSUMOT	TOTAL STEAM FLOW	LBS_S

EDIT CONTROLS

TIME
START 00: 00: 45
STOP 00: 05: 44



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a simultaneous closure of all main steam isolation valves per ANSI 3.5 - B2.2.

2) Ensure that the simulator's steam generator safety and power operated relief valves (PORV) function properly to limit steam generator pressure and that steam generator PORVs in conjunction with the auxiliary feedwater system control RCS average temperature.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, and pressurizer level in manual.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Steam generator safeties and PORVs limit steam generator pressure.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The following discrepancies were noted by the team of subject matter experts:

a) Steam Generator #11 PORV (2-MRV-213) did not appear to have operated. The team ran the test on the simulator and determined that the lack of response of 2-MRV-213 was attributable to the setpoint dial (operator controlled) being slightly out of position. The team concluded that the response was correct for the condition.

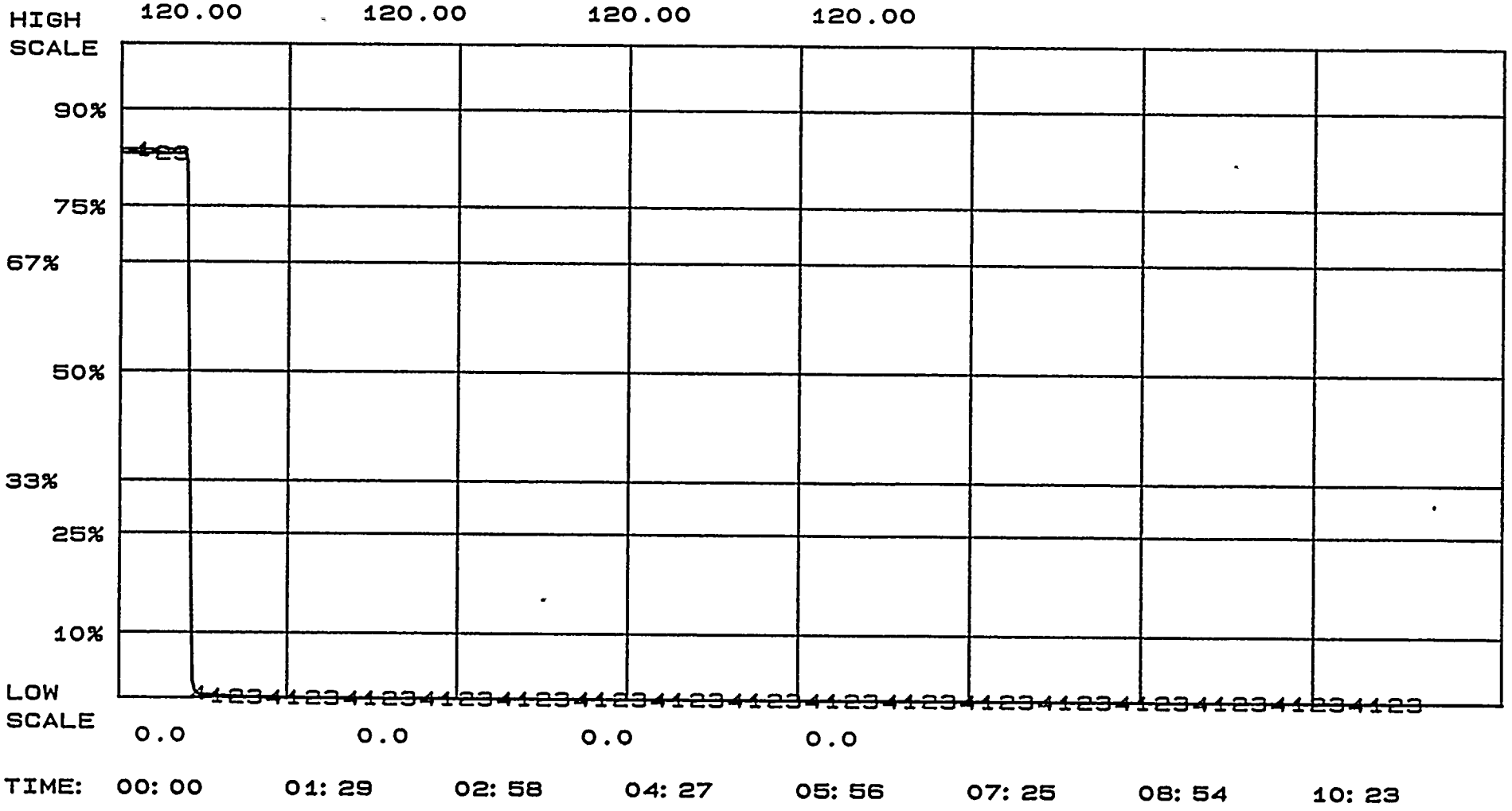
b) Pressurizer surge line temperature response was incorrect for the condition.

c) Number four (4) steam generator steamed significantly more than the other steam generators.

Discrepancy reports have been written to investigate and correct conditions b and c.

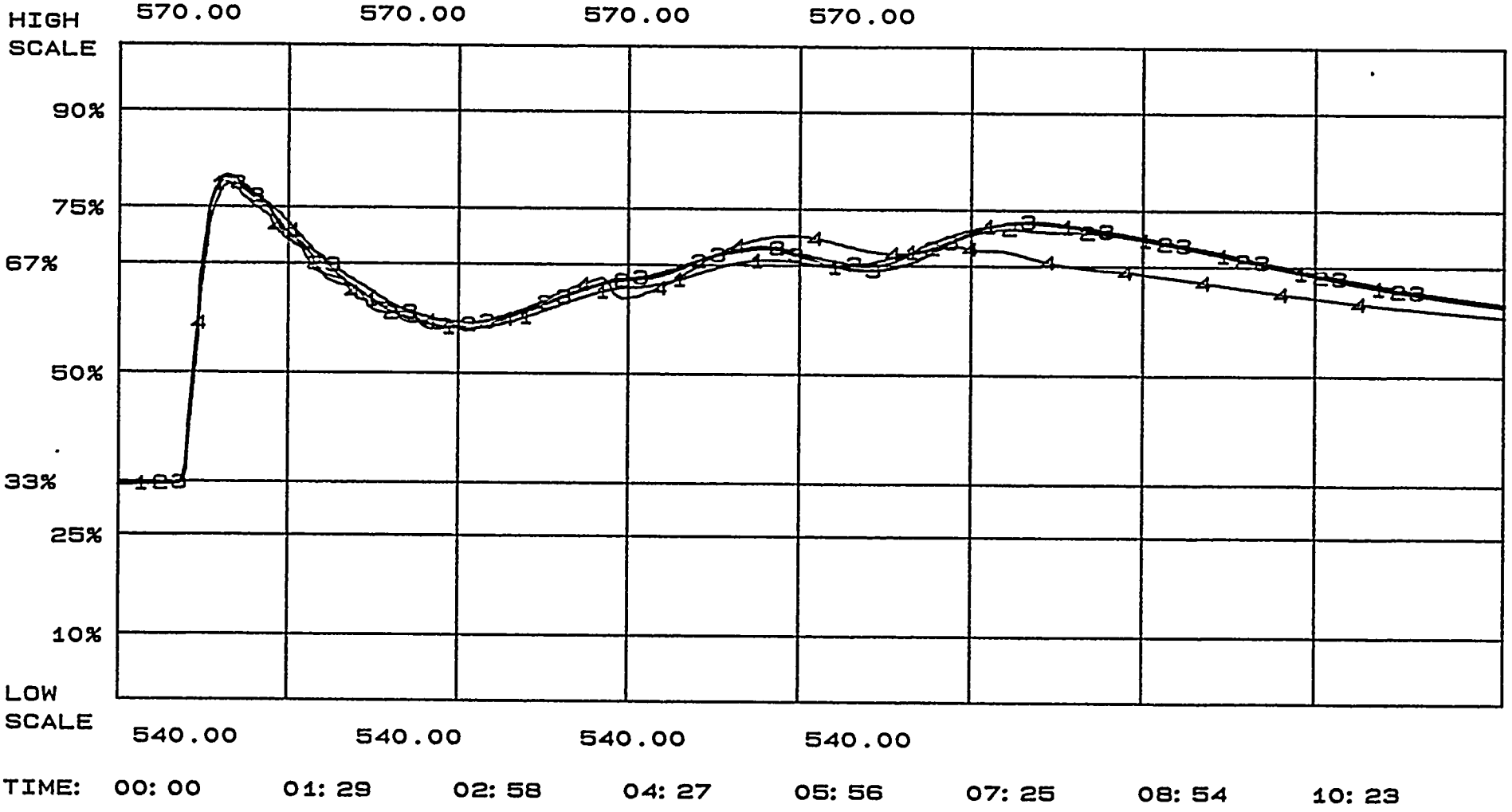
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE CHANNEL 1 AVG	PC	TIME
2	N1013	POWER RANGE CHANNEL 2 AVG	PC	START 00: 00: 00
3	N1014	POWER RANGE CHANNEL 3 AVG	PC	STOP 00: 12: 01
4	N1015	POWER RANGE CHANNEL 4 AVG	PC	
5				
6				



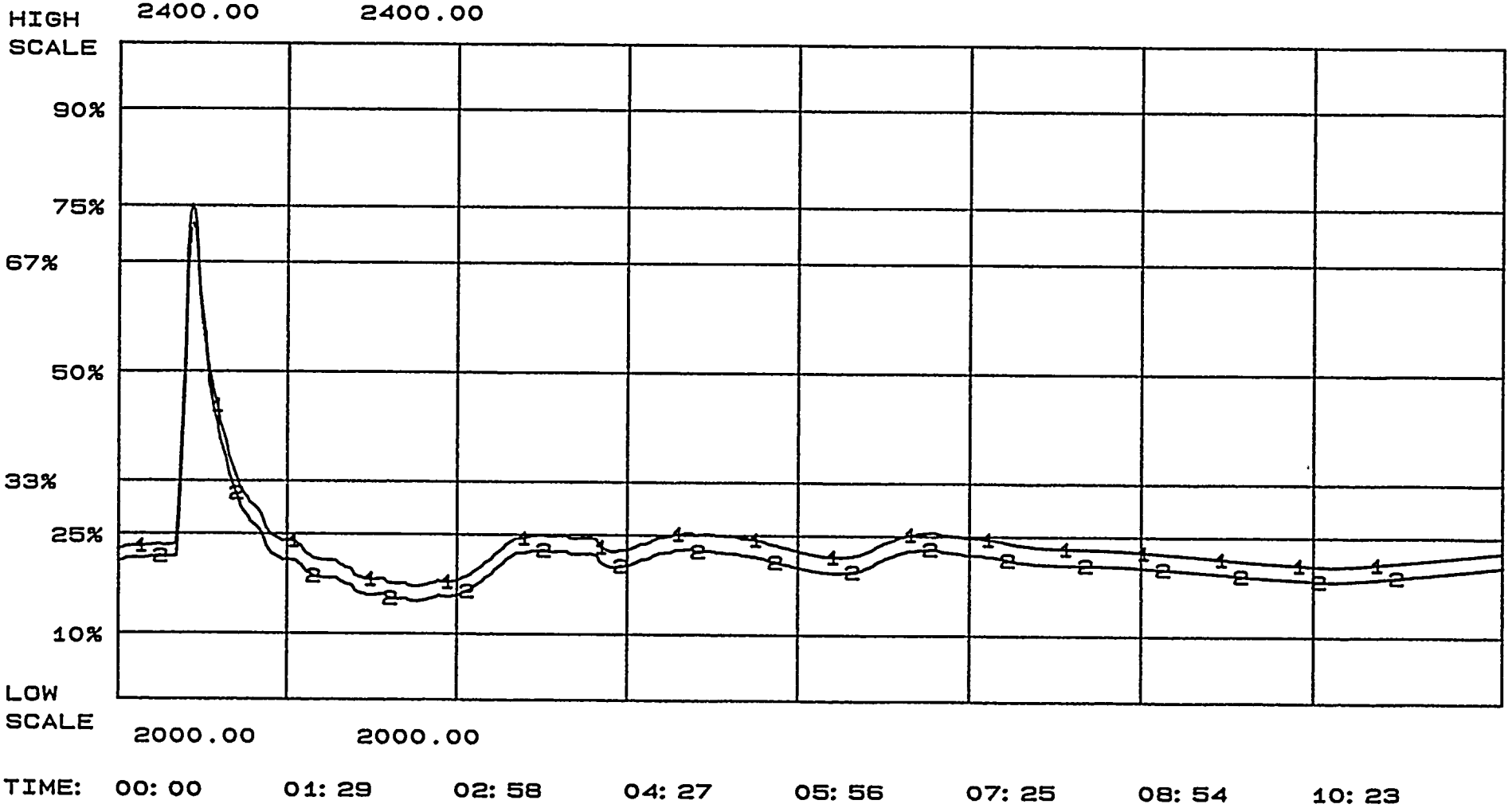
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS.
1	T1101	LOOP 1 AVG TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVG TEMP	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVG TEMP	DEG_F	STOP 00: 12: 01
4	T1104	LOOP 4 AVG TEMP	DEG_F	
5				
6				



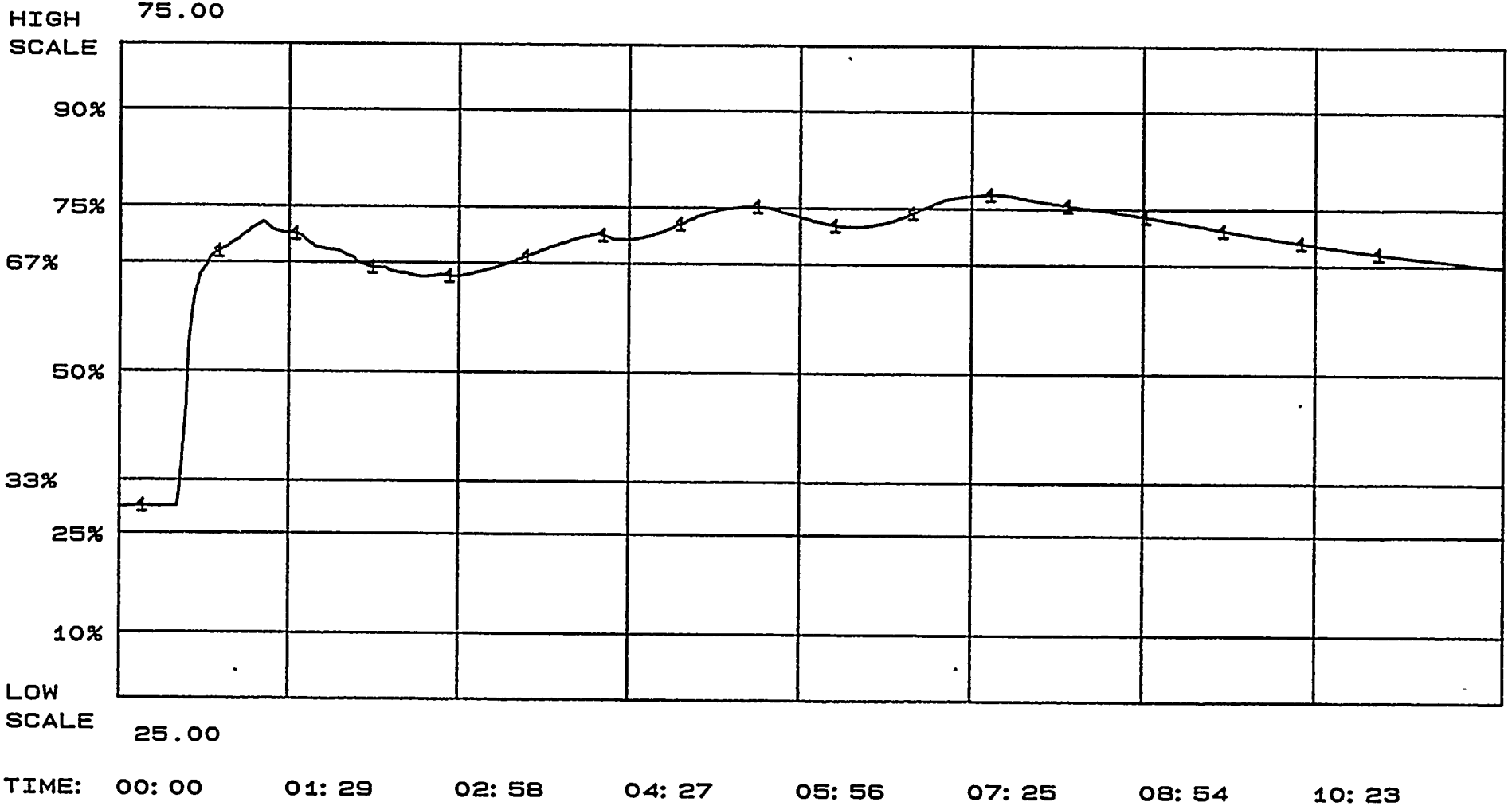
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 12: 01
4				
5				
6				



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

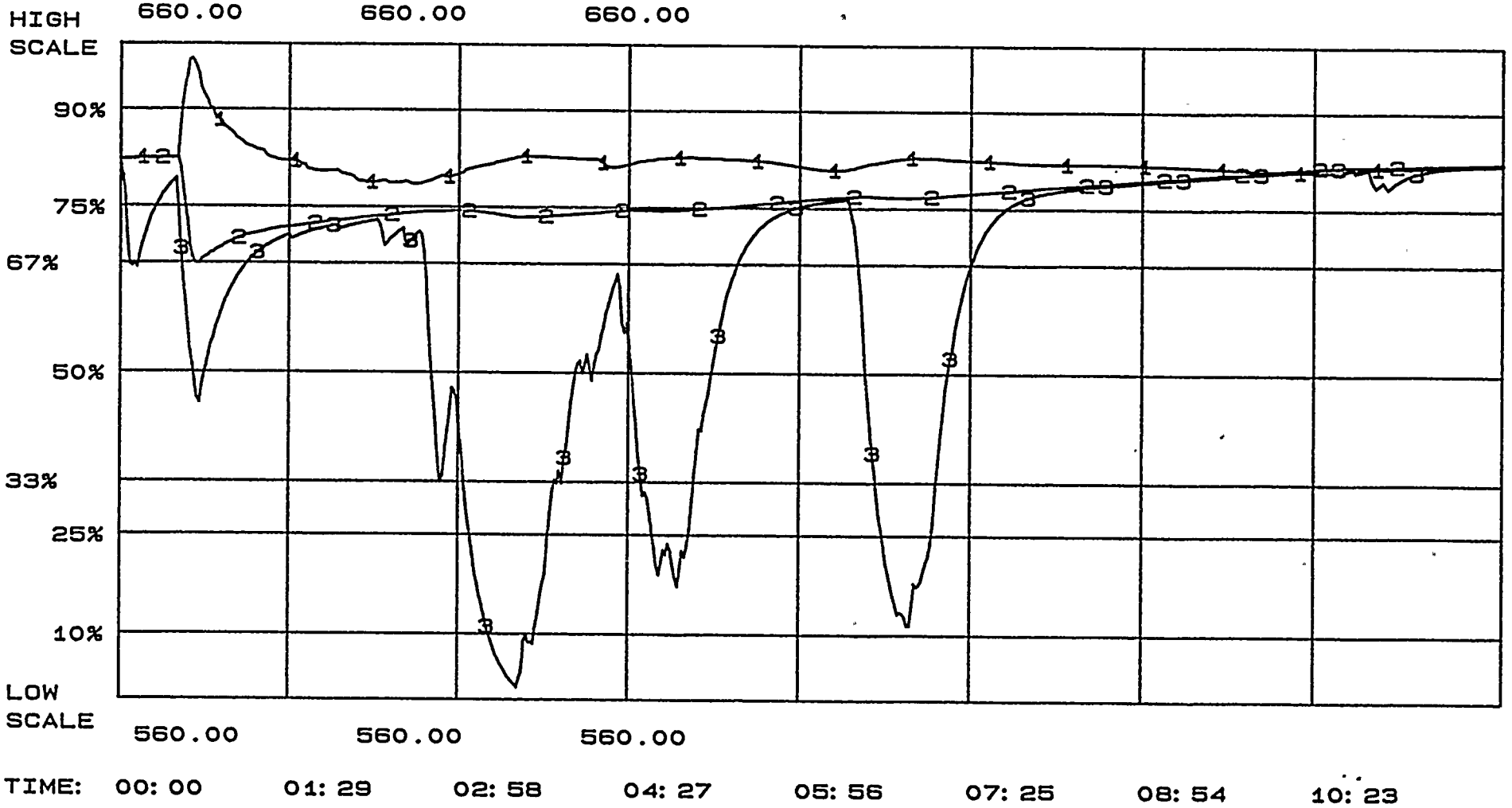
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 12: 01
4				
5				
6				



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS
1	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F
2	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F
4			
5			
6			

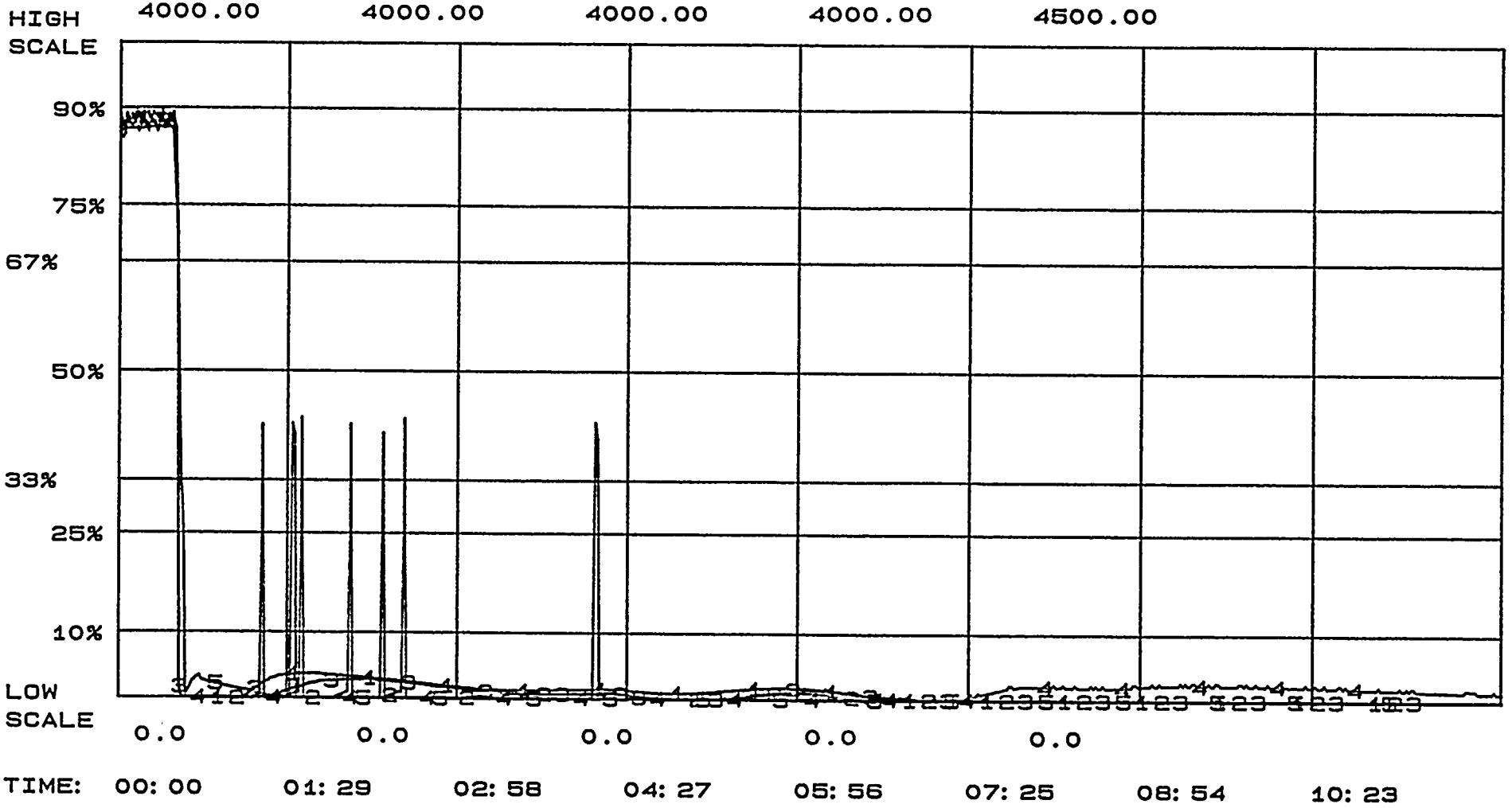
EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 12: 01



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

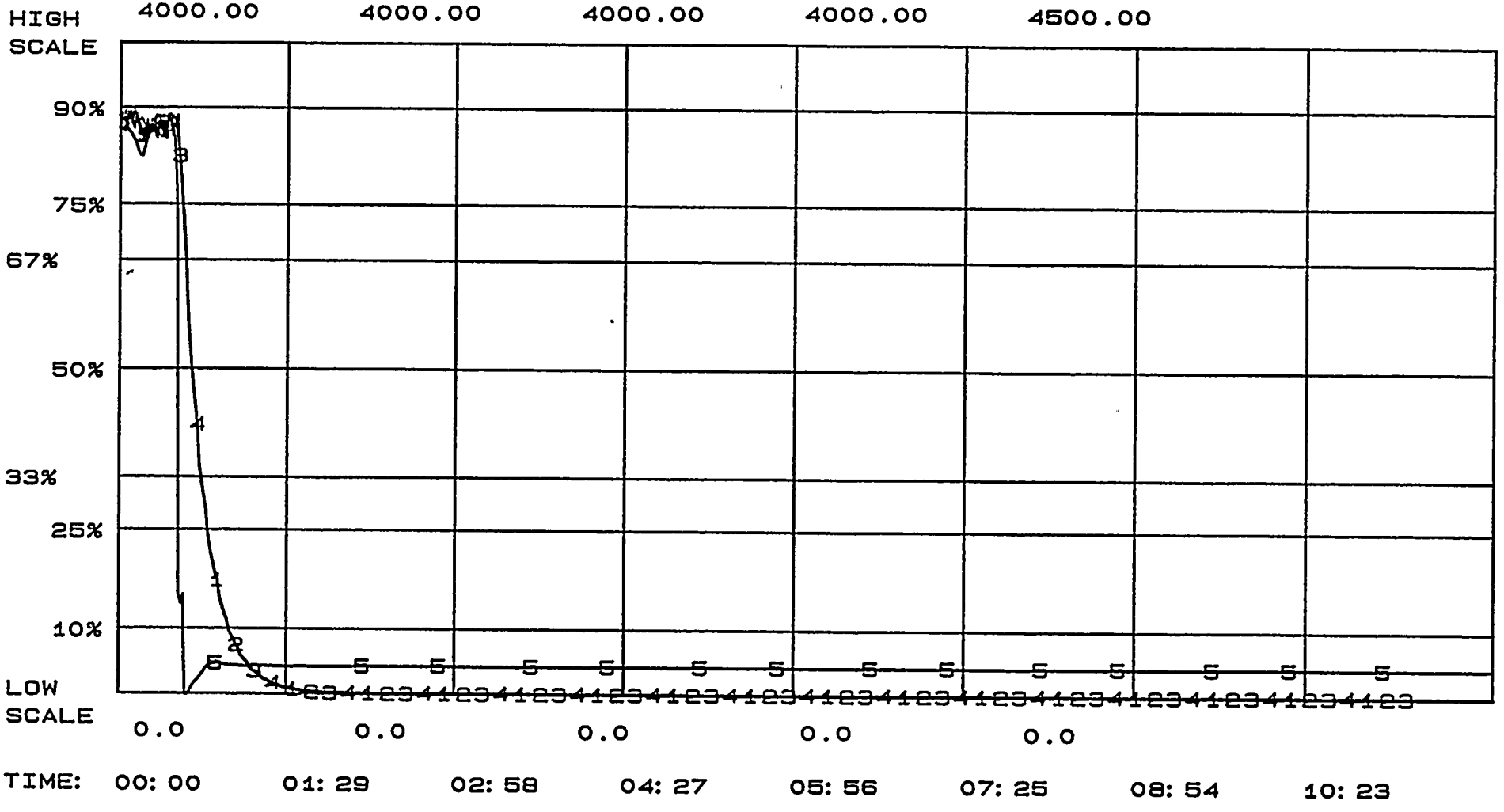
#	POINT ID	DESCRIPTION	UNITS
1	F1048	STEAM FLOW LOOP 1	KBH
2	F1050	STEAM FLOW LOOP 2	KBH
3	F1052	STEAM FLOW LOOP 3	KBH
4	F1054	STEAM FLOW LOOP 4	KBH
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 12: 01



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

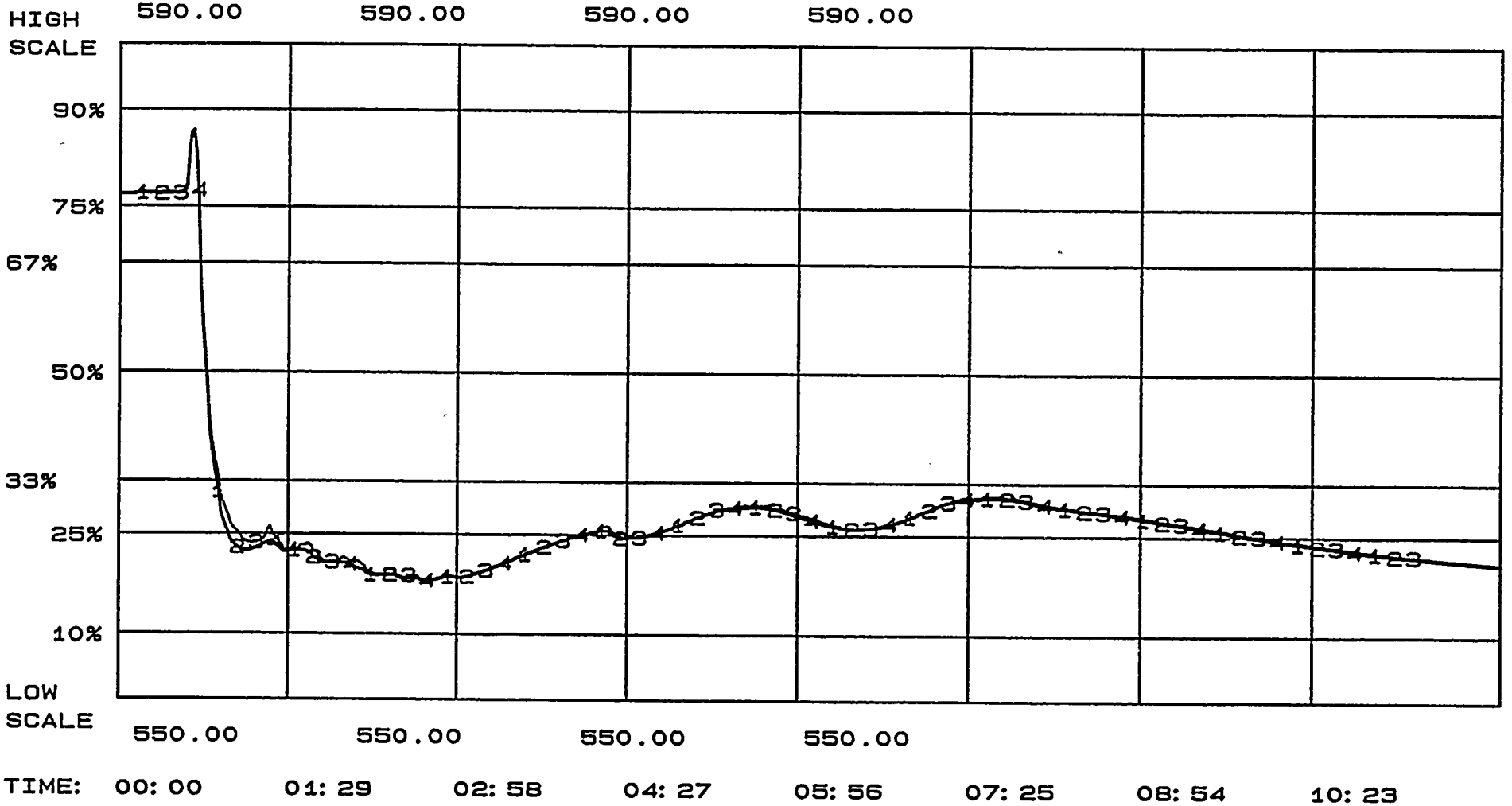
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	LOOP 1 FEEDWATER FLOW	KBH	TIME
2	F1201	LOOP 2 FEEDWATER FLOW	KBH	START 00: 00: 00
3	F1202	LOOP 3 FEEDWATER FLOW	KBH	STOP 00: 12: 01
4	F1203	LOOP 4 FEEDWATER FLOW	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S	
6				



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

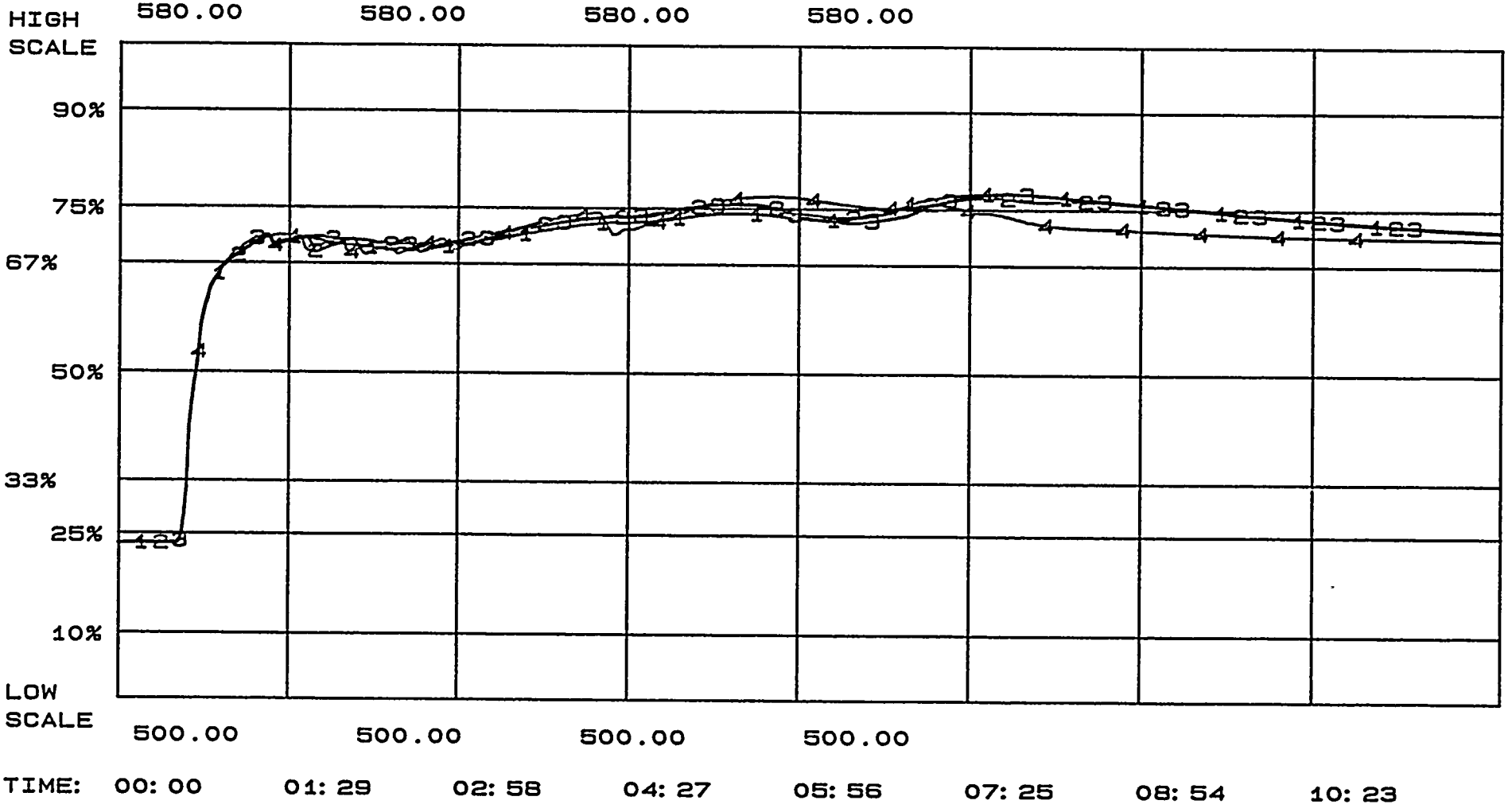
#	POINT ID	DESCRIPTION	UNITS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 12: 01



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES .

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 COLD LEG TEMP	DEG_F	TIME
2	T1116	LOOP 2 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 COLD LEG TEMP	DEG_F	STOP 00: 12: 01
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

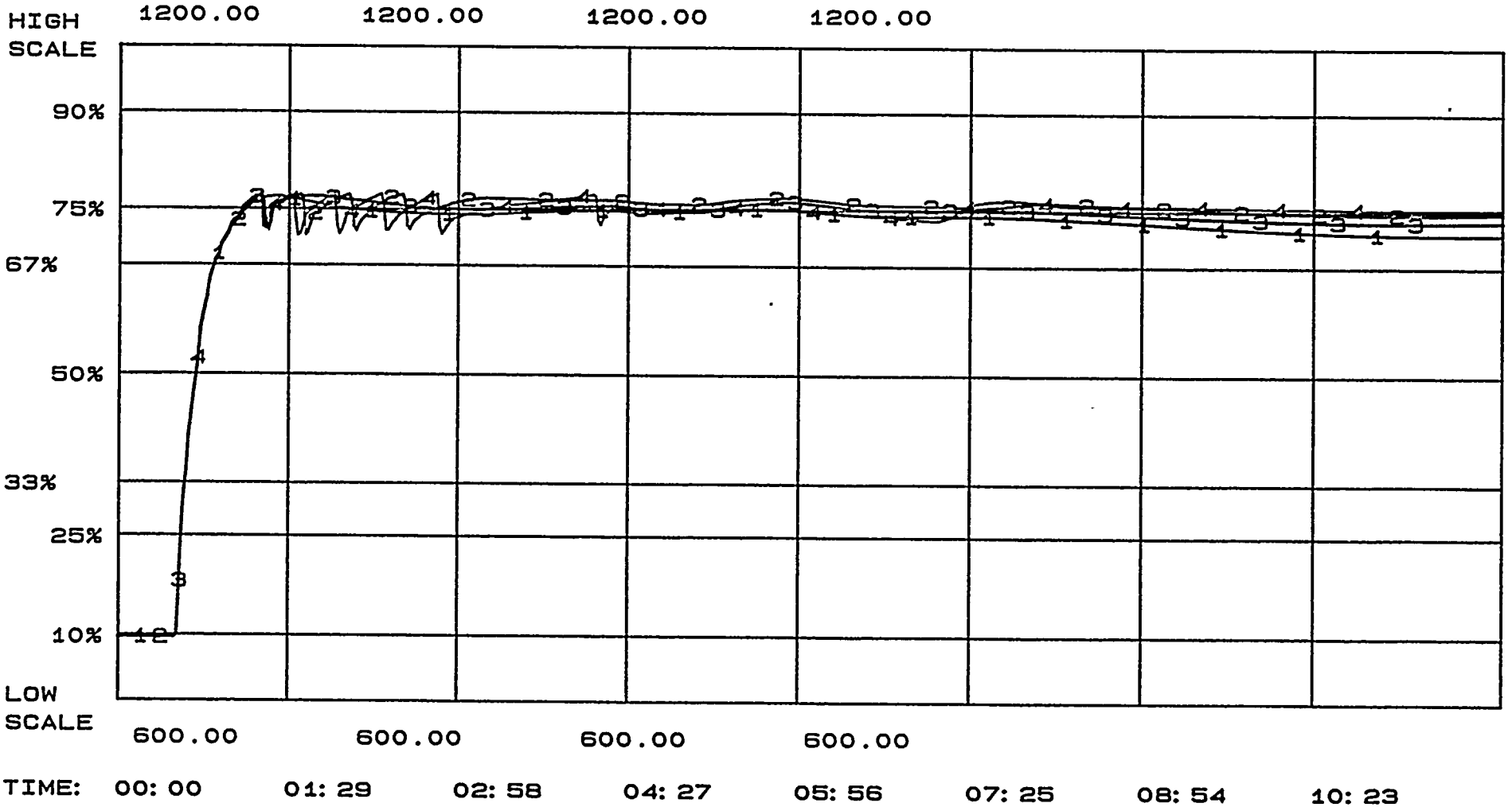
#	POINT ID	DESCRIPTION	UNITS
1	P1022	STEAM GENERATOR 1 PRESSURE	PSIG
2	P1025	STEAM GENERATOR 2 PRESSURE	PSIG
3	P1028	STEAM GENERATOR 3 PRESSURE	PSIG
4	P1031	STEAM GENERATOR 4 PRESSURE	PSIG
5			
6			

EDIT CONTROLS

TIME

START 00: 00: 00

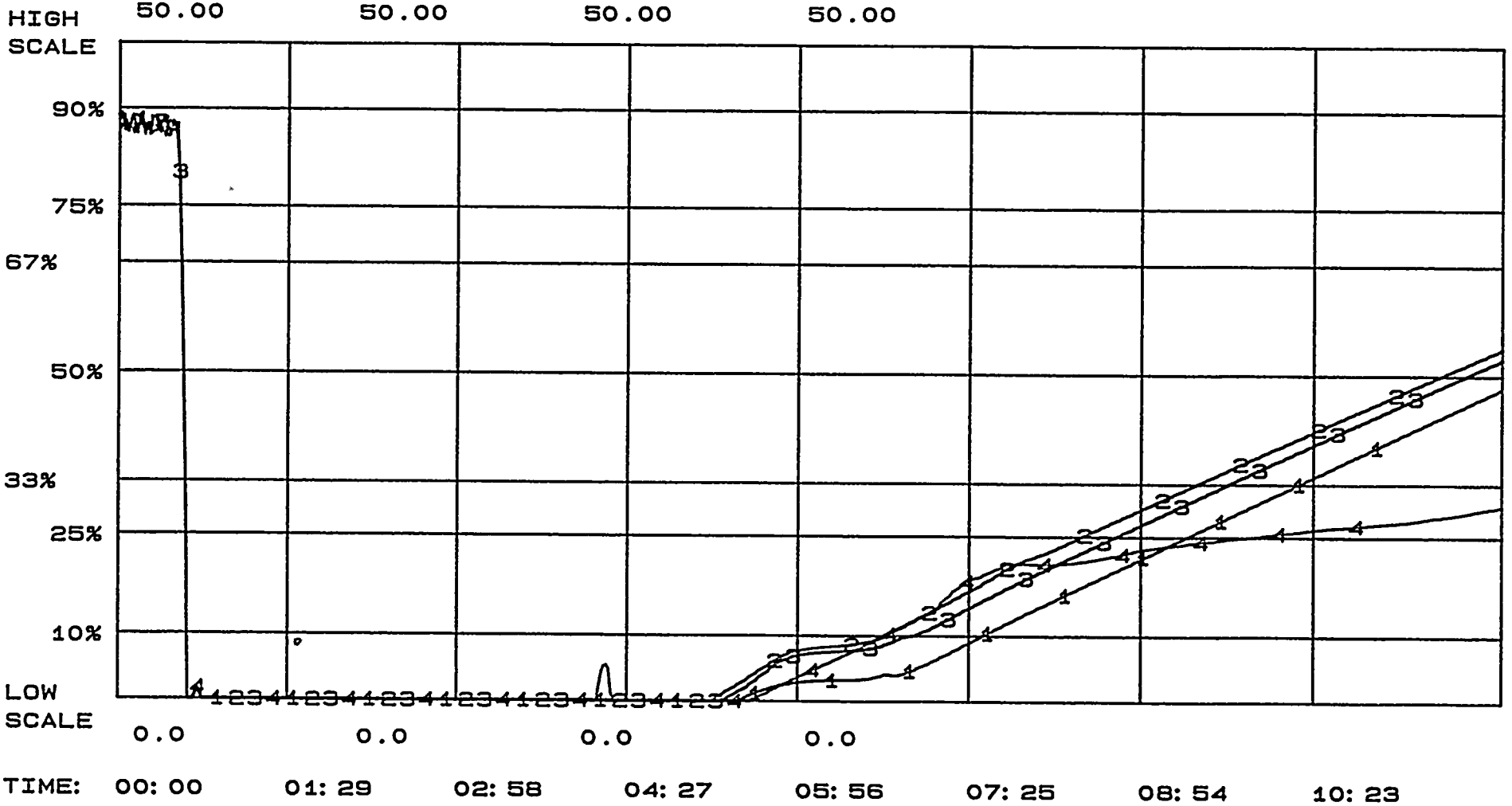
STOP 00: 12: 01



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC
5			
6			

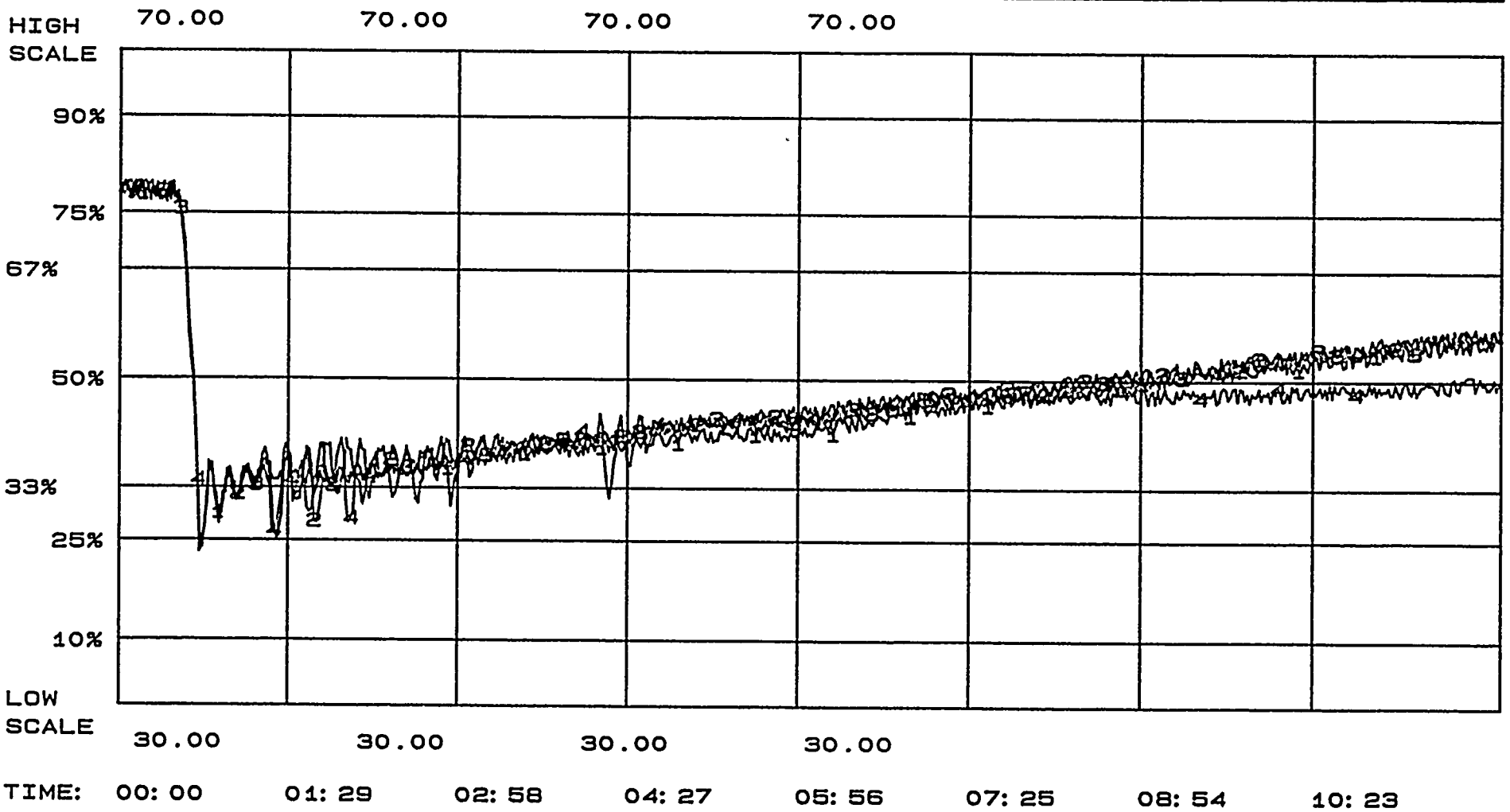
EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 12: 01



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS
1	L1200	STEAM GEN 1 WIDE RANGE LEVEL	PC
2	L1201	STEAM GEN 2 WIDE RANGE LEVEL	PC
3	L1202	STEAM GEN 3 WIDE RANGE LEVEL	PC
4	L1203	STEAM GEN 4 WIDE RANGE LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 12: 01



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a simultaneous trip of all Reactor Coolant Pumps per ANSI 3.5 - B2.2.

2) Ensure that the simulator will establish natural circulation conditions upon loss of forced Reactor Coolant System flow.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, with pressurizer level in manual.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Natural Circulation conditions established as indicated by constant or decreasing RCS Hot Leg Temperatures.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

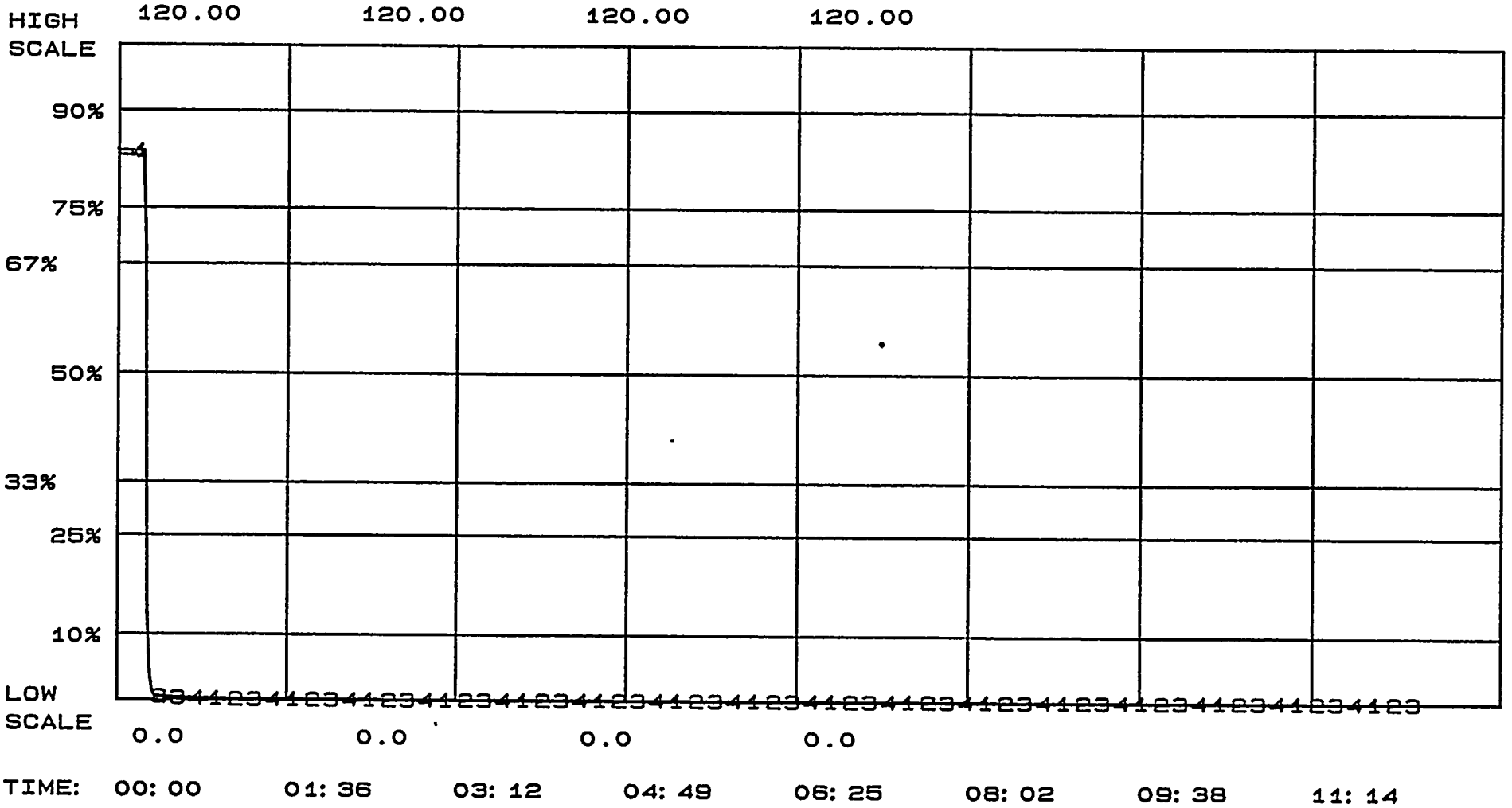
VI. Discrepancies

The team of subject matter experts noted that surge line temperature response was not correct for the condition. A discrepancy report has been written to investigate and correct the condition.

SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS
1	N1012	POWER RANGE CH 1 AVERAGE	PC
2	N1013	POWER RANGE CH 2 AVERAGE	PC
3	N1014	POWER RANGE CH 3 AVERAGE	PC
4	N1015	POWER RANGE CH 4 AVERAGE	PC
5			
6			

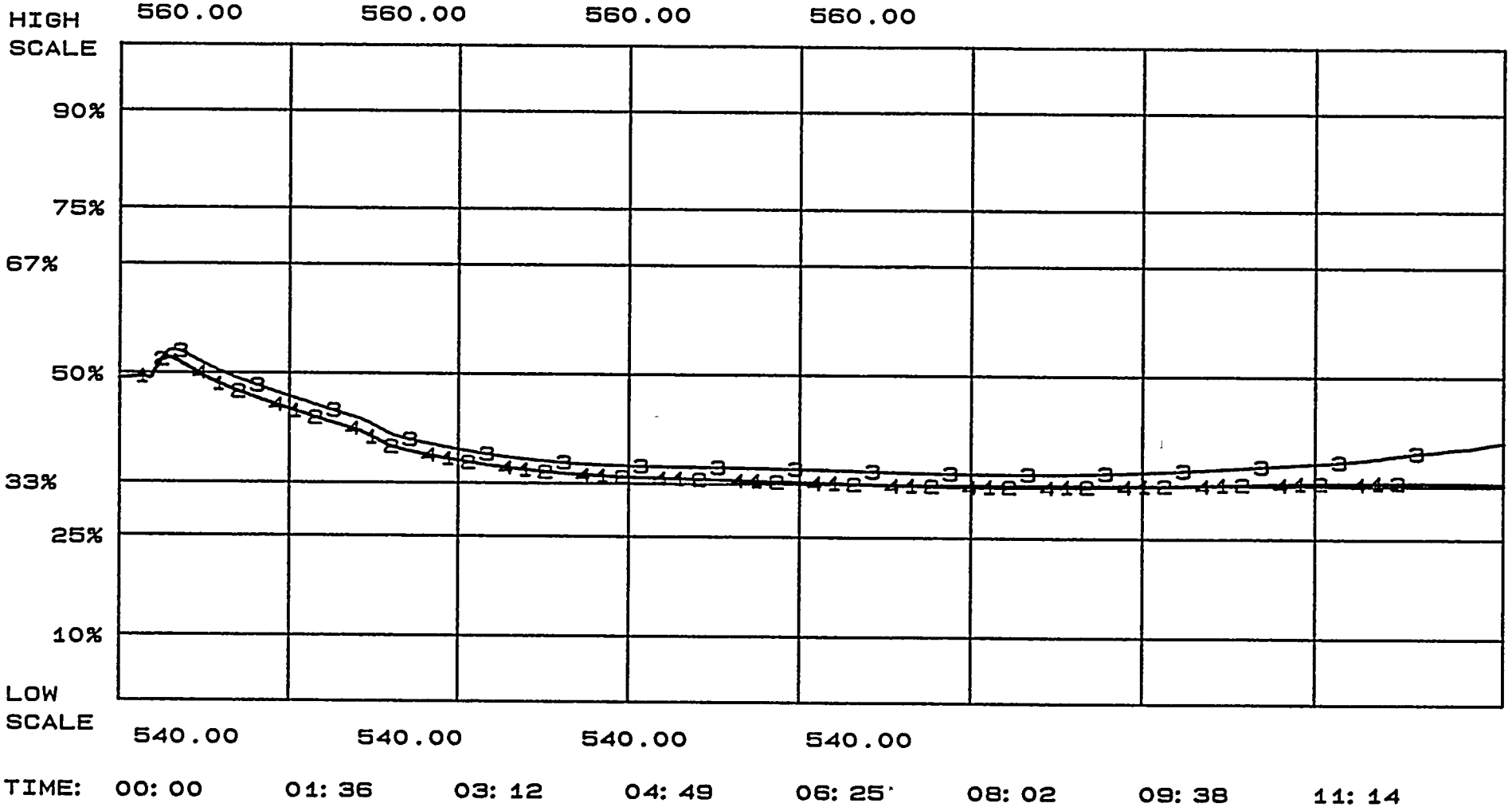
EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 13: 00



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

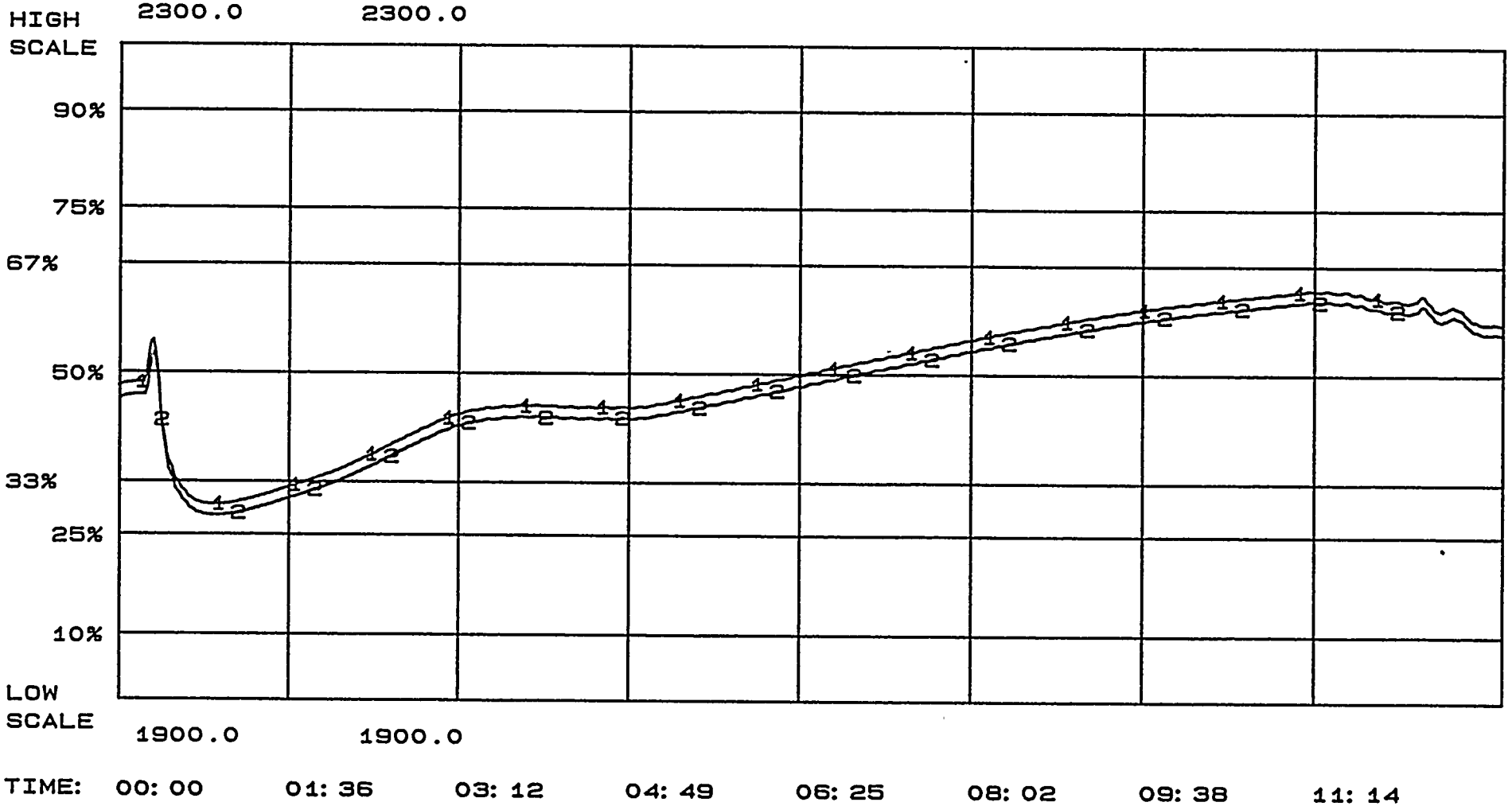
#	POINT ID	DESCRIPTION	UNITS
1	T1101	LOOP 1 AVG TEMP	DEG_F
2	T1102	LOOP 2 AVG TEMP	DEG_F
3	T1103	LOOP 3 AVG TEMP	DEG_F
4	T1104	LOOP 4 AVG TEMP	DEG_F
5			
6			

EDIT CONTROLS	
TIME	
START	00: 00: 00
STOP	00: 13: 00



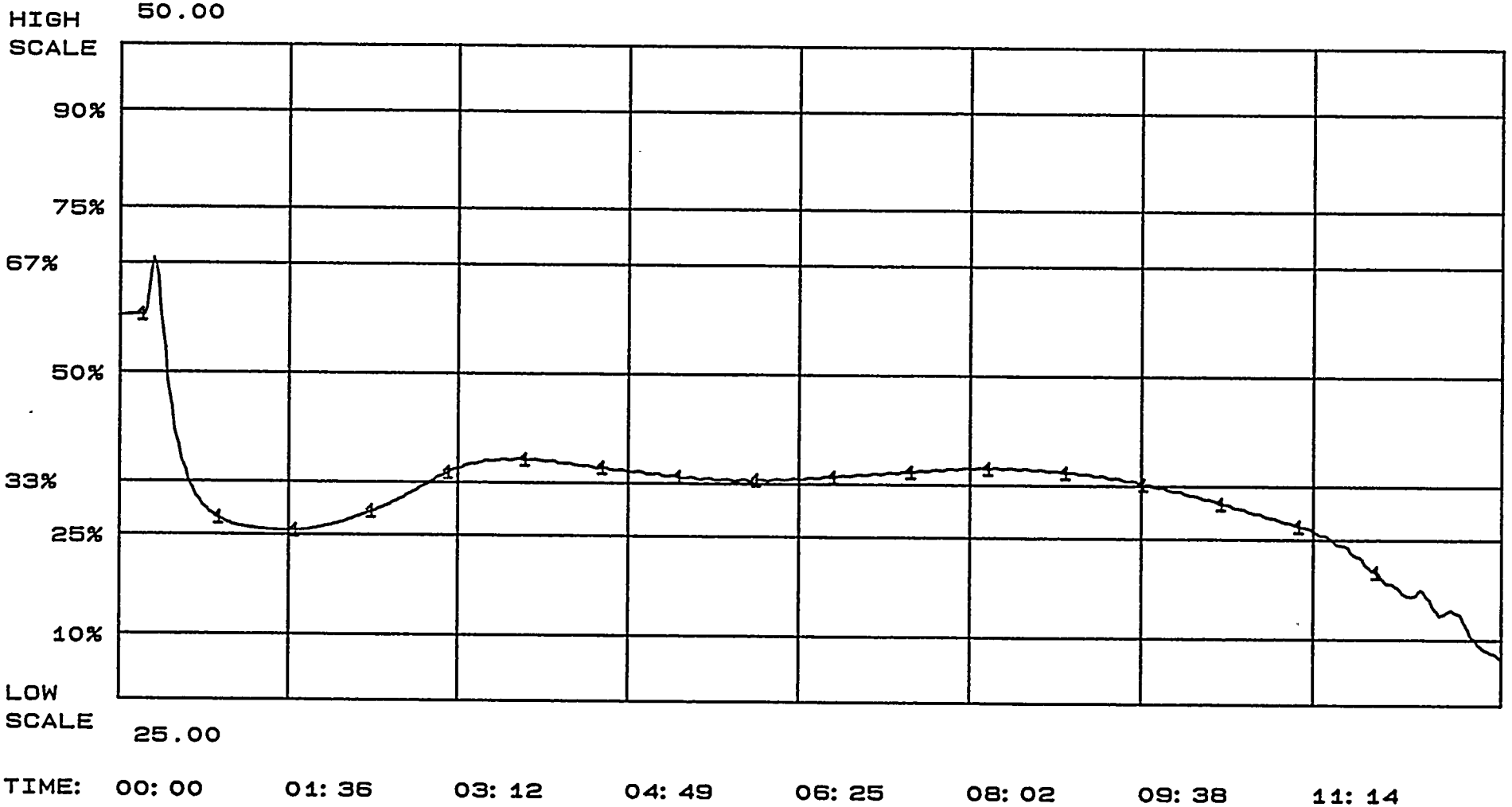
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 13: 00
4				
5				
6				



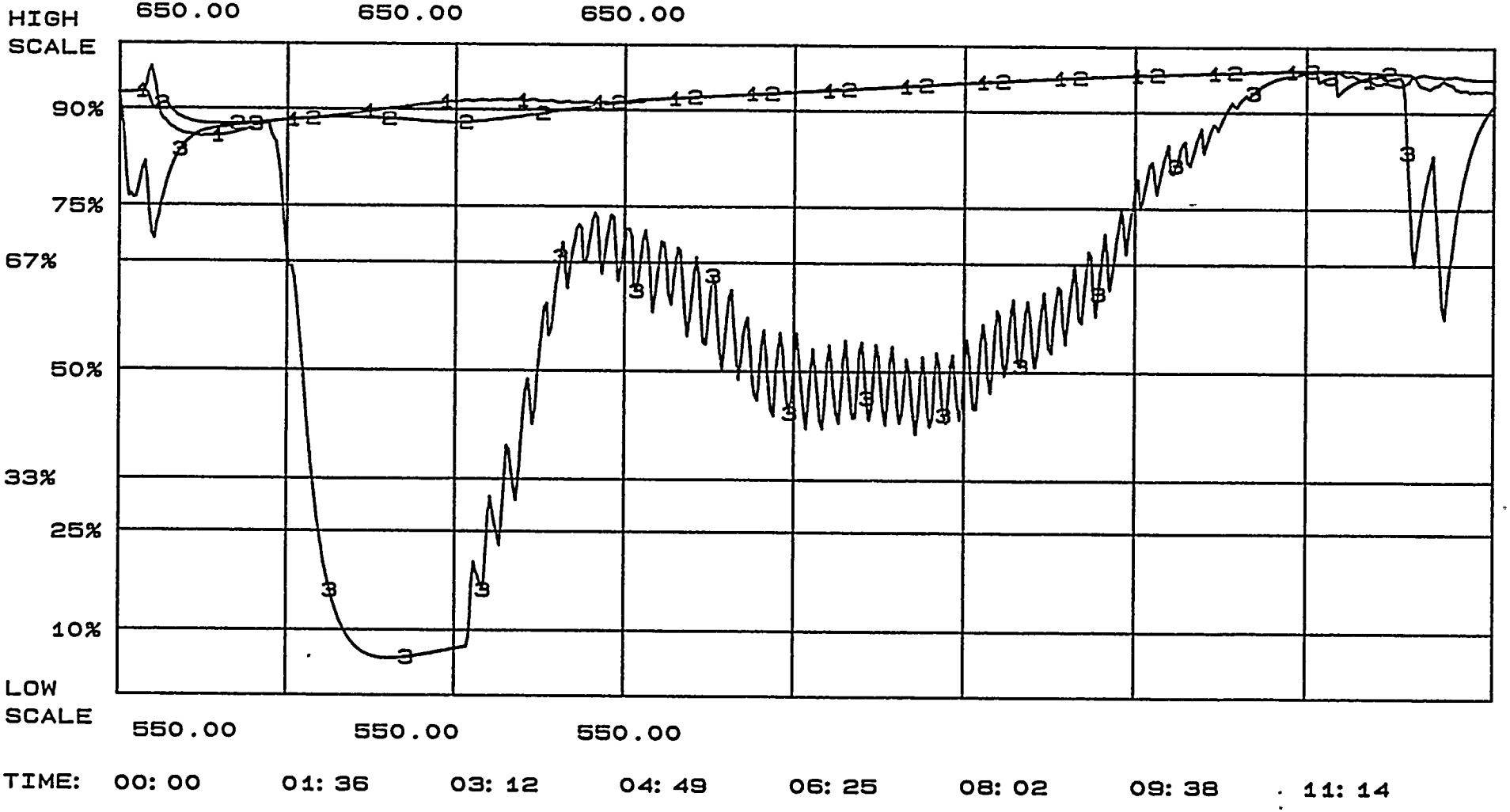
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER WATER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 13: 00
4				
5				
6				



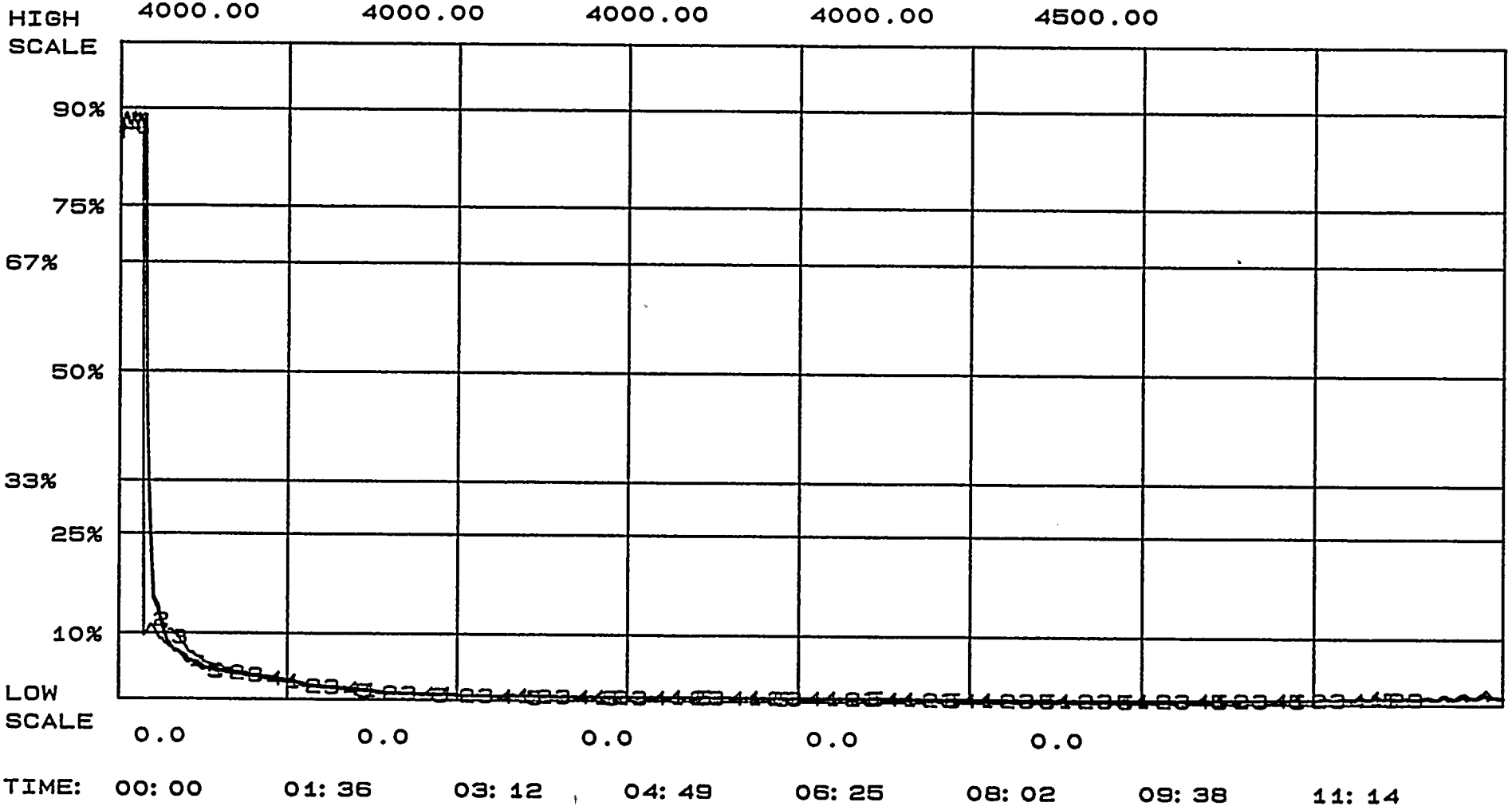
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PRESSURIZER VAPOR TEMP	DEG_F	TIME
2	T1004	PRESSURIZER LIQUID TEMP	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 13: 00
4				
5				
6				



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

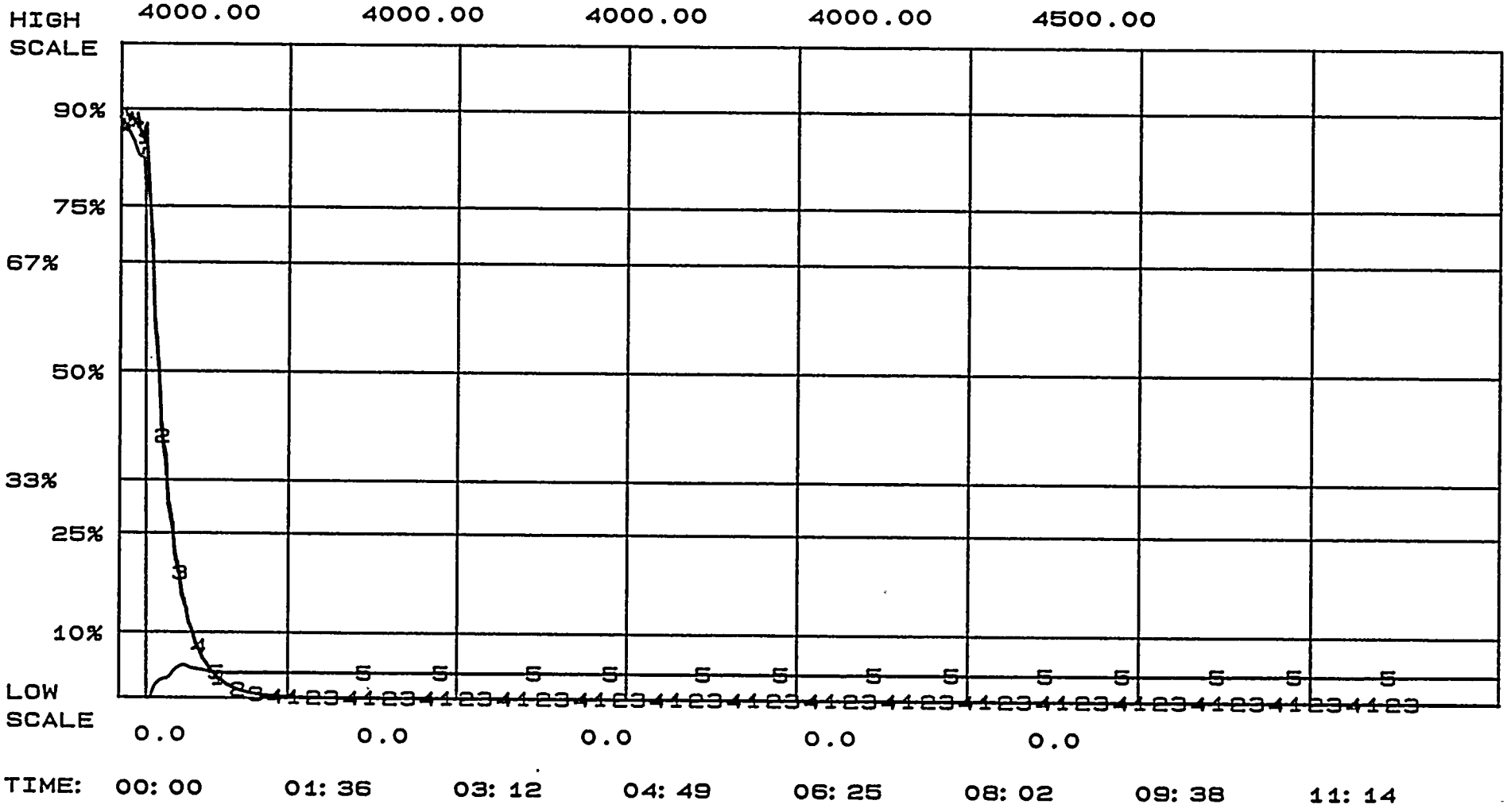
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 00: 13: 00
4	F1054	STEAM FLOP LOOP 4	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS
1	F1200	FEEDWATER FLOW LOOP 1	KBH
2	F1201	FEEDWATER FLOW LOOP 2	KBH
3	F1202	FEEDWATER FLOW LOOP 3	KBH
4	F1203	FEEDWATER FLOW LOOP 4	KBH
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S
6			

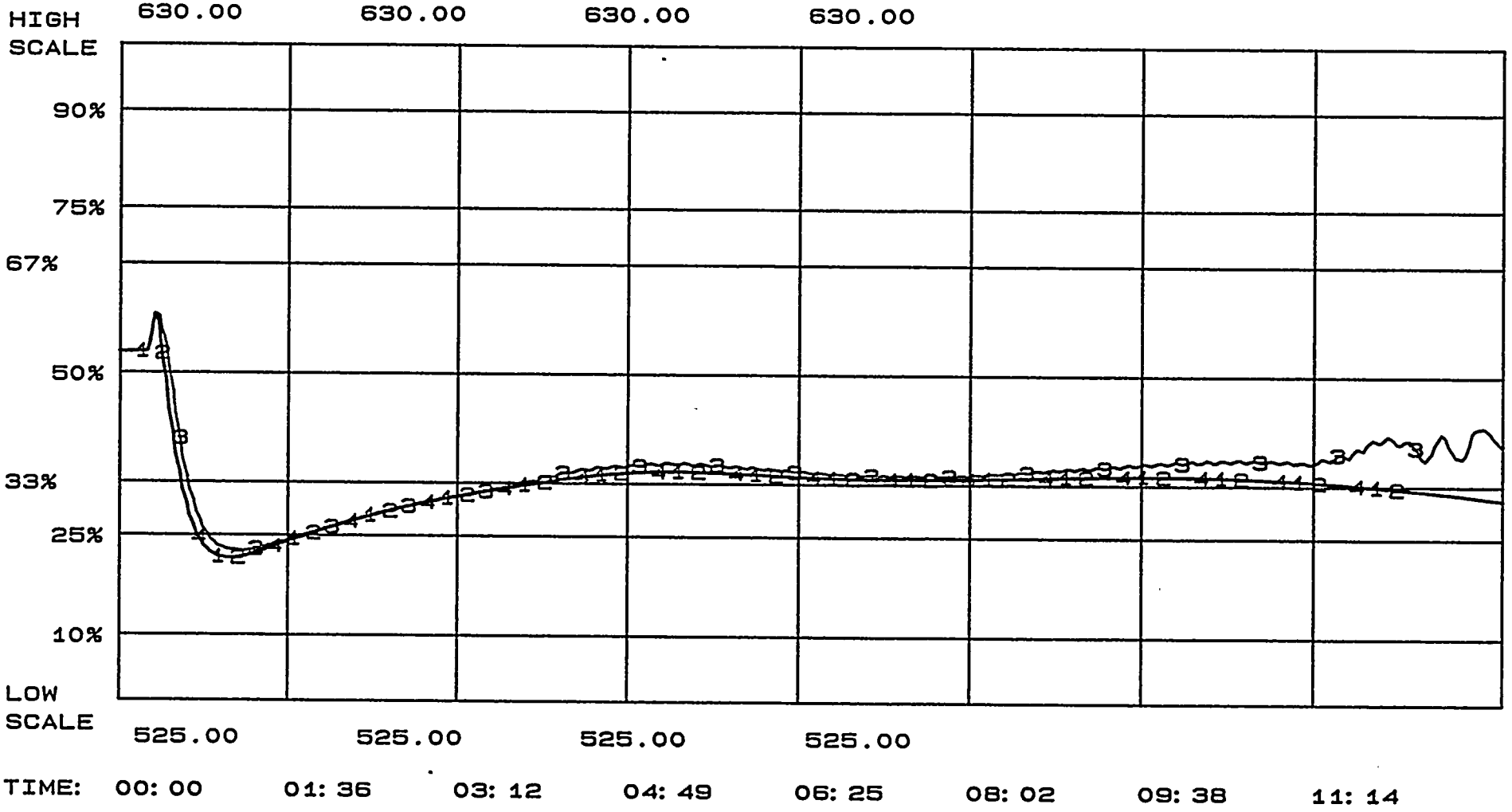
EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 13: 00



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS
1	T1111	LOOP 1 HOT LEG TEMPERATURE	DEG_F
2	T1112	LOOP 2 HOT LEG TEMPERATURE	DEG_F
3	T1113	LOOP 3 HOT LEG TEMPERATURE	DEG_F
4	T1114	LOOP 4 HOT LEG TEMPERATURE	DEG_F
5			
6			

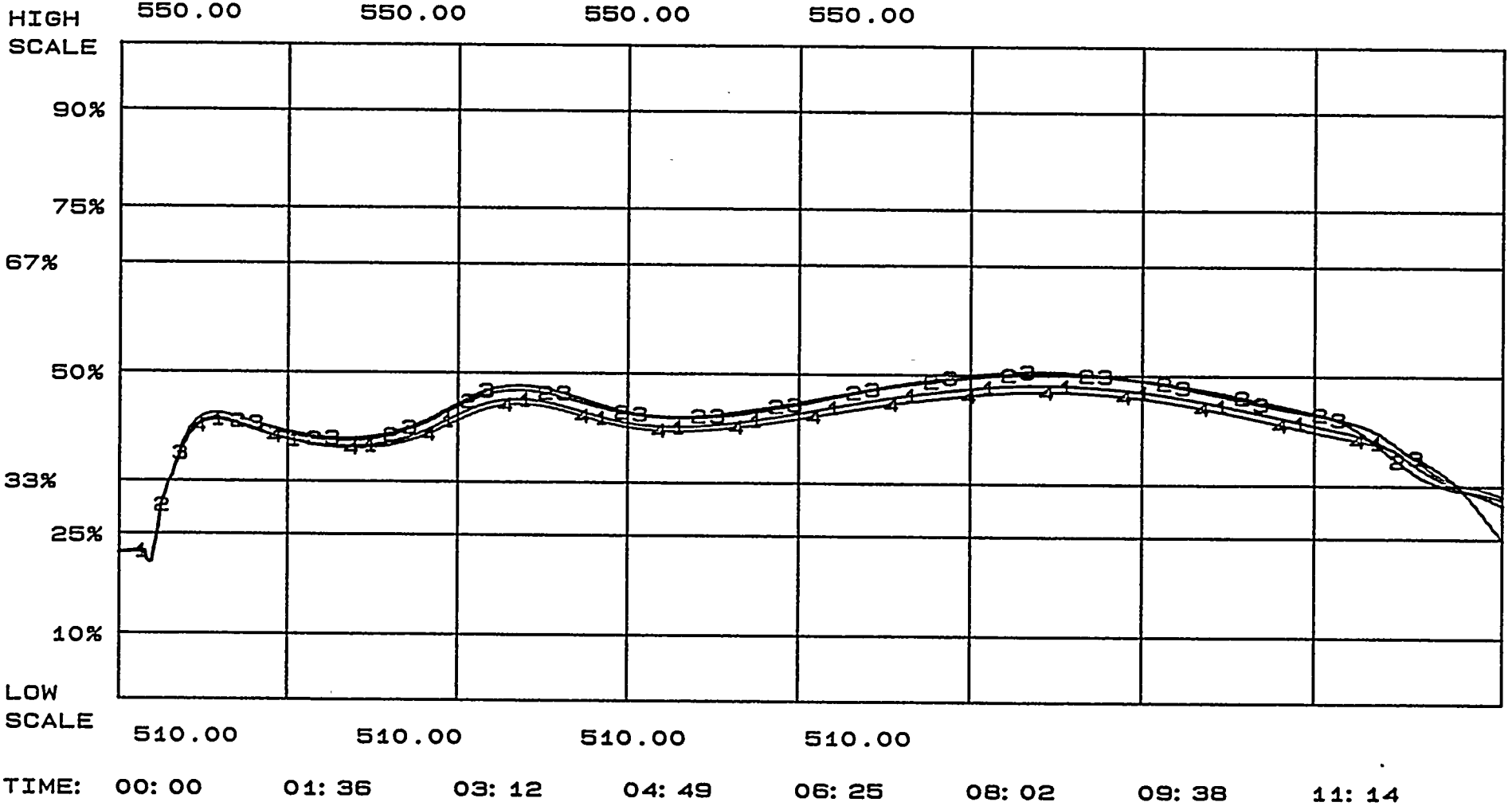
EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 13: 00



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

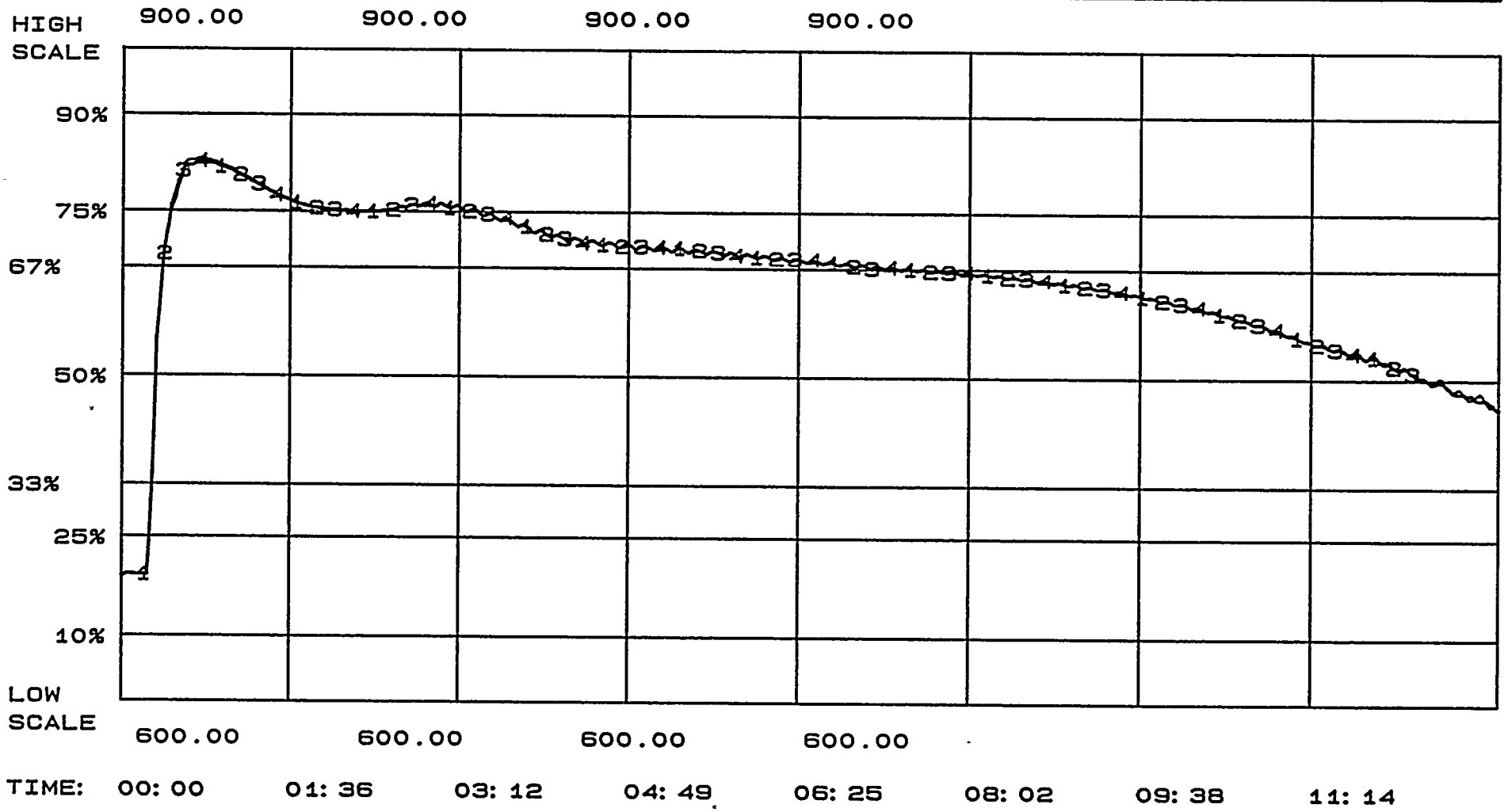
#	POINT ID	DESCRIPTION	UNITS
1	T1115	LOOP 1 COLD LEG TEMPERATURE	DEG_F
2	T1116	LOOP 2 COLD LEG TEMPERATURE	DEG_F
3	T1117	LOOP 3 COLD LEG TEMPERATURE	DEG_F
4	T1118	LOOP 4 COLD LEG TEMPERATURE	DEG_F
5			
6			

EDIT CONTROLS	
TIME	
START	00: 00: 00
STOP	00: 13: 00



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

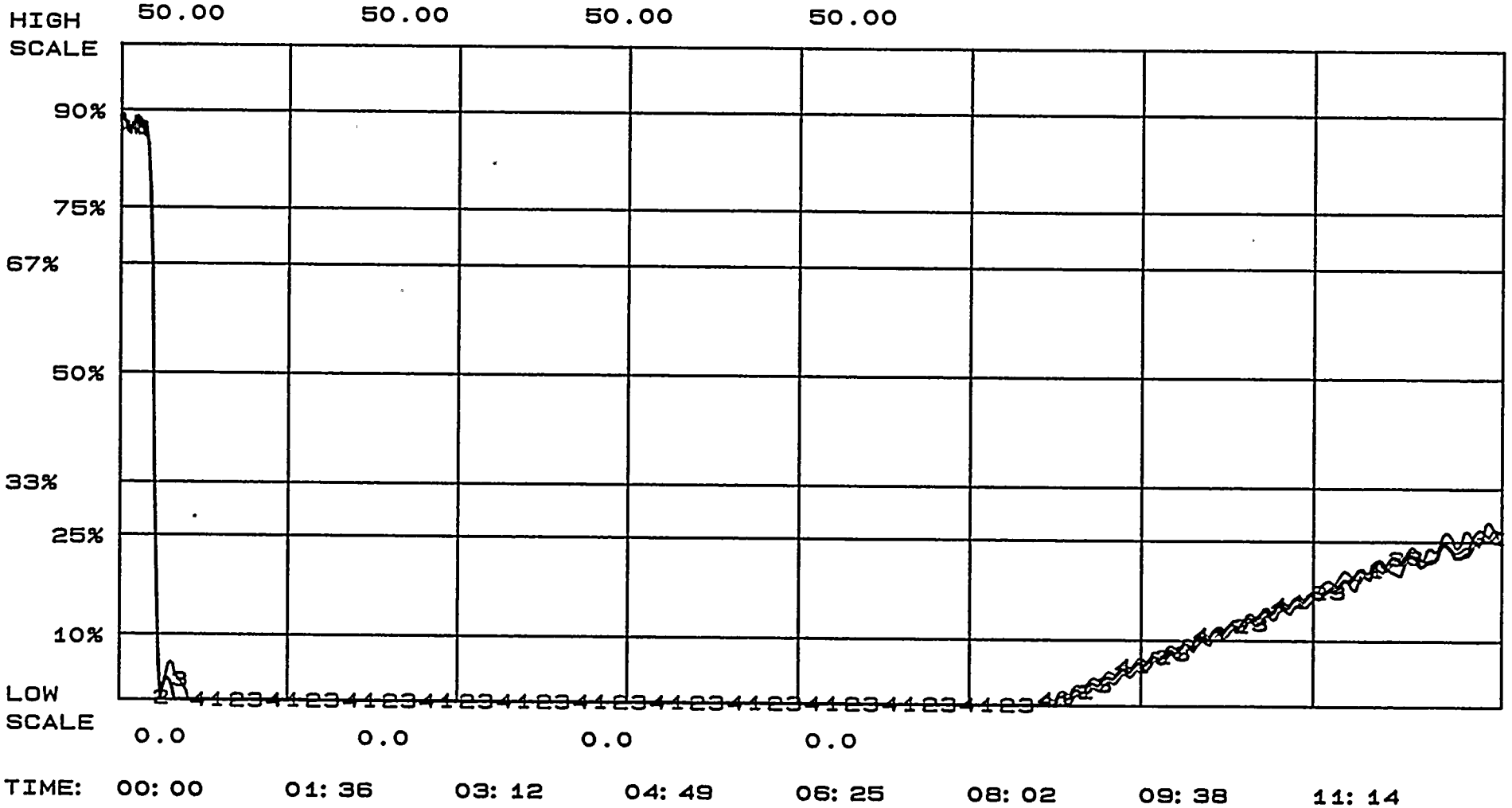
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GEN OUTLET PRESS LOOP 1	PSIG	TIME
2	P1025	STEAM GEN OUTLET PRESS LOOP 2	PSIG	START 00: 00: 00
3	P1028	STEAM GEN OUTLET PRESS LOOP 3	PSIG	STOP 00: 13: 00
4	P1031	STEAM GEN OUTLET PRESS LOOP 4	PSIG	
5				
6				



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

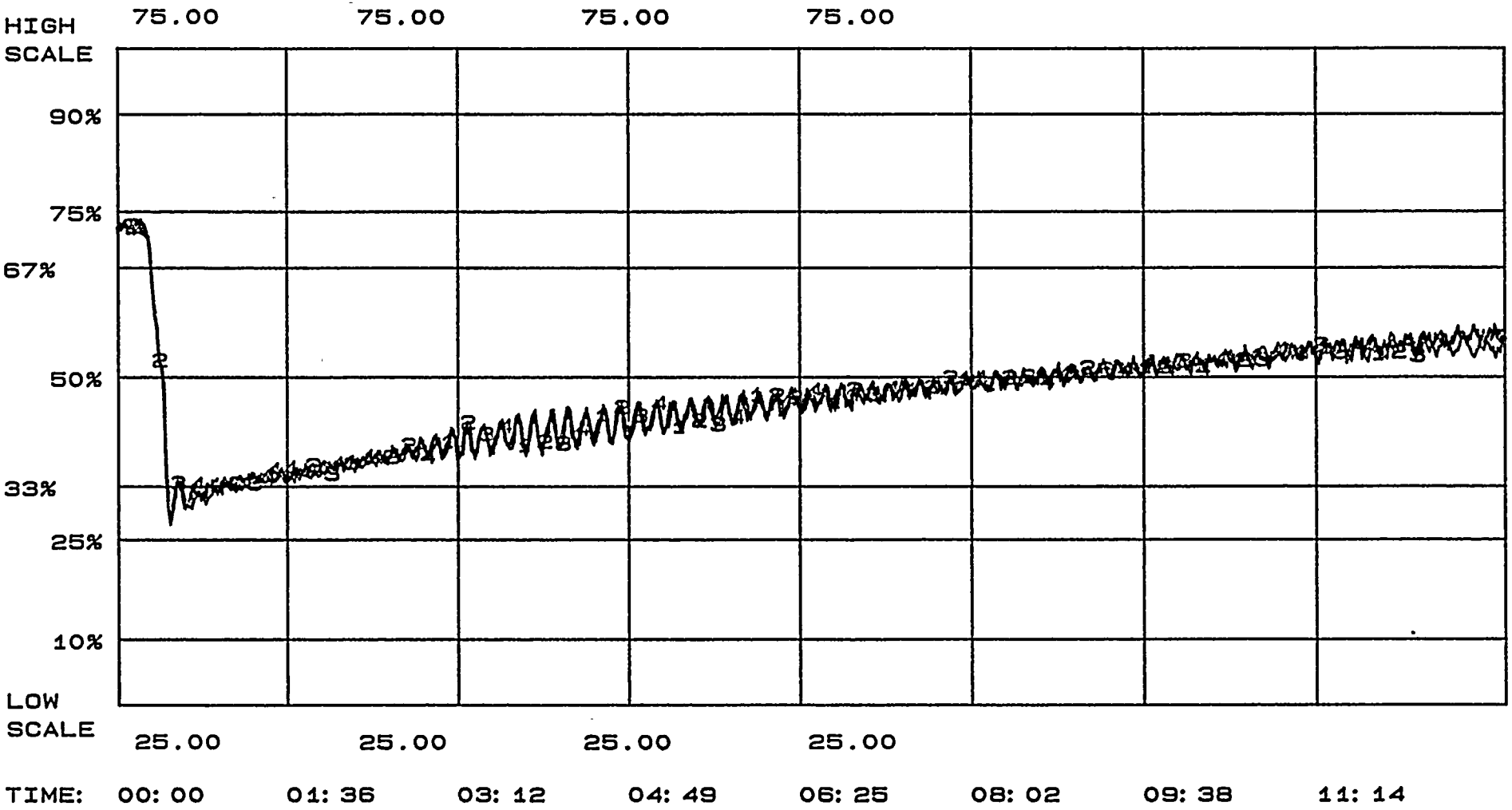
#	POINT ID	DESCRIPTION	UNITS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 13: 00



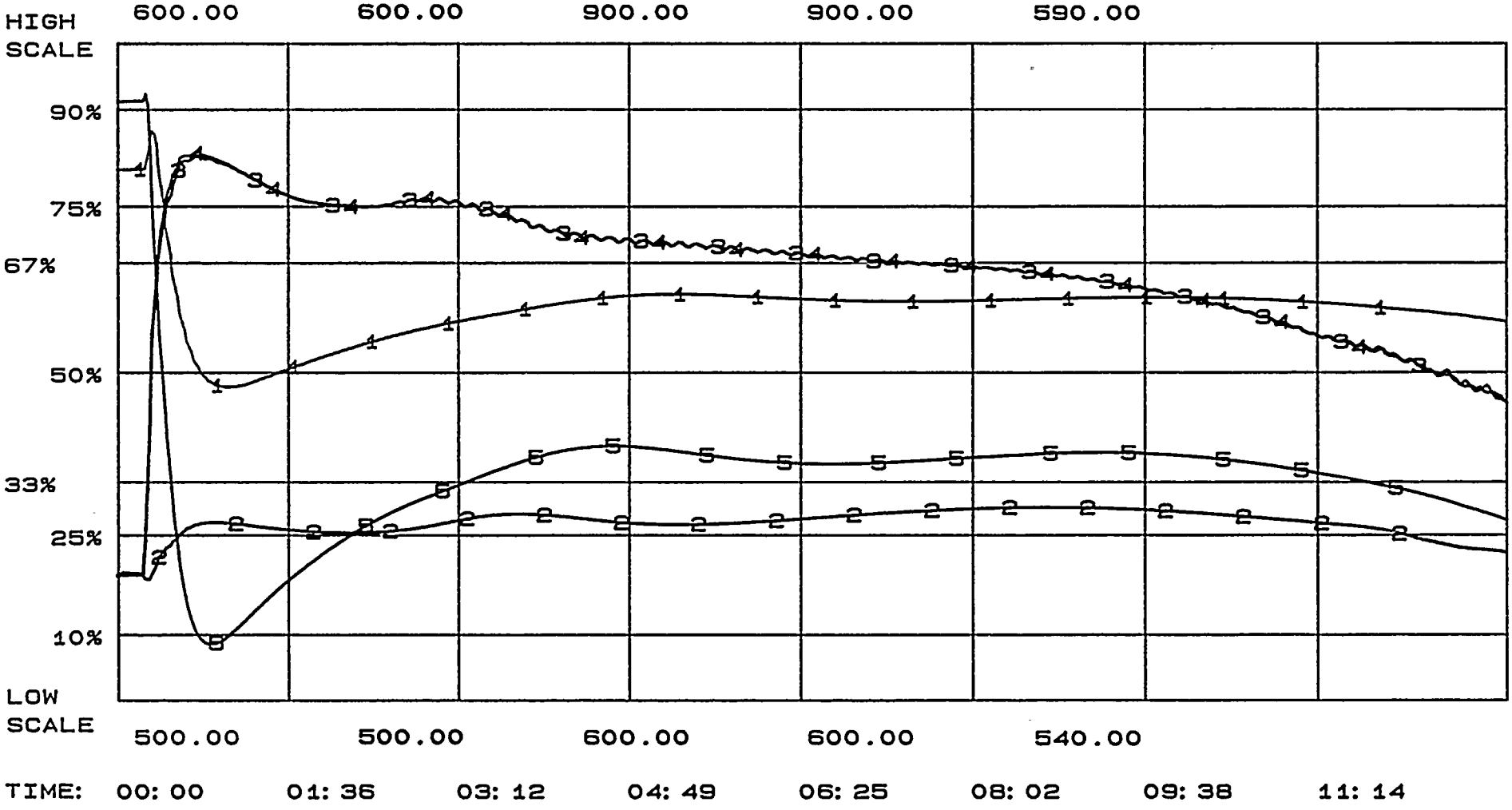
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN 1 WIDE RANGE LEVEL	PC	TIME
2	L1201	STEAM GEN 2 WIDE RANGE LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GEN 3 WIDE RANGE LEVEL	PC	STOP 00: 13: 00
4	L1203	STEAM GEN 4 WIDE RANGE LEVEL	PC	
5				
6				



SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1115	LOOP 1 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	P1022	STEAM GEN #1 PRESSURE	PSIG	STOP 00: 13: 00
4	P1028	STEAM GEN #3 PRESSURE	PSIG	
5	CRTTCEXIT	AVG CORE EXIT TEMPERATURE	DEG_F	
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

TRIP OF REACTOR COOLANT PUMP #11

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a trip of Reactor Coolant Pump #11 per ANSI 3.5 - B2.2.

2) Ensure that the simulator will initiate Reactor Coolant Pump #11 flow coastdown and flow reversal.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, and pressurizer level control in manual.

III. Data Collected

1) Neutron flux
2) RCS hot leg temperature
3) RCS cold leg temperature
4) Steam Generator pressure
5) Steam Generator level
6) Steam flow
7) Feedwater flow
8) RCS loop flow
9) RCS T average

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) RCS Loop 1 flow decreases to minimum then is re-established by flow reversal from the other RCS loops as indicated by Loop 1 T hot less than unaffected loops' T cold.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

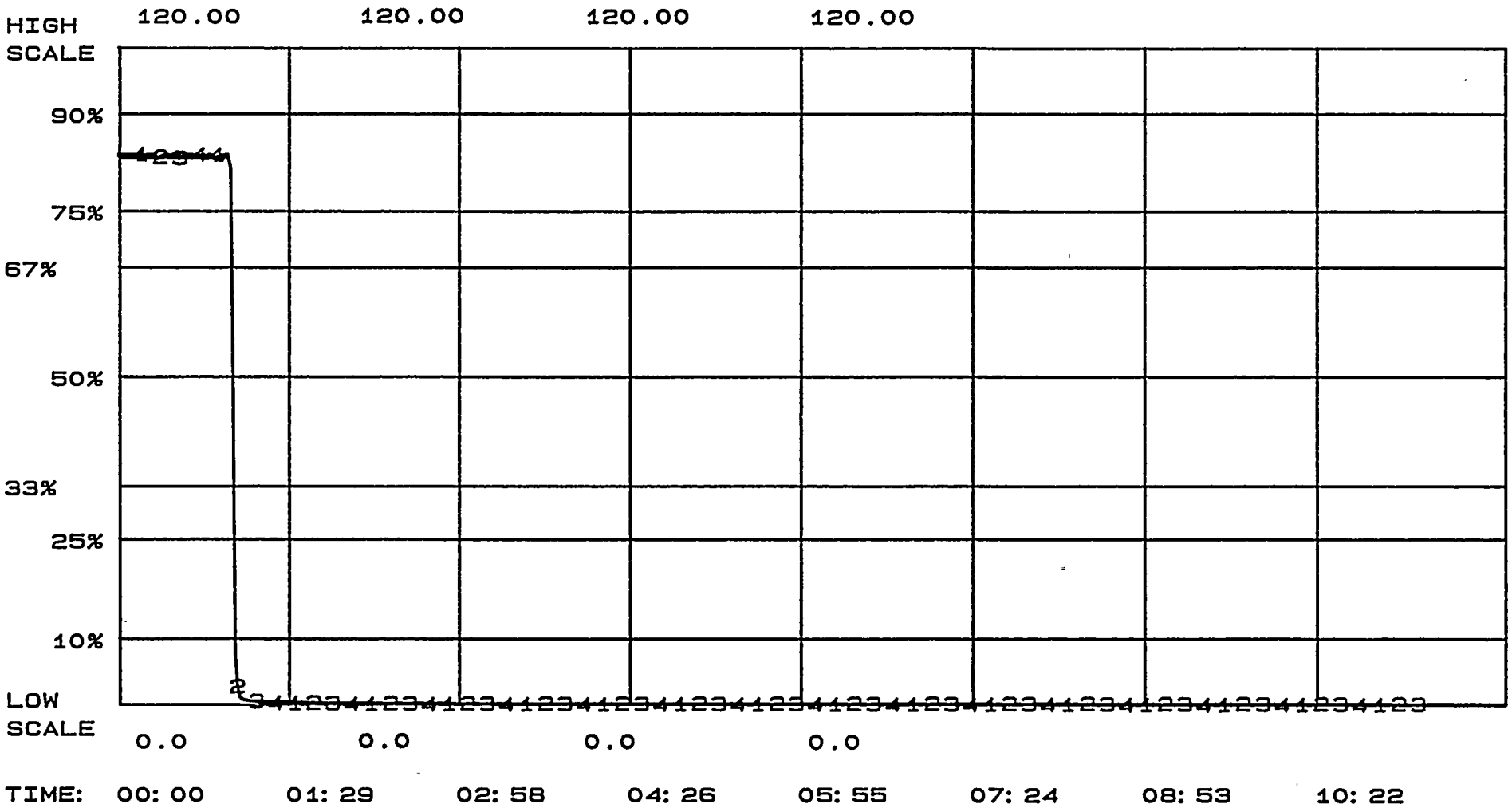
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted that steam generator number four (4) steamed significantly more than the other steam generators. A discrepancy report has been initiated to investigate and correct this condition.

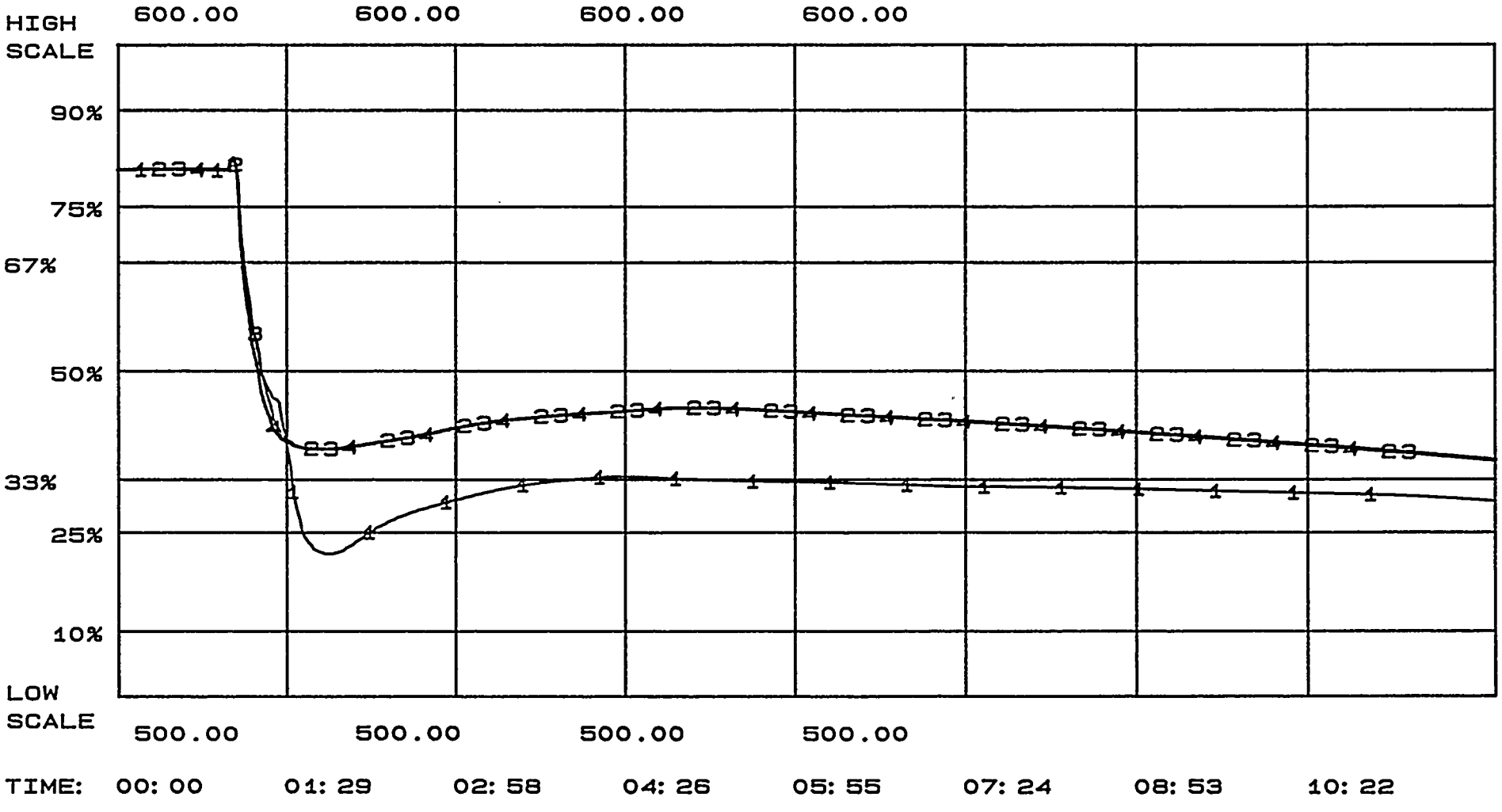
TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE CH1 AVERAGE	PC	TIME
2	N1013	POWER RANGE CH2 AVERAGE	PC	START 00: 00: 00
3	N1014	POWER RANGE CH3 AVERAGE	PC	STOP 00: 12: 00
4	N1015	POWER RANGE CH4 AVERAGE	PC	
5				
6				



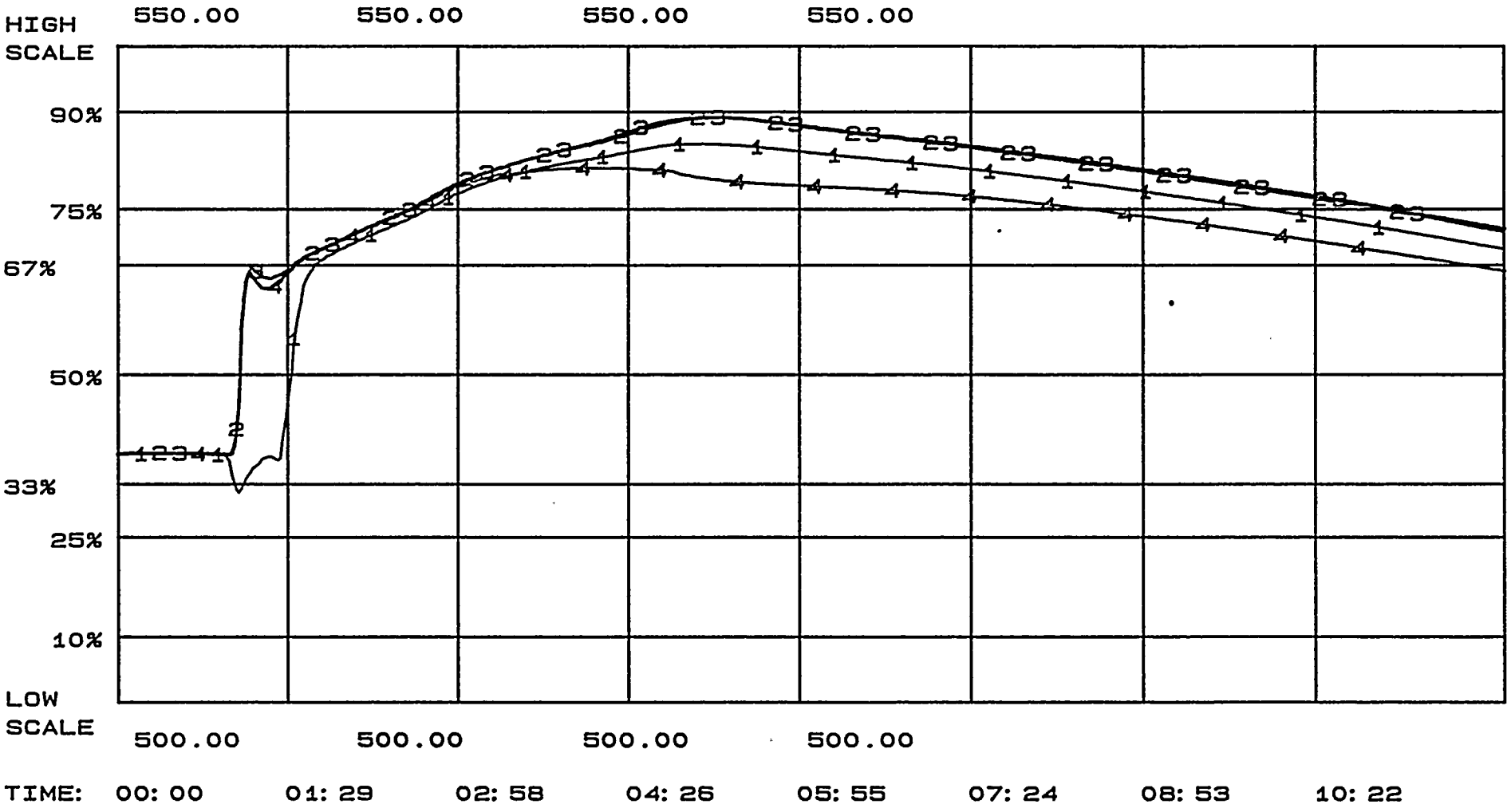
TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F	STOP 00: 12: 00
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F	
5				
6				



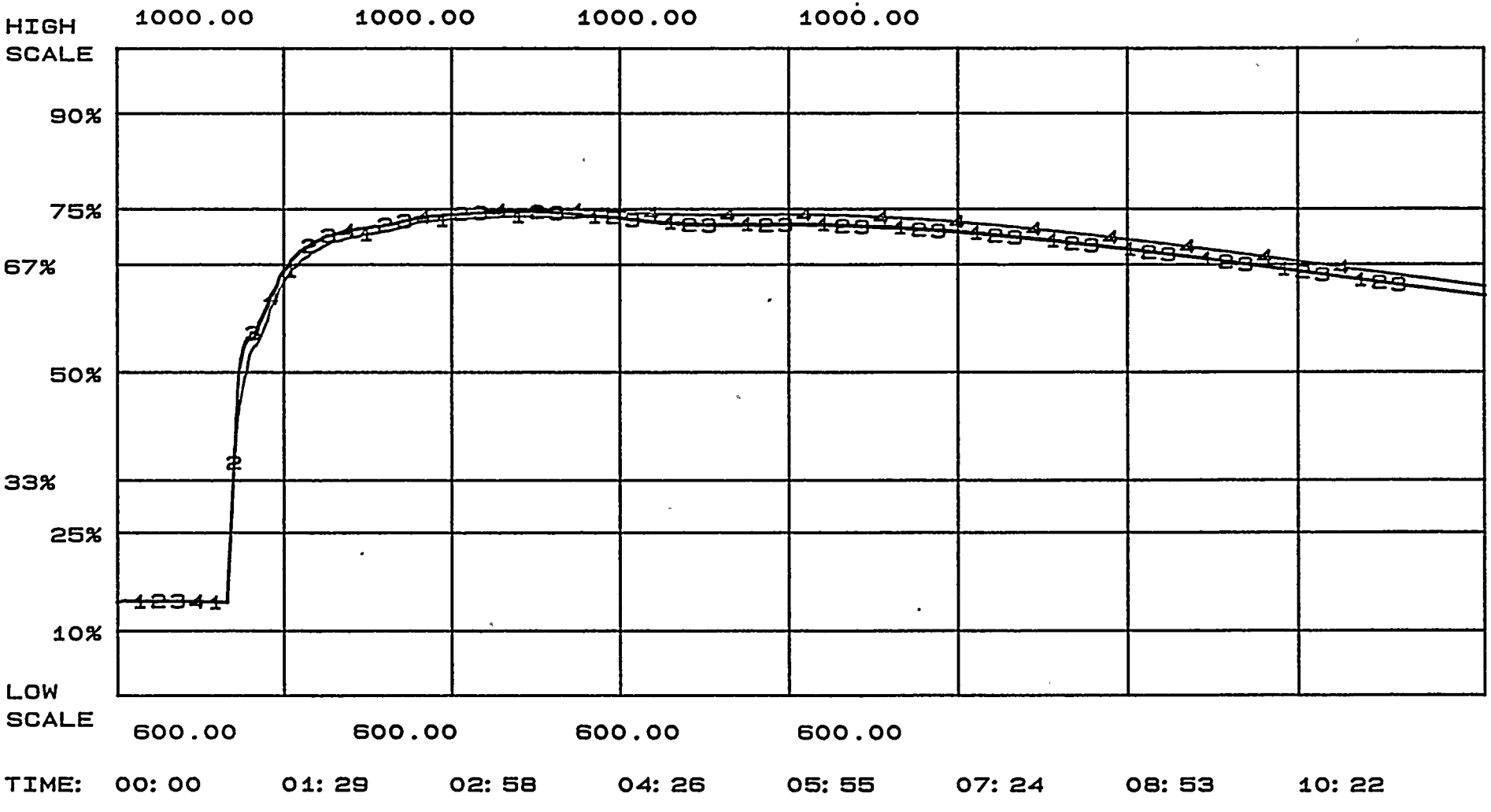
TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 COLD LEG TEMP	DEG_F	TIME
2	T1116	LOOP 2 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 COLD LEG TEMP	DEG_F	STOP 00: 12: 00
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



TRIP OF REACTOR COOLANT PUMP #11

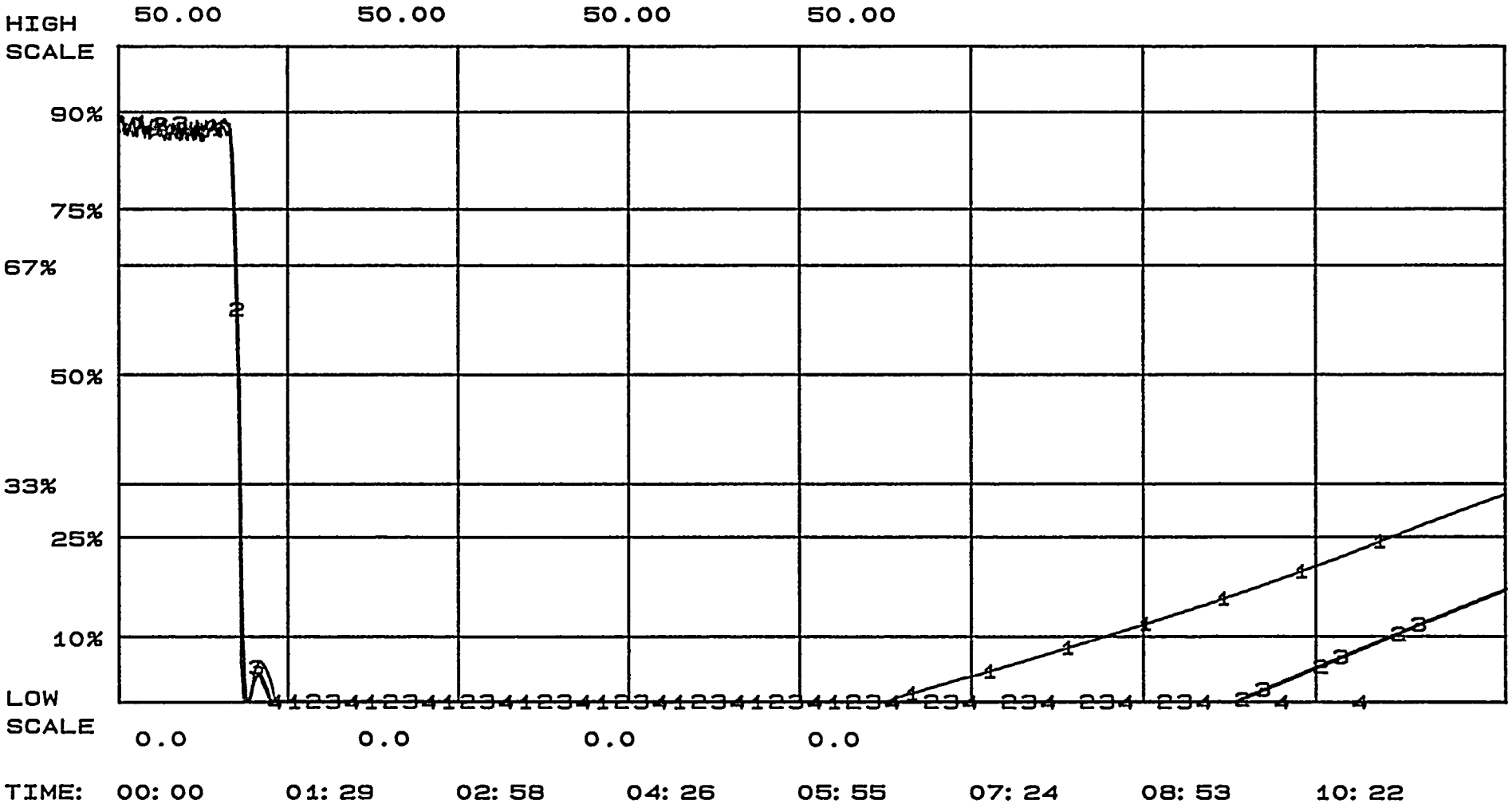
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR 1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR 2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR 3 PRESSURE	PSIG	STOP 00: 12: 00
4	P1031	STEAM GENERATOR 4 PRESSURE	PSIG	
5				
6				



TRIP OF REACTOR COOLANT PUMP #11

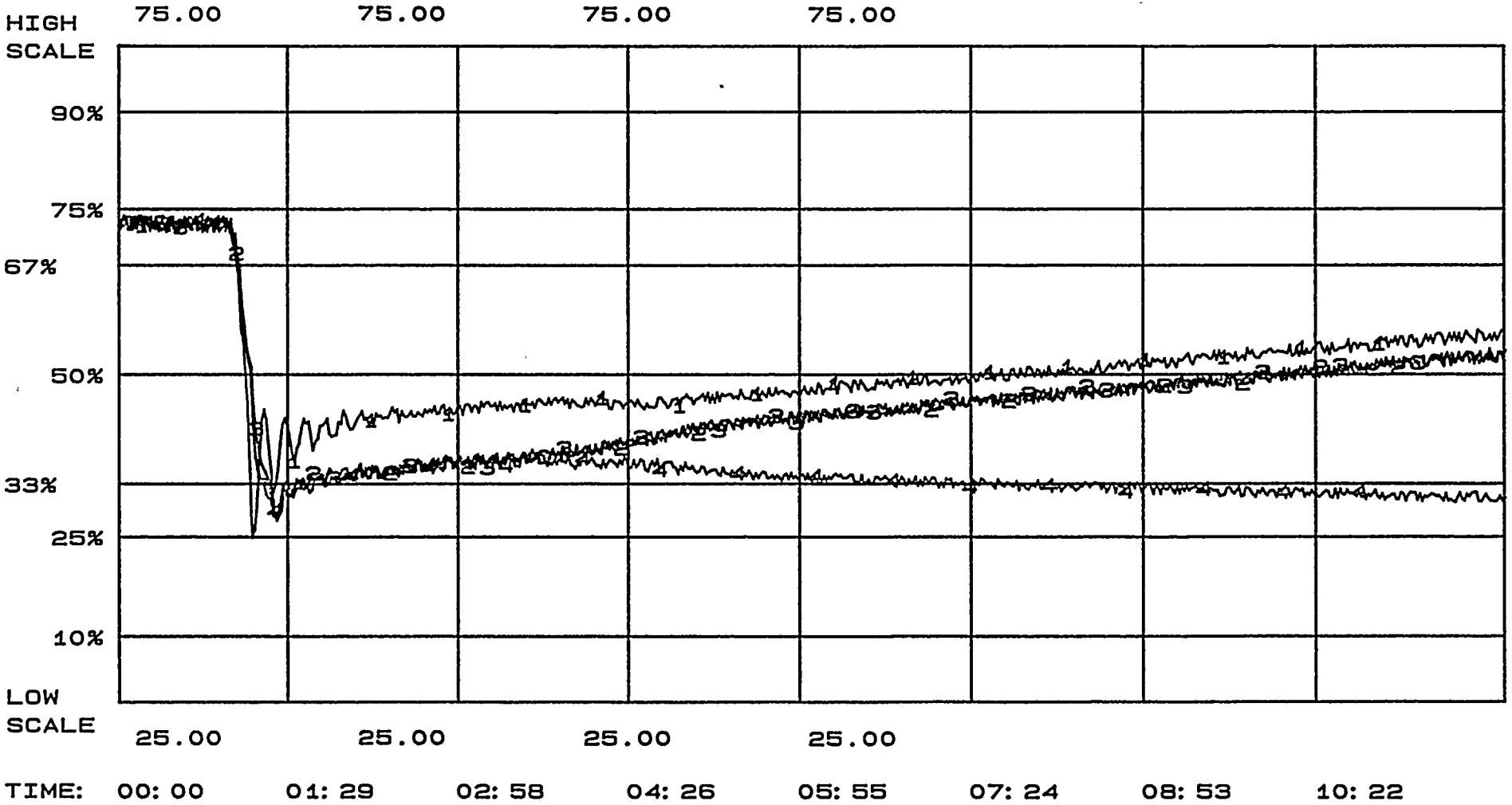
#	POINT ID	DESCRIPTION	UNITS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 12: 00



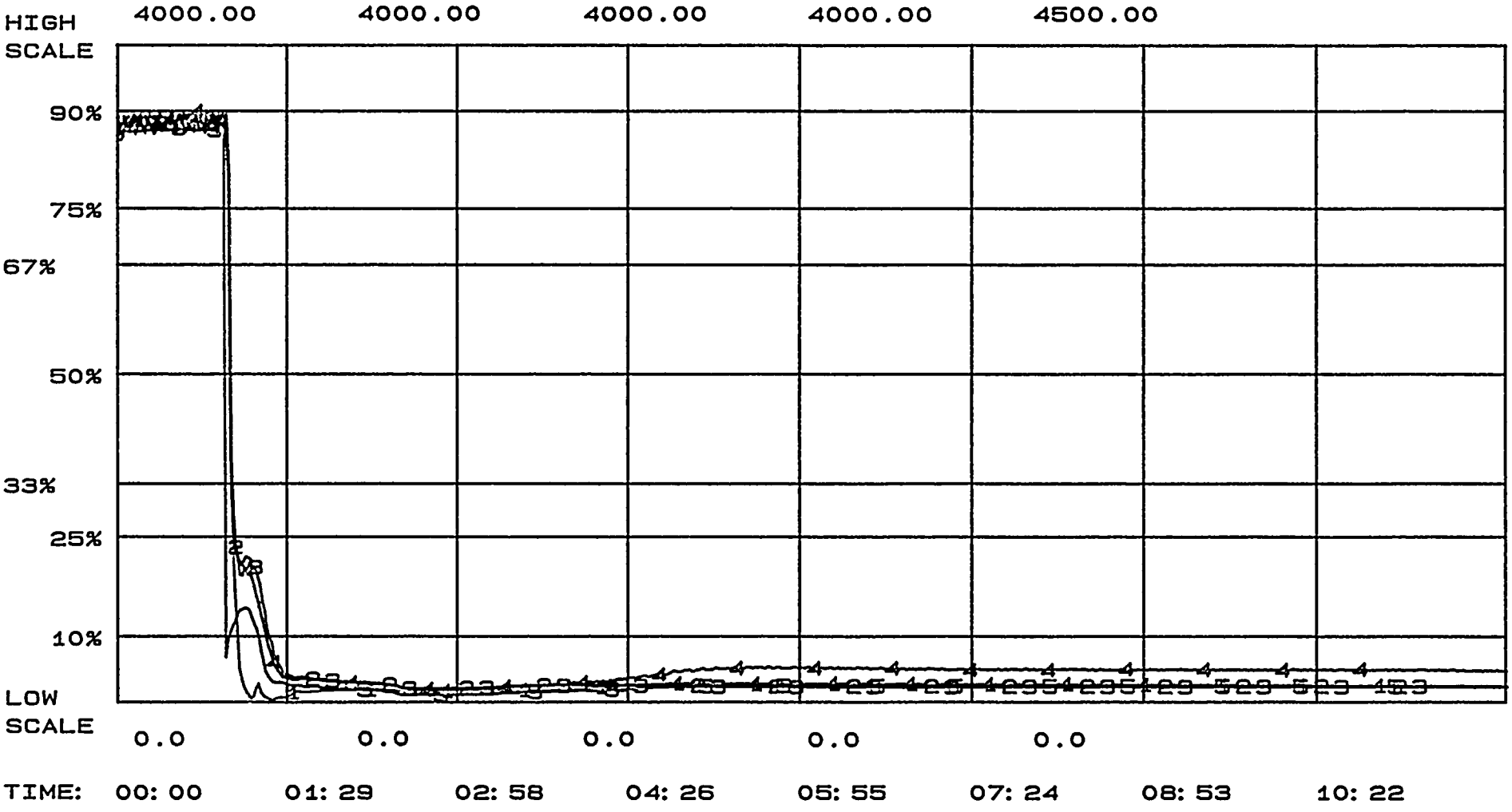
TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN 1 WIDE RANGE LEVEL	PC	TIME
2	L1201	STEAM GEN 2 WIDE RANGE LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GEN 3 WIDE RANGE LEVEL	PC	STOP 00: 12: 00
4	L1203	STEAM GEN 4 WIDE RANGE LEVEL	PC	
5				
6				



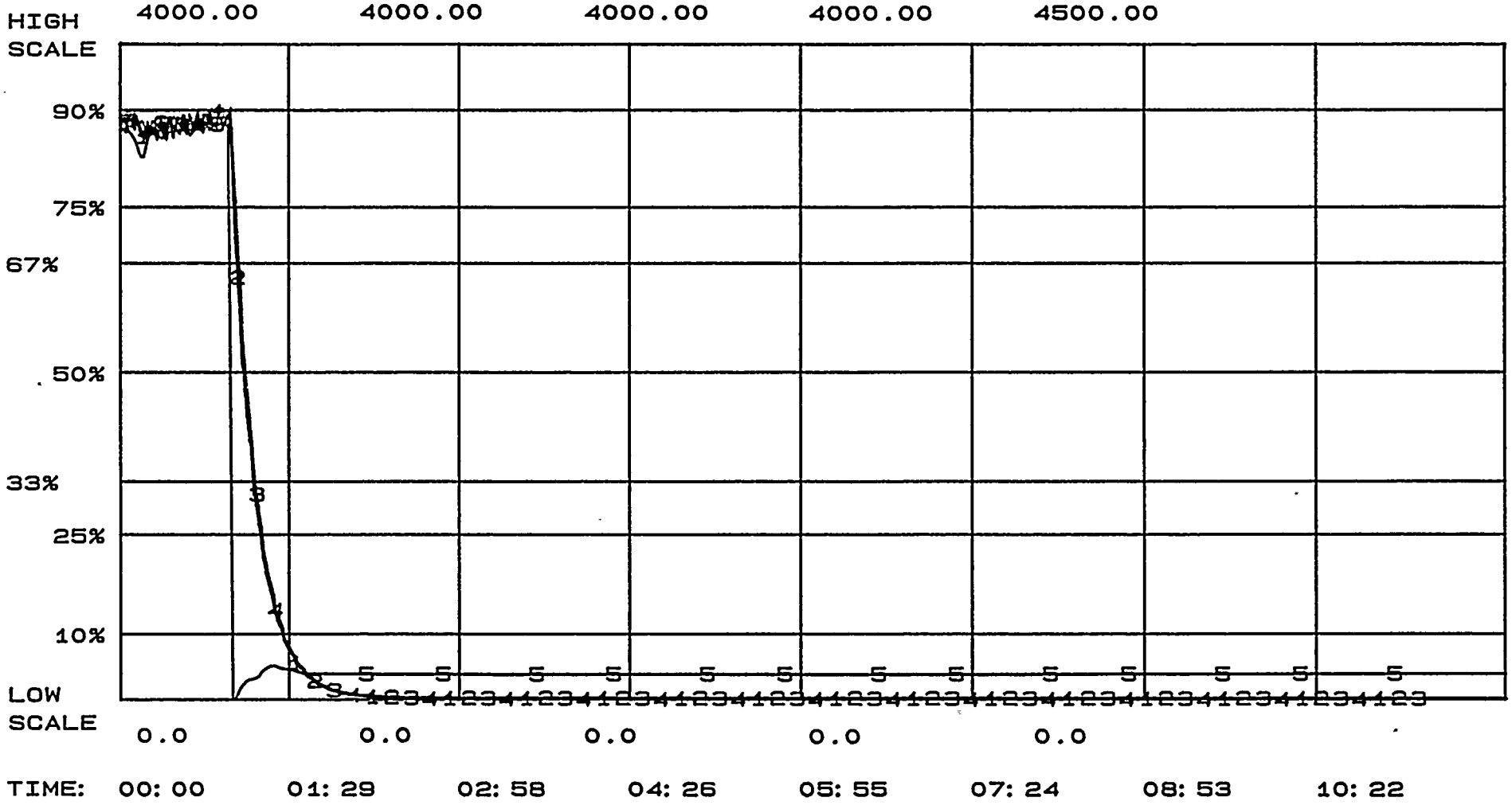
TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 00: 12: 00
4	F1054	STEAM FLOW LOOP 4	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



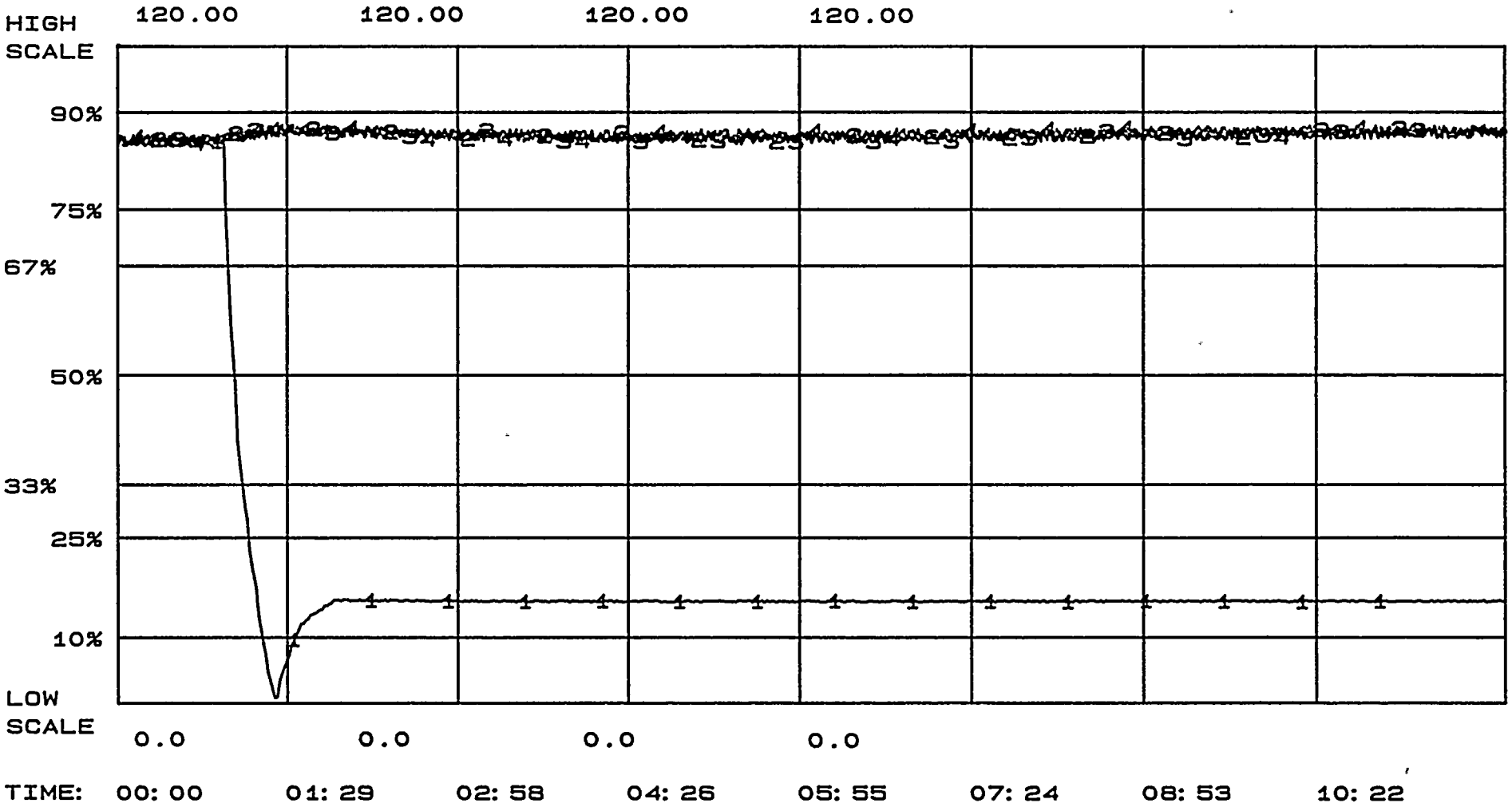
TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 00: 00
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 00: 12: 00
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S	
6				



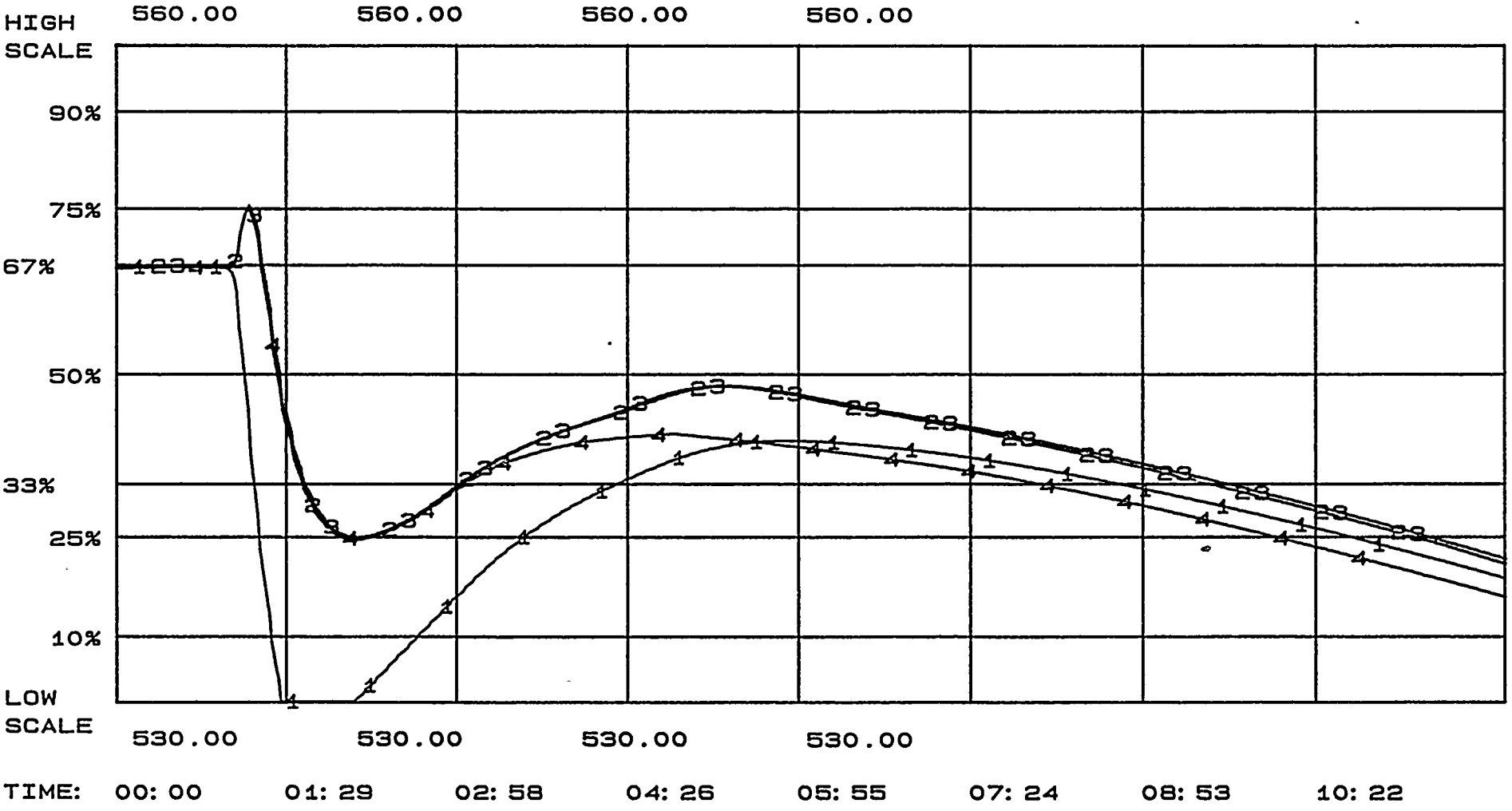
TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1089	LOOP 1 REACTOR COOLANT FLOW	PC	TIME
2	F1092	LOOP 2 REACTOR COOLANT FLOW	PC	START 00: 00: 00
3	F1095	LOOP 3 REACTOR COOLANT FLOW	PC	STOP 00: 12: 00
4	F1098	LOOP 4 REACTOR COOLANT FLOW	PC	
5				
6				



TRIP OF REACTOR COOLANT PUMP #11

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 TAVG	DEG_F	TIME
2	T1102	LOOP 2 TAVG	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 TAVG	DEG_F	STOP 00: 12: 00
4	T1104	LOOP 4 TAVG	DEG_F	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

TRIP OF MAIN TURBINE FROM 9% POWER WITHOUT REACTOR TRIP

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a trip of the Main Turbine from the maximum power level (9%) which does not result in an immediate reactor trip per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to permit a Main Turbine trip without tripping the reactor as a direct result of the turbine trip.

II. Initial Conditions

1) The simulator is operating at beginning of life core conditions, reactor power at approximately 9 percent, steam generator feedwater in automatic, steam dumps in steam pressure mode, main generator in parallel at approximately 85 MWE, and Tavg matched to Tref.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The plant stabilizes with a Tavg higher than initial and a differential temperature (Tavg - Tstm) which corresponds to the final power.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

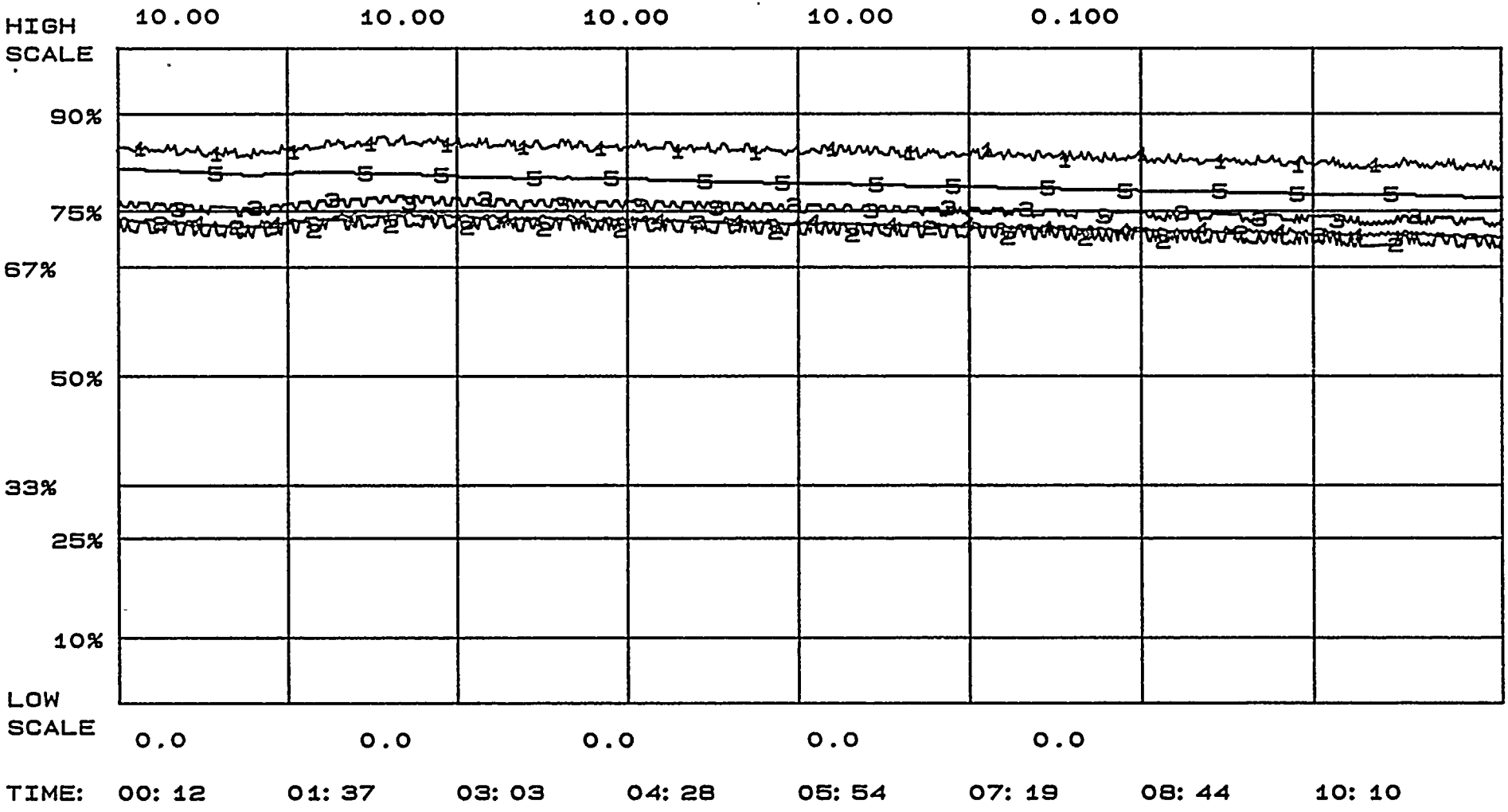
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

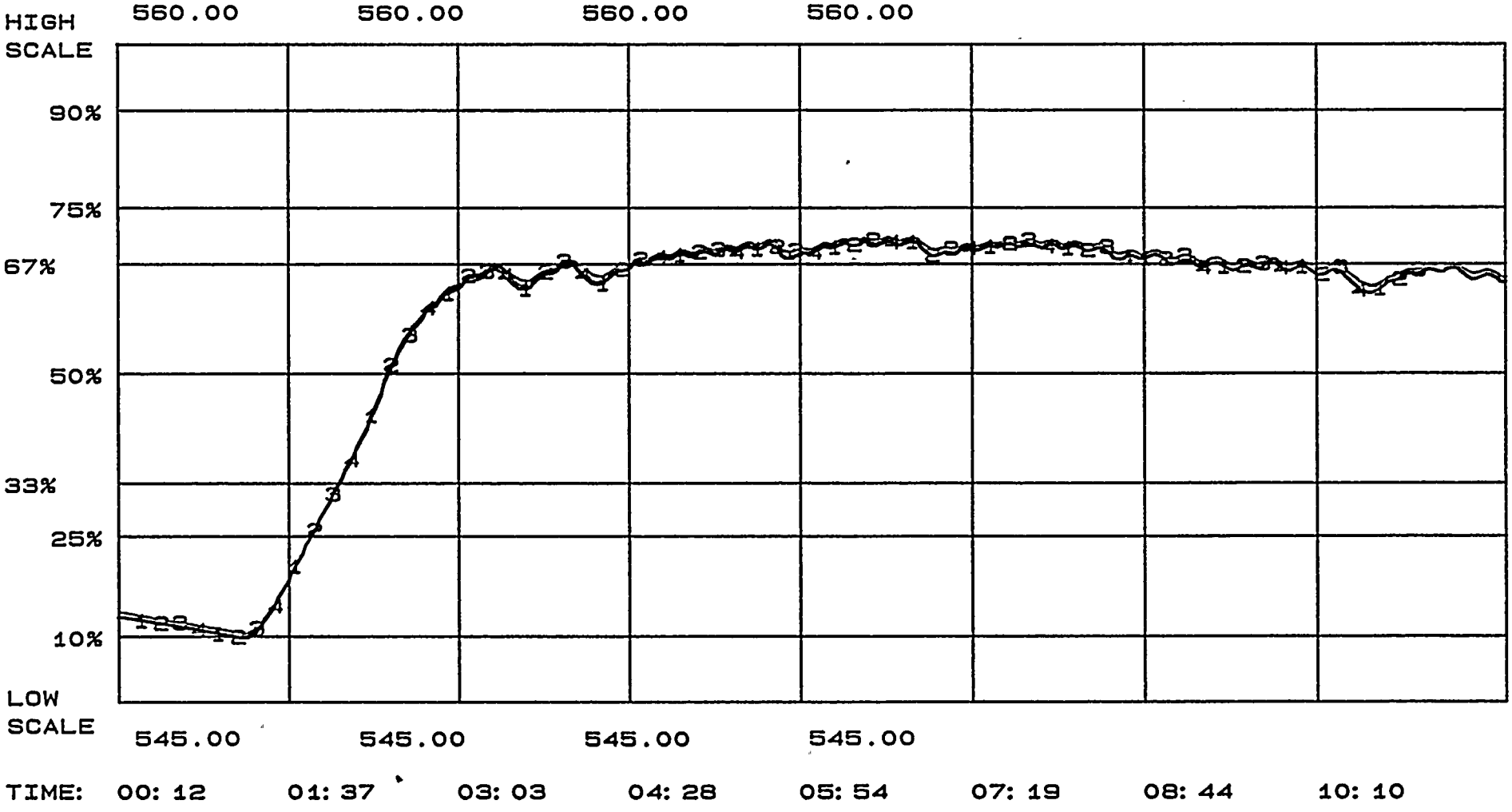
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE CH1 AVG	PC	TIME
2	N1013	POWER RANGE CH2 AVG	PC	START 00: 00: 12
3	N1014	POWER RANGE CH3 AVG	PC	STOP 00: 11: 44
4	N1015	POWER RANGE CH4 AVG	PC	
5	CRQN	REACTOR CORE HEAT FLUX	PC	
6				



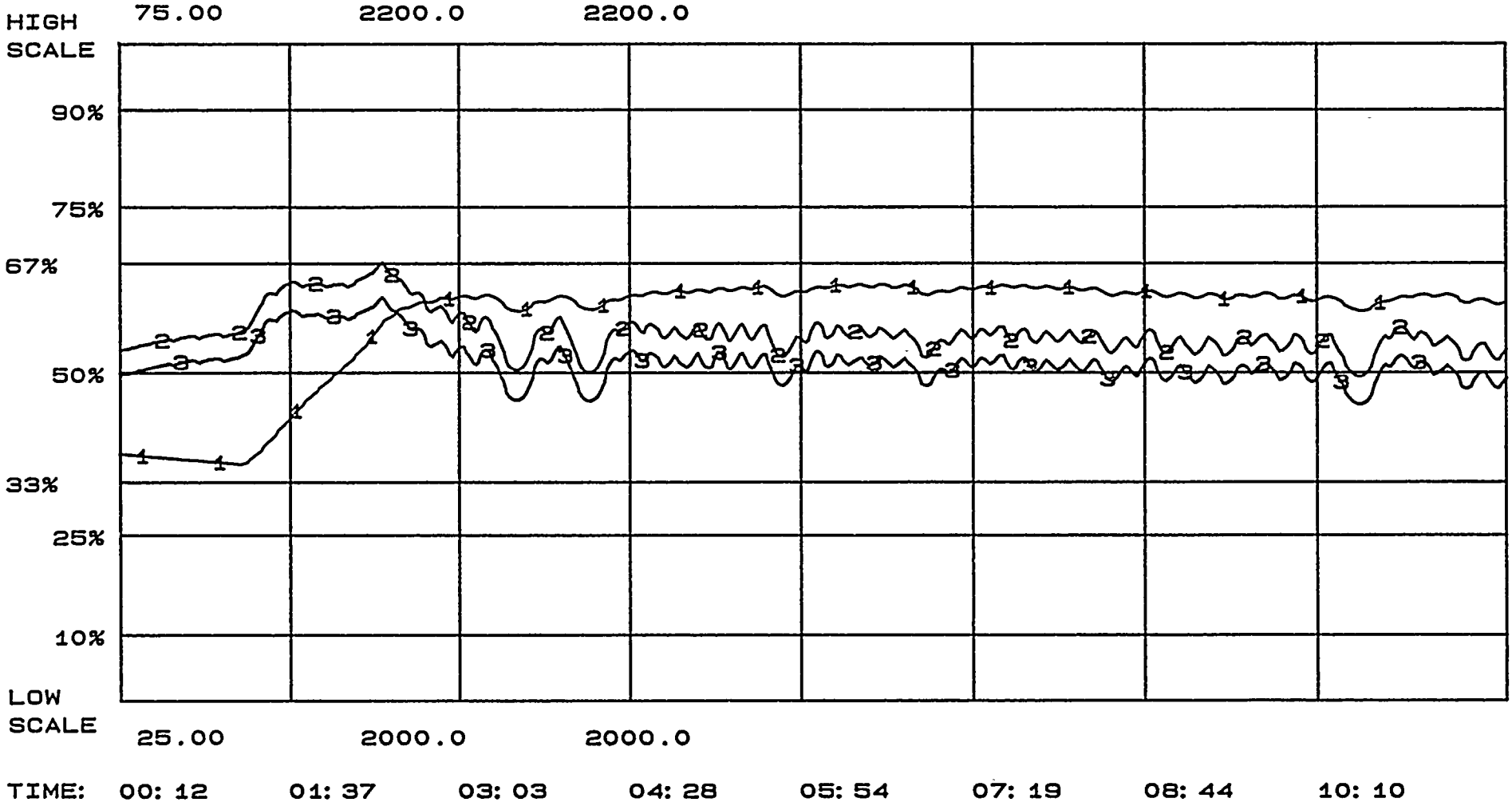
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVG TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVG TEMP	DEG_F	START 00: 00: 12
3	T1103	LOOP 3 AVG TEMP	DEG_F	STOP 00: 11: 44
4	T1104	LOOP 4 AVG TEMP	DEG_F	
5				
6				



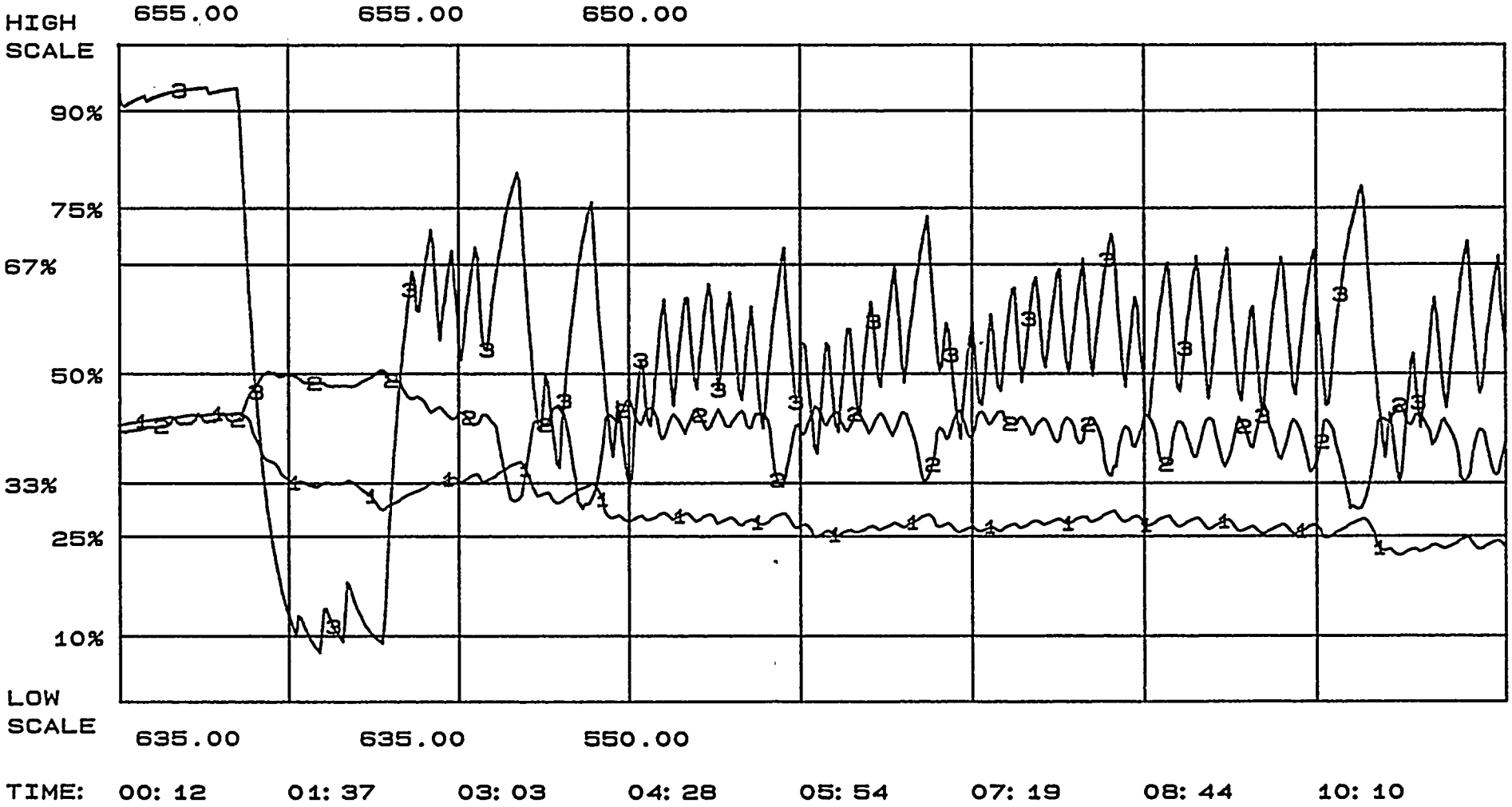
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	P1034	RCS WIDE RANGE PRESSURE	PSIG	START 00: 00: 12
3	P1036	PRESSURIZER PRESSURE	PSIG	STOP 00: 11: 44
4				
5				
6				



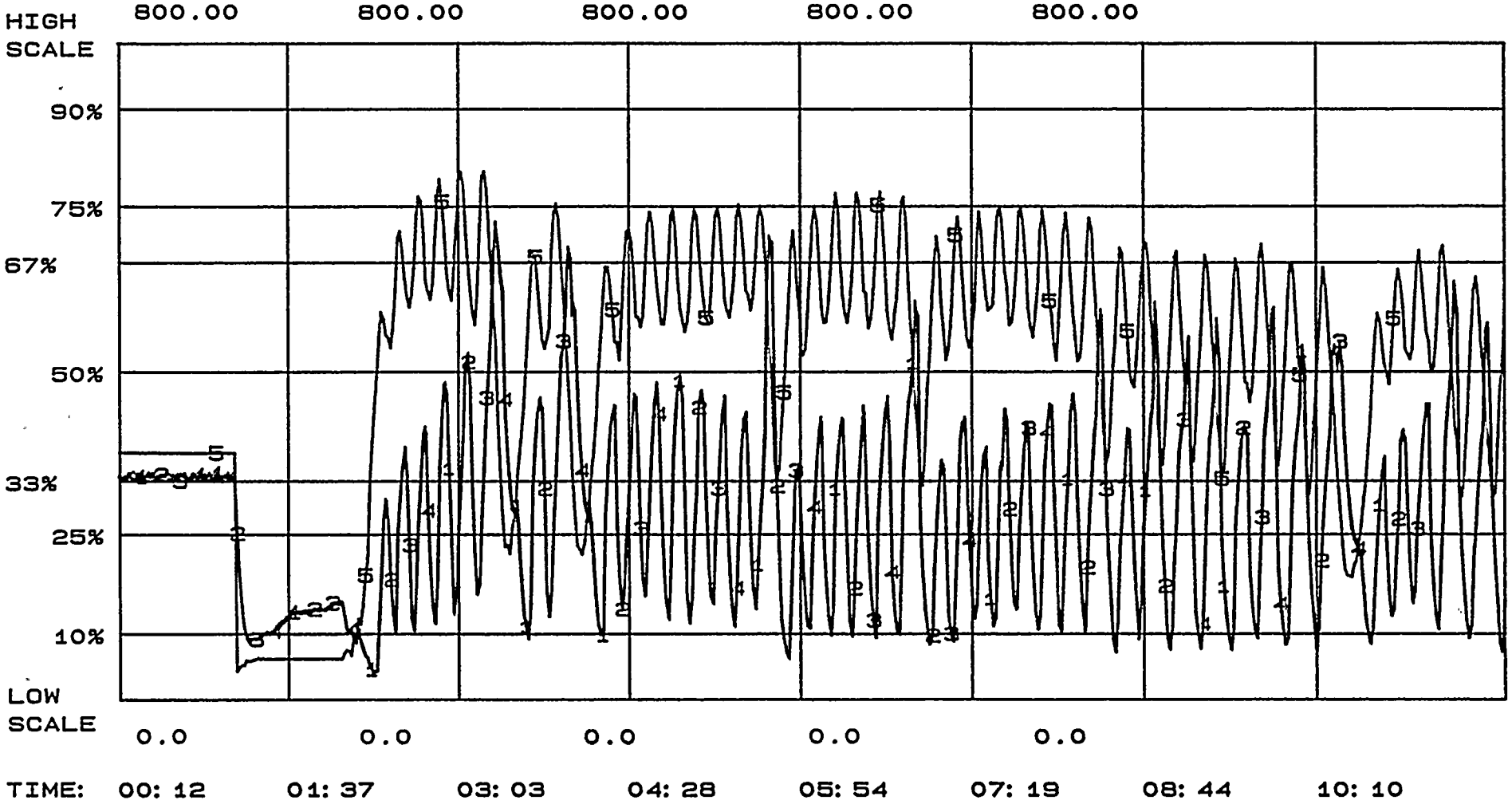
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	TIME
2	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	START 00: 00: 12
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 11: 44
4				
5				
6				



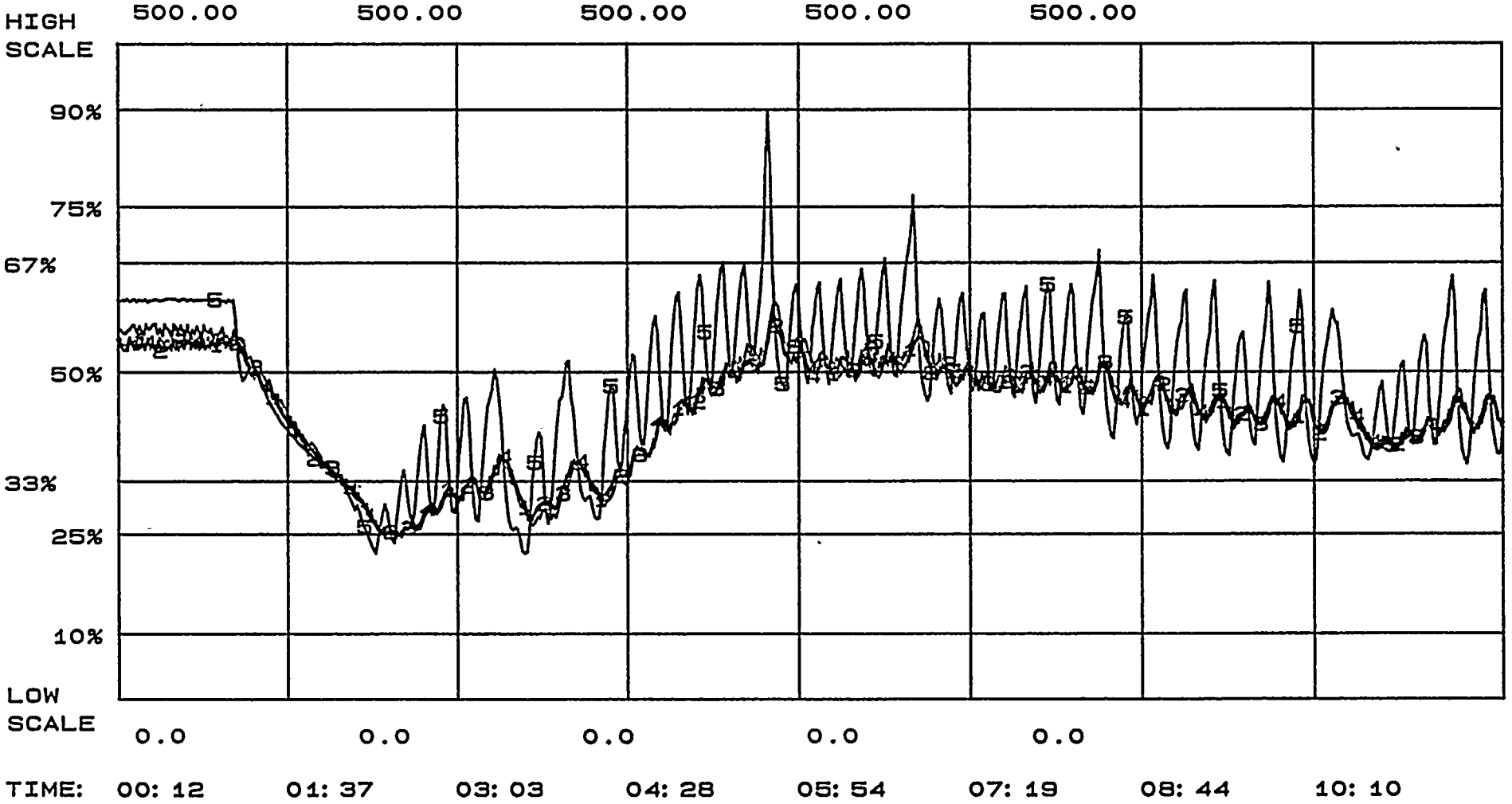
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	LOOP 1 STEAM FLOW	KBH	TIME
2	F1050	LOOP 2 STEAM FLOW	KBH	START 00: 00: 12
3	F1052	LOOP 3 STEAM FLOW	KBH	STOP 00: 11: 44
4	F1054	LOOP 4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



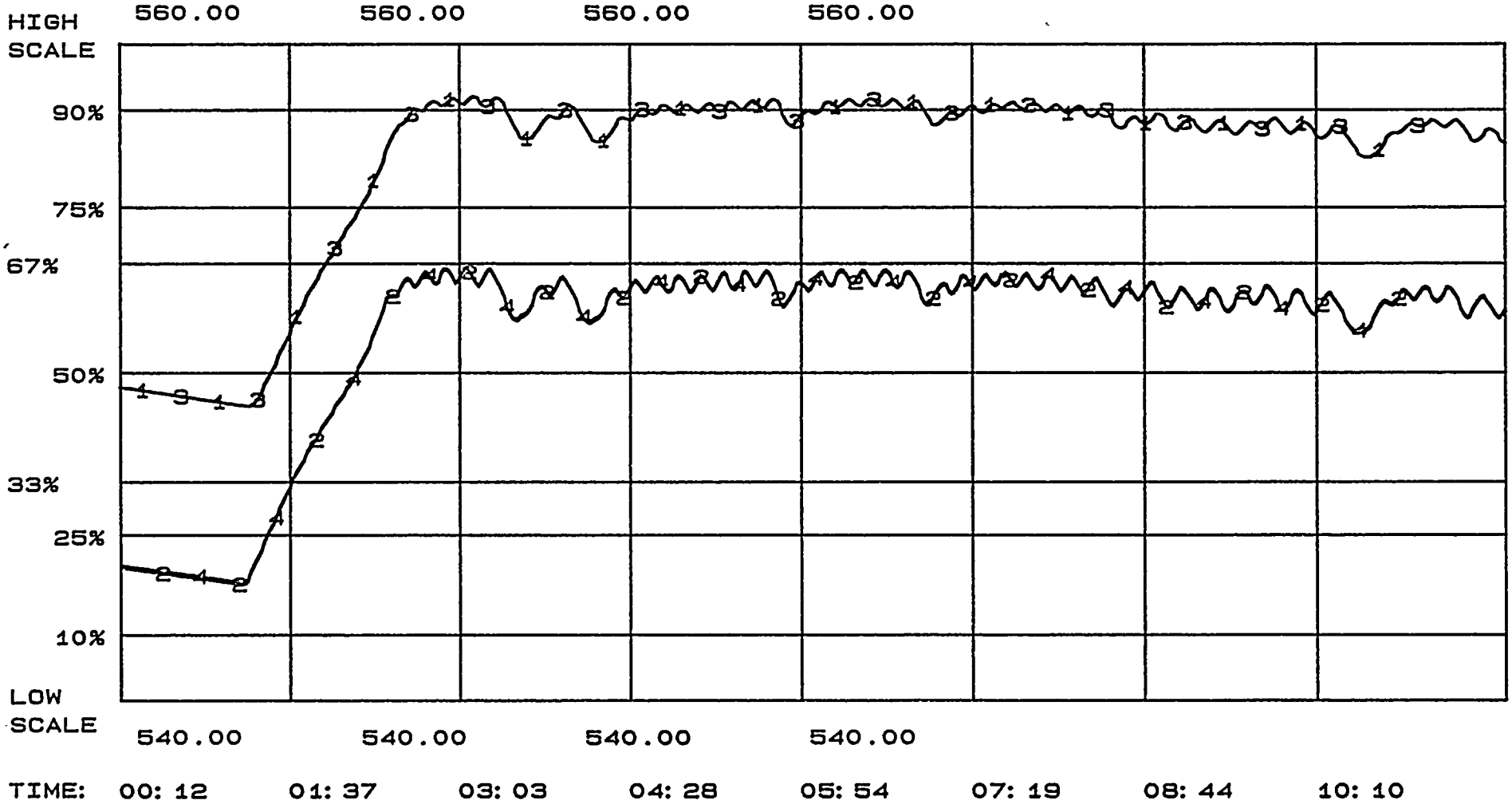
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	LOOP 1 FEEDWATER FLOW	KBH	TIME
2	F1201	LOOP 2 FEEDWATER FLOW	KBH	START 00: 00: 12
3	F1202	LOOP 3 FEEDWATER FLOW	KBH	STOP 00: 11: 44
4	F1203	LOOP 4 FEEDWATER FLOW	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S	
6				



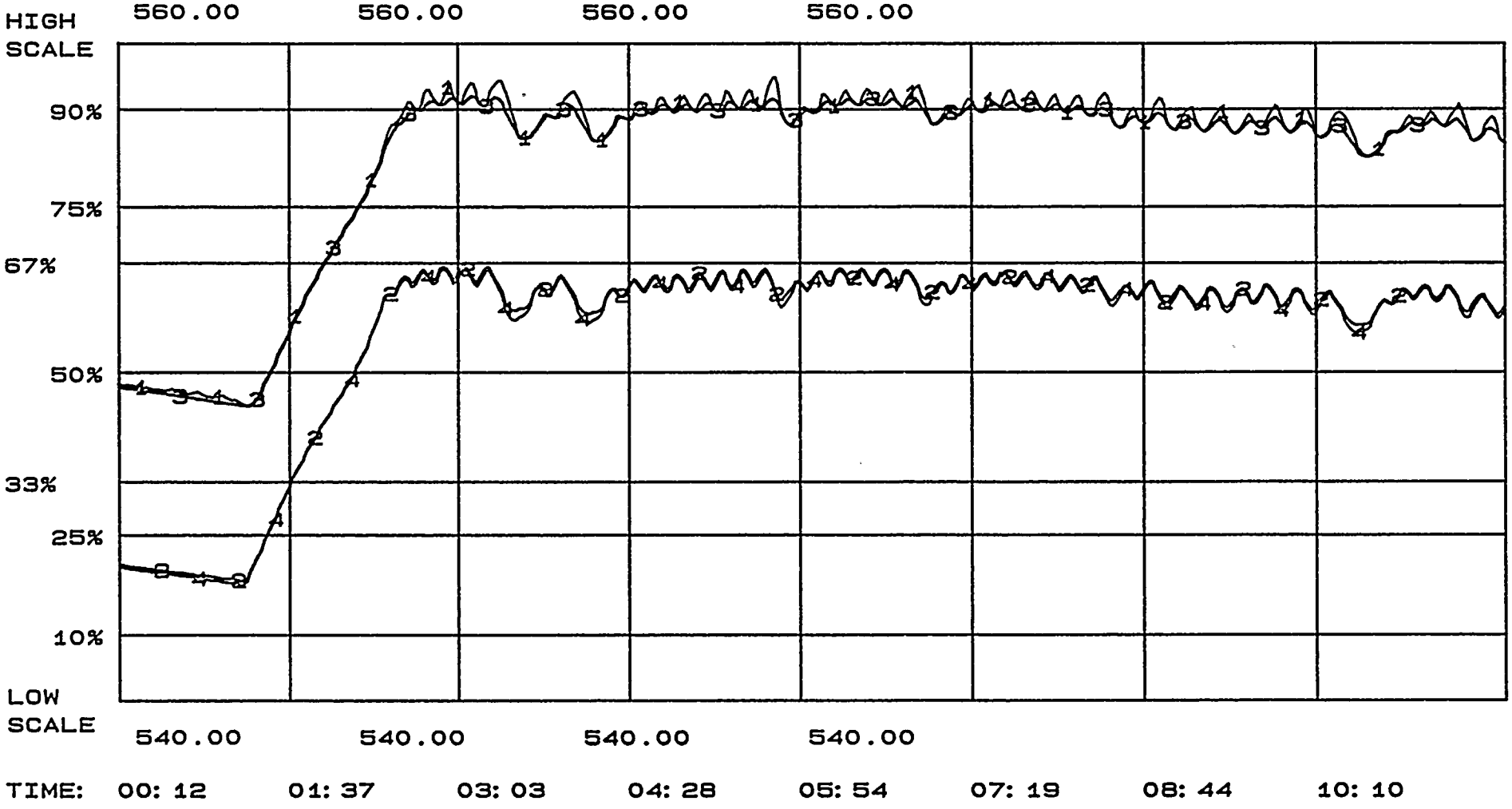
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1115	LOOP 1 COLD LEG TEMP	DEG_F	START 00: 00: 12
3	T1112	LOOP 2 HOT LEG TEMP	DEG_F	STOP 00: 11: 44
4	T1116	LOOP 2 COLD LEG TEMP	DEG_F	
5				
6				



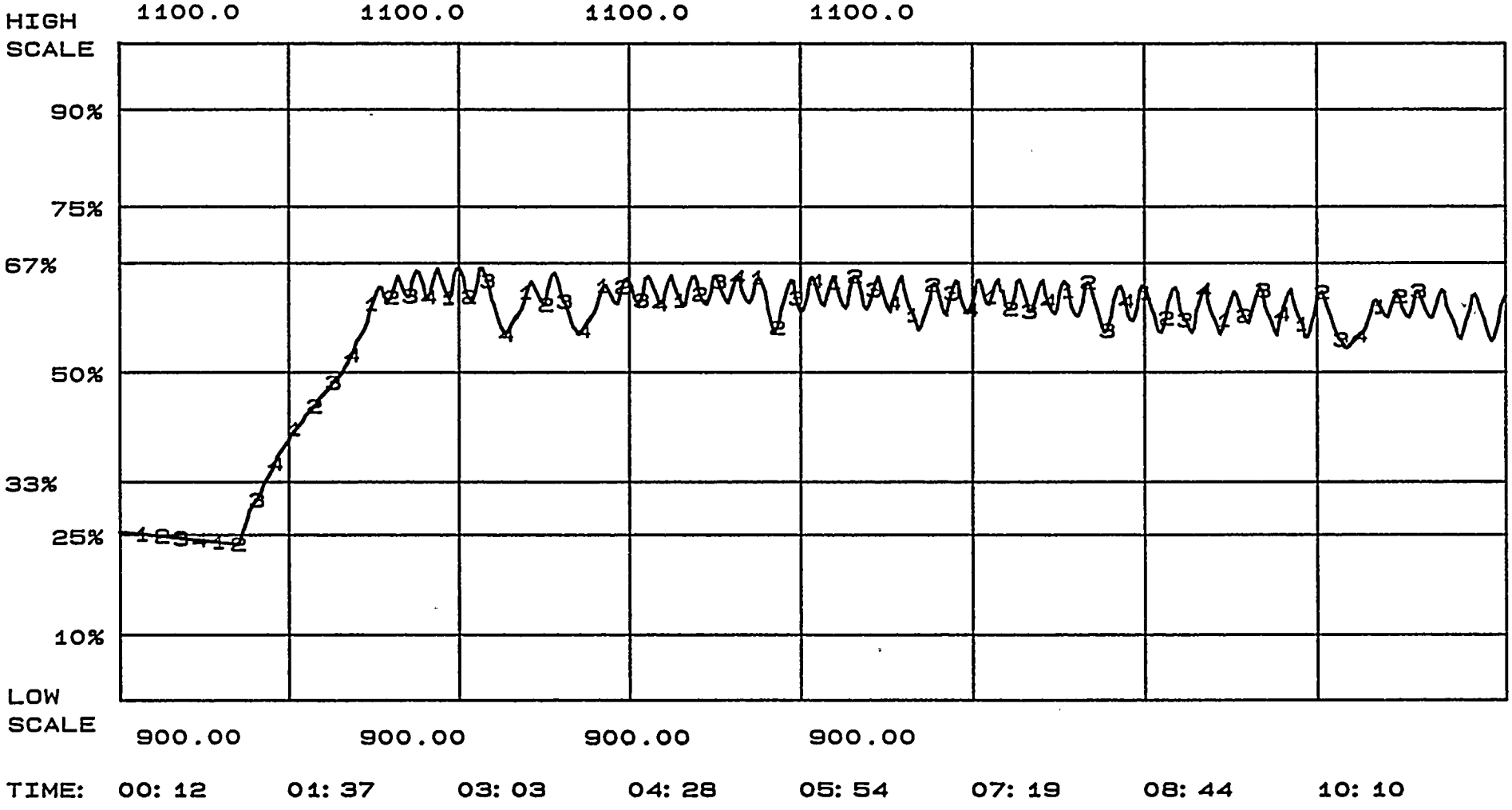
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	LOOP 3 HOT LEG TEMP	DEG_F	TIME
2	T1117	LOOP 3 COLD LEG TEMP	DEG_F	START 00: 00: 12
3	T1114	LOOP 4 HOT LEG TEMP	DEG_F	STOP 00: 11: 44
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



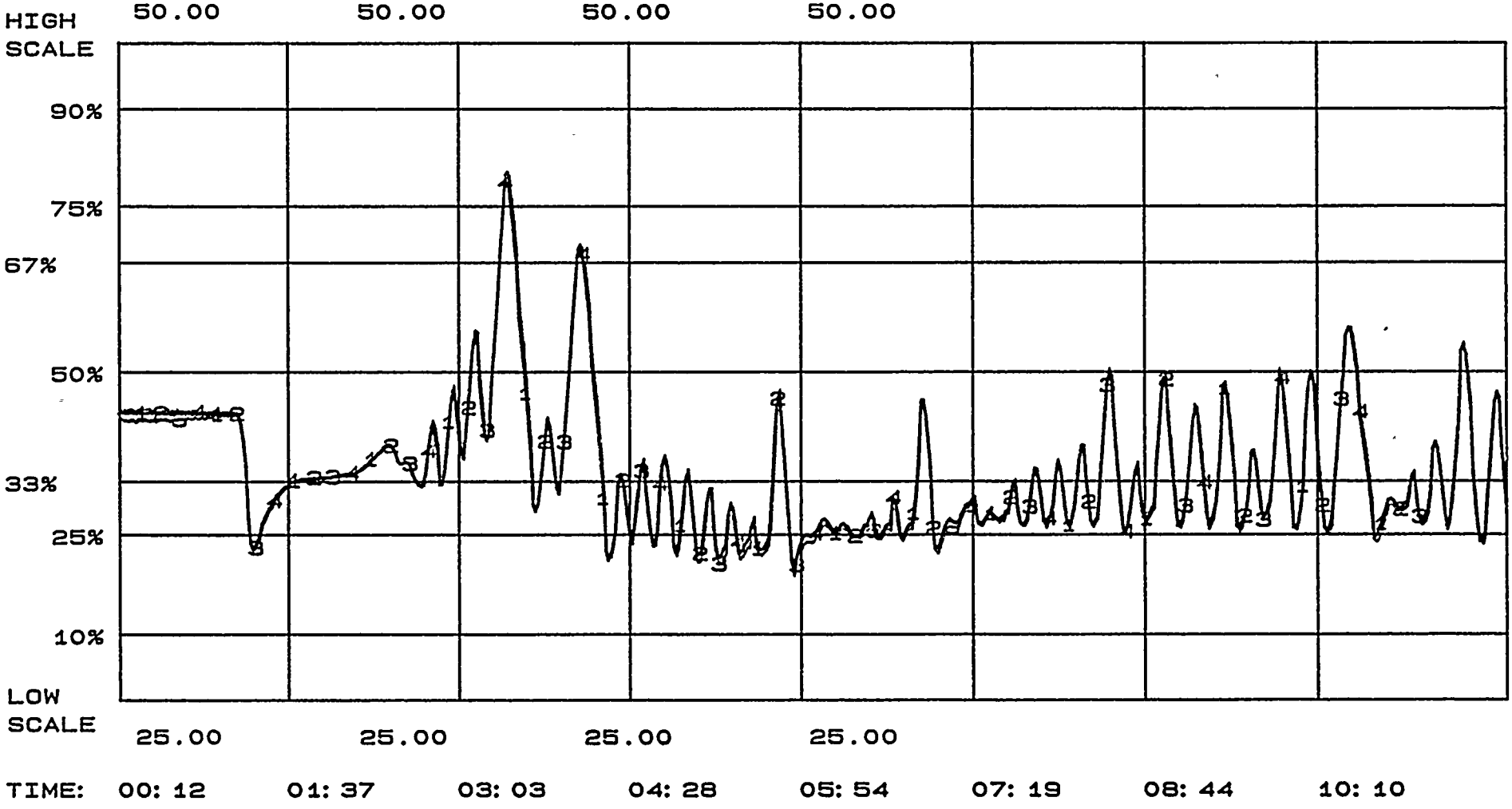
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 12
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 11: 44
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC	TIME
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC	START 00: 00: 12
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC	STOP 00: 11: 44
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a maximum rate power ramp per ANSI 3.5 - B2.2.

2) Ensure that the simulator will maintain stability during a maximum rate power ramp.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, and pressurizer level control in manual.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

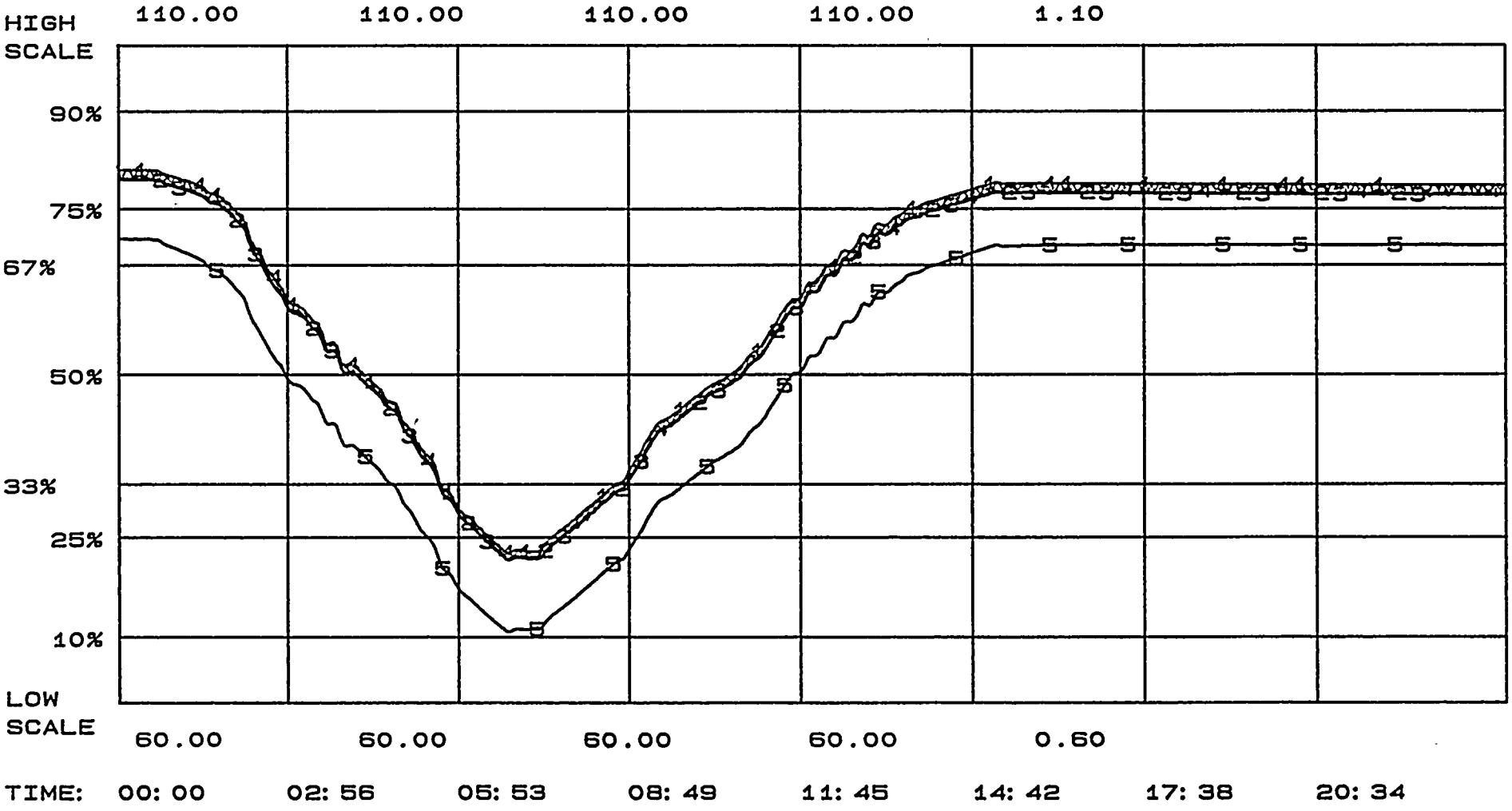
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

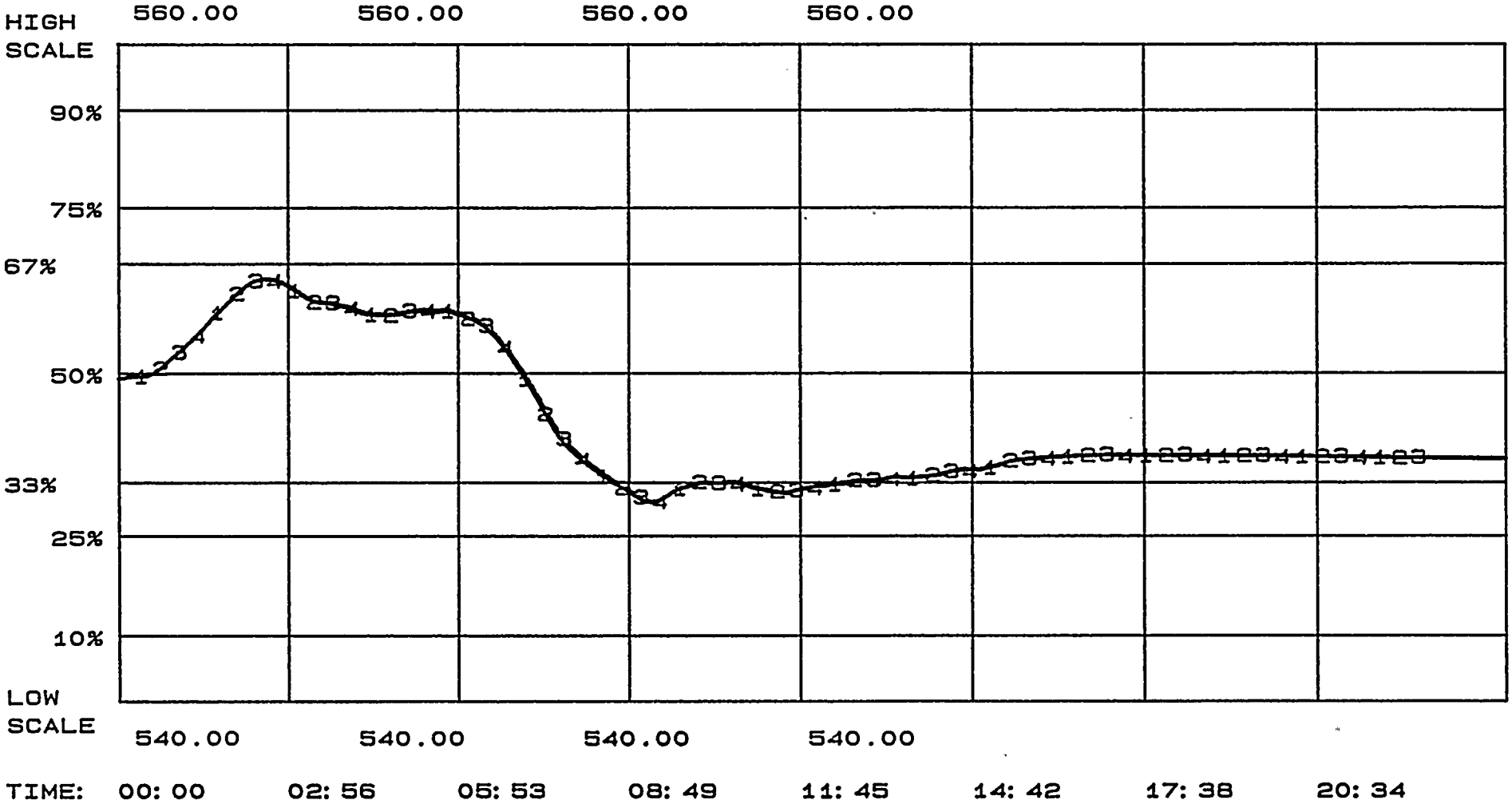
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE CH1 AVG	PC	TIME
2	N1013	POWER RANGE CH2 AVG	PC	START 00: 00: 00
3	N1014	POWER RANGE CH3 AVG	PC	STOP 00: 23: 48
4	N1015	POWER RANGE CH4 AVG	PC	
5	CRQN	REACTOR CORE HEAT FLUX	PC	
6				



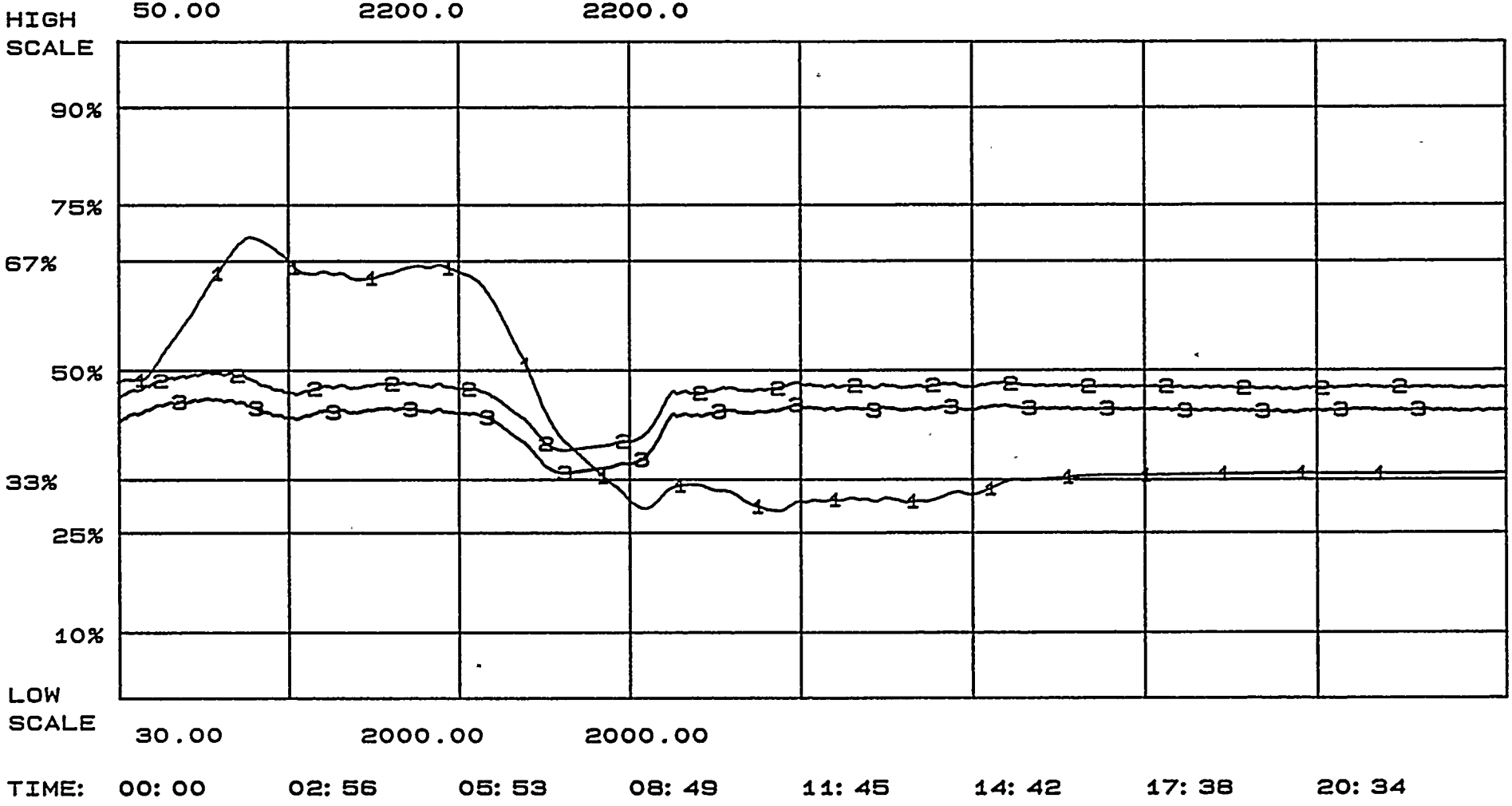
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVERAGE TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVERAGE TEMP	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVERAGE TEMP	DEG_F	STOP 00: 23: 48
4	T1104	LOOP 4 AVERAGE TEMP	DEG_F	
5				
6				



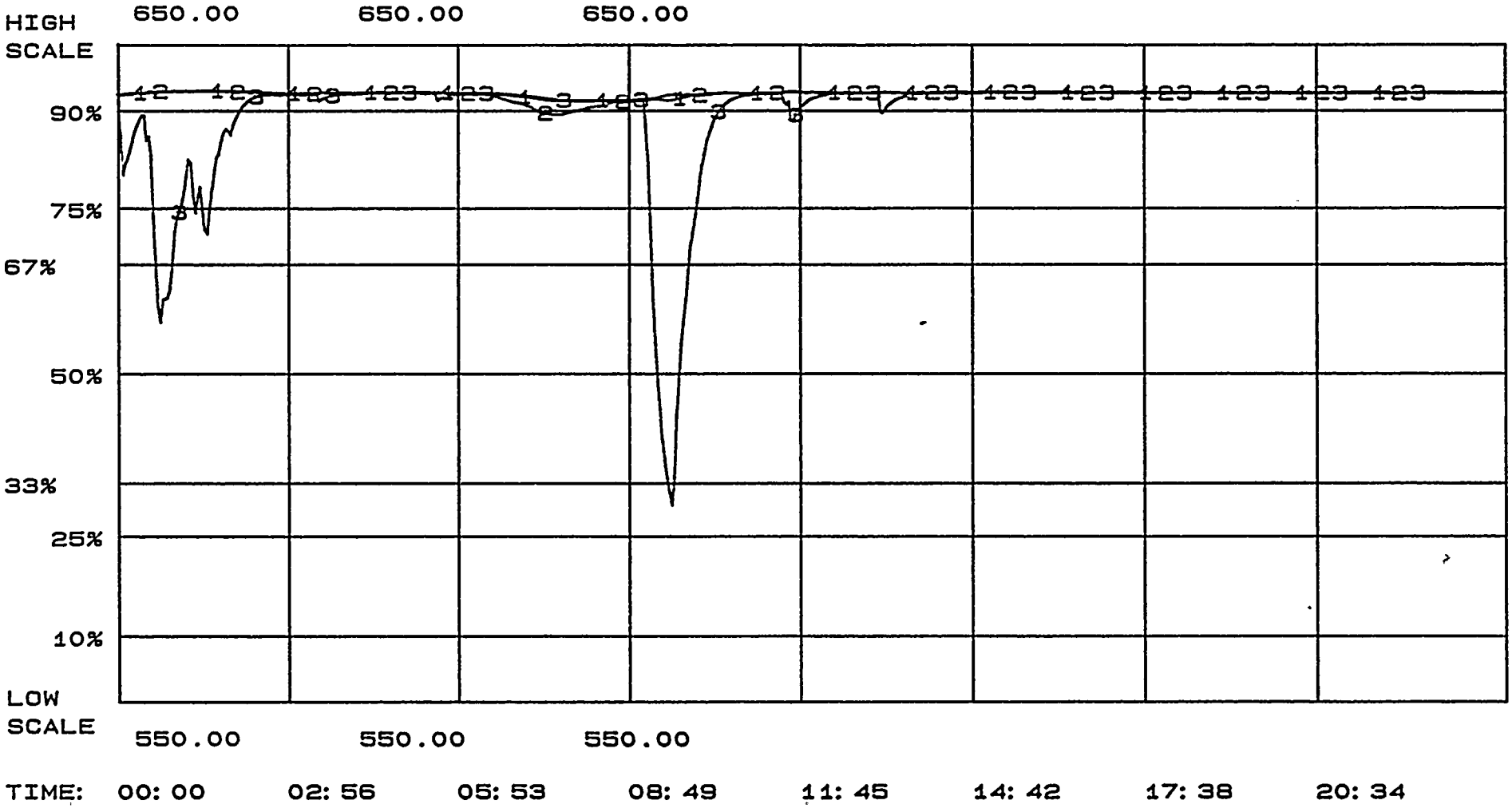
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	P1034	RCS WIDE RANGE PRESSURE	PSIG	START 00: 00: 00
3	P1036	PRESSURIZER PRESSURE	PSIG	STOP 00: 23: 48
4				
5				
6				



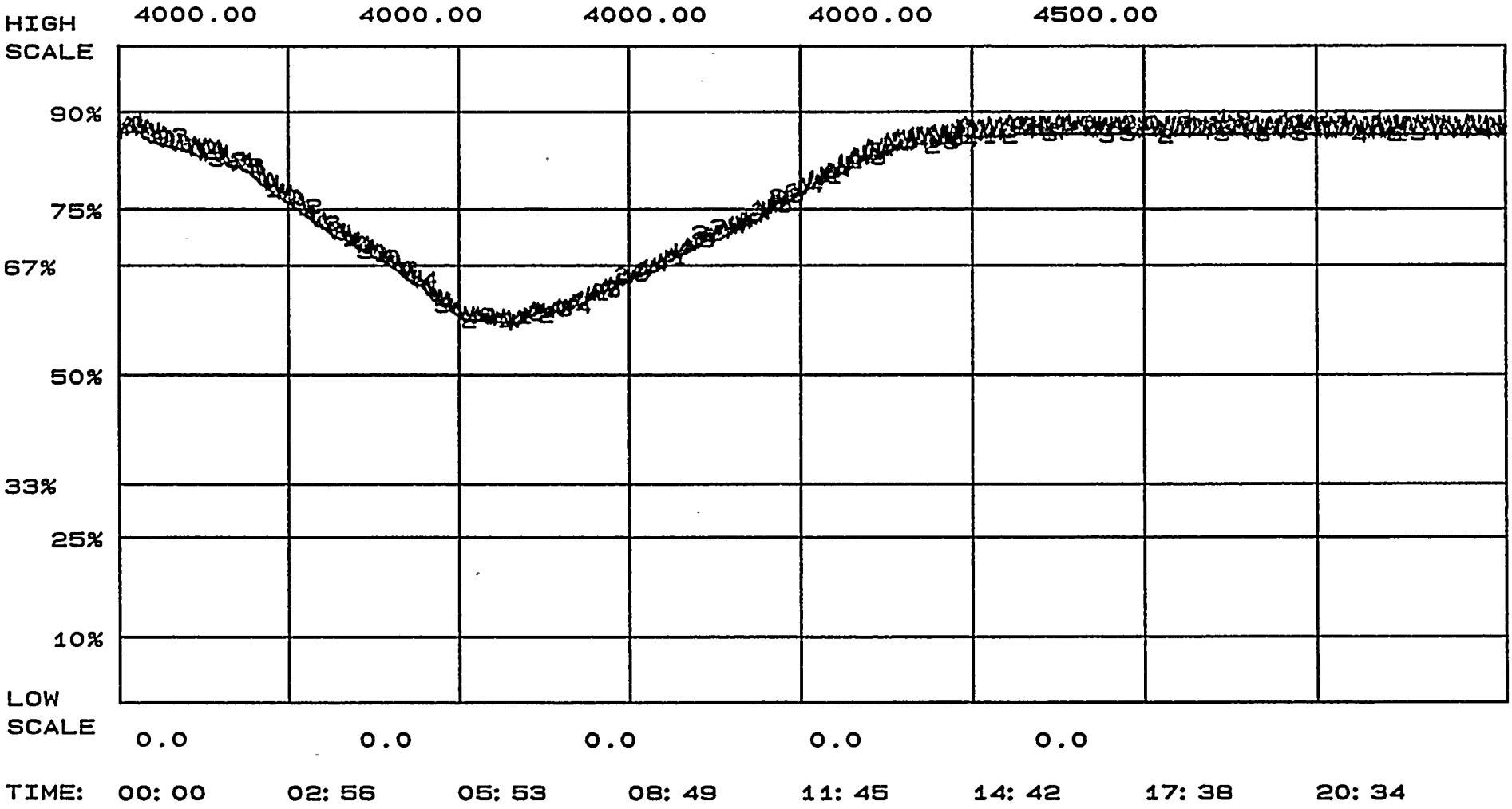
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1004	PRESSURIZER LIQUID TEMP	DEG_F	TIME
2	T1005	PRESSURIZER STEAM TEMP	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 23: 48
4				
5				
6				



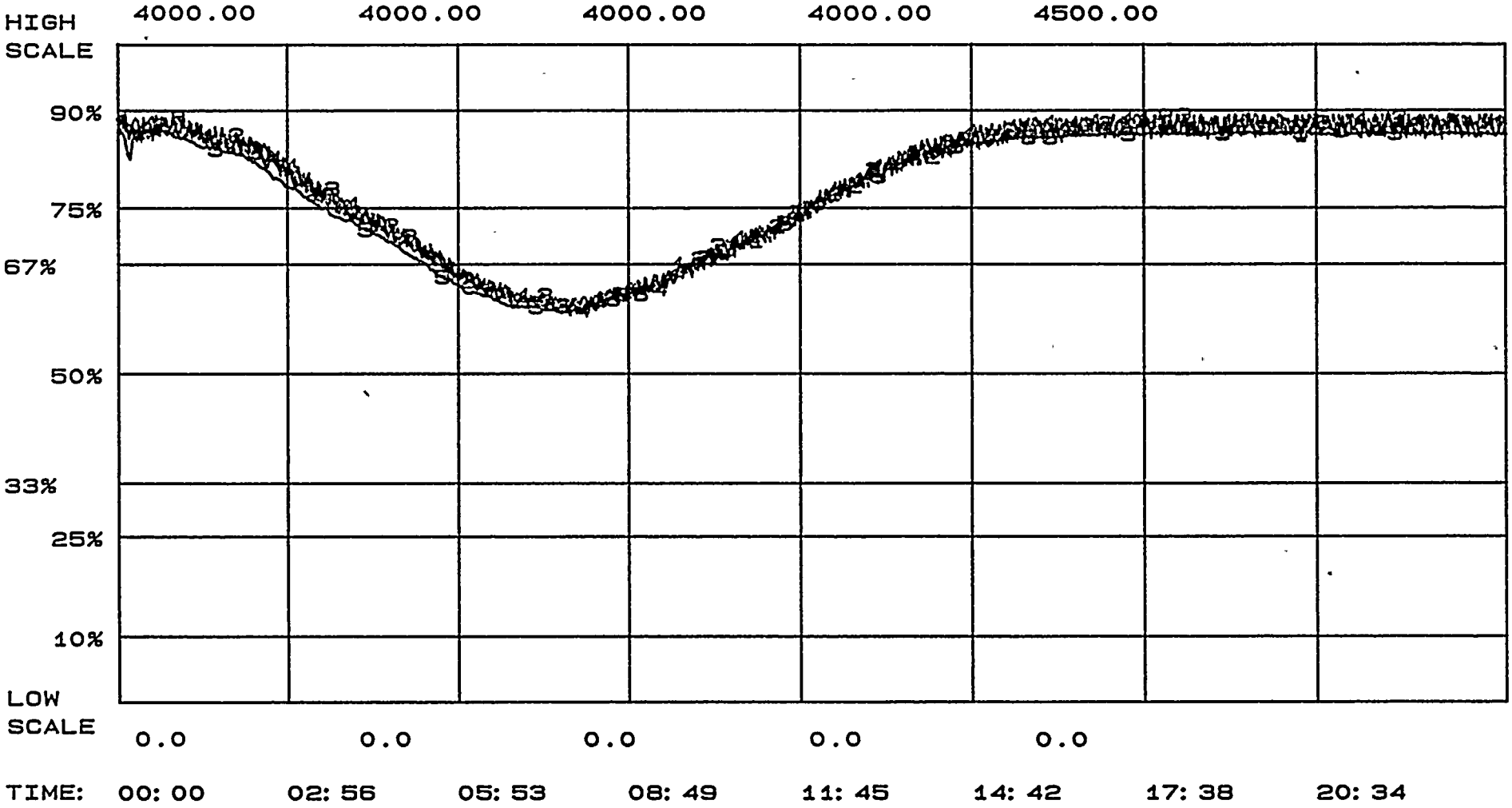
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	LOOP 1 STEAM FLOW	KBH	TIME
2	F1050	LOOP 2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	LOOP 3 STEAM FLOW	KBH	STOP 00: 23: 48
4	F1054	LOOP 4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



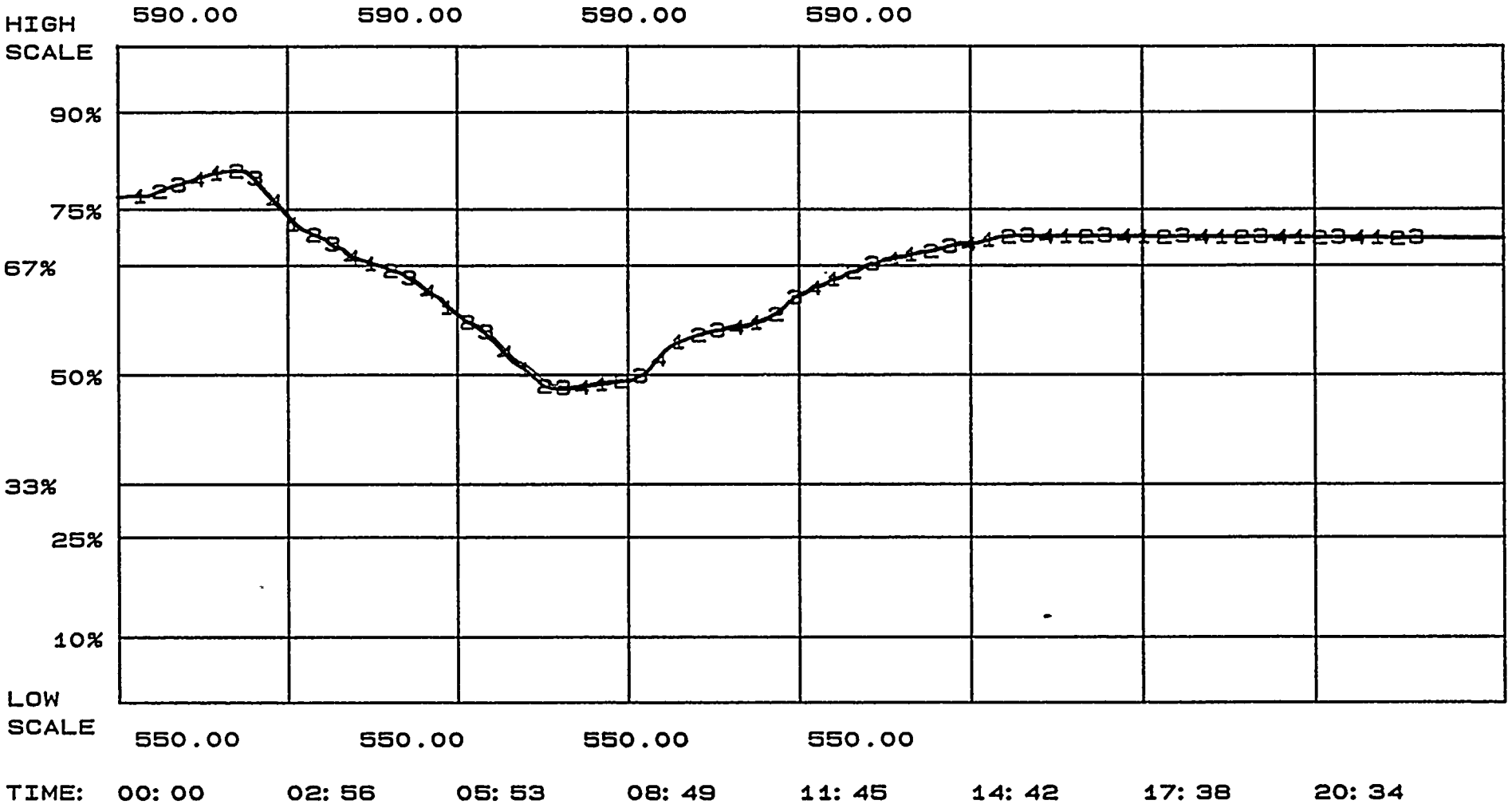
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	LOOP 1 FEEDWATER FLOW	KBH	TIME
2	F1201	LOOP 2 FEEDWATER FLOW	KBH	START 00: 00: 00
3	F1202	LOOP 3 FEEDWATER FLOW	KBH	STOP 00: 23: 48
4	F1203	LOOP 4 FEEDWATER FLOW	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S	
6				



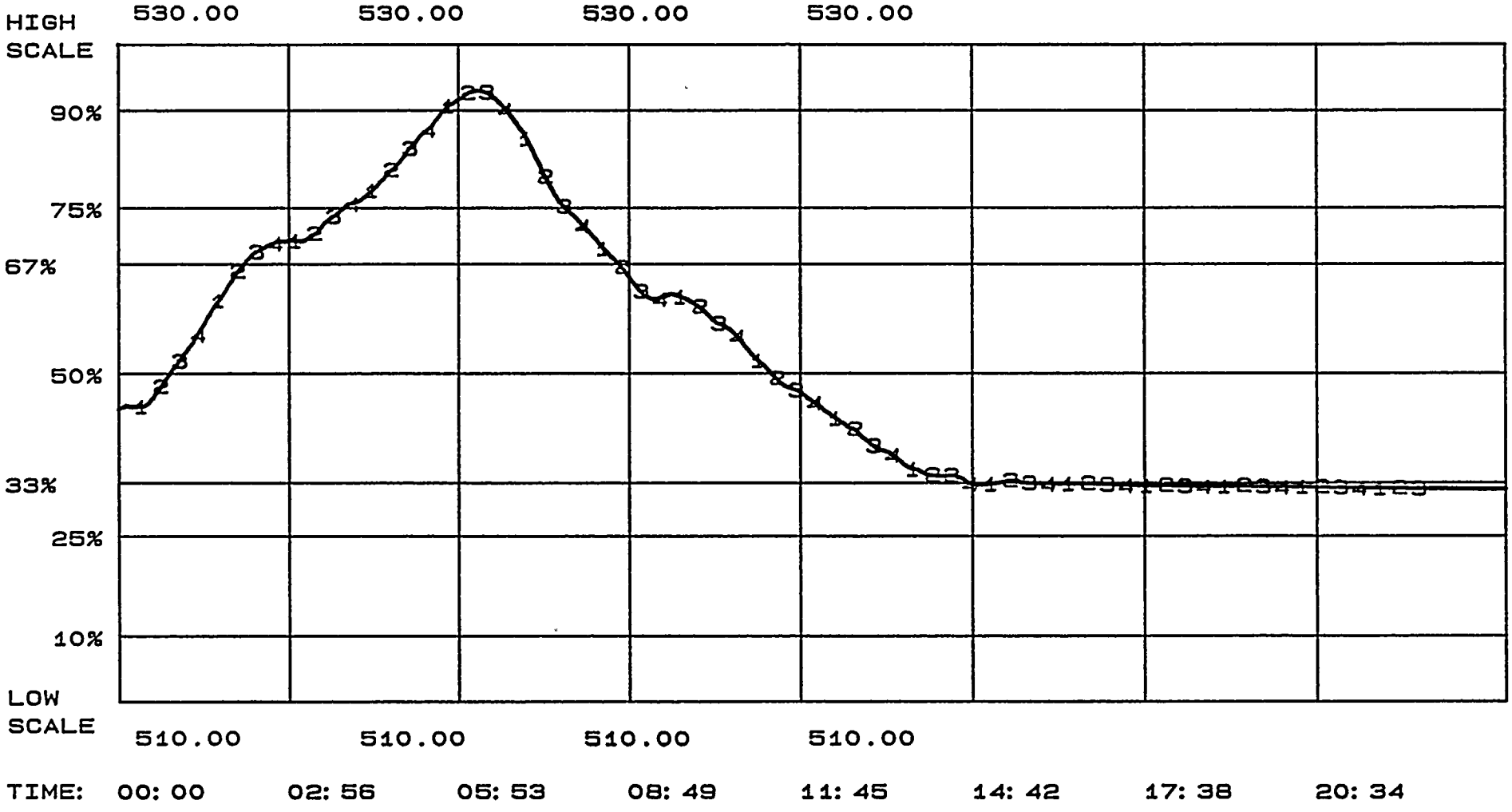
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F	STOP 00: 23: 48
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F	
5				
6				



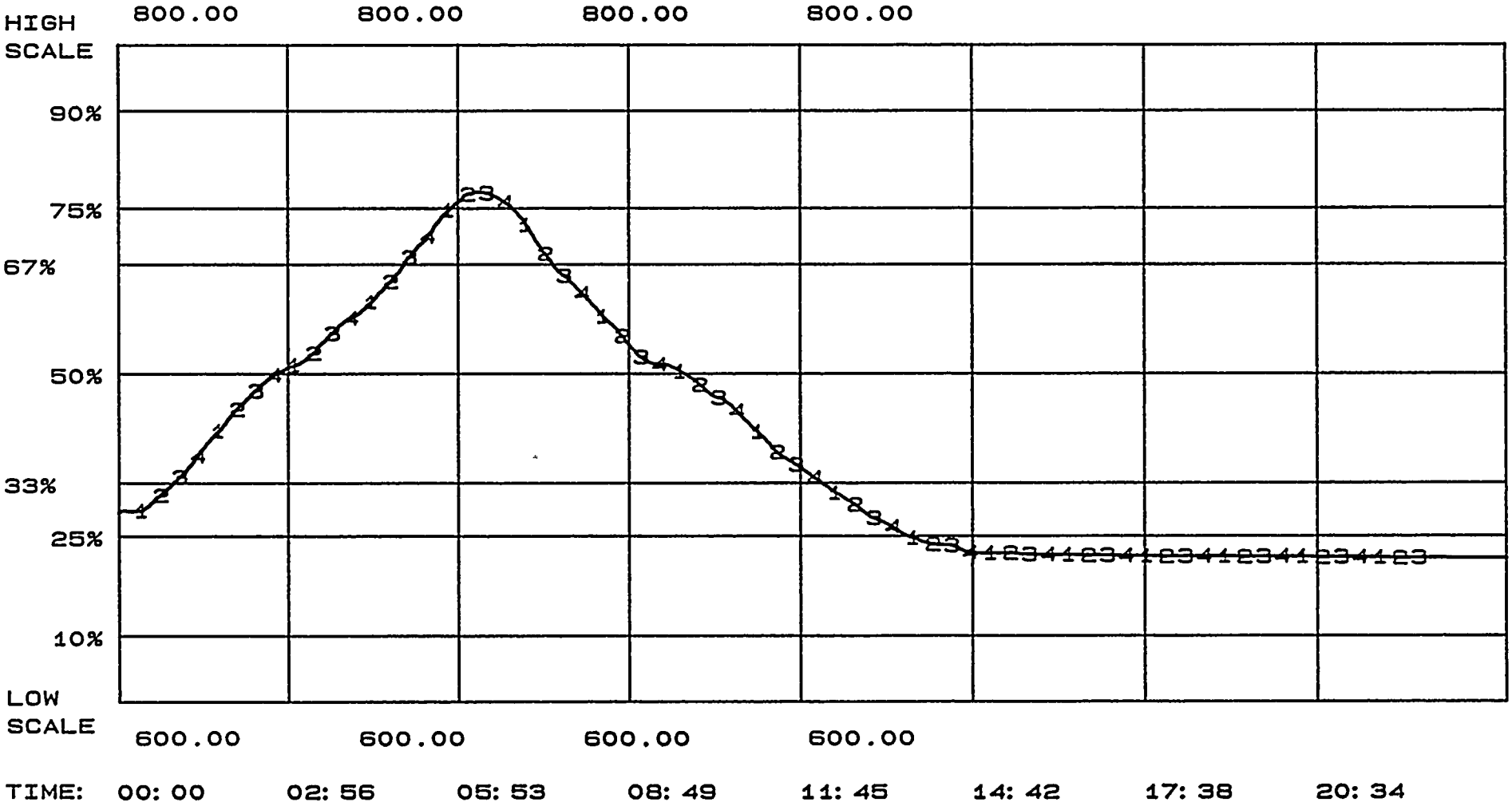
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 COLD LEG TEMP	DEG_F	TIME
2	T1116	LOOP 2 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 COLD LEG TEMP	DEG_F	STOP 00: 23: 48
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



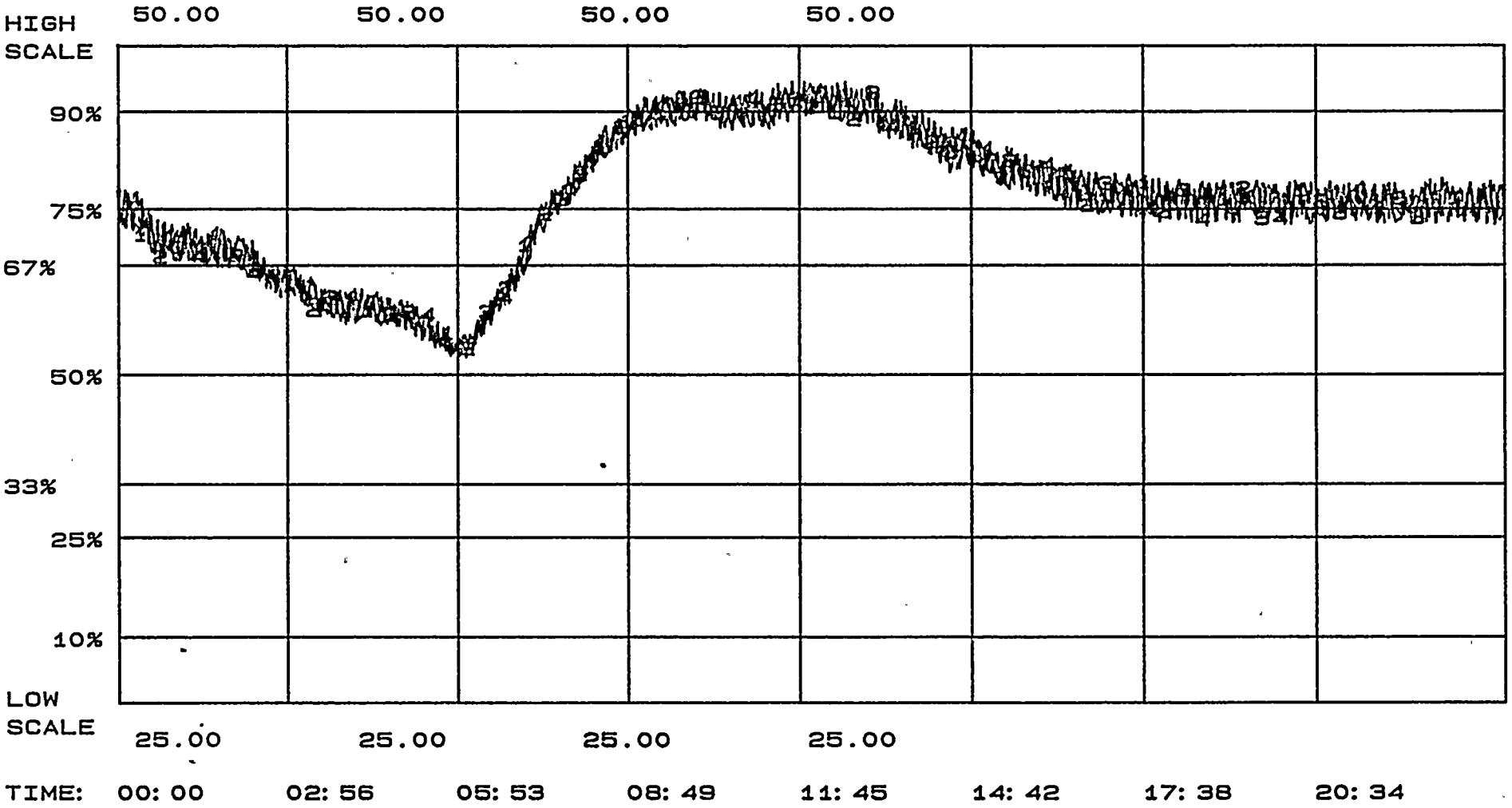
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 23: 48
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GEN 1 NARROW RANGE LEVEL	PC	TIME
2	L1207	STEAM GEN 2 NARROW RANGE LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GEN 3 NARROW RANGE LEVEL	PC	STOP 00: 23: 48
4	L1213	STEAM GEN 4 NARROW RANGE LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MAXIMUM SIZE REACTOR COOLANT RUPTURE WITH LOSS OF ALL OFFSITE POWER

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a maximum size reactor coolant system rupture with a loss of all offsite power per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to accurately replicate containment response to a large break LOCA.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, and pressurizer level control in manual.

III. Data Collected

1) Pressurizer pressure
2) Narrow range pressurizer pressure
3) Pressurizer level
4) Containment pressure
5) Containment temperature

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

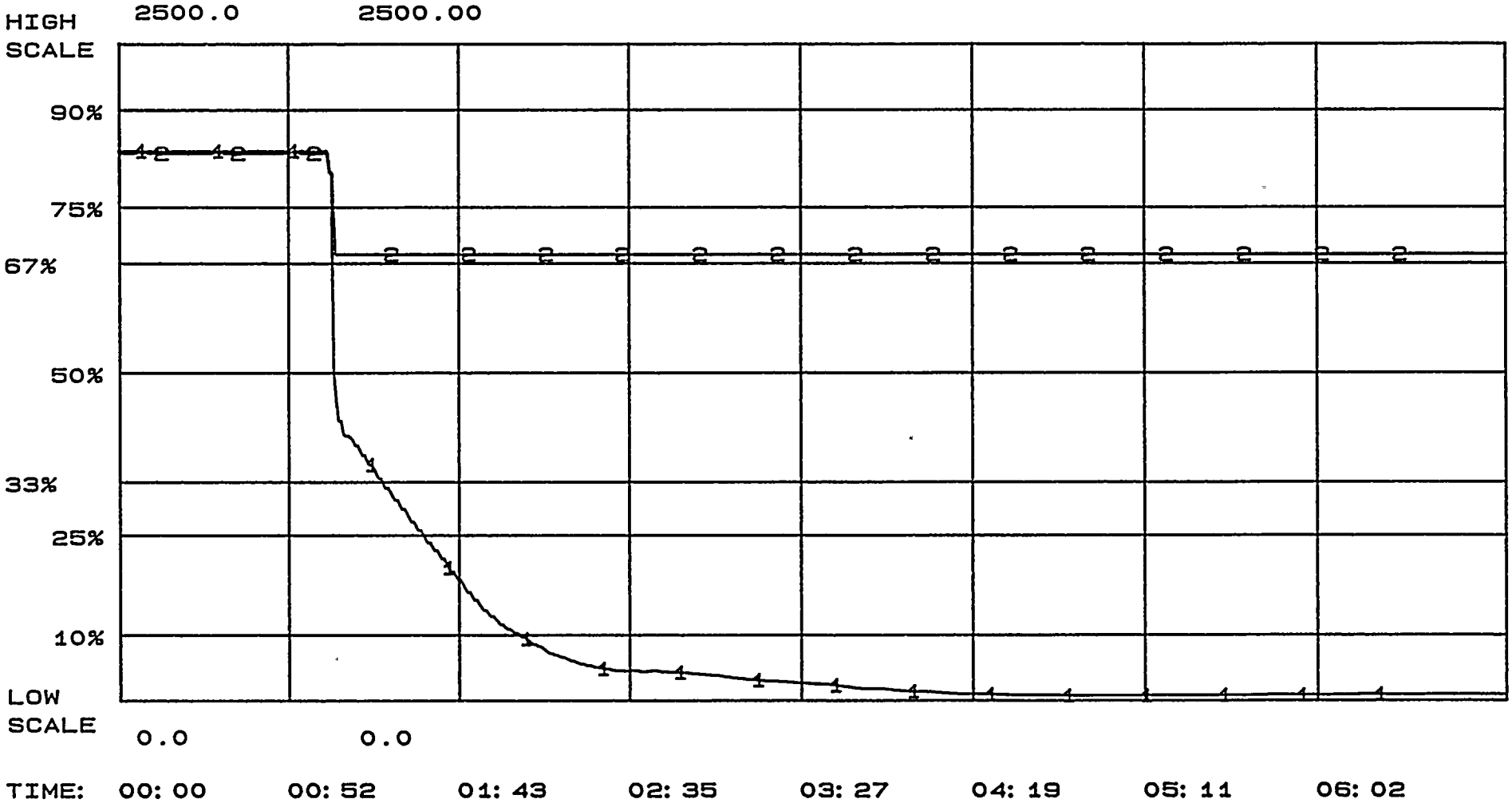
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

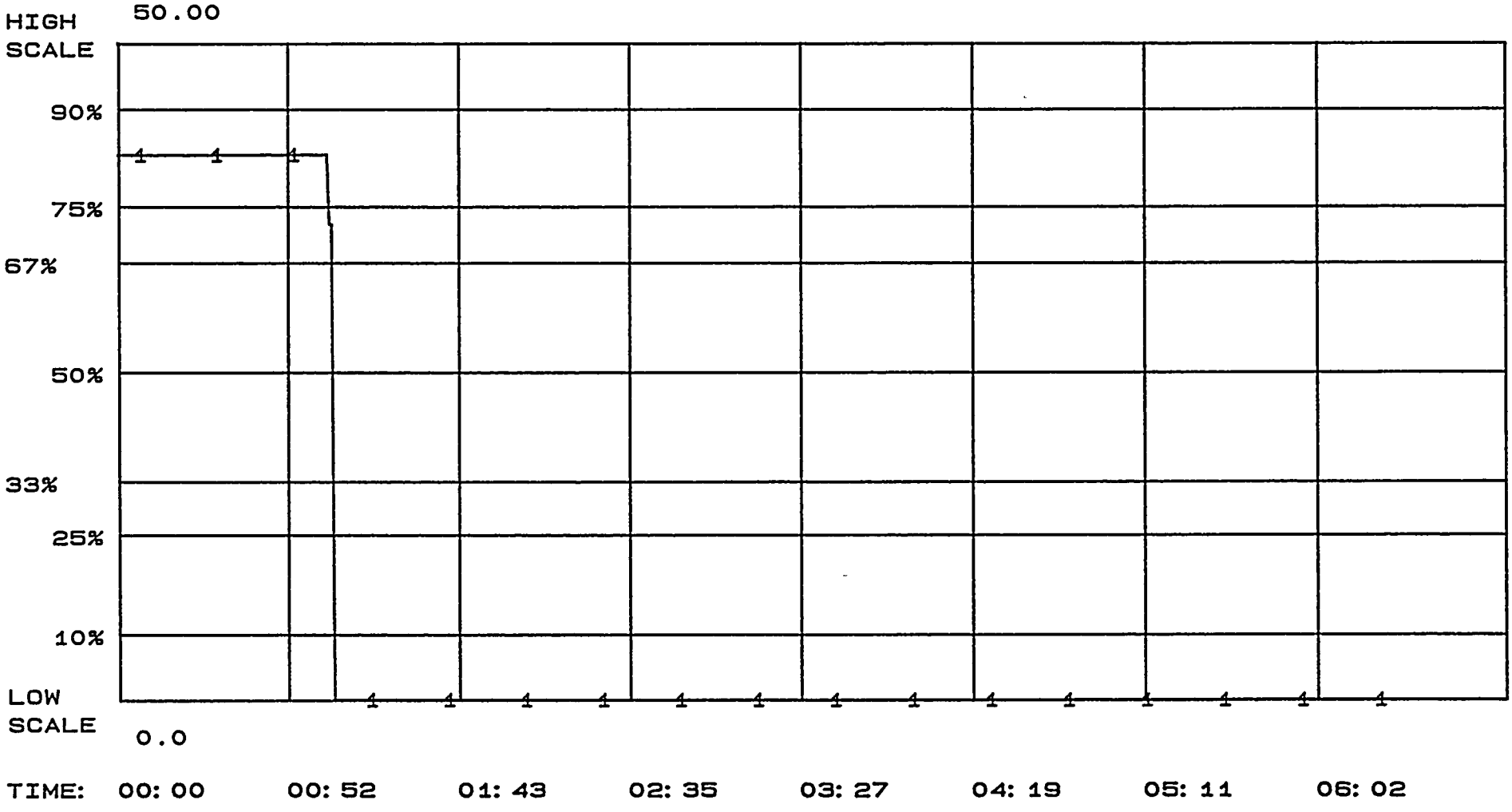
MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WIDE RANGE RCS PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 06: 59
4				
5				
6				



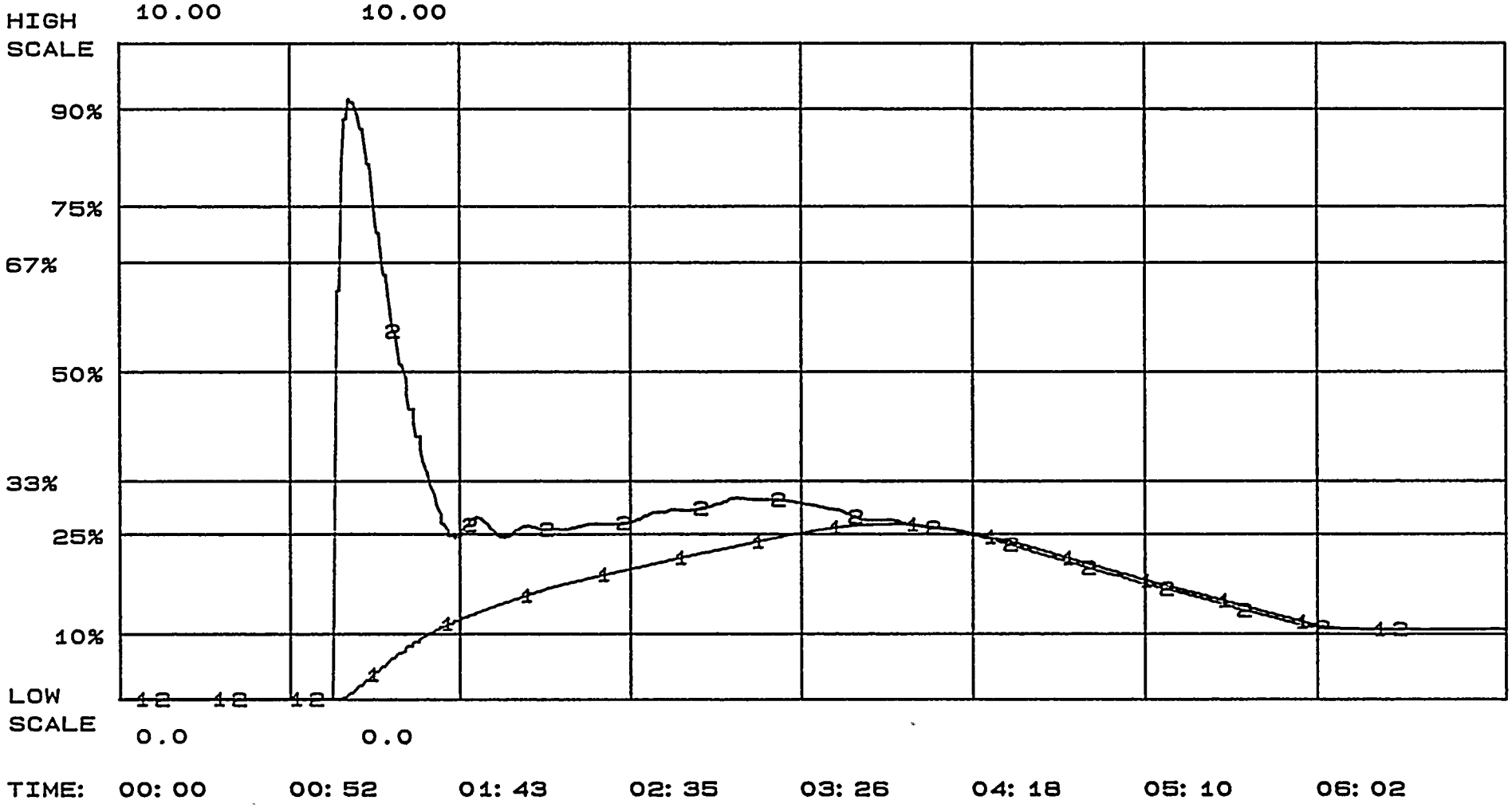
MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 06: 59
4				
5				
6				



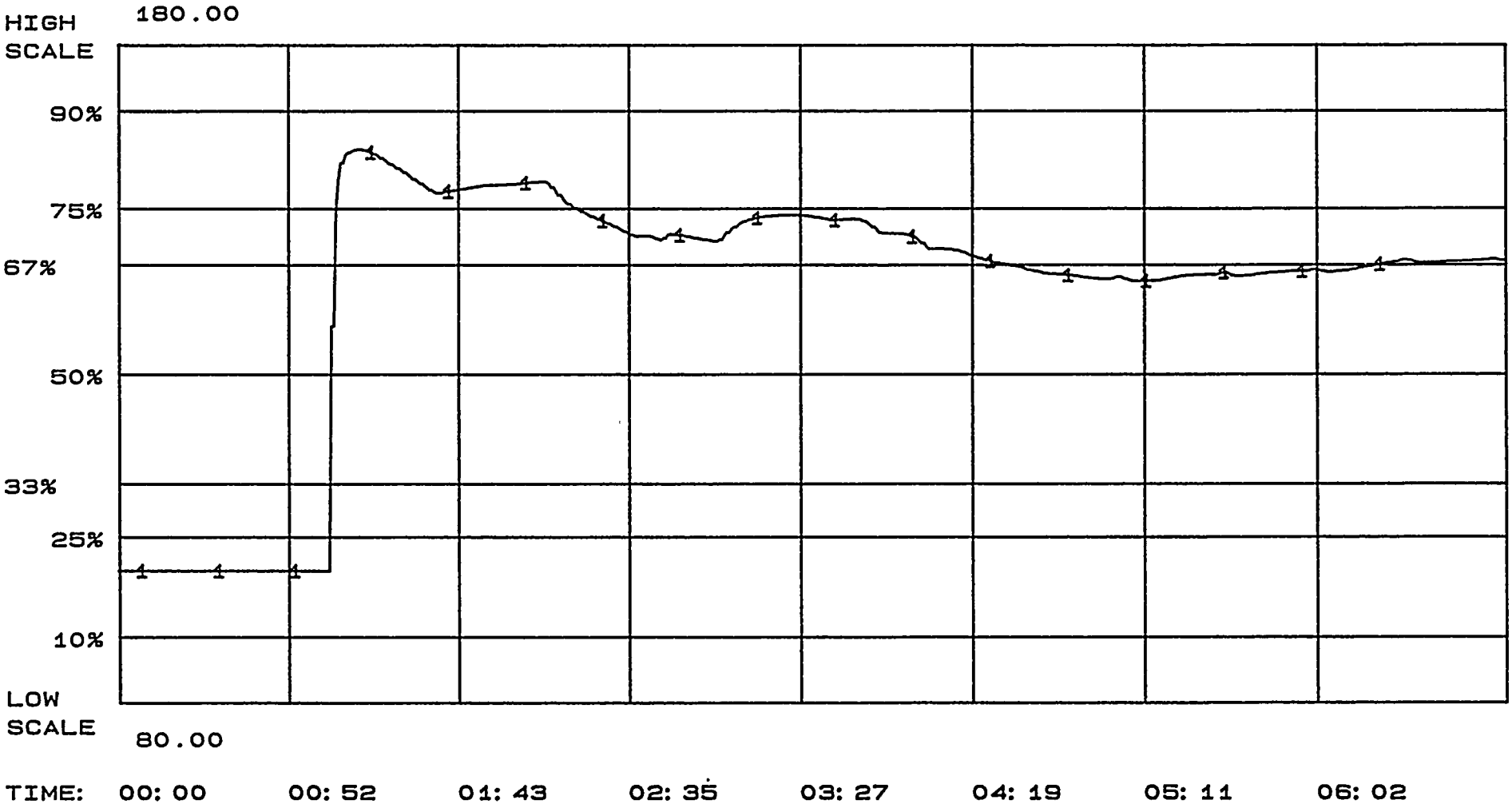
MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 07: 00
4				
5				
6				



MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	TIME
2				START 00: 00: 00
3				STOP 00: 06: 59
4				
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MAXIMUM SIZE UNISOLABLE MAIN STEAM LINE RUPTURE

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a maximum size unisolable main steam line rupture per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to accurately replicate containment response to a large main steam line break.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Pressurizer pressure
2) Narrow range pressurizer pressure
3) Pressurizer level
4) Containment pressure
5) Containment temperature

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

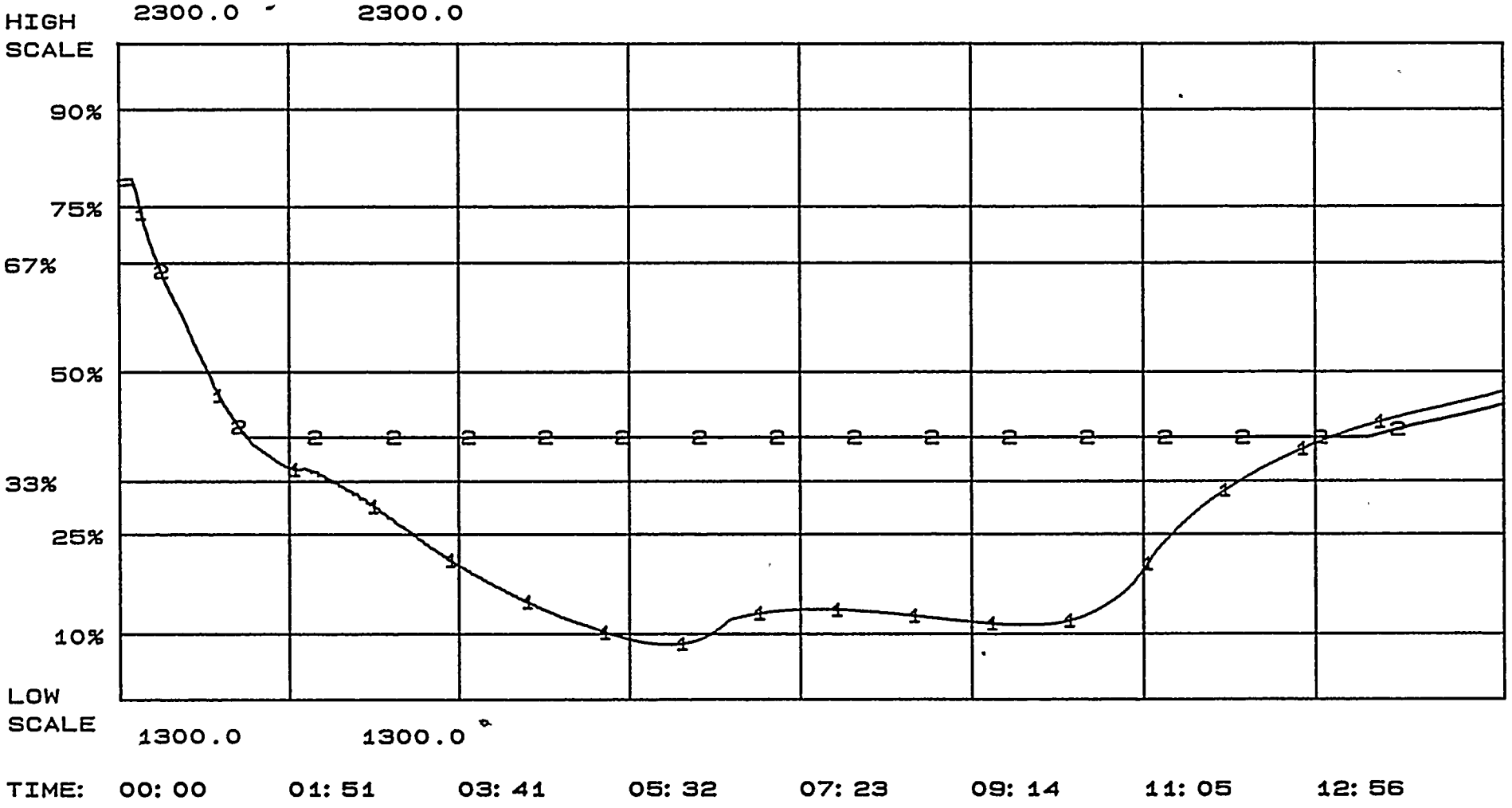
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted that lower containment temperature decreased while containment pressure increased. A discrepancy report has been initiated to investigate and correct this condition.

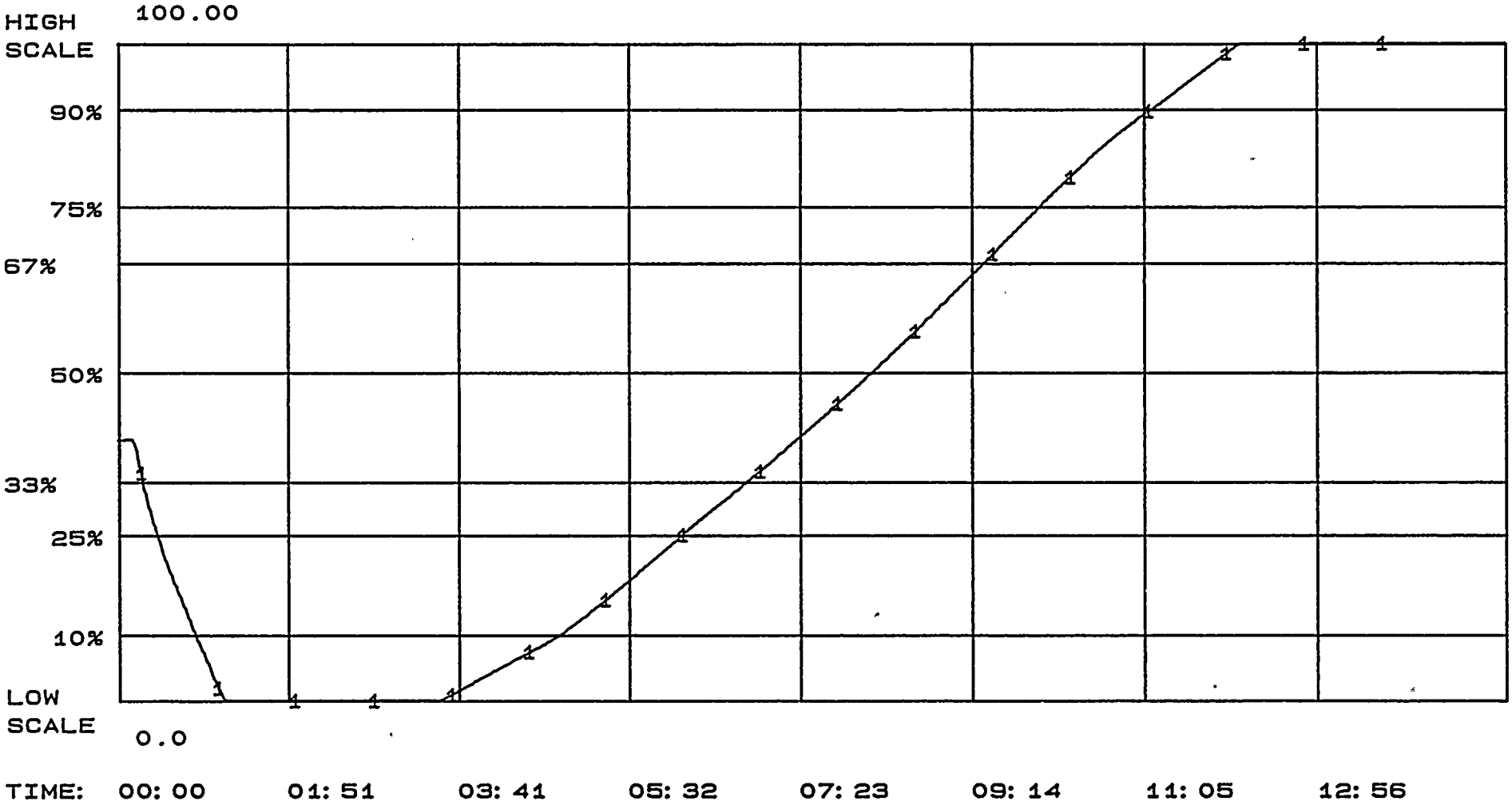
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WIDE RANGE RCS PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 15: 00
4				
5				
6				



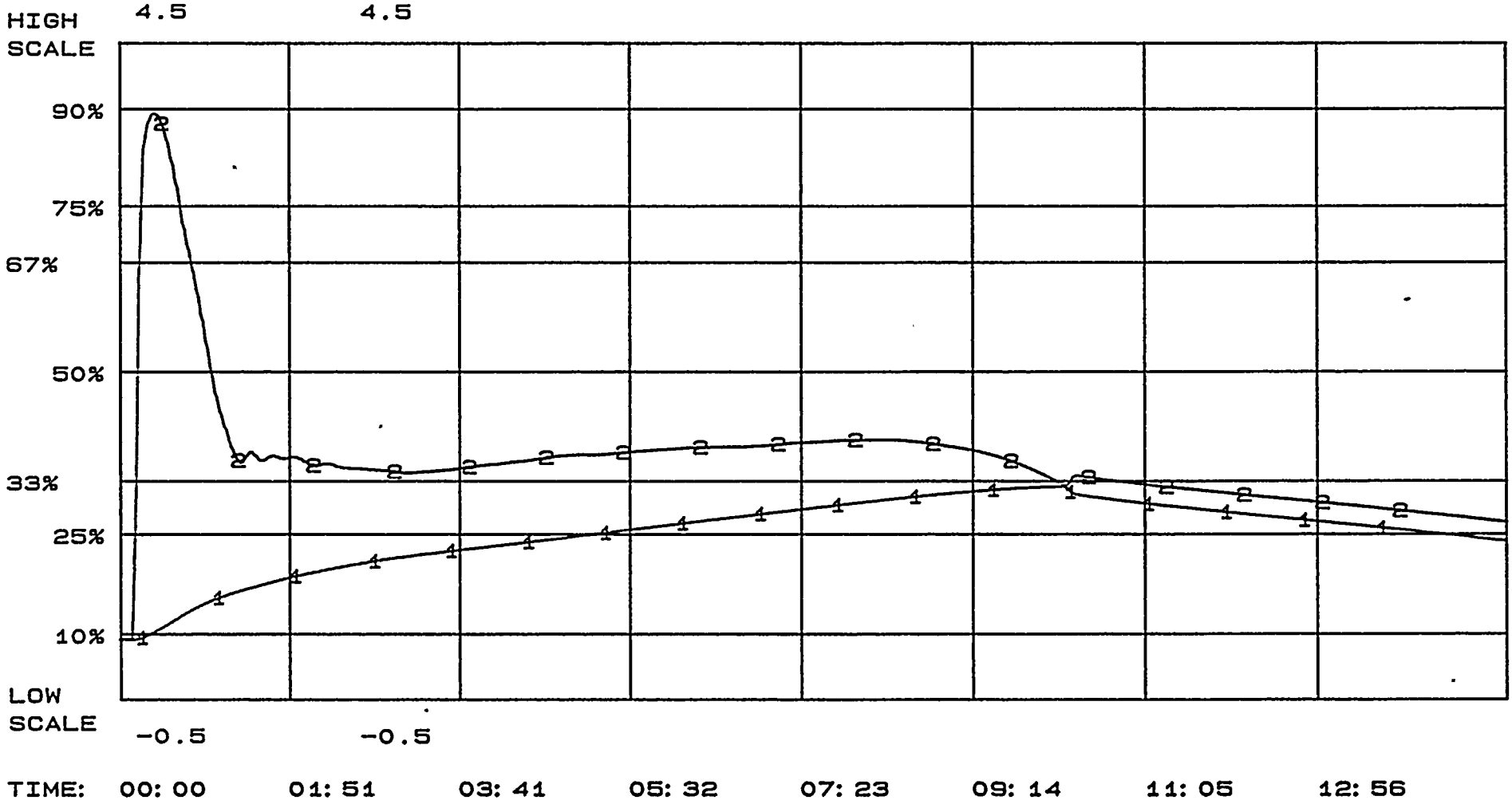
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 15: 00
4				
5				
6				



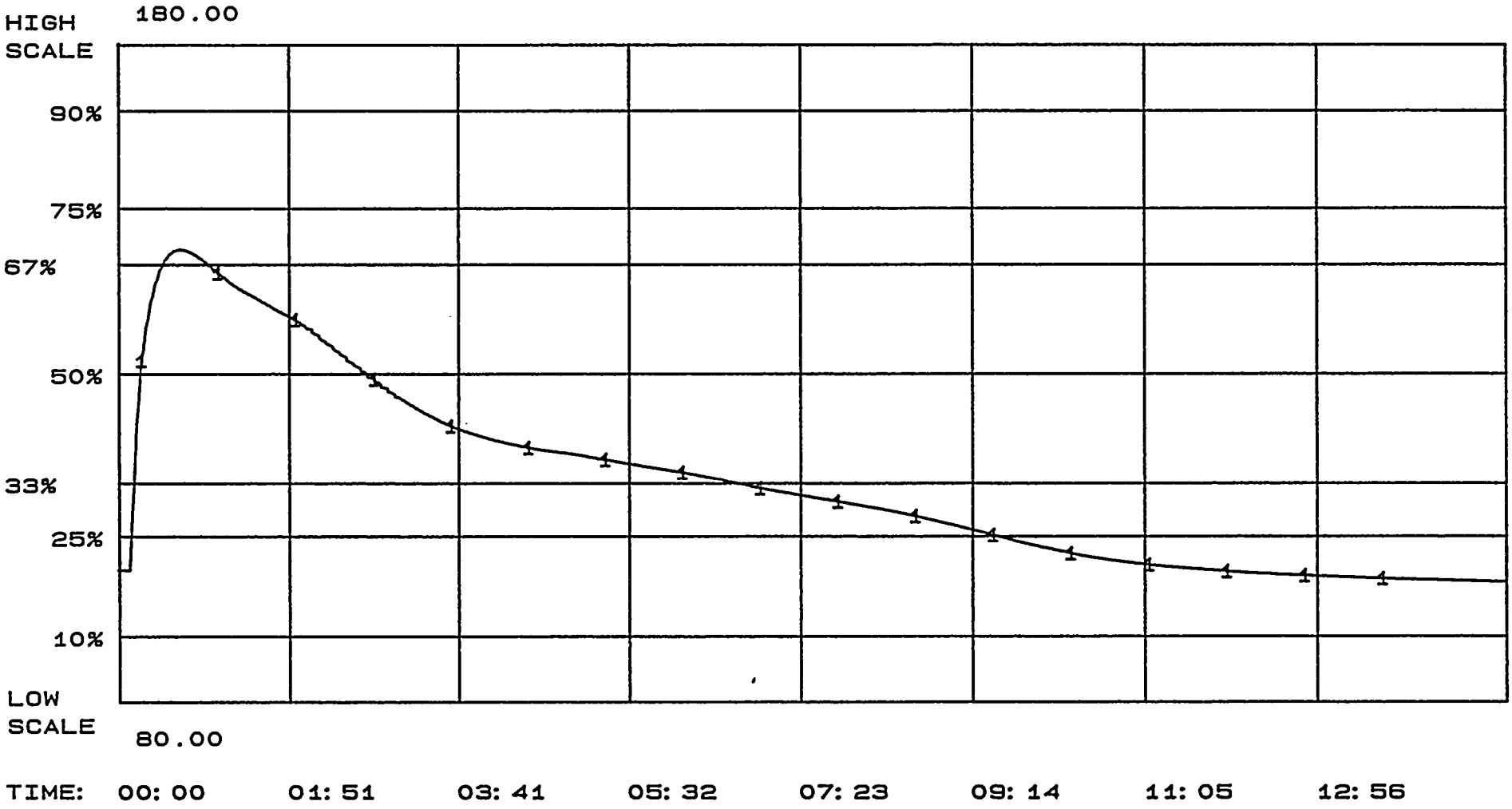
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 14: 58
4				
5				
6				



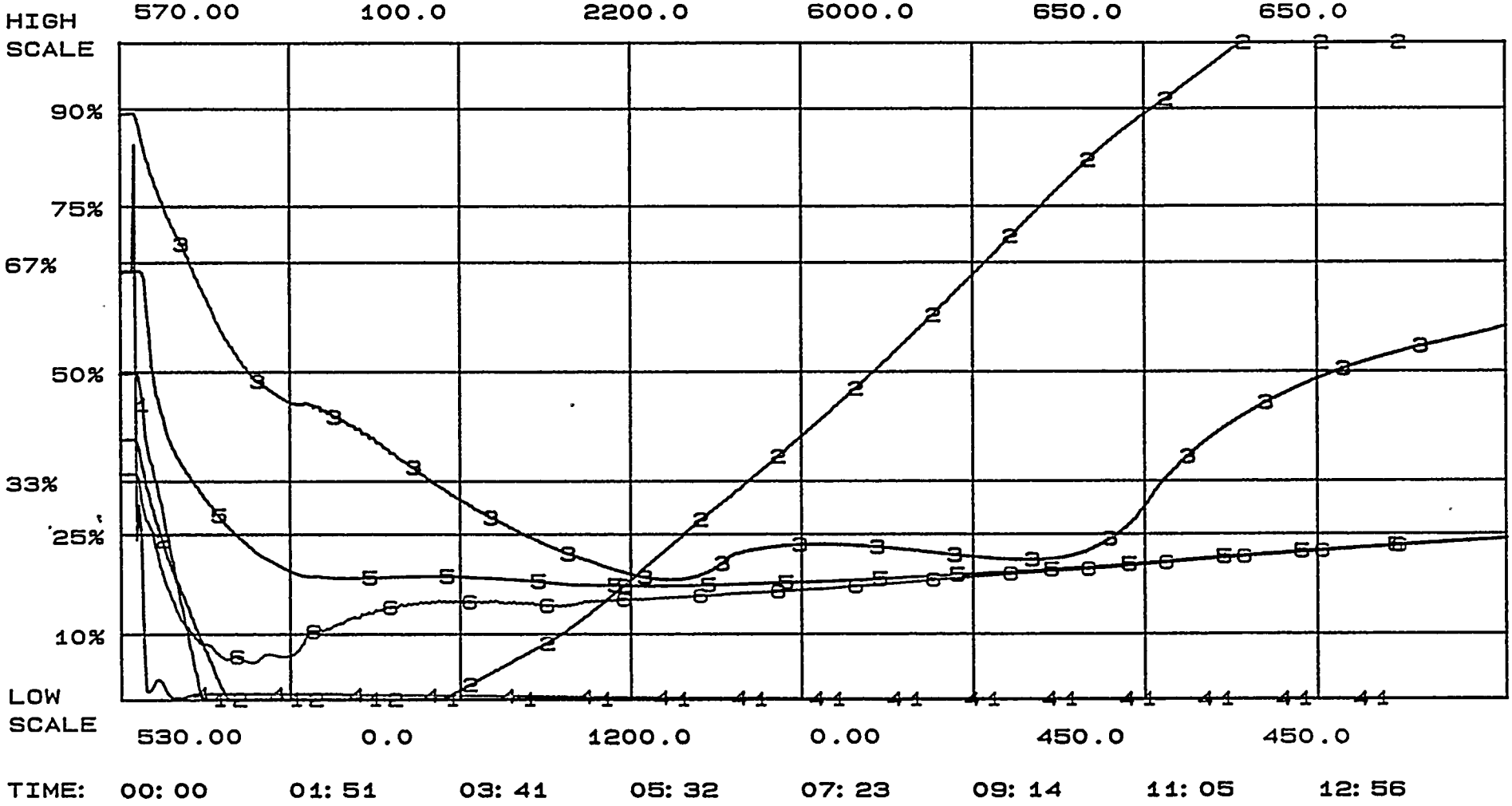
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	TIME
2				START 00: 00: 00
3				STOP 00: 14: 58
4				
5				
6				



MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVERAGE TEMP	DEG_F	TIME
2	L1091	PRESSURIZER LEVEL	PC	START 00: 00: 00
3	P1034	RCS WIDE RANGE PRESSURE	PSIG	STOP 00: 14: 58
4	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
5	T1111	LOOP 1 HOT LEG TEMP	DEG_F	
6	T1115	LOOP 1 COLD LEG TEMP	DEG_F	



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a slow primary system depressurization to saturated conditions with high pressure Emergency Core Cooling System inhibited using a pressurizer relief valve per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to establish localized saturated conditions in the RCS while liquid is maintained in the pressurizer.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits, and pressurizer level control in manual.

III. Data Collected

1) Pressurizer relief valve (PORV) flow
2) Pressurizer pressure
3) Pressurizer temperature
4) Surge line temperature
5) Pressurizer level
6) Loop flow rates
7) RCS hot leg temperature
8) Source range detector output
9) Reactor vessel level
10) RCS Saturation margin

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Localized saturated conditions are established in the RCS as indicated by:

   a) RCS saturation margin decreasing to zero (0)
   b) RCS wide range pressure decreases to approximately Psat for RCS hot leg temperature
   c) Decreasing wide range RVLIS indications with increasing pressurizer level indications

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted the following discrepancies:

a) Pressurizer surge line response was inconsistent with pressurizer level response.

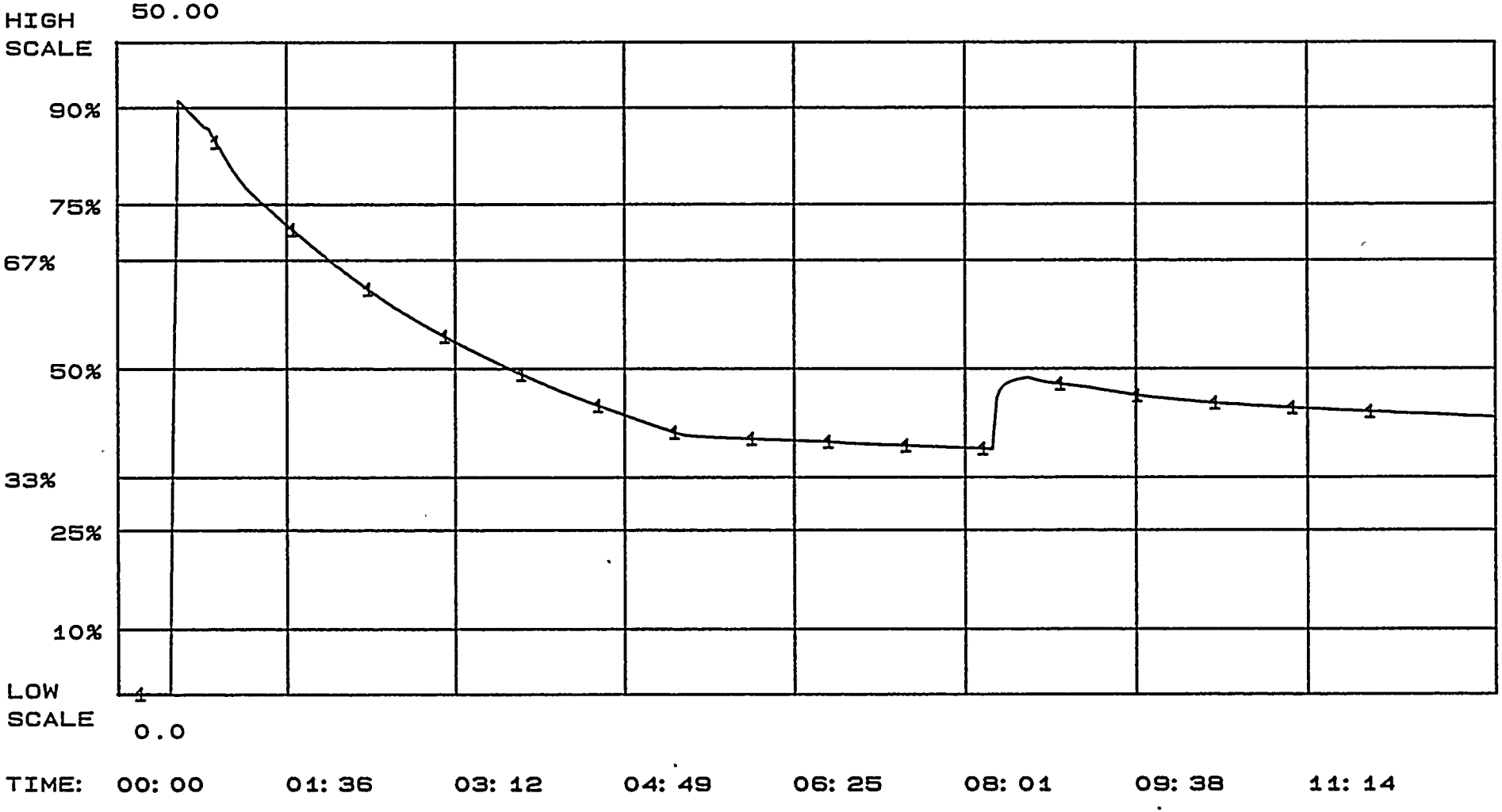
b) Reactor vessel level indicating system indication leveled off at approximately eight minutes and thirty seconds while mass was still being lost from the system.

c) RCS loop flow rates were not consistent with the event.

Discrepancy reports have been initiated to investigate and correct these conditions.

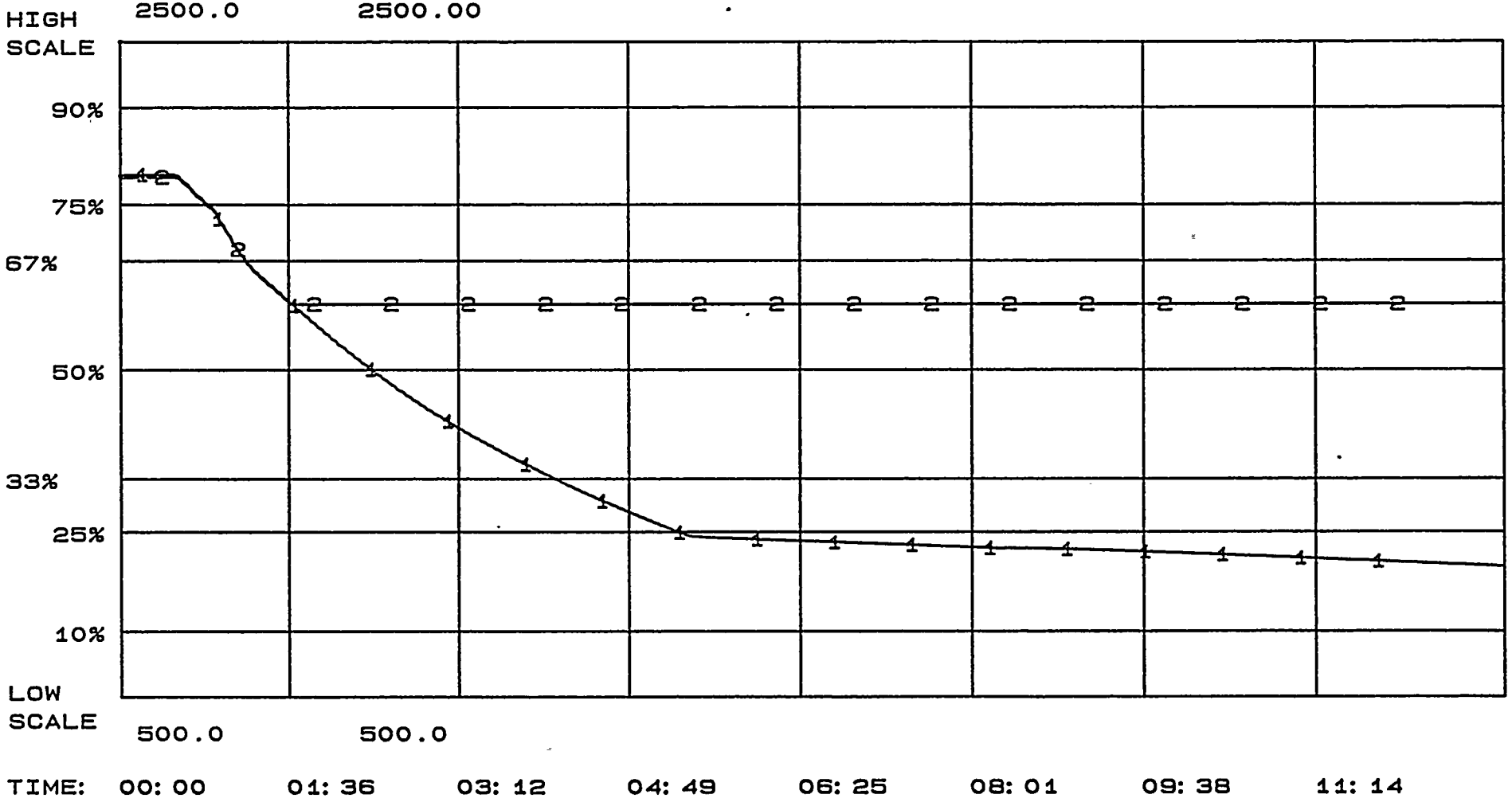
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCFPORVHDR	PRESSURIZER PORV HEADER FLOW	LBS_S	TIME
2				START 00: 00: 00
3				STOP 00: 13: 00
4				
5				
6				



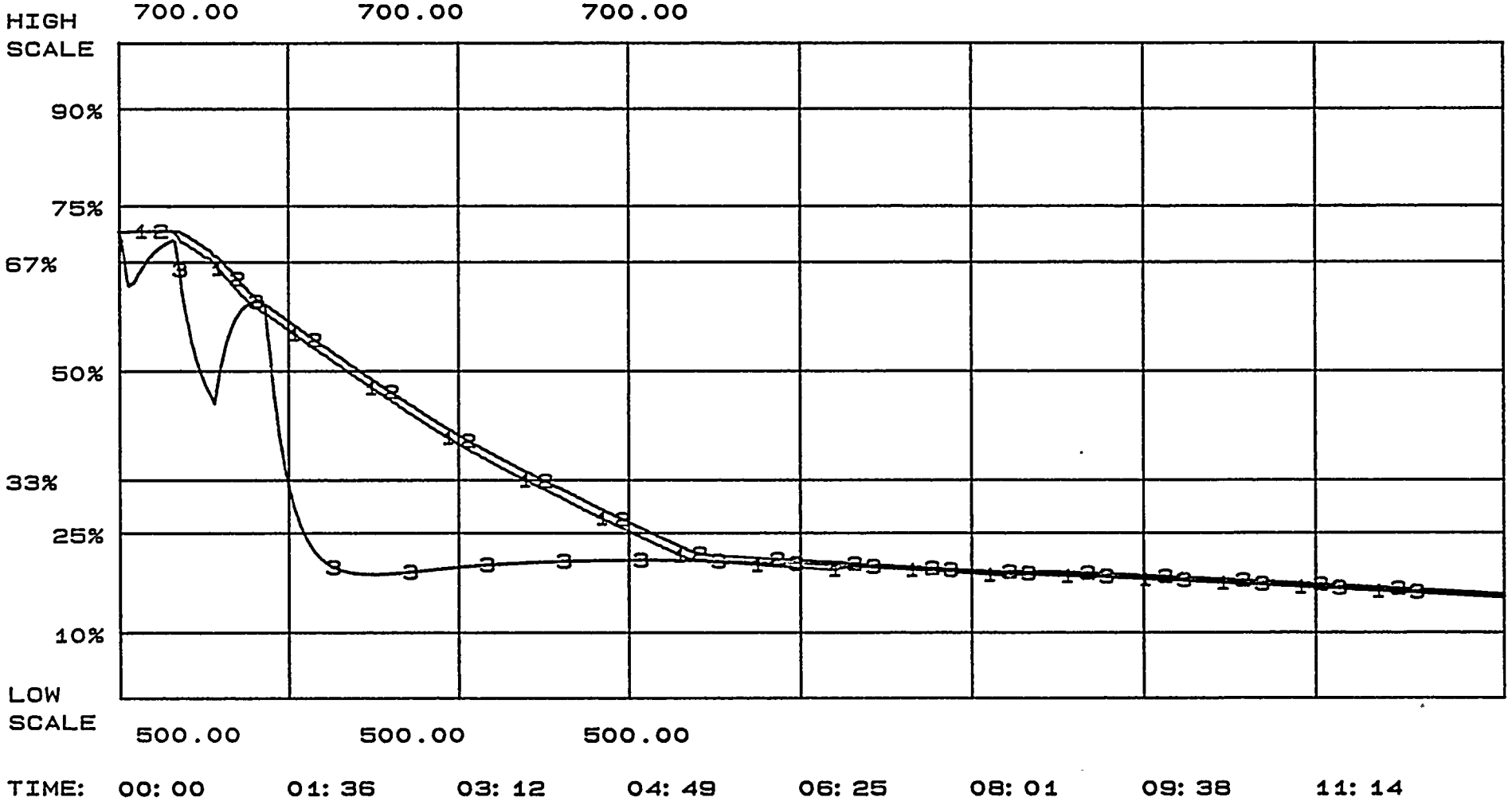
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WIDE RANGE RCS PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 13: 00
4				
5				
6				



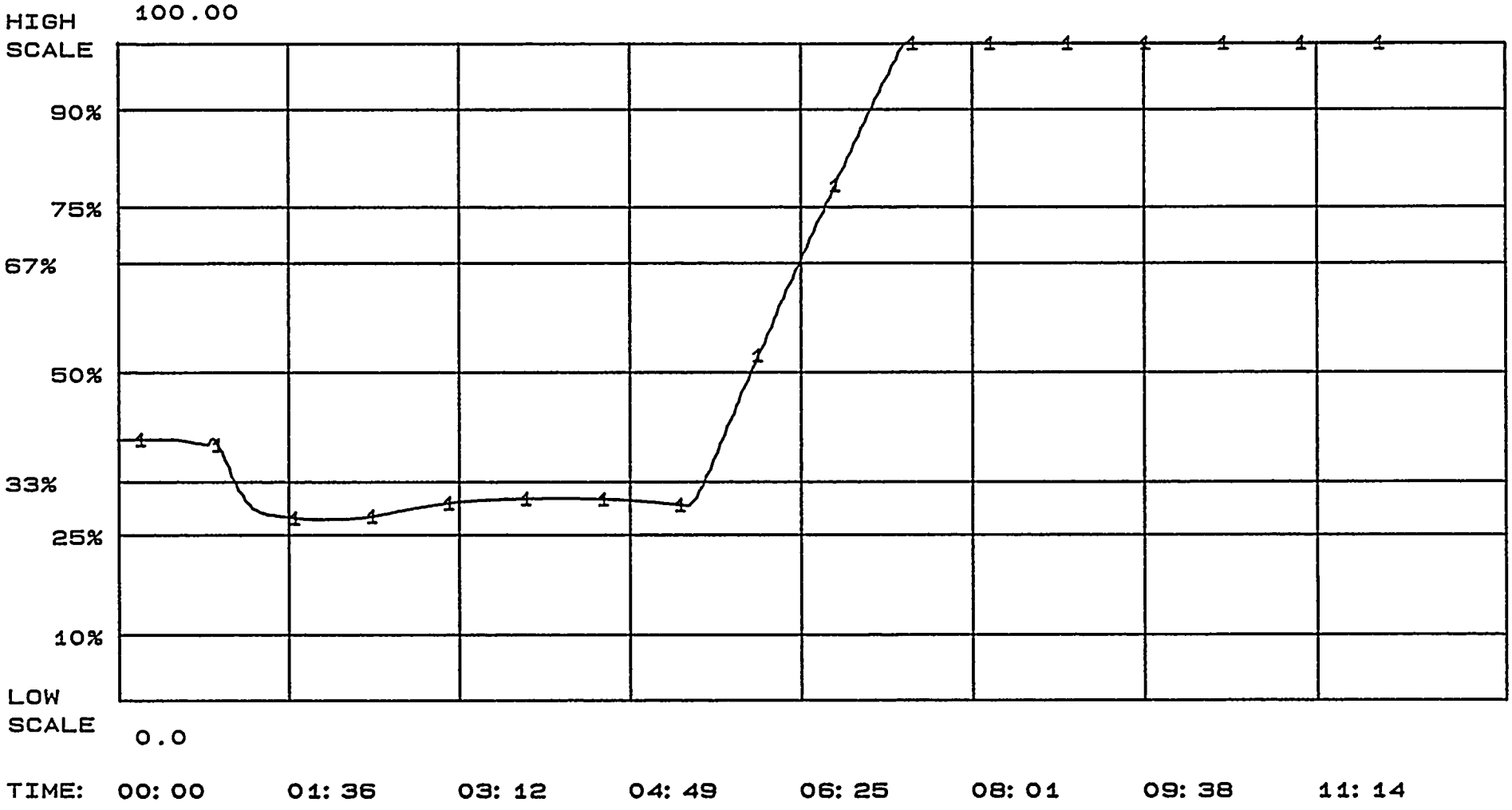
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PRESSURIZER VAPOR TEMPERATURE	DEG_F	TIME
2	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 13: 00
4				
5				
6				



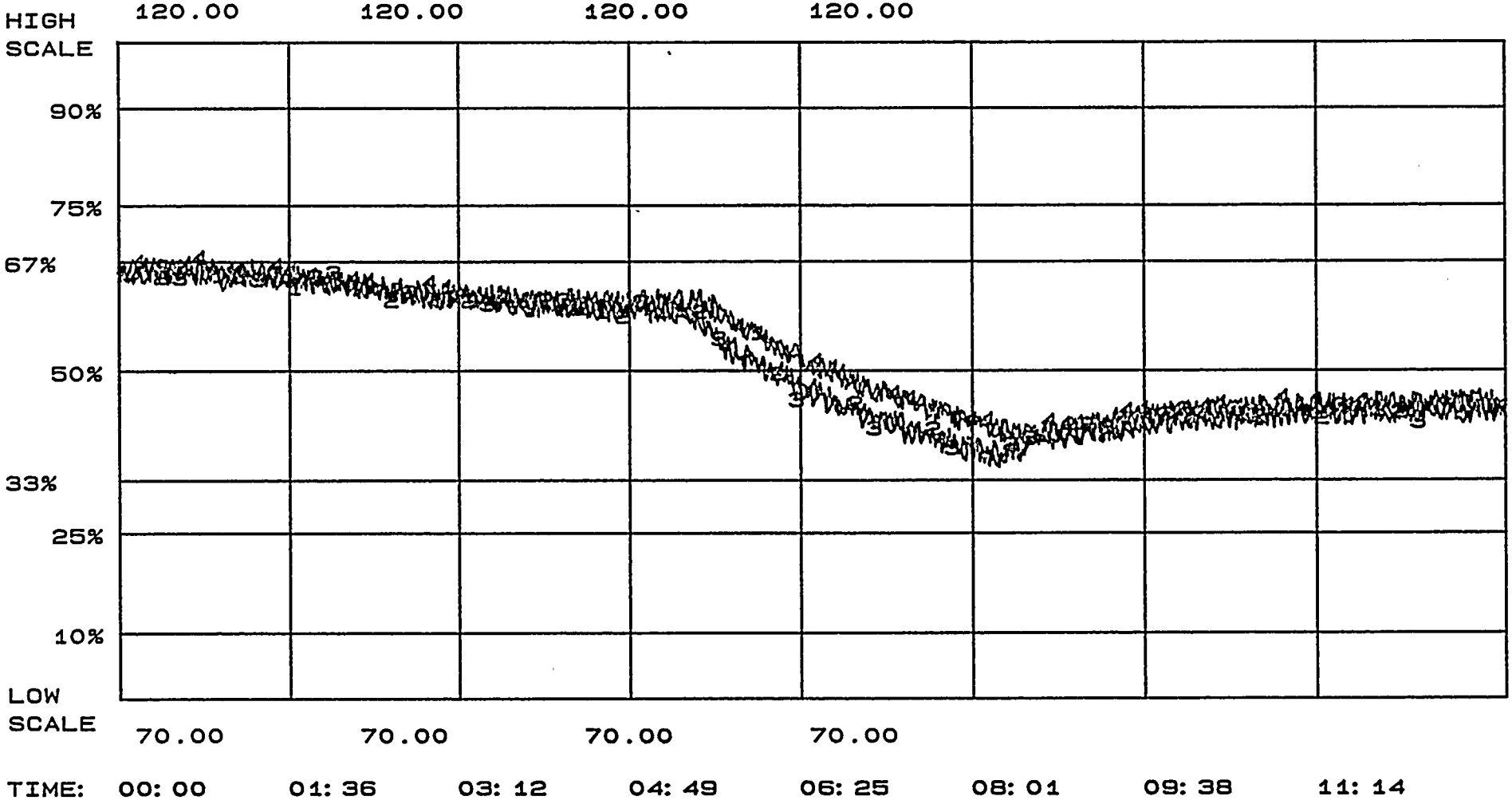
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 13: 00
4				
5				
6				



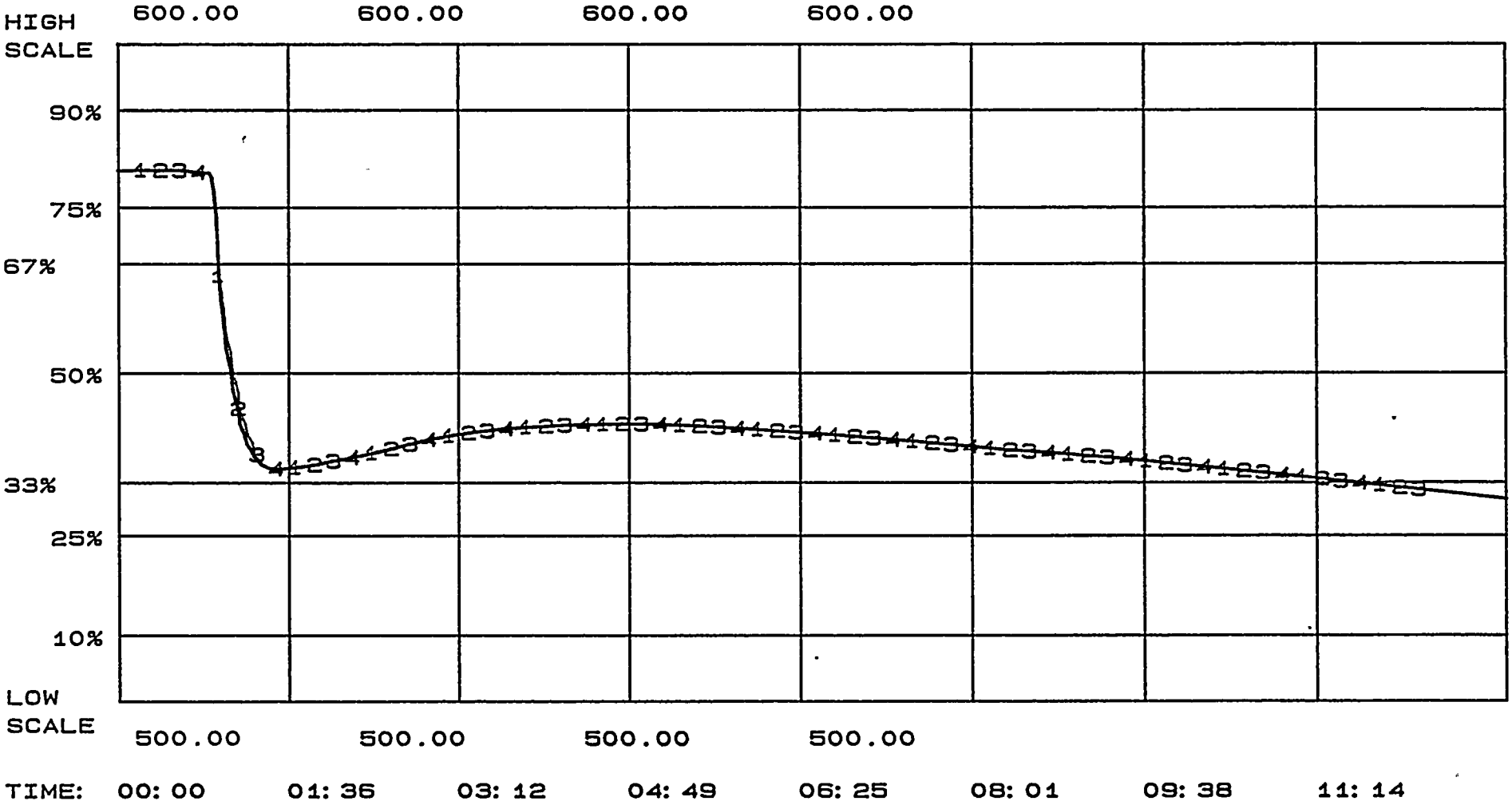
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1089	RCS LOOP 1 FLOW RATE	PC	TIME
2	F1092	RCS LOOP 2 FLOW RATE	PC	START 00: 00: 00
3	F1095	RCS LOOP 3 FLOW RATE	PC	STOP 00: 13: 00
4	F1098	RCS LOOP 4 FLOW RATE	PC	
5				
6				



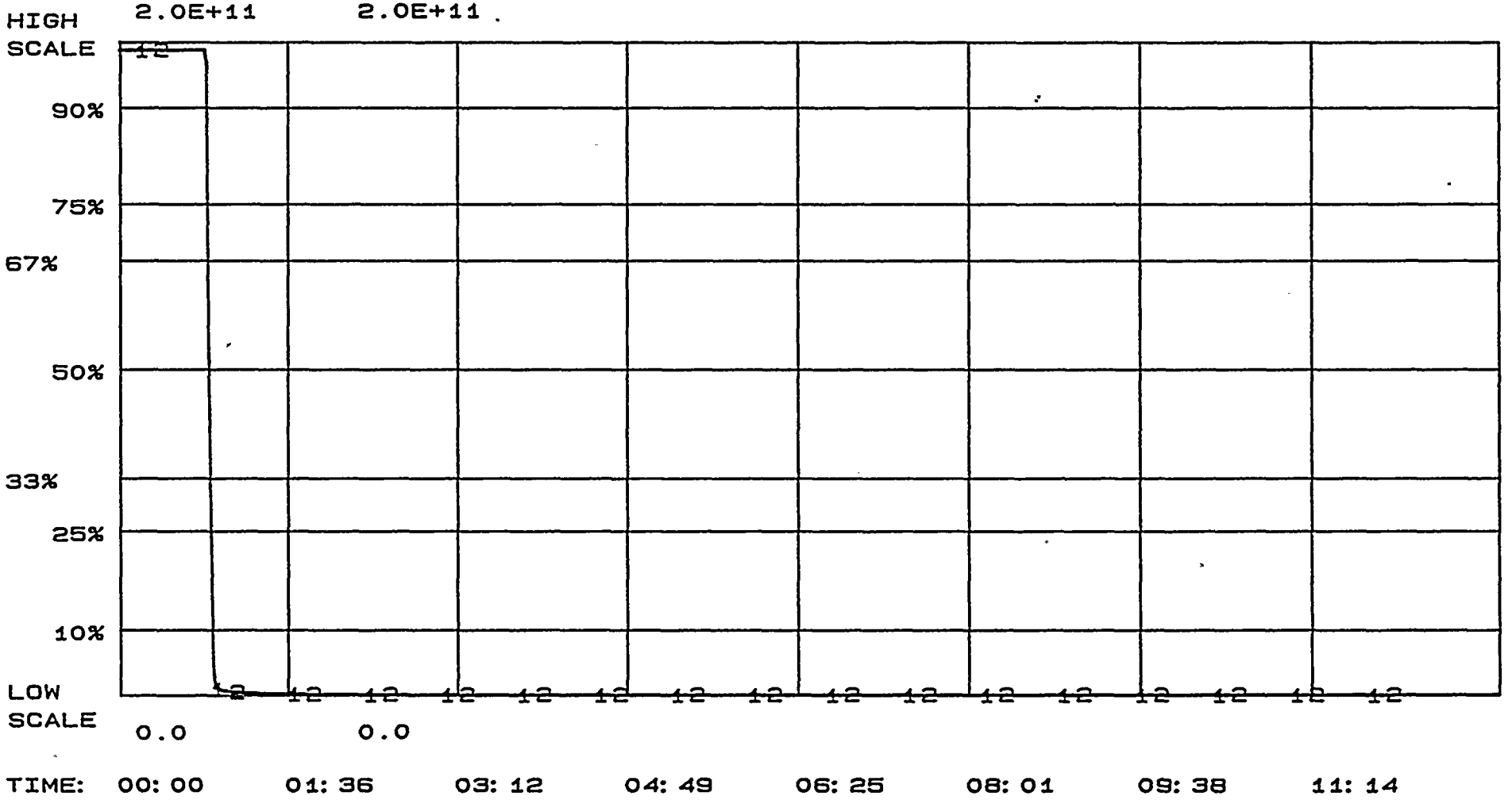
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F	STOP 00: 13: 00
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F	
5				
6				



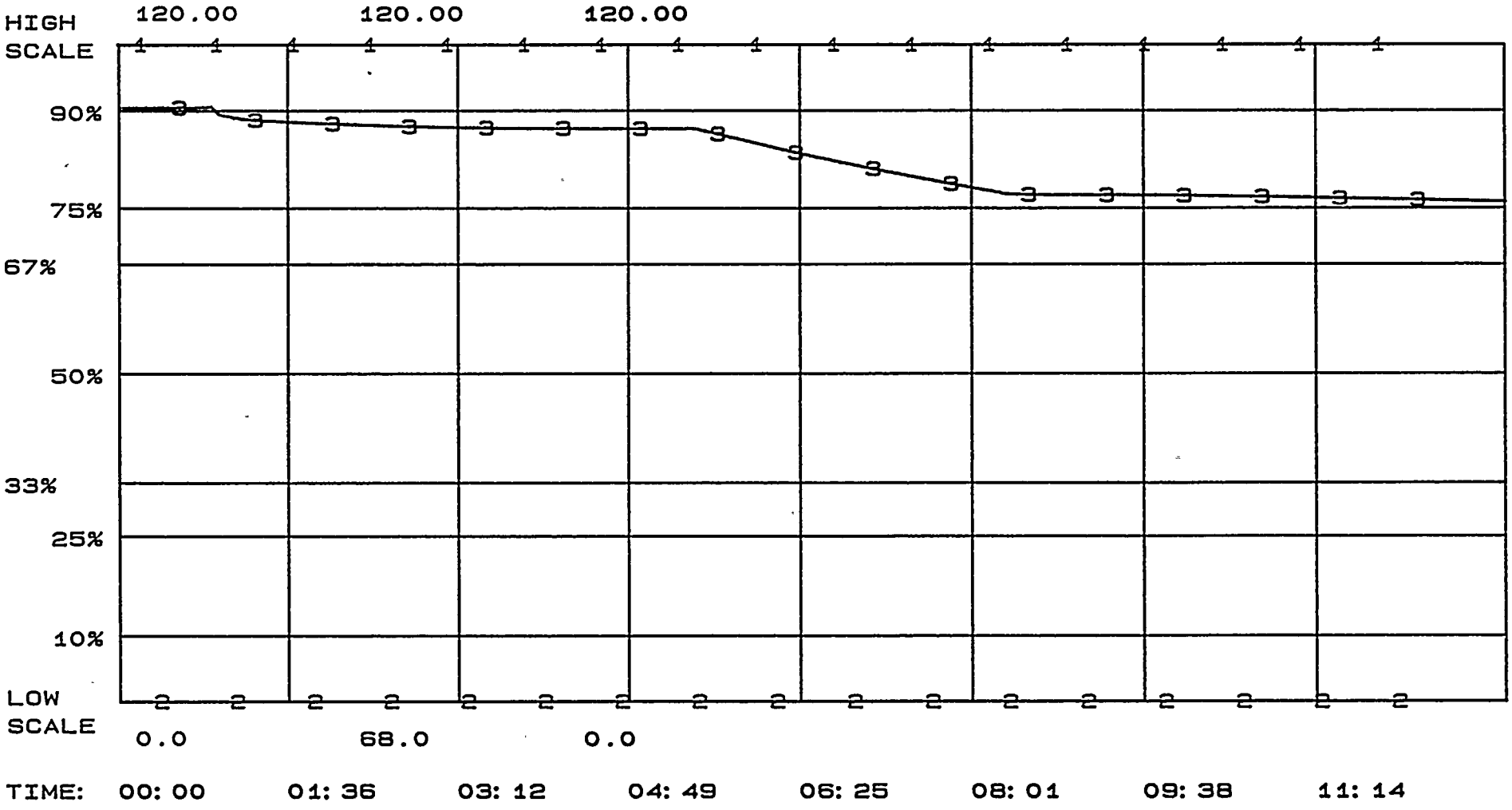
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU(1)	SOURCE RANGE DETECTOR N-31	CPS	TIME
2	NILDTOU(2)	SOURCE RANGE DETECTOR N-32	CPS	START 00:00:00
3				STOP 00:13:00
4				
5				
6				



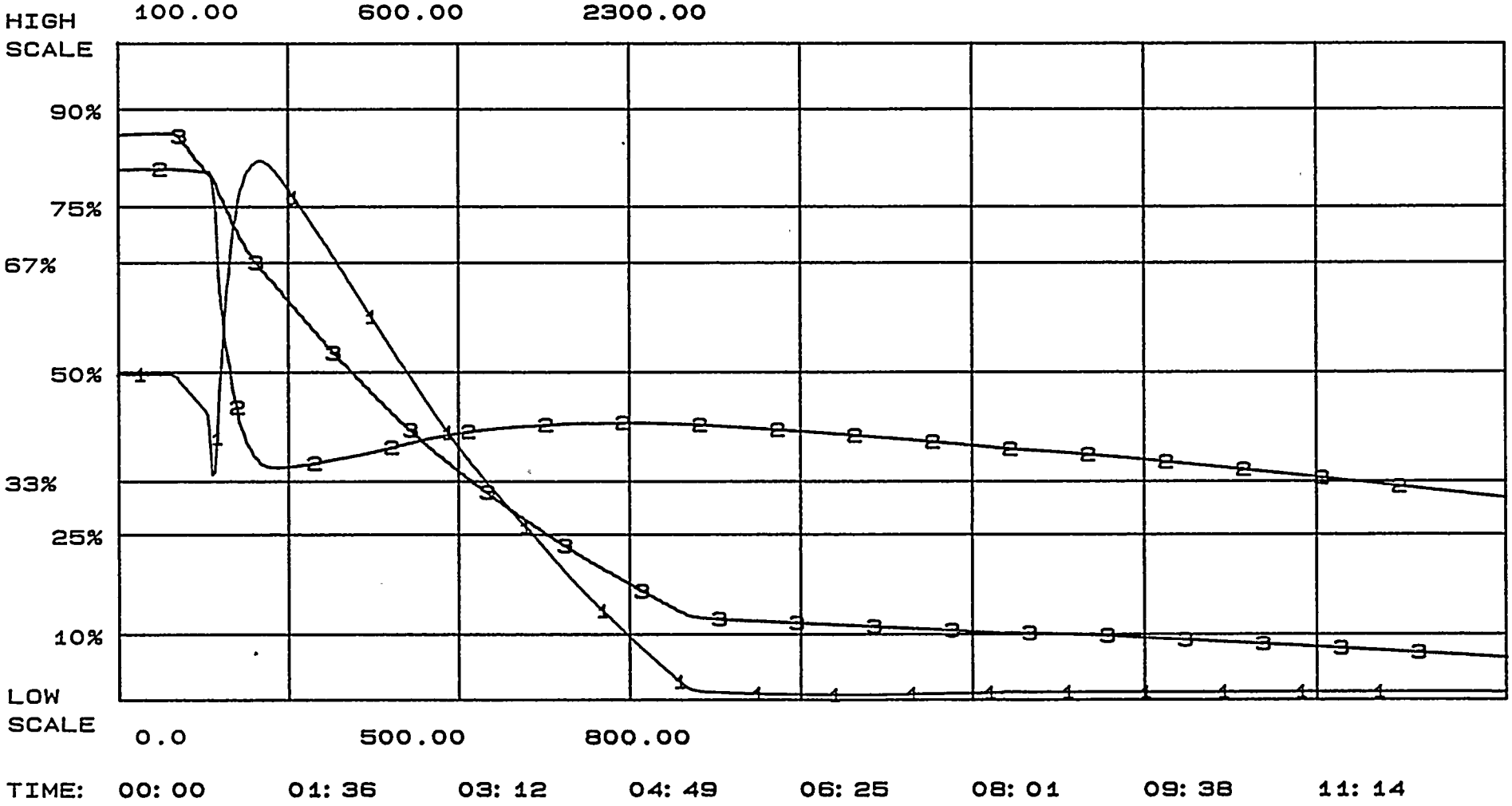
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1220	RX VESSEL LEVEL NARROW RANGE	PC	TIME
2	L1222	RX VESSEL LEVEL UPPER RANGE	PC	START 00: 00: 00
3	L1224	RX VESSEL LEVEL WIDE RANGE	PC	STOP 00: 13: 00
4				
5				
6				



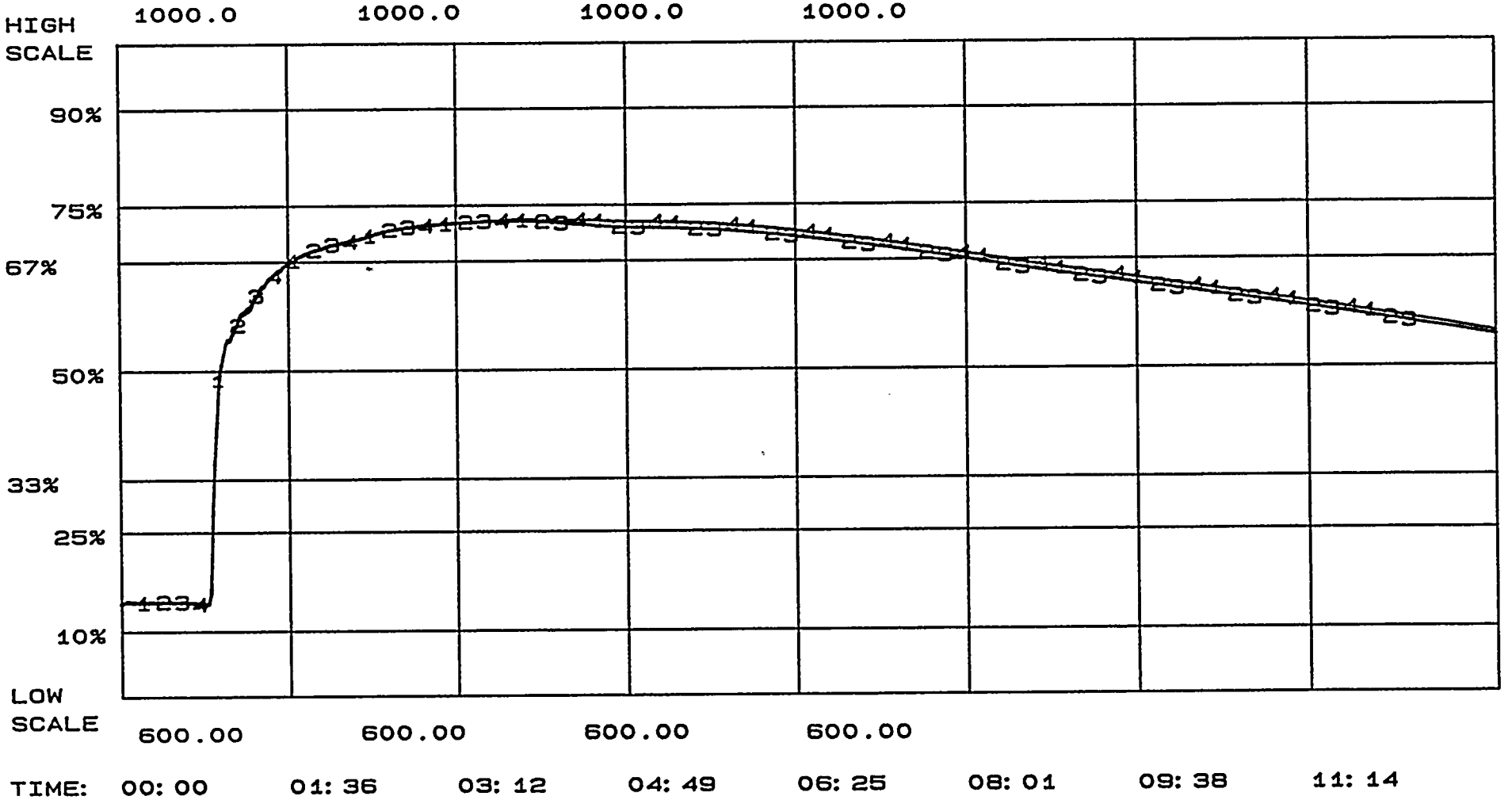
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RXTSC	RCS SATURATION MARGIN	DEG_F	TIME
2	T1111	LOOP 1 HOT LEG TEMP	DEG_F	START 00: 00: 00
3	P1034	RCS WIDE RANGE PRESSURE	PSIG	STOP 00: 13: 00
4				
5				
6				



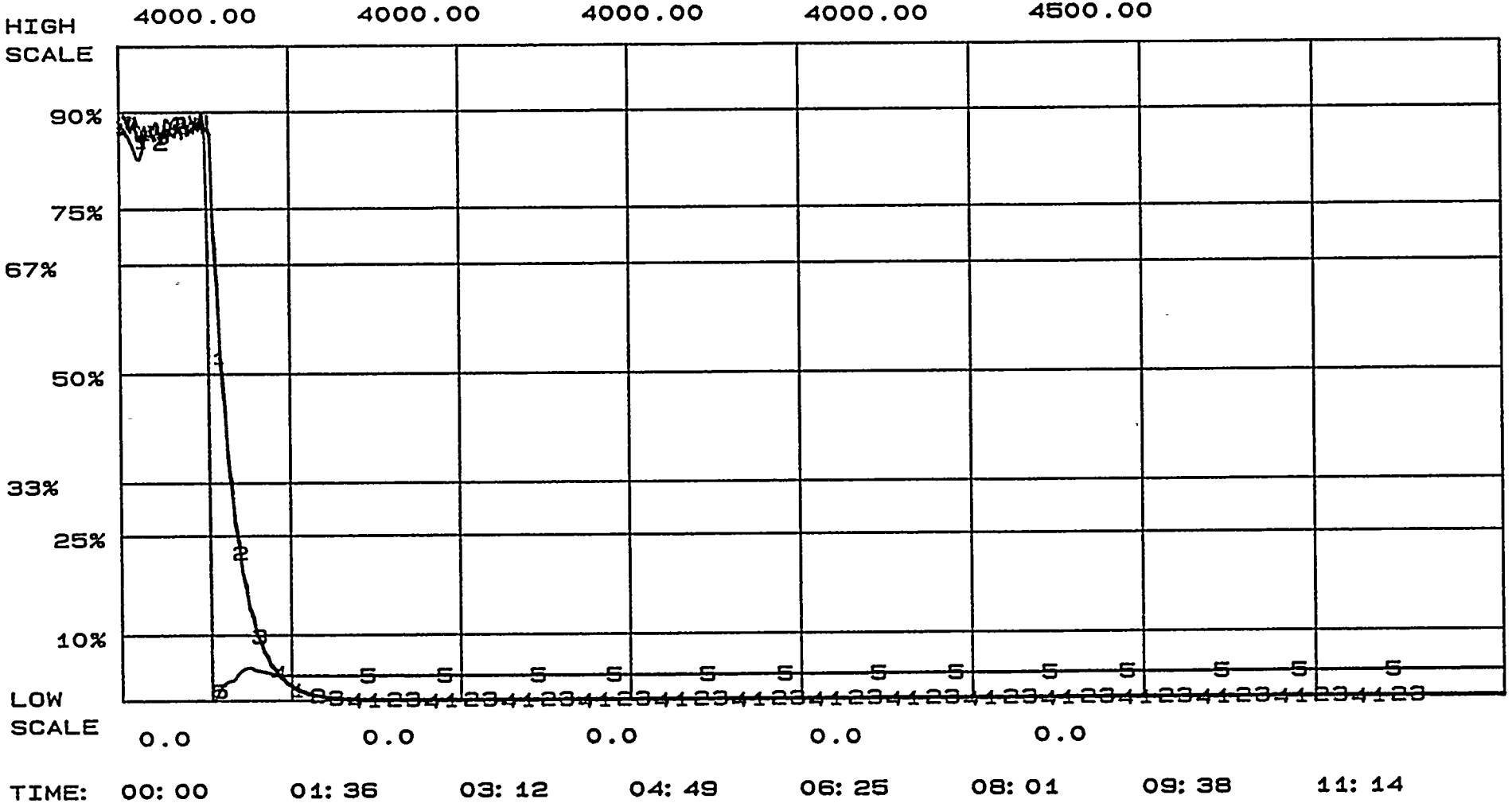
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 13: 00
4	P1031	STEAM GENERATOR #3 PRESSURE	PSIG	
5				
6				



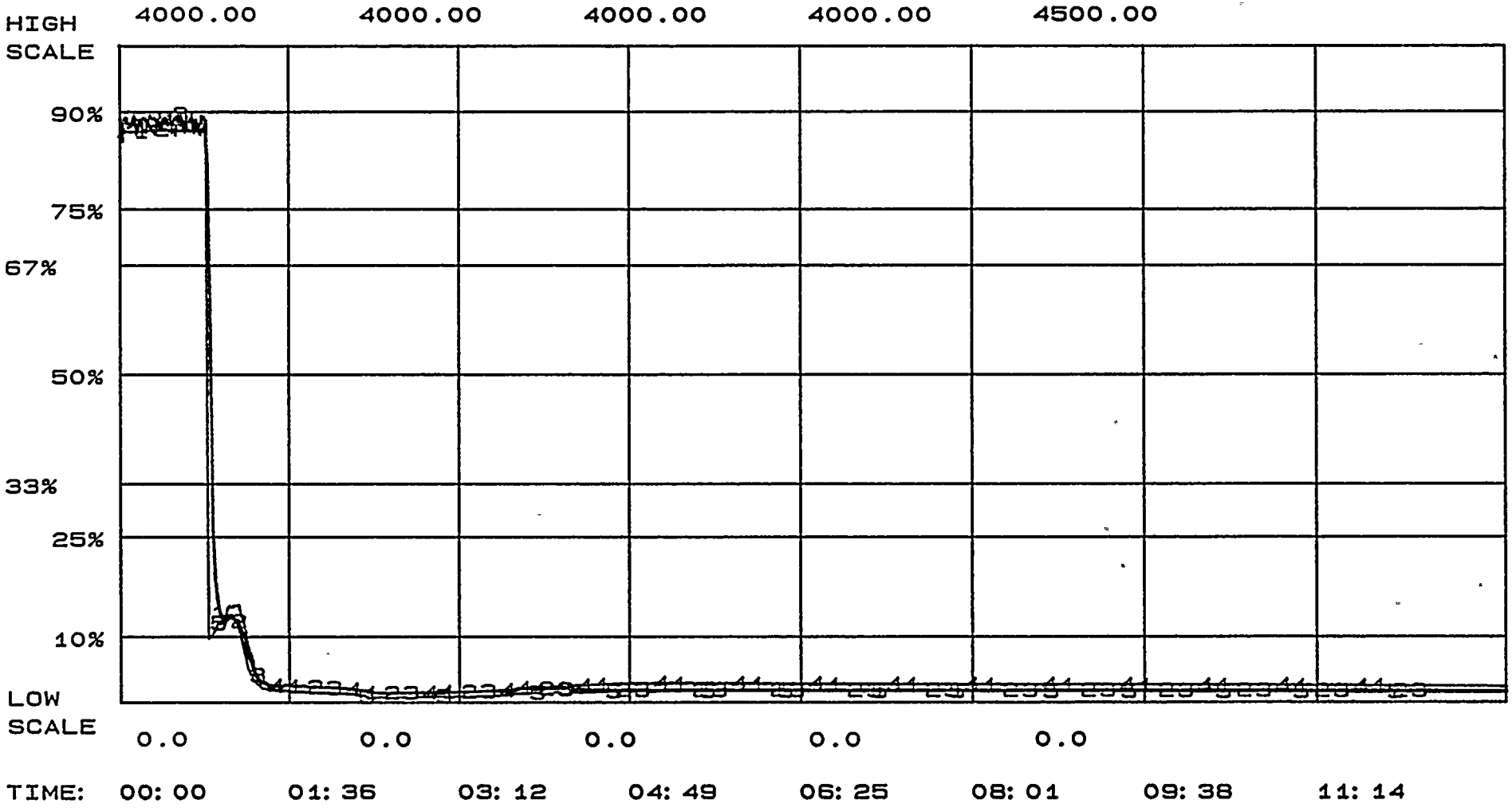
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	LOOP 1 FEEDWATER FLOW	KBH	TIME
2	F1201	LOOP 2 FEEDWATER FLOW	KBH	START 00: 00: 00
3	F1202	LOOP 3 FEEDWATER FLOW	KBH	STOP 00: 13: 00
4	F1203	LOOP 4 FEEDWATER FLOW	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW (INC AFW)	LBS_S	
6				



SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	LOOP 1 STEAM FLOW	KBH	TIME
2	F1050	LOOP 2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	LOOP 3 STEAM FLOW	KBH	STOP 00: 13: 00
4	F1054	LOOP 4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



SEE COOK PLANT SIMULATOR UNIT 2 CERTIFICATION PACKAGE

SEE COOK PLANT SIMULATOR UNIT 2 CERTIFICATION PACKAGE

COOK PLANT SIMULATOR

DIFFERENCES

I. Introduction

The Cook Plant Simulator Certification Submittal references two differences between the reference plant and the simulator specified as exceptions. They are:

1) Plant Process Computer

Presently the Cook Plant Simulator does not simulate the reference plant process computer system due to replacement of this equipment in the reference plant. Installation in the plant is scheduled for the 1991 refueling outage (last quarter of 1991).

The hardware is on site to replicate and simulate the plant process computer and is expected to implemented by the end of the last quarter of 1991.

2) Plant Hand Held Radio Communication System

Presently the Cook Plant Simulator does not simulate the reference plant hand held radio communication system due to replacement of this equipment in the reference plant.

Equipment to replicate and simulate reference plant equipment is on order and expected implementation date is by the end of the last quarter of 1990.

3) Main Turbine, Feedwater, Condensate and Main Generator Systems

Cook Plant Unit 1 secondary system (General Electric) differs from the Unit 2 secondary system (Brown Boveri). These differences are summarized in the Human Factor Study.

TUF 90-02

Final Technical Report

Summary Report on Physical Differences Between the Simulator and the Unit One Control Room at the D.C. Cook Nuclear Plant Implications for Operator Training and Examination

by:

John A. Molino
John E. Farbry, Jr.
G. Allen Elliff (AETA/SCI)
Kristinn R. Thorisson
Katrin G. Helbing
Linda J. Langley

Prepared by:

AETA/SCI, Inc.
3633 Wheeler Road, Ste. 280
Augusta, GA 30909

Tech-U-Fit Corp.
400 Madison St., Ste. 210
Alexandria, VA 22314

(Edited for brevity by D.C. Cook Simulator Staff)

Prepared for:

Indiana Michigan Power Company
Donald C. Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106

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EXECUTIVE SUMMARY

A detailed analysis was made of the physical differences between the Simulator and the Unit One control room at the D.C. Cook Nuclear Plant. Detailed photographs were taken of each facility. These photographs and other materials were utilized to identify and document 1,684 physical discrepancies out of the approximately 13,000 components (controls, displays, labels, etc.) in each facility. The majority of these discrepancies concerned minor annunciator, label and bezel differences, leaving 348 remaining discrepancies. These remaining 348 discrepancies were judged to be either insignificant or to be of no consequence in producing possible training errors.

A series of 16 operator interviews was conducted to supplement judgements concerning the consequences of these physical discrepancies. The evaluation concentrated primarily on Emergency Operating Procedures (EOPs).

An Assessment Panel of experts in operations, training, engineering and human factors independently evaluated all 1,684 identified discrepancies. Their task was to determine whether any of these discrepancies could cause a possible negative transfer of training error. Such negative transfer of training errors could either (1) possibly challenge a Critical Safety Function (CSF), Attachment 16, at the plant, (2) possibly adversely affect plant operations, or (3) have no significant effect on either plant CSFs or operations. The Assessment Panel found no physical discrepancies that would be likely to challenge any CSFs, and only 5 discrepancies that would be likely to adversely affect plant operations.

By a program of modifications to enhance simulation fidelity and specialized instruction to reduce negative transfer of training, the Panel decided that any remaining negative impacts could be minimized.. Therefore, as far as physical differences between the two facilities are concerned, the overall conclusion of the present study is that the Simulator at D.C. Cook may be used adequately to train and examine operators on D.C. Cook, Unit One. However, specific training and/or examination on the Unit One turbine, turbine control feedwater (and condensate) and main generator systems would be difficult due to differences between the two units and the fact that high physical fidelity is maintained between the simulator and Unit Two./

1.0 INTRODUCTION

The present report summarizes an analysis of the physical differences between the Simulator and the Unit One control room at the D.C. Cook Nuclear Plant operated by the Indiana/Michigan Power Company. This analysis has been conducted as part of the process of certifying the Simulator for the conduct of operator training and examinations on Unit One procedures.

1.1 Background

1.1.1 Baseline

The Donald C. Cook Nuclear Plant is a two unit nuclear power plant. Both units use Westinghouse four-loop pressurized water reactors with ice condenser containments as the primary design. The differences between the two units on the primary side are minimal, and operators are licensed to operate both units.

The two units have different turbine generator systems, and have a limited number of other differences on the primary side. The differences between the two units on the secondary side are currently being addressed through training so that operators may receive dual licenses despite secondary side system and equipment differences.

To meet the present Simulator certification requirements, the Simulator is being certified as "plant reference" by the utility. Analysis to support the certification application is to include evaluation of the Simulator's fidelity and functionality as compared to the actual plant control room and plant responses, in accordance with criteria specified in regulatory guidance (Reg. Guide 1.149; ANSI/ANS-3.5, 1985; NUREG 1258; etc.).

1.1.2 Simulator Characteristics

The Indiana/Michigan Power Company procured the Simulator to be plant reference to the D.C. Cook Unit Two control room. The Simulator is to be used for the training of operators for both Unit One and Unit Two, with the operators being licensed to operate either unit (dual licensed).

1.1.3 Fidelity of Unit Two Control Room and Simulator

Both D.C. Cook control rooms were evaluated extensively within the scope of the Detailed Control Room Design Review (DCRDR), and all identified Human Engineering Discrepancies (HEDs) are being addressed and resolved in the context of the DCRDR. Considerable control room modifications, backfits, and enhancements resulted from the DCRDR to resolve significant HEDs. These modifications, backfits, and enhancements are being implemented consistently in both control rooms and in the Simulator. Thus the DCRDR work at D.C. Cook is an ongoing process. One of the goals of this process is to insure that the Unit Two control room and the Simulator are virtually identical with respect to control board fidelity.

1.1.4 Fidelity of Unit One Control Room and Simulator

The Simulator is also intended to represent a faithful simulation of the Unit One control room in all important respects, with a few exceptions. Since the Unit One and Unit Two control rooms were made to be as identical as possible through original design, DCRDR backfits, and operational enhancements, and since the Simulator has a high degree of fidelity to Unit Two, the Simulator also has a high degree of fidelity to Unit One, except for system differences and panel arrangement differences for some of the backpanels.

These system exceptions are related primarily to different turbine generator systems between Units One and Two, and other secondary side system design and piping differences between the Units. There are also a few minor differences on the primary side between the Simulator and the Unit One control room. To obtain certification of the Simulator as "plant reference" to Unit One, these differences were identified and evaluated to see whether or not such differences contribute to an increase in the probability of operator error in the actual Unit One control room.

1.1.5 Unit One RTP Program Differences

D.C. Cook has recently implemented a reduced temperature and pressure (RTP) program to extend steam generator life on Unit One. This RTP program has caused operating ranges, setpoints, etc., for some plant parameters on Unit One to differ from those on Unit Two. Several related modifications to procedures are being made to reflect these new parameter values. D.C. Cook is also developing a software module for Unit One Simulator training that will accurately model Unit One performance under the RTP program parameters.

1.2 Project Objective

To certify the Simulator as "plant reference" to Unit One, the Simulator was evaluated against Unit One in accordance with the requirements of Regulatory Guide 1.149 and ANSI/ANS-3.5, 1985. Other guidance (e.g., NUREG 1258) provides further direction on criteria for acceptability of the Simulator as "plant reference."

Because of the system differences between Unit One and Unit Two (and therefore between Unit One and the Simulator), and because of operational differences between Unit One and Two due to the Unit One RTP program, D.C. Cook decided to contract with AETA/SCI/Tech-U-Fit to conduct an assessment of the human factors implications of using the Simulator for Unit One operator training and examinations.

1.3 Regulatory Guidance

The following regulatory guidance and supporting documents were used in the present study:

- o 10 CFR Parts 50 and 55, Operator's Licenses and Conforming Amendments
- o NRC Reg. Guide 1.149, Nuclear Power Plant Simulation Facilities for Use in Operator Licensing Examinations
- o ANSI/ANS 3.5,1985, Nuclear Power Plant Simulators for Use in Operator Training
- o NRC Reg. Guide 1.8, Qualification and Training of Personnel for Nuclear Power Plants
- o NUREG 1258, Evaluation Procedure for Simulation Facilities Certified Under 10 CFR 55
- o NRC Form 474, Simulation Facility Certification.

2.0 PHYSICAL DIFFERENCES

Given the objective of identifying and documenting the physical differences between the Simulator and the Unit One control room, the principle methodological issue was to develop procedures to facilitate detailed comparisons between the two facilities.

The primary method of detecting Unit One and Simulator differences was through the comparison of recent photographs of the corresponding control room areas, primarily the control panel components. These photographs were taken in the Simulator on July 21, 1989, and in the Unit One control room on July 26,1989. When a difference was found between the photographs, it was recorded on a specific form as described later. In certain cases, such as with the annunciators, lettering was too small to be read from the photos. In this case, instead of photos, hardcopy diagrams of Unit One and Simulator annunciators were used for comparison. These hardcopy diagrams were validated against actual annunciator and status light tiles for about 200 out of the approximately 1200 entries on the diagrams for each facility. In Unit One, all 214 tiles examined were in exact correspondence with the printed layout. In the Simulator, three (3) minor discrepancies (abbreviations, word order, etc.) were found between the actual tiles and the printed layout in 245 comparisons. These discrepancies had been previously identified, and were immediately corrected.

In order to identify discrepancies which might impair Simulator effectiveness and produce possible negative transfer of training, virtually all discrepancies were documented and assessed. Major candidates for discrepancies included:

- o Displays
  - Meters: range, graduation marks, zone banding
  - Indicating Lights: color, size
- o Controls
  - J-handles, dials, knobs: size, shape
  - Pushbuttons: size, shape, color
  - Toggle Switches: type, size
- o Labels
  - Abbreviations, location relative to component, content differences
  - Size
  - Type of Font
  - Presence/absence of specific component
- o Component arrangement
  - Relative positions of components
  - Location of corresponding components on other panels
- o Miscellaneous Components
  - Phone
  - Alarms
- o Sequential arrangement of panels

2.1 Discrepancy Forms

The physical discrepancies between the Unit One control room and the Simulator were recorded on two types of forms. The first form was the General Component Discrepancy (GCD) Form. A copy of this form is given in Attachment 1. Discrepancies between components such as controls, displays, pen recorders, indicating lights, and a few miscellaneous items were recorded on this form. Basic information about the component (type, location, label, etc.) was recorded for its identification. Discrepancies were recorded in the spaces applicable to that particular component. Spaces which applied to the component but had no differences were left blank. In certain applications of the GCD form, several components were listed on the same form and total numbers of discrepancies were listed. Additional descriptions of the components were given in either the "Type" or "Comments" sections of the form.

The second form, the Discrepancy Form for Matrices, was used for documenting discrepancies only for annunciator panels, status lights and knife switches. A copy of this form is given in Attachment 2. Discrepancies for these components were recorded on these forms because of their matrix arrangement. The matrix form was designed to include information such as label, color, and location differences. As with the GCD form, information could be provided for several elements grouped together or for individual elements.

The GCD form and the matrix form were developed to accommodate the different types of components found in a nuclear control room. These two forms evolved from the forms suggested in NUREG 1258. They contain all the relevant information contained in the NUREG 1258 versions.

2.2 Evaluation Methodologies

2.2.1 Control Panels in Control Room

Materials. Large, color photographs (about 12" x 16") of the Simulator and the Unit One control room were prepared by D.C. Cook. Three types of photos were available:

- Overall view of the primary U-shaped space,
- Panel views from top to bottom usually showing several demarcated systems,
- Detailed panel views showing close-ups of components and labels.

The overall views served to locate and orient among the detailed panel views. Each photo was labeled with an identification number to serve as a reference on the discrepancy forms. The two forms were developed and executed on Q&A Version 3.0 (Symantec) software.

Procedures. To locate Simulator-Unit One differences, the photo of a Simulator panel area and the photo of the corresponding panel in the Unit One control room were placed side by side. Then the two photos were compared for differences in labels, components, etc. When a discrepancy was observed, it was recorded on the GCD form. This form could be used to record one or more discrepancies on one component, as well as one or more discrepancies which were shared by several components. In the latter case, for example, a group of J-handle controls in the Simulator was the same as a group of the J-handle controls in Unit One except that their identification labels were of a different size.

This form was also used to record more complex discrepancies. For instance, the Turbine panels in the Simulator and in the Unit One control room are very different from each other in terms of number of components and their arrangement. This situation did not allow a comparison based on the typical condition where all features of a component are the same except for just a few differences. A discrepancy on a panel such as the Turbine panel was often based on a comparison of component groups which had the same or similar function as determined by their labels. Such groups often had differing numbers of controls or displays. In addition, components with similar functions were often not in the same panel locations. The basic description of this type of discrepancy is sometimes located in the Comments section at the bottom of the discrepancy form.

With regard to recording physical differences on the General Component Discrepancy form, this form served two primary functions. The top portion of the form identified the component(s). The rest of the form identified the discrepant features of the components:

Discrepancy #: Discrepancy reports were recorded in serial order within each panel/system. Thus, the Reactor Coolant Pump panel (RCP) discrepancies proceed from 1 to 24 and the Turbine panel (T) discrepancies proceed from 1 to 62.

Panel: The panel being evaluated was indicated by an abbreviation. Thus, the Pressurizer panel was represented by "PRZ" and the Safety Injection System panel by "SIS". This abbreviation appears at the bottom of the actual panel in the control room. A detailed listing of the control panels and their abbreviations is shown in Attachment 3.

Photo ID: The Photo ID number refers to the photo on which the discrepancy was observed. The form provides a place for the Unit One (often referred to as "Reference" or "Ref") photo ID as well as the Simulator (or "Sim") photo ID. When both of these photos are accessed, the photos normally show very similar panel layouts. Differences in the photos were recorded as discrepancies. Occasionally, a photo ID space was not completed on the form. This occurred when a component was not present ("Does not exist") on one system panel, but was present on the other panel. If necessary, more than one photo ID would be placed in this space or additional photo IDs would be indicated in the Comments space.

Component Type: This field indicated whether the component being described was a light (indicating light), pen recorder, control, display or relay. A miscellaneous category was also included (phone circuit, clock, alarm, etc.). When more than one component of a given type was documented on a form, this field also indicated the number of such components. For instance, if six (6) displays were each discrepant, they would be indicated as:

Component Type: display(6)

In a few cases, a group of elements on a panel were considered as one component. This mostly occurred when indicating lights were placed directly above a J-handle or pushbutton.

Label and Identifier: This information provides the primary identification of the component. The label describes the plant system equipment and indicates the words and terms which are found near or on the component (e.g., MAIN GEN MW OUT). The label may also describe a system parameter (e.g., SPEED GOVERNOR PRESS). Note that capital letters are used to represent the actual label as found on the component. The identifier refers to the alpha-numeric description of equipment and its power supply (e.g., 1-SPI-300). When more than one component was being described on a single form, the first component and the last component in a sequence are indicated in these Label or Identifier fields. More detailed labeling and ID descriptions were indicated as space allowed.

The rest of the page provides for specific features about the components being evaluated (Parameter,...Legends/Symbols). These features were used in two ways. First, they can be used to further identify a component. Thus "Type" can further elaborate the component type as a "J-handle". The primary use of this feature, however, was to describe the discrepancy. On the same row as this feature are two fields, "Ref Type" and "Sim Type". When the type feature was used to document a discrepancy, the different type of component was indicated as:

Ref Type: J-handle
Sim Type: pushbutton

This system allows the reviewer to rapidly isolate the discrepant feature and to refer to the photo if further clarification is required.

To discriminate between the two uses of the features (i.e., further component identification vs. discrepancy identification), a "Y" (yes) or an "N" (no) was inserted after the colon following the name of the feature:

Type: Y
or
Label: N

The "Y" means that a discrepancy exists, in this case, in the type of component. With regard to the label, the "N" indicates that additional terminology was provided for component identification, but there is no discrepancy between the two labels.

The last category is "Comments". This field was used to describe non-typical discrepancies for which there were no identified features provided above. For instance, when a component on one panel did not have a corresponding component on the other panel, this condition was indicated in the "Comments" field. In addition, this particular comment about component absence was preceded and followed by three asterisks:

Comments: ***This control exists in the sim.
but not in the ref.***

Because the Simulator was modeled after Unit Two and being evaluated against Unit One, there were certain systematic differences in the labeling of equipment for which discrepancies were not identified. These conditions are listed below:

- Label differences specifying Unit One vs. Unit Two
- Label differences specifying North vs. South

- Same text on a label, but broken up differently from line to line:

  example: FUEL HLDG AREA EXHAUST FAN 2 / FUEL HLDG AREA EXHAUST FAN 2

- Manufacturing logos and/or labels

- Punctuation differences (presence/absence of periods, hyphens, parentheses)

- Slight difference in color shade which could be due to photo technique (e.g., as in color of bezels of a component).

The components on the relay panels (panels A-1 through A-15) were less complex and more amenable to a summary description. In recording relay panel discrepancies, the photos of the panels were laid side by side and observed for discrepancies in labeling and location of corresponding components. Also, any differences in the total number of components on each panel was examined. All of the discrepancies were recorded on the General Component Discrepancy form.

The Discrepancy # field contained the discrepancy number. All discrepancies on a relay panel were recorded on one form. Thus each panel had its own discrepancy number if it had one or more discrepancies. The Panel field contained the panel abbreviation. The Photo ID fields list one photo ID number for each unit, followed by an "*". The asterisk indicates that a complete listing of the photo ID numbers for the panel is found in the Comments field. All relay panels were of the "relay" Component Type. The Label field contains the name of the entire relay panel. The total number of labeling discrepancies was given in the Sim Com Labl field, and the total number of location differences was given in the Sim Location field. The total number of components found on each panel was indicated in the Comments field.

2.2.2 Annunciator Panels and Status Light Panels

Materials. The basis of comparison for the annunciator and status light panels were layout diagrams depicting their two-dimensional matrix arrangement. Each matrix window was identified by a drop number in the upper left hand corner of the window. The color of the window (Red, White, Amber) was indicated in the upper right corner. Each window presented the message shown on the annunciator window.

Procedure. The annunciator layout diagrams were provided by D.C. Cook. The revision dates ranged from 2/2/89 to 9/16/89. The hard copies were validated against the actual panel as described above. As in the comparison of panels, the corresponding matrix sheets for the Simulator and Unit One were placed side by side and examined for discrepancies in message content and terminology, window color, and window location. These discrepancies were then entered in the Discrepancy Form for Matrices.

The layout diagrams were used as worksheets. Discrepancies were indicated on both the Simulator and Unit One layout forms to identify the location of discrepancies. Discrepancies were documented in the following manner:

- o A circle was drawn around the drop number to flag any discrepancy in label content or color.
- o A square was drawn around the color indication of R, W, or A for a color discrepancy.
- o A square was drawn in the center-top of the window for a location discrepancy in which the same message had migrated to a different place on the corresponding panel. The new drop number was indicated inside this square.
- o A discrepancy in both the label and the color was indicated by a triangle around the color indication.

Text differences included a difference in wording, abbreviation or word order. A text difference also included the condition in which a message occurs only on one annunciator panel, but not on the corresponding annunciator panel in the other facility. A copy of the completed annunciator worksheets may be found in Appendix A.

The discrepancies were entered on the Discrepancy Form for Matrices. This form had space to enter 10 discrepancies. If more than 10 discrepancies were found, they were entered on a continuation form, labelled with an alphabetic suffix after the discrepancy number (e.g., "6A", "12B", etc.). At the top of the form, the discrepancy number was indicated. Following the discrepancy number and semi-colon is a number indicating the number of the annunciator. The status light panel is indicated by an alpha-numeric of varying length. This form has ten sets of repeated fields, each of which are identified by a drop number. The drop number is copied from the reference panel, not from the simulator. The presence of a discrepancy was indicated by a "Y" (yes) following one of the four characteristics of Label, Color, Param/Units and Location listed under the Drop #. Further description of the discrepancy is provided to the right for each of the four characteristics. For example, a label discrepancy can be described by the following item pair:

Ref Labl: EAST FPT OVERSPEED TRIP
Sim Labl: EAST FPT PRESS SETTER FAILURE

The label in the Unit One (reference) panel was always located on top and the Simulator label below. It was not necessary to use the Param/Units field.

To the far right are the terms RC and SC representing Reference plant color and Simulator color. Thus, an R following RC means that the particular tile in question is a red tile in Unit One.

R# and S# represent the drop number in the Reference and Simulator panels. If a number follows S#:, that number represents the location in that annunciator matrix to which the message has migrated. Thus migration or transposition of tiles is indicated by the presence of a number in this section.

The above description applies to the situation in which each drop number on the discrepancy form is dedicated to a drop number on the actual annunciator panel. Thus, if there were nine (9) windows with discrepancies on an annunciator panel, the matrix form would show nine sets of fields with indications. Individualized documentation for each annunciator tile was written for specific panels selected by D.C. Cook. These panels are shown below:

SIS	RHR	RCP	PRZ
FLX	RC	DTU	SG
FP	CP	SA	

The remaining panel annunciators were described in a more summary fashion on the same discrepancy form for matrices. According to this approach, the report lists the total number of label discrepancies found on a given annunciator or status light panel instead of specifying each label discrepancy. Similarly for the color and location features, only the total number of discrepancies is listed.

There is no difference in the manner of entry for Discrepancy # and annunciator ID. The ten sets of fields are used differently, however. If there are any label discrepancies, they are recorded in the first set of fields. The next type of discrepancy (e.g., color) would be located in the next set of fields. Location discrepancies are recorded in the third set of fields. In this format for grouped discrepancies, the number of differences are indicated in the simulator field, because the Unit One configuration is the reference condition. Since there were no "Param/Unts" discrepancies, only three sets of fields are used on the matrix form when annunciator/status light discrepancies are summarized or grouped. Status/monitor light panels were evaluated and documented in the same fashion as the annunciator panels. A copy of the completed worksheets for status/monitor lights is included in Appendix A.

2.2.3 Knife Switches

Materials. Knife switches are located on a variety of control room panels. Several switches are located or grouped together in one box. A layout diagram was developed directly from the control boards for each group. The main function of the diagram was to present the label for each switch and to indicate its relative position.

Procedure. Discrepancy identification proceeded by comparing corresponding forms for the Simulator and Unit One. The knife switches were examined for label content and terminology as well as for switch location. The discrepancies were then entered on the Discrepancy Form for Matrices. The comparison and documentation process was similar to the process used for the annunciators and status light boxes. The layout diagrams were developed specifically to record labeling and location information about the knife switches. This information was copied directly from the actual knife switch boxes in the Simulator and Unit One control room. Each knife switch in a box was assigned a number to allow for easier identification, and the boxes were placed into rows and columns on the layout diagrams to create a Matrix which preserved their actual order on the panels. On the layout diagram, each window represented one knife switch in a box and the number of the knife switch was indicated in the upper right hand corner.

Discrepancies were first recorded on the layout diagrams and were documented with the following symbols on each discrepant knife switch window:

- A line drawn diagonally through the number box indicated that the label text was different
- A circle drawn around the number indicated that a knife switch with the same message had migrated to a different location in the other unit. The corresponding location was indicated below the circle with the format: (row number, column number (e.g., 2,4 means the window in the second row in column four).

Individual knife switch labels were not considered to be different if their wording terminology were slightly different but the meaning was obviously the same. Abbreviation and punctuation differences were ignored. The main label difference, then, occurred when the text on one label appeared in one facility, but not in any recognizable form in the other. A copy of the completed knife switch worksheet layout diagrams may be found in Appendix B.

The Discrepancy Form for Matrices was used to record all knife switch differences. As the knife switch boxes were usually grouped together on a panel, each group was recorded on one form. At the top of the form, the Discrepancy # field gives the discrepancy number followed by the panel abbreviation and the numbers of the boxes recorded on the form or a brief description of the group location (B:bottom; L:left; R:right). Each of the ten sets of data fields on the form was used to record the discrepancies for one knife switch box. The Drop # field received the number of the knife switch box. This number was found on the label above the actual boxes in the two facilities. A "Y" (yes) in the label field indicated that there was at least one labeling discrepancy. The total number of discrepancies for that particular box could be found in the "Sim labl" field. A "Y" in the Location field indicated that at least one knife switch label had migrated to a different location between the two units. The actual number of location differences was recorded in the S # (Simulator location) field. The corresponding locations for the individual knife switches were not recorded on the form, but could be found on the layout diagrams. The two other fields on the form, Color and Param/Unts, were never used. The Comments field

was used to give further identification of the location of the knife switch boxes on the panel and also to give any information which was not specified in any of the other fields.

2.2.4 Hot Shut Down Panel

Materials. The materials consisted of photographs and diagrams. For this panel, a photomosaic was made for evaluation of larger characteristics such as component arrangement. To compare labels, a diagram of the Unit One panel was developed to include label names which could then be compared to the Simulator panel. For certain details which could not be determined from the photographs (e.g., scale markings) a special diagram was prepared.

Procedure. The photomosaics were compared for the presence/absence of components, component arrangement, large labels and other large features. The Unit One diagrams were compared against the Simulator panel for label and scale discrepancies. Discrepancies were recorded on the General Component Discrepancy Form in the same manner as the other control panels in the control room.

2.2.5 Consoles and Desks

The items evaluated were the Operator Console, the Computer Operator's Console and a large, U-shaped desk used for storage of documents and CRT use. The computer printer station was not evaluated because it will soon be replaced.

Materials. The operator consoles/stations/desks in the center of the horseshoe panel were photographed in the Simulator and Unit One. The photos presented several views of the desks.

Procedure. The photos were evaluated for discrepancies concerning such items as number location of telephones, CRTs, and labels.

2.3 Results

The basic output for the identification of physical differences in this study were discrepancy report forms documenting all differences observed in the comparison of the Simulator with the Unit One control room. Note that the discrepancy report form allows the entry of more than one discrepancy for any given component and that the form allows more than one component to be described. Consequently, the number of actual discrepancies is greater than the number of discrepancy report forms. Thus it may be difficult to say that one panel has more discrepancies than another panel based solely on the total number of discrepancy reports for those panels.

The numbers of discrepancy reports executed for each panel are shown in Attachments 3 & 4. Attachment 3 indicates the number of discrepancies for controls and displays for each of the system panels in the Simulator. The panels are listed in sequential order by panel name and panel abbreviation. The total number of discrepancy reports was 738 for all of the panels, excluding

discrepancies for annunciators, status lights, monitor lights and knife switches. This number of discrepancy reports was from a total of 5,242 control and display components counted on all of the panels listed (exclusive of annunciators and labels). Attachment 4 indicates that there are 2,523 annunciator/status/monitor light tiles in the Simulator, for a total of 7,765 controls, displays and lighted tiles in the facility. To this number must be added at least an equal number of labels as there are controls and displays (5,242), for a grand total of about 13,007 components in the Simulator.

The number of discrepancies for the annunciator tiles, status lights and monitor lights is shown in Attachment 4. The annunciator tile, status light, and monitor light matrices are listed in numerical order and by name and number. Separate columns show the number of discrepancies associated with each matrix. The total number of annunciator/status light/monitor light discrepancies was 604. Knife switches were counted separately, as shown in Attachment 5. The total number of knife switch discrepancies was 113.

The distribution of the types of discrepancies found on the controls and displays (exclusive of annunciators/lights/knife switches) around the system panels may be found in Attachment 6. Inspection of the types of discrepancies indicated that a very large portion of the actual discrepancies were written concerning differences in various kinds of labels including component labels, identification labels, system labels, and unit labels (514 total). Also many discrepancies reports concerned minor differences in the color and shape of bezels (105 incidences) There were altogether 619 of these labeling and minor bezel discrepancies. The fact that the total number of discrepancies listed in Attachment 6 (967) exceeds the total number of discrepancy report forms found in Attachment 3 (738) merely indicates that more than one discrepancy was often noted on a single discrepancy report form. If all noted discrepancies for the entire Simulator are lumped together, the total number is 967 for controls and displays and 712 for annunciators (lights) knife switches, for a grand total of 1,684 noted discrepancies. These 1,684 discrepancies are from a total of 13,007 identified components in the control facility.

2.4 Summary of Physical Differences

From the above results of the survey of physical differences between the Simulator and the Unit One control room a total of 1684 discrepancies was found. Annunciators/status lights/monitor lights and labels could be lumped together as textual displays whose differences could be considered relatively minor, since the operator can always read the meaning. If this is done, 1118 discrepancies may be subtracted from the total of 1684, leaving 566. From this total minor differences in bezels and knife switch notations can produce a further reduction by 218, to a total of 348 discrepancies. Thus, after such an *a priori* elimination process, only 348 discrepancies remain which might be considered candidates for producing training and/or transfer of training problems. Furthermore, the vast majority of these discrepancies represent minor and trivial differences. Nevertheless, all of the noted discrepancies (1,684 instances) were considered in the Assessment phase of the present study, not just the 348 most likely candidates.

3.0 ENVIRONMENTAL MEASUREMENTS

The environmental parameters in the Unit One control room and in the Simulator were assessed by means of physical measurements. The major environmental parameters measured in the present study were lighting, acoustics and temperature/humidity.

3.1 Lighting Measurements

Lighting measurements consisted of two basic quantities: (1) illuminance, the light falling on objects, and (2) luminance, the light coming from objects, either by reflection or directly from an extended luminous source. Illuminance measurements were taken in foot-candles (fc) by a Photo Research, Lite Mate III Photometer, Model 504, with a cosine-corrected illuminance probe. Luminance measurements were taken in foot-Lamberts (fL) by the same Photometer with a Photo Research, Spot Mate, Model 502, 1-degree spot luminance probe. For illuminance measurements the probe was positioned on the center of the surface being measured, facing away from the surface. Luminance measurements were made from a small surface area subtending about 1 degree of visual angle at a distance of about 2 feet. All instruments were calibrated according to the manufacturer's recommendations.

The nineteen (19) locations at which lighting measurements were taken in the Simulator and in the Unit One control room are shown in Attachments 7 and 8 respectively. Two kinds of measurements are reported: (1) control panel or desk measurements of illuminance and luminance at the approximate middle of the panel or desk (looking straight ahead, standing or seated), designated "AHEAD"; and (2) measurements of illuminance falling on a hand-held writing pad oriented at about 30 degrees from the horizontal and about 4 feet above the floor, designated "PAD". Lighting measurements were conducted under normal and emergency lighting conditions. Not all measurement locations were utilized in making luminance measurements under emergency lighting conditions.

Attachments 9 and 10 show the illuminance measured for the "ahead" and "pad" orientations at each measurement location under the normal and emergency lighting conditions respectively. The average illuminance values reveal that the "pad" measurements are generally higher than the "ahead" measurements, and that the Simulator is always considerably brighter than the Unit One control room. Attachment 11 shows the magnitude of the differences in illuminance between the two facilities (about 10 to 20 foot-candles of incident light on the average). Attachment 12 and 13 show the panel luminance measurements for each location and the differences between the Simulator and Unit One. Once again, on the average, the panels in the Simulator are brighter than the panels in the Unit One control room, this time by about 5 to 7 foot Lamberts of reflected light.

When one takes into account the scale differences, the variability is generally greater for the "pad" as opposed to the "ahead" orientation. Individual locations near the desks at the center of the room (locations 1-5) and at the back panels (locations 15 and 16) show unusually large variation. Much of the diminished illumination observed in the Unit One control room was due to numerous lamps being burned out in that facility.

3.2 Acoustic Measurements

Acoustic measurements consisted of two basic quantities: (1) weighted sound levels that integrate acoustic energy from different frequencies in a specified manner, and (2) octave band levels which indicate the amount of acoustic energy in different parts of the frequency spectrum. Both types of measurements were made with a single instrument, the Ivie Model IE-10A Sound Level Meter and Octave Band Analyzer. This instrument was calibrated by means of a Burel & Kjaer Model BK 4230 Sound Level Calibrator. All measurements were made with an integral random-incidence microphone positioned at a height of about 5 feet above the floor (approximate ear height). C-weighted sound levels were taken to approximate the physical acoustic environment, with all audible frequencies equally weighted except extremely high and extremely low frequencies. A-weighted sound levels were taken to approximate how the human listener might perceive these sounds, with the various frequency components of the sound weighted according to the appropriate sensitivity of the human ear. Octave band pressure levels were measured to provide information on the shape of the acoustic frequency spectrum emanating form various sound sources. All measurements were expressed in decibels (dB) re 20 micro Pascals.

Sixteen (16) locations at which acoustic measurements were taken in the Simulator and in the Unit One control room. Complete data were collected only for locations 1 through 13. Acoustic measurements were made in Unit One under noisy conditions at the beginning of the day shift with a relatively large number of people in the control room (about 7:00 a.m. on August 19, 1989) and under quiet conditions during the backshift with a relatively small number of people in the control room (about 5:00 a.m. on the same day). Acoustic measurements were made in the Simulator only during relatively quiet conditions during the morning of August 18, 1989 (about 10:00 a.m.) Acoustic measurements were also made of auditory alarm signals in both Unit One and the Simulator.

There was very little difference in either the A-weighted or C-weighted sound level between noisy and quiet conditions (about 56 to 58 dBA and 73 to 74 dBC), despite the fact that the number of people in the facility was more than double during the noisy period. Acoustic measurements made in the Simulator under quiet conditions with virtually nobody present in the room. Under quiet conditions the Unit One control room is more noisy than the Simulator by about 8 dBA or 17 dBC.

The shapes of the sound spectra observed for the two facilities under quiet conditions revealed the minimum octave band measurement obtained in each facility. These measurements represent a sort of noise floor below which the ambient octave band levels are not likely to penetrate. On the other hand, the average sound spectrum reveals little difference between the minimum and average "quiet" sound spectrum for each facility.

In all cases the spectrum is dominated by low frequency building sounds below 250 Hz, rather than speech spectrum sounds in the region from 200 to 1000 Hz. However, the sound spectrum for Unit One has progressively more low frequency sound energy than the spectrum for the Simulator. The shapes of the spectra do not differ greatly from those for the average "quiet" spectra, except that slightly more acoustic energy can be observed in the speech range, showing the effect of intermittent human speech sounds.

Acoustic measurements of the sound levels produced by auditory alarms were taken at a location near the center of the room. In all cases except one, the alarm was considerably more intense in Unit One that in the Simulator (by about 9 to 18 dB). The only exception was the telephone, which was virtually the same in each facility. They all have a similar spectrum shape in both facilities, only four of the five alarms were considerably louder in Unit One than in the Simulator. Measurements were taken near the control room door in Unit One with the door open. The results of such measurements taken in the Simulator with the door open and the artificial, simulated external noise source generator turned on. In this case, not only is the sound level altogether too low in the Simulator, but the sound spectrum shape for the Simulator does not adequately model that for Unit One.

3.3 Temperature/Humidity Measurements

Measurements of temperature and humidity were made in the Unit One control room and in the Simulator. These measurements were made on the morning of August 19, 1989, by means of a Webster Instruments sling psychrometer. As concerns ambient dry bulb temperatures, both facilities were virtually the same. There was, however, a slight difference in the measured wet bulb and relative humidity values.

3.4 Summary of Environmental Measurements

The environmental measurements generally showed that the Simulator was brighter than the Unit One control room, that the Unit One control room was more noisy than the Simulator, and that the temperature was the same, but the relative humidity was slightly higher in Unit One. In addition, auditory alarms were generally louder in the Unit One control room than in the Simulator.

4.0 OPERATOR INTERVIEWS

4.1 Objective

The objective of the operator interviews was to obtain information and opinions from control room operators at the D.C. Cook Nuclear Plant regarding the physical hardware differences between the Unit One control room and the Simulator as well as the potential significance of these differences for control room operation and training.

The major differences of interest included the presence or absence of controls and displays, the arrangements of component groups and labeling. Potential issues of software fidelity or Simulator response dynamics were not in the scope of the present analysis.

4.2 Method

Operator responses were assessed through structured interviews by means of an Operator Interview Form. An example of this Operator Interview Form may be found in Appendix C. All of the operators interviewed had current licenses. They had varying degrees of experience. Except for three, all interviews were conducted in the Unit One or Unit Two control rooms or the Shift Supervisor's office. This feature allowed the operators to refer directly to a particular component, panel or item when desired. The other three interviews were conducted in the training building. The settings were quiet and comfortable. There was no time constraint except from the shift supervisors.

The interview began with a brief introduction stating the objective of the study and that the operator's responses would remain anonymous. The first section of the interview developed background information regarding experience as a dual licensed operator at D.C. Cook. Then the operator was asked a variety of questions designed to determine whether the Unit One vs. Simulator differences had any significant effect on training, examinations or control room operation, or whether these differences might be likely to have such an effect in the future. The questions were open-ended to allow flexibility in responses. Some questions asked the operators to estimate the intensity of their responses on a rating scale. Other questions asked about the operator's direct experience, while some questions asked the operator to speculate about certain hypothetical situations. At the end of the interview, operators were given an opportunity to propose modifications to resolve Unit One vs. Simulator differences. The operators were also encouraged to comment on differences that may not have surfaced during previous questions.

4.3 Results

4.3.1 Operator Characteristics

Seventeen (17) operators were interviewed. All interviews were with a single operator, except for paired interviews with Shift Supervisors and Assistant Shift Supervisors. The typical length of an interview was about one hour.

Results of the initial interviews indicated that for certain questions, when discussing the significance of Unit One vs. Simulator differences, it was important to specify whether normal procedures, emergency procedures or abnormal procedures were being practiced on the Simulator, and whether these procedures represented Unit One or Unit Two. The interview forms were later modified to more accurately indicate this sort of context (see Appendix D for an example of the modified form).

The average operating experience for the sample (after obtaining the license) was slightly over four years, with a range of three months to twelve years. Operators tended to equally divide their time in the plant between the two units. Most interviewees indicated that they will work on one unit for two weeks and then work on the other unit for two weeks. Only two of the interviewees had trained on the Simulator in preparation for their licenses. Nevertheless, the entire sample of operators had spent a number of hours working in the Simulator in the past 6 months. Operator estimates for the proportion of Simulator time spent on Emergency Operating Procedures (EOPs) ranged from 70% to 90%. The remaining time was devoted to normal and abnormal procedures. Of the total Simulator time, approximately two days had been spent on Unit One training.

Thus, the large majority of Simulator training up to the time of the present interviews had been devoted to Unit Two EOPs. A Background Questionnaire was filled out by all of the operators who were interviewed. The results of this questionnaire may be found in Appendix E.

4.3.2 Operator Comments

When asked to rate the similarity between the Simulator (Sim) and the Unit One (U1) control room on a seven-point scale (1=identical panels, 7=no similarity), operators responded with an average rating of 3.2. This rating represents a moderate degree of judged similarity. The operators also listed the control room panels which they felt exhibited the most U1-Sim differences. The panel areas mentioned most frequently were the Turbine Control/Turbine Aux. panel, Feedwater Heaters and the Main Feed Pumps. Little or no mention was made of panels on the primary side. Additional operator comments from different portions of the interview discuss the heaters:

- The switch positions on the heater drain panel have a high likelihood of causing an error, especially for new operators during a transient.
- The heater drain pumps were identified as requiring extra alertness to locate them after working on Unit Two.
- On Unit Two, the components for the heater pumps and discharge valves are on top of the panel; On Unit One the controls are on the bottom. After switching units, this can result in a delay of a few seconds.
- Concerning the Feedwater Heater panel and MSR section, some of the operators are glad that the Simulator duplicates Unit Two instead of Unit One - They feel that if one can operate Unit Two, then Unit One should not cause serious problems.

EOP Training. Operators were asked whether Unit One vs. Simulator differences would cause problems in EOP training. All of the operators answered "no". However, some qualifications were mentioned:

- o It would be necessary to be aware of RTP differences.

- o If a reactor trip were not completed, it might be necessary to trip feedpumps on the secondary side, which involves Unit One - Simulator differences.

- o If you don't get a turbine trip in an EOP, you need to trip the high pressure oil pumps and these vary between Units One and Two.

- o The crossover switches for the heater drains are in the EOPs and they vary between the Units.

Normal and Abnormal Procedures. Operators were also queried in regard to normal and abnormal procedures. Before the Simulator was available, an SRO would usually handle all of the secondary panels. When the Simulator became available, the SRO would allow some of these actions be handled by an RO. Ten out of ten operators indicated that it would be desirable to train on normal and abnormal procedures as well as on EOPs. However, eight of these operators predicted difficulty in training for Unit One normal and abnormal procedures on the Simulator because these procedures tend to require those secondary panels which exhibit U1-Sim differences. Several operators volunteered opinions on this item. They felt that training for start-up and shut-down would not be practical. Similar reactions were obtained for Turbine, MSR and Feedpump operations.

Although one operator thought that it would be possible to pretend to be in Unit One while performing normal procedures in the Simulator, several operators thought this would be difficult. One operator said that he doesn't want to go to (the Unit Two) Simulator and pretend he is in Unit One.

4.3.3 Additional Comments

- o There is no way to deal with this if one is trying to train specifically for Unit One.

- o If the Simulator is being used for Unit One training and some components are missing, the procedural sequence would be interrupted randomly. This would cause continuity to be broken in the procedure which would be bad for training.

- o It would be better to do "walkdowns" on Unit One normal procedures than to train on the Simulator for these procedures.

- o One operator thought it would only be possible to train on the primary side for normal procedures.

Operators also gave an indication of which panels were likely to cause difficulty in practicing Unit One normal procedures on the Simulator. Panels that would cause difficulty or would need to be modified for Unit One normal procedures included the Feedwater Heater panel, Feedpump panel, Electric panel and the Turbine and DTU panels. Additional comments about specific panels were also offered by the sample of operators:

- The heaters and MSR are so different, its hard to imagine training Unit One on the Simulator.
- The feedpumps require mental transformation of labels.
- A lot would have to be changed to make it work, i.e. the panels starting with DTU and proceeding to the Turbine panel would have to be changed appropriately.
- If the Simulator is used to simulate Unit One (e.g., Lube Oil pumps), then there would be confusion.
- One cannot train at all on the Simulator for the Turbine and MSR panels on Unit One.

4.4 Summary of Operator Interviews

The panels which are most different between the Unit One Control Room and the Simulator are on the secondary side. Since the panels on the primary side are more similar, and since the EOPs require mostly primary panels, the Simulator was judged by operators to be effective for training and examining on EOPs for both Units One and Two.

The operators would also like to train on the Simulator for normal procedures such as start-up and shut-down. Since these procedures heavily involve the secondary panels, operators expressed the opinion that training on normal procedures may not be practical due to the large number of Unit One vs. Simulator differences.

5.0 ASSESSMENT

Each of the 1684 discrepancies identified was assessed to determine whether the discrepancy would be corrected, or whether, if it were not corrected, the discrepancy might cause a significant problem for training or examination. If the discrepancy were not going to be corrected, an assessment was made to determine the probability that a specific discrepancy might cause a negative transfer of training error on the part of an operator, what kind of an error might be induced in the operator's behavior and what would be the possible consequences of such an error. A Simulator/Unit One Discrepancy Assessment form was developed for this purpose, and an Assessment Panel was convened to implement the assessment process.

5.1 Assessment Form

The Simulator/Unit One Discrepancy Assessment form was designed to formalize the process of assessment and provide a consistent format for the assessment portion of the physical discrepancy data base. A separate Assessment form was executed for each discrepancy form generated during the identification of physical differences. An example of this Assessment form is shown in Attachment 14. After identifying the Discrepancy Number and Panel name, the Assessment Panel answered the following questions:

1. Will D.C. Cook agree to take corrective action to make the Simulator match Unit One for this discrepancy? If so, the discrepancy would effectively disappear, and the Panel would skip to the Assessment Category section of the form. There category number three (3) "no significant effect" would be checked, and approval would be noted along with the approval date.

2. Could training with this discrepancy cause a negative transfer of training error? Here, a "negative transfer of training error (NTT)" was defined as an error committed by an operator while operating in the Unit One control room, such that a strongly indicated cause for that error could be training or examining of that operator on Unit One procedures administered in the Simulator. If the answer were "no", i.e. no negative transfer of training error could be identified, the Panel would once again skip to the Assessment Category section, check number 3, and approve the action. If the answer were "yes", the Panel would continue to fill out the rest of the form.

3. What is the possible behavioral error due to negative transfer of training? If a possible NTT error could be readily identified, what would be the worst such error that could occur? For example, the operator could misread or misinterpret the information contained on a given display. Or the operator could activate the wrong control.

4. What is the predicted likelihood of such a negative transfer of training (NTT) error occurring? Here the Panel used a seven-point rating scale from "definitely not" to "definitely" to indicate its judgment as to the likelihood of such an error.

5. What might be the worst consequences of such an NTT error? For example, the operator could act upon or transmit the wrong information. Or the operator could open instead of close a given valve.

6. What might be the effect of such an NTT error, if one assumes the worst consequence? For example, the operator could act as if there is sufficient core coolant when there really is not. Or the operator could close the valve to restore core coolant instead of opening it.

7. What is the assumed scenario for the determination of safety and/or operational consequences or effects? For example, the above consequences and effects could be assumed during a Loss of Coolant Accident (LOCA) scenario.

8. What is the possible effect of the identified NTT error on any Critical Safety Function (CSF) at the plant? A plant-specific definition of a "critical safety function" may be found in the Appendix F. First, it was decided whether any CSF at all was involved in operating a given panel, group of components or individual component. If a significant CSF could be identified, the Assessment Panel determined how the particular NTT could affect that or any other CSF at the plant. This determination was made on a seven-point rating scale from "no effect" to "prevents restoration" of the CSF.

9. What is the possible effect of the identified NTT error on plant operations? Here, it was assumed that no CSF was involved. The Assessment Panel used a different seven-point rating scale to estimate operational impact ranging from "no effect" to "extended loss of plant function".

The above nine (9) items completed the formal assessment of possible problems that could be caused by identified physical discrepancies between the Simulator and the Unit One control room. The remainder of the form was devoted to the disposition of each discrepancy. In this portion, the Assessment Panel assigned a category for each discrepancy depending upon its effect on plant safety or operations. The categories were:

1. Training with this discrepancy could directly challenge or cause a loss of CSF.

2. Training with this discrepancy could adversely affect normal plant operation.

3. Training with this discrepancy would have no significant effect on plant CSF or operation.

Any comments that were needed to explain the assessment action were noted, as well as any suggestions for corrective action which would lessen the possible negative consequences of a given discrepancy. Finally, approval of the assessment action was indicated by the Panel, along with the date of approval. For the purpose of entering the results of the assessment process into the computerized data base for the study a summary version of the Assessment form was developed.

5.2 Assessment Panel

The Assessment Panel met between November 13 and November 16, 1989. The composition of the Assessment Panel is given in Attachment 15. A permanent body of 4 to 5 individuals from the first group of names in the attachment was always present during Panel meetings. There were also always present one or two licensed reactor operators from the second rotating group of names in the attachment. The answers to each question were discussed openly among all members present on the panel at the time. The final wording for each entry on the form, as well as the final disposition for each discrepancy, was always arrived at by group consensus. Any disagreements were resolved or compromised through group discussion. Every member of the Panel present agreed with the outcome of every assessment.

5.3 Results of Assessment

Just as in the identification of discrepancies, for statistical purposes, the minimum divisible unit for assessment was a single discrepancy report form. Since more than one physical difference may be described on a single report form, statistical statements about numbers of discrepancies do not always accurately reflect the precise number of physical differences involved. Nonetheless, such statements can provide valuable comparative information.

Each of the 1684 discrepancies identified was assessed. Of these discrepancies, the majority were labelling differences and slight or insignificant color differences in bezels, needle pointers, etc. Labelling and minor color differences accounted for about two thirds of the total number of non-annunciator discrepancies. Of these 619 labelling and color differences, D.C. Cook has agreed to make the Simulator match Unit One in most cases. The remaining cases of labelling and minor color differences were all judged by the Assessment Panel not to cause any NTT error. They were all assigned to category 3, "no significant effect on plant CSF or operations." Other minor labelling differences that were summarily dismissed as category 3, having "no significant effect," were:

1. Singular vs. plural designations on labels
2. Size of lettering on eschutsion plates
3. Horizontal vs. arched vs. vertical lettering
4. Calibration stickers (all will be removed)
5. Operator aids, if in Unit 1 and not in Sim.
6. Power supply (identifier) label differences.

The detailed results of all of these judgments may be found in Appendix G, which constitutes the Book of Discrepancy Reports and Assessments, the main database produced by the present study.

Thus, many discrepancies were either slated to be fixed or summarily dismissed as insignificant based upon one of the rules stated earlier. The remaining discrepancy reports were each individually assessed by the Panel on a case by case basis. The first step was to determine whether any negative transfer of training (NTT) error could be readily associated with the discrepancy. If an NTT error could be identified, certain general rules were applied to assist in the process of determining the significance or consequence of each discrepancy and its associated possible error(s). The discrepancy and/or error was judged to be less important if:

1. No critical safety function (CSF) was involved.

2. The procedure was easier to execute on Unit One than on the Simulator.

3. There were no panel components in the Unit One control room that were not in the Simulator.

4. Physical differences stood out clearly and were easy to remember without confusion.

5. Unit One was less complicated than the Simulator.

6. No new procedures would be added when transferring procedures from the Simulator to Unit One.

7. Unit One procedures could be readily used on the Simulator without modification, only deletion of steps.

8. Mirror-imaged backpanels are highly varied and differences stand out between Unit One and the Simulator.

9. Rows or columns of components or tiles may be laterally shifted but logical arrangement is maintained.

10. Annunciator/status tiles must be individually touched to acknowledge.

11. Knife switches are basically functionally arranged in columns.

12. Two identically located controls for the same function are activated in the same direction in both facilities.

On the other hand, the discrepancy and/or its associated possible NTT error(s) were judged to be more important if:

1. One or more Critical Safety Functions (CSFs) were involved.

2. The procedure was harder to execute on Unit One than on the Simulator.

3. There were panel components in the Unit One control room that were not present in the Simulator.

4. Physical differences did not stand out clearly and were easily confused.

5. Logical order was not maintained in the shifting of rows and columns of components or tiles.

6. Two identically located controls for the same function are activated in opposite directions in Unit One and in the Simulator.

Each of the remaining discrepancies or group of discrepancies was judged panel by panel according to the above criteria in order to determine the final category of assessment. For the total of 1684 discrepancies, the following assessment categories were assigned:

Category Number	Number of Cases
1	0
2	5
3	1679.

The 5 discrepancies that were judged to be in category 2 were all found on only two control panels: Feedwater Heaters/MSR (C-3) and Turbine Auxiliaries (T-2). Although these 5 category-2 discrepancies were judged to be capable of adversely affecting normal plant operations, none of them were judged to be capable of directly challenging or causing a loss of any Critical Safety Functions (CSFs) at the plant.

The situation portrayed above only holds if a large number of minor modifications are made to the Simulator and a few modifications are made to the Unit One control room. All of these modifications were committed to by the D.C. Cook Nuclear Plant. Besides large numbers of label changes and minor color changes on bezels and pointer needles, the following are some significant corrective actions that will be taken to make the Simulator match the Unit One control room:

1. Add dimmers to the Simulator lighting system

2. Reverse QRV 171 switches on the BA panel to operate in the same direction.

5.4 Summary of the Assessment Process

Although 1684 physical discrepancies were identified between the Simulator and the Unit One control room, the overall assessment process showed no discrepancies that would be likely to directly challenge or cause the loss of a CSF in Unit One due to training on the Simulator. Only 5 discrepancies might adversely affect normal plant operations in Unit One due to Simulator training. These adverse effects can be minimized or eliminated by specialized, separate training to sensitize operators to their presence. The majority of discrepancies would have no significant effect on plant CSFs or operations.

6.0 OVERALL CONCLUSIONS

The overall conclusions that may be drawn from the present study are the following:

1. A methodology was developed to identify and document the physical differences between the Simulator and the Unit One control room. This methodology was based upon detailed photographs of each facility, careful scrutiny of the photographs and a system of computerized discrepancy report forms.

2. The results of this methodology yielded the identification and documentation of 1684 discrepancies between the two facilities. The vast majority of these discrepancies concerned annunciators, labels, and minor bezel differences, leaving 348 remaining discrepancies.

3. Environmental measurements demonstrated that the Unit One control room was somewhat darker, noisier and more humid than the Simulator. These discrepancies were all either judged to be minor or were agreed to be corrected by the utility.

4. Operators who were interviewed as a part of the study indicated that the Simulator was effective for training on Unit One Emergency Operating Procedures (EOPs), since the primary sides were quite similar between the two facilities. However, since the secondary sides were somewhat different, operators felt that training on certain Unit One normal procedures might not be practical in the Simulator.

5. The 1684 discrepancies uncovered in the course of the study were all evaluated by an Assessment Panel of experts in operations, training, engineering and human factors. The panel employed a formal assessment algorithm which revealed no challenges to Critical Safety Functions (CSFs) by training on the Simulator, and only 5 adverse effects upon plant operations. This situation only holds if the utility makes a significant number of minor corrections in the Simulator.

6. A program of modifications to enhance simulation fidelity, specialized instruction to minimize negative transfer of training and sensitivity to physical and functional differences can minimize the negative impact of those discrepancies that remain.

7. Therefore, as far as physical differences between the two facilities are concerned, the overall conclusion of the present study is that the Simulator at D.C. Cook may be used adequately to train and examine on EOPs for the Unit One control room. The Simulator may also possibly be used to train and examine on normal operating procedures for Unit One, provided that such procedures do not depend heavily upon functions located on the Secondary Side of the plant.

ATTACHMENT 1

SIMULATOR/UNIT 1 DIFFERENCE STUDY

Discrepancy #:
Date:

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U:
Corrected ? :

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Ref P/U :
Corrected ? :

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
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Drop #:
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Drop #:
Label : Ref Labl:
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Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :

Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :
Comments:

ATTACHMENT 2

SIMULATOR/UNIT 1 DIFFERENCE STUDY

Discrepancy #:
Date:
Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :
Drop #:
Label : Ref Labl:
Color : Sim Labl:
Param/Unts: Ref P/U :
Location : Sim P/U :
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Param/Unts: Ref P/U :
Location : Sim P/U :
Corrected ? :
Comments:

Panel Names, Abbreviations, Total Number of Components, and Total Number of Discrepancy Reports

Panel Name	Abbrev.	No. of Components	No. of Discr. Reports
Plant Services	SV	48	21
Main Generator	G	113	34
Station Auxiliary Power	SA	365	42
Turbine Auxiliaries	T	387	62
Feedwater Heaters/MSR	C	261	40
Condensate Pumps/Heaters	CP	82	17
Main Feedpumps	FP	111	39
Steam Gen/Aux Feedpumps	SG	220	35
Delta Temp/Steam Dump/Unit	DTU	186	65
Rod Control	RC	175	6
Flux	FLX	78	16
Boric Acid	BA	175	31
Pressurizer	PRZ	107	18
Reactor Control Pumps	RCP	142	24
Residual Heat Removal	RHR	102	19
Safety Injection	SIS	190	20
Containmnet Spray & Relief	SPY	84	15
Component Cooling Water	CCW	61	8
Essential Service Water	ESW	97	15
Non-Essential Service Water	NSW	44	8
Nuclear Instrumentation System	NIS	191	9
Containment Isolation Valves	IV	396	10
Ventilation System	VS	205	42
Fire Protection	EF	72	21

Panel Name	Abbrev.	No. of Components	No. of Discr. Reports
Radiation Monitoring System	RMS-CT	38	6
Radiation Monitoring System	RMS	110	20
Dig. Metal Instrm. Monitor System	DMIMS	...	1
Failed Fuel Commun	FFC	22	14
Movable In-Core	MFX	290	14
Axial Power Distrib. Monitoring System	APDMS	120	3
In-Core Thermocouple	FI-FIP	43,65	6
Circ. Water	CW	148	15
Blank Panel	A-1	0	0
Gen Aux Panel A-2	A-2	15	1
Gen Neut Prot & Synch Panel A-3	A-3	11	0
Unit & XFMR Overall Diff Panel A-4	A-4	19	1
Gen and Aux Metering Panel A-5	A-5	7	1
Unit Aux Metering Panel A-6	A-6	8	1
XFMR TR1AB Diff Panel A-7	A-7	18	0
XFMR TR2CD Diff Panel A-8	A-8	19	0
XFMR TR2CD Diff Panel A-9	A-9	23	1
XFMR TR101CD Diff Panel A-10	A-10	23	1
XFMR TR11A and TR11B Diff Panel A-11	A-12	25	0
XFMR TR11BMC TR11CM & RCP Diff Panel A-12	A-12	25	0
XFMR TR11C & TR11D Diff Panel A-13	A-13	27	0
Meteorological	A-14	2	1
Cont. Temp. Recorder	A-15	1	1
Hot Shut Down Panel	HSD	289	33

Annunciator/Status/Monitor Lights
Panel Name, Panel Number, Total Number of Tiles,
and Total Number of Discrepancies

Panel Name	Panel Number	No. of Tiles	No. of Discrepancies
-ANNUNCIATOR TILES-			
Emer Fire	101	100	21
Emer Fire	102	50	39
Ventilation	103	50	6
ESW	104	100	3
CNTMT Spray	105	50	4
RHR	106	50	0
RCP	107	100	3
PRZ	108	50	0
Boric Acid	109	50	12
RC and Flux	110	50	4
DTU	111	50	1
Unit	112	50	23
SG 1 and 2	113	50	5
SG 3 and 4	114	50	4
Feedwater	115	100	68
Condensate	116	100	31
Turbine	117	50	49
Main and FPT	118	100	56
Diesel Gen AB	119	100	4
Diesel Gen CD	120	100	4
Generator	121	100	83
Plant Serv.	122	100	57

Panel Name	Panel Number	No. of Tiles	No. of Discrepancies
Circ Water	123	50	2
Containment Auxiliary	124	100	99
Liquid and Misc. Waste	* 127	50	
Boron Recycle and Waste Gas	* 128	50	
Plant Heating Boiler	* 129	50	
Aux Bldg. Access Control Area Vent Electro-Larm	* 133	8	
AFP Electro-Larm Ann.	* 134	6	
Ice Condenser Refrigeration Electro-Larm	* 135 (Left)	30	
Ice Condenser Refrigeration Electro-Larm	* 135 (Right)	30	
RMS Electro-Larm	138	29	22
Eberline RMS	139	6	
TSC-UPS	* 141	15	
Total:		2024	600

* These Annunciator Tiles panels in Unit One only

Annunciator/Status/Monitor Lights
Panel Name, Panel Number, Total Number of Tiles,
and Total Number of Discrepancies

Panel Name	Panel Number	No. of Tiles	No. of Discrepancies
-STATUS LIGHTS-			
H2 Sampling Isol Valves	1-SML-1	12	0
Nuclear Sampling Isol Valves	1-SML-2	4	0
Nuclear Sampling Isol Valves	1-SML-3	12	0
H2 Sampling Isol Valves	1-SML-4	12	0
Nuclear Sampling Isol Valves	1-SML-5	4	0
Nuclear Sampling Isol Valves	1-SML-6	4	0
Containment Pressure	1-SML-10	8	0
Reactor Coolant	1-SML-13	32	0
Pressurizer	1-SML-14	30	0
Nuclear Instn. System	1-SML-16	50	0
Miscellaneous 1	1-SML-17	50	2
Miscellaneous 2	1-SML-18	20	0
Stm Gen Level Hi-Hi	1-SML-19A	16	0
Stm Gen Level Lo-Lo	1-SML-19B	12	0
SG Level Low/Flow Mismatch	1-SML-19C	16	0
Steamline Diff Press	1-SML-19D	12	0
Steamline	1-SML-19E	13	2
Total:		307	4

Annunciator/Status/Monitor Lights
Panel Name, Panel Number, Total Number of Tiles,
and Total Number of Discrepancies

Panel Name	Panel Number	No. of Tiles	No. of Discrepancies
-MONITOR LIGHTS-			
Essential Service Water	1-SML-7	32	0
Component Cooling Water	1-SML-8A	8	0
Component Cooling Water	1-SML-8B	24	0
Component Cooling Water	1-SML-8C	8	0
Containment Spray	1-SML-9A	8	0
Containment Spray	1-SML-9B	16	0
Containment Spray	1-SML-9C	8	0
Safety Injection	1-SML-11A	8	0
Safety Injection	1-SML-11B	32	0
Safety Injection	1-SML-11C	8	0
Residual Heat Removal	1-SML-12A	8	0
Residual Heat Removal	1-SML-12B	20	0
Residual Heat Removal	1-SML-12C	8	0
PORV Block Valves	1-SML-15	4	0
Total:		192	0
Grand Total:		2,523	604

Knifeswitches

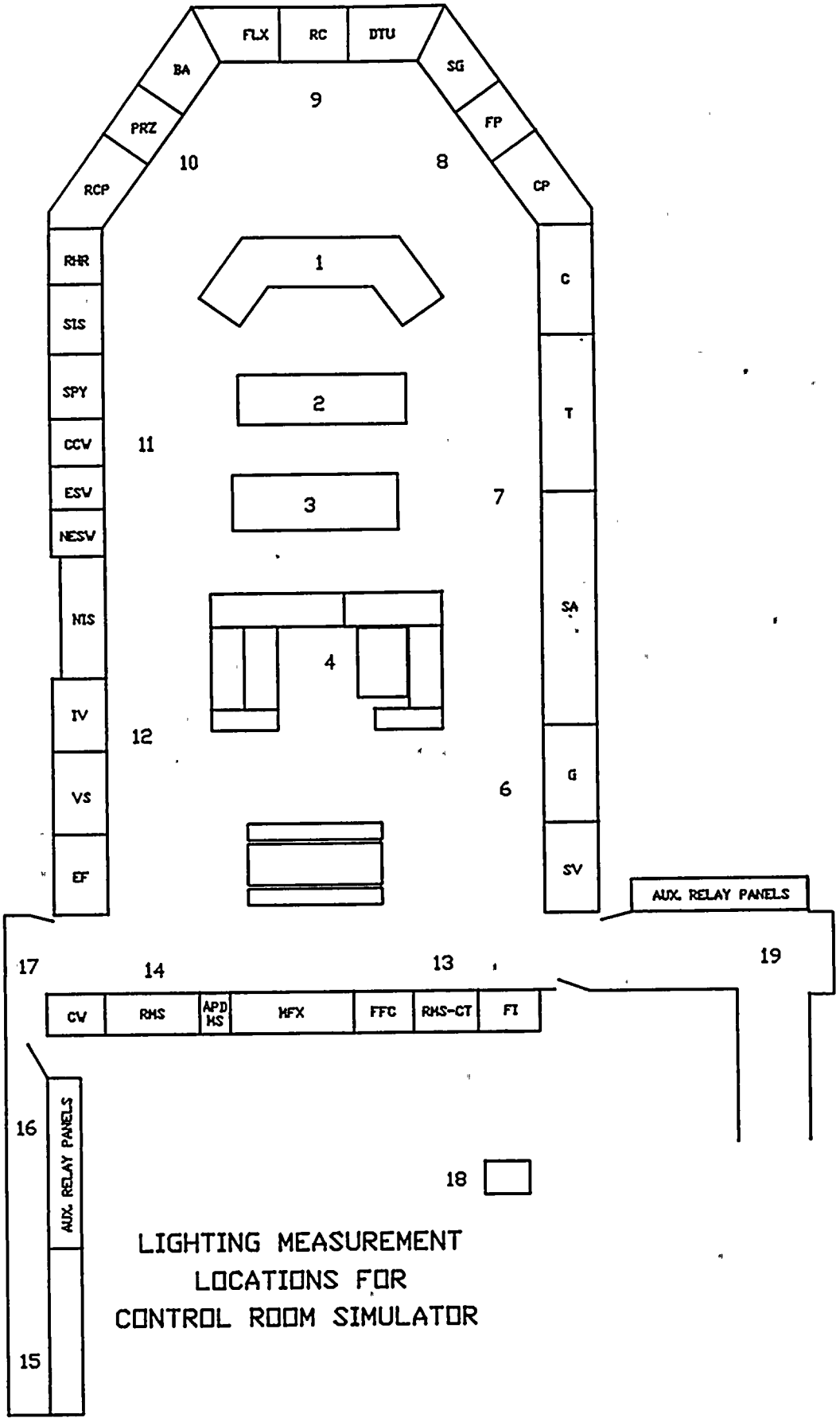
Panel Name,Abbreviation,Total Number of Switches,
Total Number of Discrepancies

Panel Name	Abbrev.	Switches	No. of Discrepancies
Main Generator	G	60	32
Stat Aux Power	SA (right)	74	12
Stat. Aux Power	SA (middle)	80	13
Stat. Aux Power	SA (left)	74	19
Delta Temp/Steam Dump/Unit	DTU	8	4
Residual Heat Removal	RHR	8	0
Fire Protection	EF	40	25
XFMR TR11A and TR11B Diff Panel A-11	A-11	8	4
XFMR TR11C and TR11D Diff Panel A-13	A-13	8	4
Total:		360	113

Distribution of Discrepancies According to Type

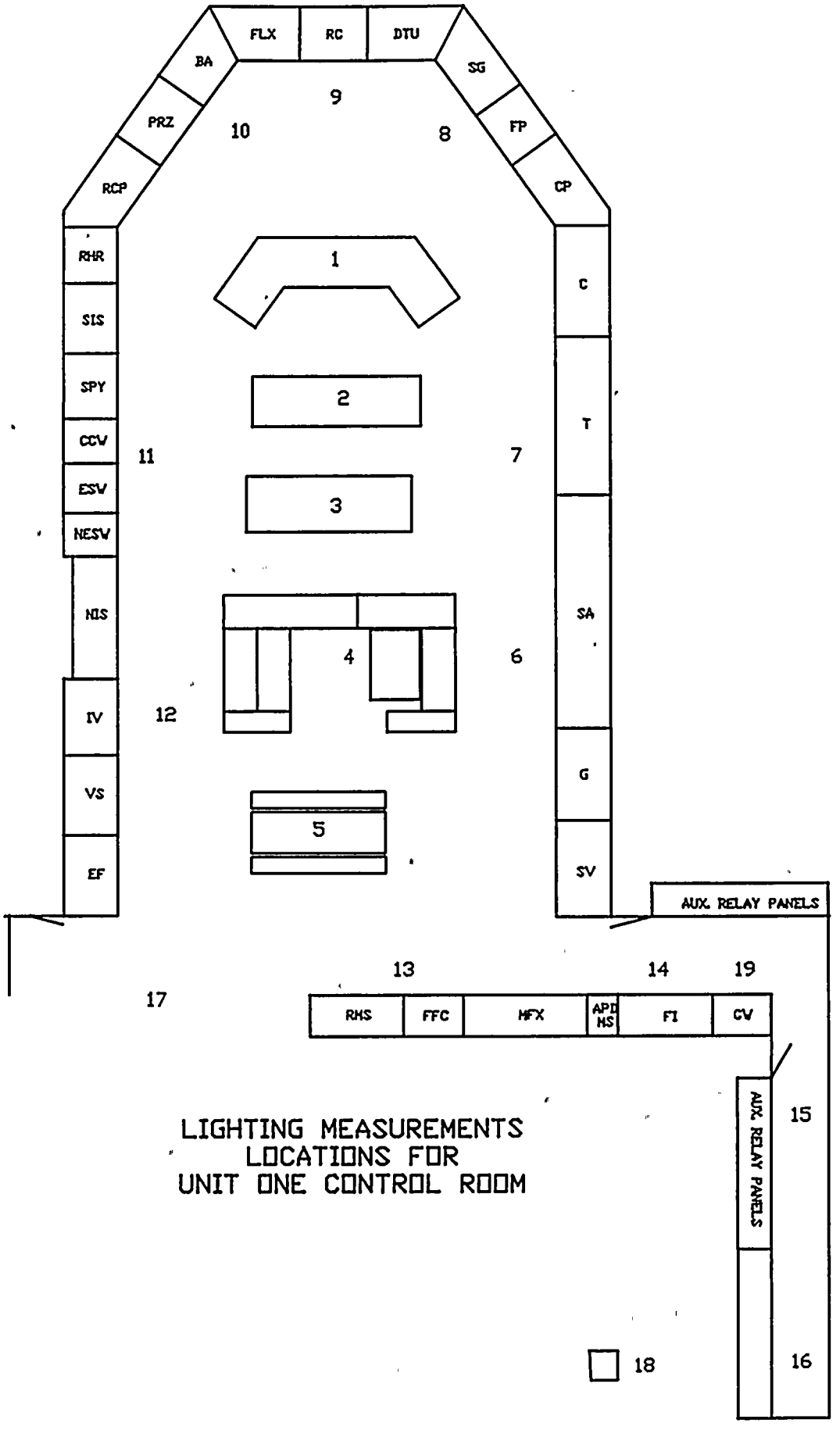
Type of Discrepancy	Number of Instances
Bezel	105
Color	20
Comp. Label	65
Divisions	24
Identifier	89
Label	360 *
Legend	10
Location	115
Markings	79
Parameter	1
Pointed	22
Range	29
Setpoint	14
Shape	7
Units	7
Zone Band	20
Total:	967

* 92 of these labels have been identified as corrected.



LIGHTING MEASUREMENT
LOCATIONS FOR
CONTROL ROOM SIMULATOR

ATTACHMENT 8



LIGHTING MEASUREMENTS
LOCATIONS FOR
UNIT ONE CONTROL ROOM

D.C. COOK
Unit 1 vs. Simulator Illuminance
(Under Normal Lighting Conditions)

Measurement Locations	UNIT 1 Ahead	UNIT 1 Pad	SIMULATOR Ahead	SIMULATOR Pad
1	65.1	63.5	86.0	80.3
2	67.1	68.5	69.6	78.2
3	60.5	61.9	79.9	73.1
4	62.2	58.3	83.6	79.1
5	66.9	82.8	110.9	99.5
6	25.6	80.8	44.9	108.8
7	28.1	75.6	42.0	107.7
8	38.4	72.2	44.9	90.3
9	29.5	84.1	51.6	96.1
10	37.2	65.4	35.9	81.6
11	29.3	70.2	50.4	110.9
12	13.8	39.2	46.3	116.3
13	30.4	78.1	40.1	108.3
14	27.7	52.9	35.9	104.5
15	32.8	59.2	46.3	97.3
16	61.4	147.0	26.8	69.8
17	15.2	45.5	24.1	52.9
18	9.3	25.1	47.6	70.1
19	32.1	60.2	41.3	87.1
Average:	38.6	67.9	53.1	90.1

Illuminance, footcandles

D.C. COOK
Unit 1 vs. Simulator Illuminance
(Under Emergency Lighting Conditions)

Measurement Locations	UNIT 1 Ahead	UNIT 1 Pad	SIMULATOR Ahead	SIMULATOR Pad
1	12.3	16.6	21.9	20.9
2	7.7	11.5	14.2	13.6
3	1.3	0.9	24.6	27.3
4	17.1	10.5	23.0	26.7
5	8.7	0.5	27.8	25.9
6	1.1	1.4	16.5	45.1
7	1.0	1.4	15.5	44.8
8	1.2	0.8	3.4	7.2
9	1.2	1.8	17.0	26.7
10	1.5	3.9	4.3	13.4
11	1.2	1.4	17.3	49.8
12	1.0	1.0	17.7	45.5
13	0.7	0.6	7.1	14.6
14	0.5	0.2	8.4	27.0
15	0.1	0.1	2.0	1.2
16	0.1	0.1	14.9	52.1
17	0.2	0.2	1.3	0.9
18	0.1	0.1	8.3	19.2
19	0.3	0.2	13.2	30.2
Average:	3.0	2.8	13.6	25.9

Illuminance, footcandles

D.C. COOK
Illuminance Difference - Unit 1 Minus Simulator
(Under Normal and Emergency Lighting Conditions)

Measurement Locations	Normal Lighting Ahead	Normal Lighting Pad	Emergency Lighting Ahead	Emergency Lighting Pad
1	-20.90	-16.80	-9.60	-4.30
2	-2.50	-9.70	-6.50	-2.10
3	-19.40	-11.20	-23.30	-26.40
4	-21.40	-20.80	-5.90	-16.20
5	-44.00	-16.70	-19.10	-25.40
6	-19.30	-28.00	-15.50	-43.70
7	-13.90	-32.10	-14.50	-43.40
8	-6.50	-18.30	-2.20	-6.40
9	-22.10	-12.00	-15.80	-24.90
10	1.30	-16.20	-2.80	-9.50
11	-21.10	-40.70	-16.10	-48.40
12	-32.50	-77.10	-16.70	-44.50
13	-9.70	-30.20	-6.40	-14.00
14	-8.20	-51.60	-7.90	-26.80
15	-13.50	-38.10	-1.90	-1.10
16	34.60	77.20	-14.80	-52.00
17	-8.90	-7.40	-1.10	-0.70
18	-38.30	-45.00	-8.20	-19.10
19	-9.20	-26.80	-12.90	-30.00
Average:	-14.50	-22.18	-10.59	-23.10

Illuminance, footcandles

Panel Luminance & Difference - Unit 1 vs. Simulator
(Under Normal Lighting Conditions)

Measurement Locations	Unit 1 Luminance footlamberts	Simulator Luminance footlamberts	Luminance Difference footlamberts
1	10.7	16.3	-5.6
2	17.9	24.6	-6.7
3	27.8	76.4	-48.6
4	8.2	12.2	-4.0
5	9.3	9.8	-0.5
6	18.2	20.8	-2.6
7	18.5	22.9	-4.4
8	17.2	14.6	2.6
9	26.9	16.1	10.8
10	23.3	16.2	7.1
11	17.5	25.5	-8.0
12	8.7	23.3	-14.6
13	15.1	22.9	-7.8
14	12.4	23.3	-10.9
15	30.7	41.2	-10.5
16	8.3	8.4	-0.1
17	7.9	21.6	-13.7
18	4.3	16.8	-12.5
19	19.4	19.9	-0.5
Average:	15.9	22.8	-6.9

Panel Luminance & Difference - Unit 1 vs. Simulator
(Under Emergency Lighting Conditions)

Measurement Locations	Unit 1 Luminance footlamberts	Simulator Luminance footlamberts	Luminance Difference footlamberts
1	0.7	2.3	-1.6
4	4.3	9.2	-4.9
7	0.8	9.2	-8.4
9	0.8	8.1	-7.3
10	1.0	2.3	-1.3
11	0.8	4.4	-3.6
13	0.6	5.1	-4.5
Average:	1.3	5.8	-4.5

SIMULATOR/UNIT 1 DISCREPANCY ASSESSMENT

Discrepancy #: _____

Panel : _____

Corrective action will make simulator match Unit 1: Y N

Training with this discrepancy could cause a negative transfer error: Y N

Possible behavioral error due to negative transfer of training (NTT):

Likelihood of error:

Cat. 3 | Cat. 1 or 2

Def. not	Very unlikely	Unlikely	Maybe	Likely	Very Likely	Definitely

Consequences of NTT error:

Effect of NTT error:

Assumed scenario:

Effect of NTT on Critical Safety Function (CSF):

Cat. 2 or 3				Cat. 1		
No Effect	Potential Reduction to CSF Maint. Resource	Reduced CSF Maint. Resource Capability	Loss of CSF Maint. Resource	Challenge to CSF	Loss of CSF	Prevents Restoration

Effect of NTT Error on plant operations:

Cat. 3					Cat. 2	
No Effect	Requires Additional Steps	Reduction in Oper. Perform.	Loss of Component Function	Loss of System Function	Extended Loss of System Function	Extended Loss of Plant Function

Assessment Category:

_____ 1. Training with this discrepancy could directly challenge or cause a loss of CSF.

_____ 2. Training with this discrepancy could adversely affect normal plant operation.

_____ 3. Training with this discrepancy would have no significant effect on plant CSF or operations.

Comments:

Approved by Committee: Y N

Approval Date: _____

Corrective Action:

Composition of the Assessment Panel

Name	Affiliation	Specialization	Years Experience	Highest Degree
PERMANENT				
William Burgess (Chairman)	D.C. Cook	Simulator Coordinator	25	S.R.O.
Allen Elliff	AETA/SCI	Industrial Engineering/ Human Factors	20	Ph. D.
George McCullough	D.C. Cook	Training/ Operator	17	S.R.O.
Ross Gridley	AEP	Engineering	13	M.S.
John Molino	TUF	Human Factors/ Psychology	20	Ph. D.
ROTATING				
David Mead	D.C. Cook	Operations	11	R.O.
Mark Gember	D.C. Cook	Operations	11	U.S.
Mark Russell	D.C. Cook	Operations	14	U.S.
Chuck Smith	D.C. Cook	Operations	12	U.S.
Thomas Welch	D.C. Cook	Operations	14	R.O.
Rudy Piller	D.C. Cook	Operations	12	U.S.
Ron Sieber	D.C. Cook	Operations	15	A.S.S.

CRITICAL SAFETY FUNCTION DEFINITION

Critical Safety Function (CSF) Controls and Indication:

Any control or indication which is used in identifying or mitigating a challenge to the Critical Safety Functions as defined by the Westinghouse Owners Group (WOG) Emergency Operating Procedures. Additionally CSF controls and indications are any controls or indications which through misinterpretation or misoperation could lead to a transient which would challenge the WOG CSFs.

WOG Critical Safety Functions:

Subcriticality
Core Cooling
Heat Sink
Integrity
Containment
Inventory

NRC FORM 474
(1-90)
10 CFR 55.45(b),
55.4 and 55.5

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0138
EXPIRES: 9-30-92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 120 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0138), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

SIMULATION FACILITY CERTIFICATION

Accession # 9009050394

INSTRUCTIONS. This form is to be filed for initial certification, recertification (if required), and for any change to a simulation facility performance testing plan made after initial submittal of such a plan. Provide the following information, and check the appropriate box to indicate reason for submittal.

FACILITY	DOCKET NUMBER
COOK NUCLEAR PLANT	50- 316
LICENSEE	**DATE**
INDIANA MICHIGAN POWER COMPANY	8/24/90

This is to certify that:

1. The above named facility licensee is using a simulation facility consisting solely of a plant-referenced simulator that meets the requirements of 10 CFR 55.45.
2. Documentation is available for NRC review in accordance with 10 CFR 55.45(b).
3. This simulation facility meets the guidance contained in ANSI/ANS 3.5, 1985, as endorsed by NRC Regulatory Guide 1.149.
   If there are any exceptions to the certification of this item, check here [X] and describe fully on additional pages as necessary.

NAME *(or other identification)* AND LOCATION OF SIMULATION FACILITY

COOK TRAINING CENTER
ONE COOK PLACE
BRIDGMAN, MI 49106

[X] SIMULATION FACILITY PERFORMANCE TEST ABSTRACTS ATTACHED. *(For performance tests conducted in the period ending with the date of this certification)*

DESCRIPTION OF PERFORMANCE TESTING COMPLETED *(Attach additional page(s) as necessary, and identify the item description being continued)*

See attached Transient, Steady State, Malfunction and Operability Tests.

[X] SIMULATION FACILITY PERFORMANCE TESTING SCHEDULE ATTACHED. *(For the conduct of approximately 25% of performance tests per year for the four year period commencing with the date of this certification.)*

DESCRIPTION OF PERFORMANCE TESTING TO BE CONDUCTED. *(Attach additional page(s) as necessary, and identify the item description being continued)*

See attached test schedule.

[ ] PERFORMANCE TESTING PLAN CHANGE. *(For any modification to a performance testing plan submitted on a previous certification)*

DESCRIPTION OF PERFORMANCE TESTING PLAN CHANGE *(Attach additional page(s) as necessary, and identify the item description being continued)*

Not Applicable. Initial submittal.

[ ] RECERTIFICATION *(Describe corrective actions taken, attach results of completed performance testing in accordance with 10 CFR § 55.45(b)(5)(iv). Attach additional page(s) as necessary, and identify the item description being continued.)*

Not Applicable. Initial submittal.

Any false statement or omission in this document, including attachments, may be subject to civil and criminal sanctions. I certify under penalty of perjury that the information in this document and attachments is true and correct.

SIGNATURE – AUTHORIZED REPRESENTATIVE	TITLE	DATE
M O'Reilly	Vice President	8/24/90

In accordance with 10 CFR § 55.5, Communications, this form shall be submitted to the NRC as follows:

BY MAIL ADDRESSED TO: Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

BY DELIVERY IN PERSON TO THE NRC OFFICE AT: One White Flint North
11555 Rockville Pike
Rockville, MD

COOK PLANT SIMULATOR

EXCEPTIONS TO ANS 3.5 AND/OR REG GUIDE 1.149

1. (ANS 3.5 - 3.2.1) Currently the reference plant process computer is not replicated on the simulator. The Unit 2 plant process computer is being replaced during the 1991 refueling outage. The replacement plant process computer hardware is on site and being integrated into the simulator at this time. Scheduled implementation is by the last quarter of 1991.

2. (ANS 3.5 - 3.2.3) The reference plant wireless telephone equipment is not currently replicated in the simulator. A facsimile of this equipment has been ordered and will be integrated into the simulator during the last quarter of 1990.

COOK PLANT SIMULATOR

COOK PLANT UNIT 2 REFERENCE PLANT INFORMATION

1) Plant

Owner: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Operator: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Plant : Type - 4 Loop Pressurized Water Reactor (PWR)

NSSS - Westinghouse Electric
Turbine - Brown Boveri Company (BBC)
MWTh - 3411
MWE - 1150

2) Simulator

Owner: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Operator: Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, IN 46801

Manufacturer: Singer Link Corporation
8895 McGaw Road
Columbia, MD 21045

3) Date Available For Training: May 16, 1988

4) Type of Report: Initial

COOK PLANT SIMULATOR

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Manufacturer: Singer Link Corporation
8895 McGaw Road
Columbia, MD 21045

3) Date Available For Training: May 16, 1988

4) Type of Report: Initial

COOK PLANT SIMULATOR

GENERAL INFORMATION

The Cook Plant reference plant simulator functions to provide training for both Units of the Cook Plant. Unit 1 certification is provided in a separate report. The simulator is modelled to the Cook Plant Unit 2 and modified to support training on Cook Plant Unit 1.

The simulator incorporates several advanced models to increase simulator functional fidelity as listed below:

The reactor coolant system thermal hydraulic model is the Singer Link RETACT (Real Time Advanced Core and Thermohydraulic Code) model that provides best estimate prediction capability for the analysis of normal and abnormal operating conditions.

The RETACT code will predict parameters not only observable from the control room, but also key parameters such as fuel center line temperature, peak cladding temperature, DNB ratio, coolant mixture level and generation of non-condensable gases, including fuel melt with generation of hydrogen.

The reactor core neutronic model, Singer Link's Space-Time Kinetics (STK) code, is an advanced three dimensional multi-node model which calculates the reactor power distribution using a one-group, adiabatic space-time kinetics model. The core is divided into six axial meshes and 25 azimuthal meshes for a total of 150 regions (nodes).

The core model fidelity was further increased by AEPSC nuclear fuel engineers, Cook Simulator Software and Singer Link engineers after delivery to include each fuel assembly exposure and to increase the number of fuel types from 6 to 13. This provided better neutron flux and delta flux distribution and rod worth.

Cook Simulator software engineers increased the feedwater system fidelity by complete modelling of the feedwater level control system and transmitter noise. This has greatly enhanced the operator responses to feedwater transients in the plant.

Plant operations from cold shutdown and the Reactor Coolant System drained to half loop conditions (Mode 5) to 100% power, including reactor coolant system fill and vent, heatup, cooldown and drain down, are supported by the simulator.

The electrical distribution system is modelled to include 120 volt AC breakers, including any breakers operated inside the control room, plus all higher AC voltages and all DC voltages.

The radioactive transport model is presently being upgraded to predict accurate radiation and activity levels that would be present in the various plant systems following the 4 classes of fuel damage due to loss of cooling transients and iodine spiking phenomena in the reactor coolant system.

The Cook Plant Simulator also has a fully functional Simulated Technical Support Center (STSC) to support Plant Emergency Plan drills and exercises. This includes transmission of appropriate data to the Emergency Operations Facility (EOF), Operations Staging Area (OSA) and Initial Assessment Group (IAG) to support real time simulation of Emergency Plan exercises.

COOK PLANT SIMULATOR

SIMULATOR ENVIRONMENT

I. Degree of Panel Simulation (ANS 3.5 - 3.2.1)

This section of the standard requires that the simulator shall contain sufficient operational panels, controls, instrumentation, alarms and other man-machine interfaces to conduct normal plant evolutions and respond to malfunctions.

All panels, controls, instrumentation and alarms located in the reference plant control room are duplicated and functional in the Cook Plant Simulator, with the exception of the containment camera controls.

All panels are duplicated in size, color, shape, configuration, arrangement, and functionality as the reference plant, with few exceptions.

Those exceptions are:

1) Instrument bezel color may not be the same, as there isn't any exact method in the reference plant to control bezel color.

2) The containment RCP camera controls are not simulated, however, half loop level indication is provided during reactor coolant system half loop operations (which is the main purpose of the containment camera).

3) Two recorders on the main generator panel have been substituted for the original recorders which are slightly different and do not detract from training.

4) Back panels without controls have been simulated for spacial relationships, however they do not contain wiring, relays, etc.

II. Controls on Panels (ANS 3.5 - 3.2.2)

This section states that controls, panels and consoles shall be designed to replicate the size, shape, color and configuration of the functionally simulated hardware of the reference plant.

All controls, panels and consoles with functional hardware that is used by the reactor operator of the reference plant are replicated in size, shape, color and configuration, with the exception that the simulator Unit 2 Hot Shutdown Panel is in the position of the reference plant Unit 1 Hot Shutdown Panel. Students are routed out of the control room and back to the Hot Shutdown Panel to simulate a different location.

All reference plant information is displayed in the same form and units on the simulator.

All simulator controls are located in the same location of the reference plant panels.

All changes to control room panels are maintained per the reference plant and photographs are taken biennially to verify the simulator configuration control process.

III. Control Room Environment (ANS 3.5 - 3.2.3)

This section states that consideration shall be given to simulating the reference plant control room environment to a degree reasonably possible and practical.

The Cook Plant simulator replicates lighting (both normal and emergency), obstructions (desks, bookcases, etc.), floor covering, communication systems(with the exception of the two way radio) and ceiling height the same as the reference plant.

Plant and/or reference plant control room noise has been simulated as listed below:

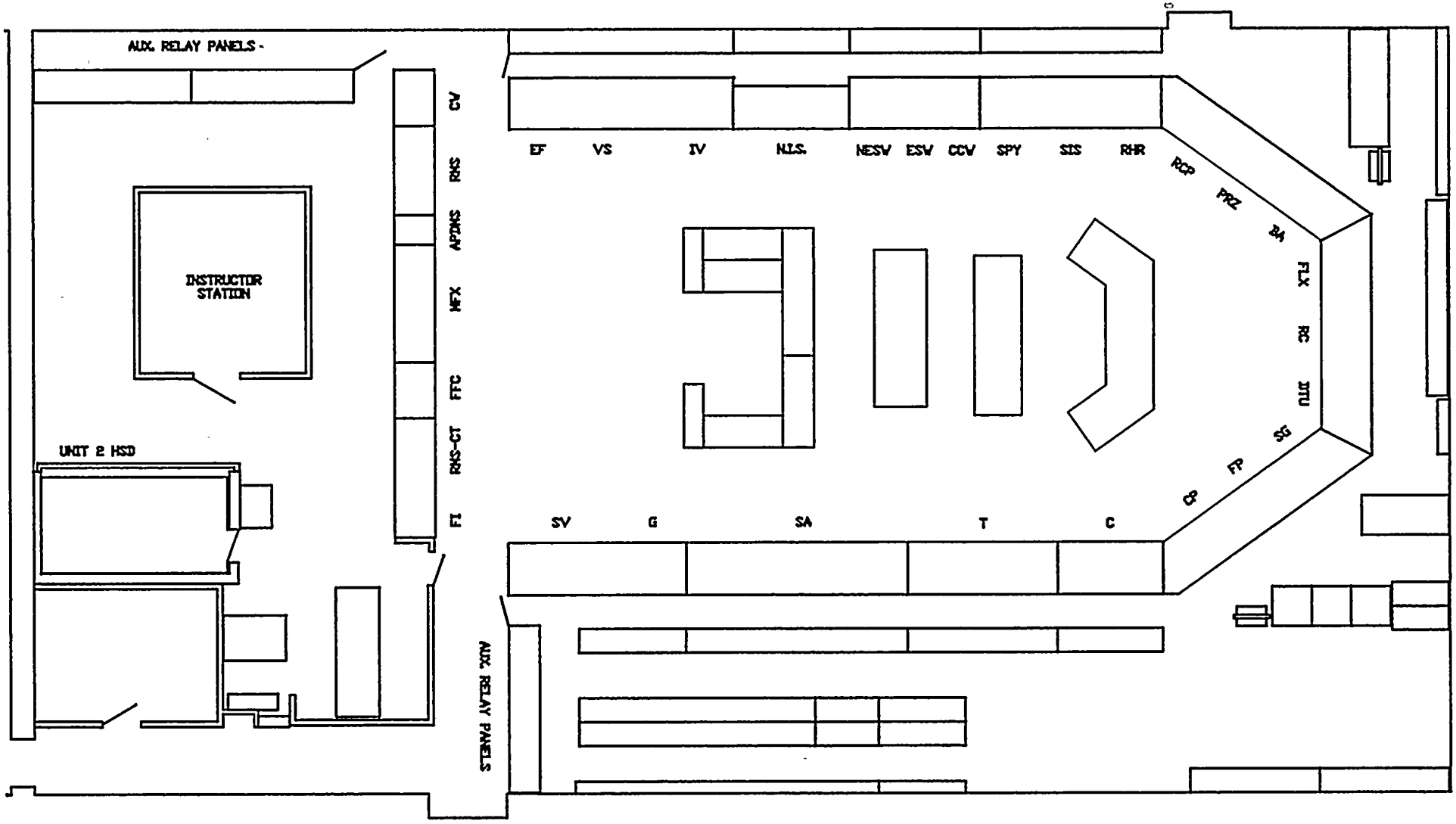
- Turbine room noise
- Pneumatic valve controllers
- Various relay noises
- Control room pressurization fan
- Some plant noises on the PA system

IV. Control Room Documentation (ANS 3.5 - A1.4)

All procedures, drawings and data used in the simulator control room are controlled in accordance with plant document control and do not deviate from the reference plant.

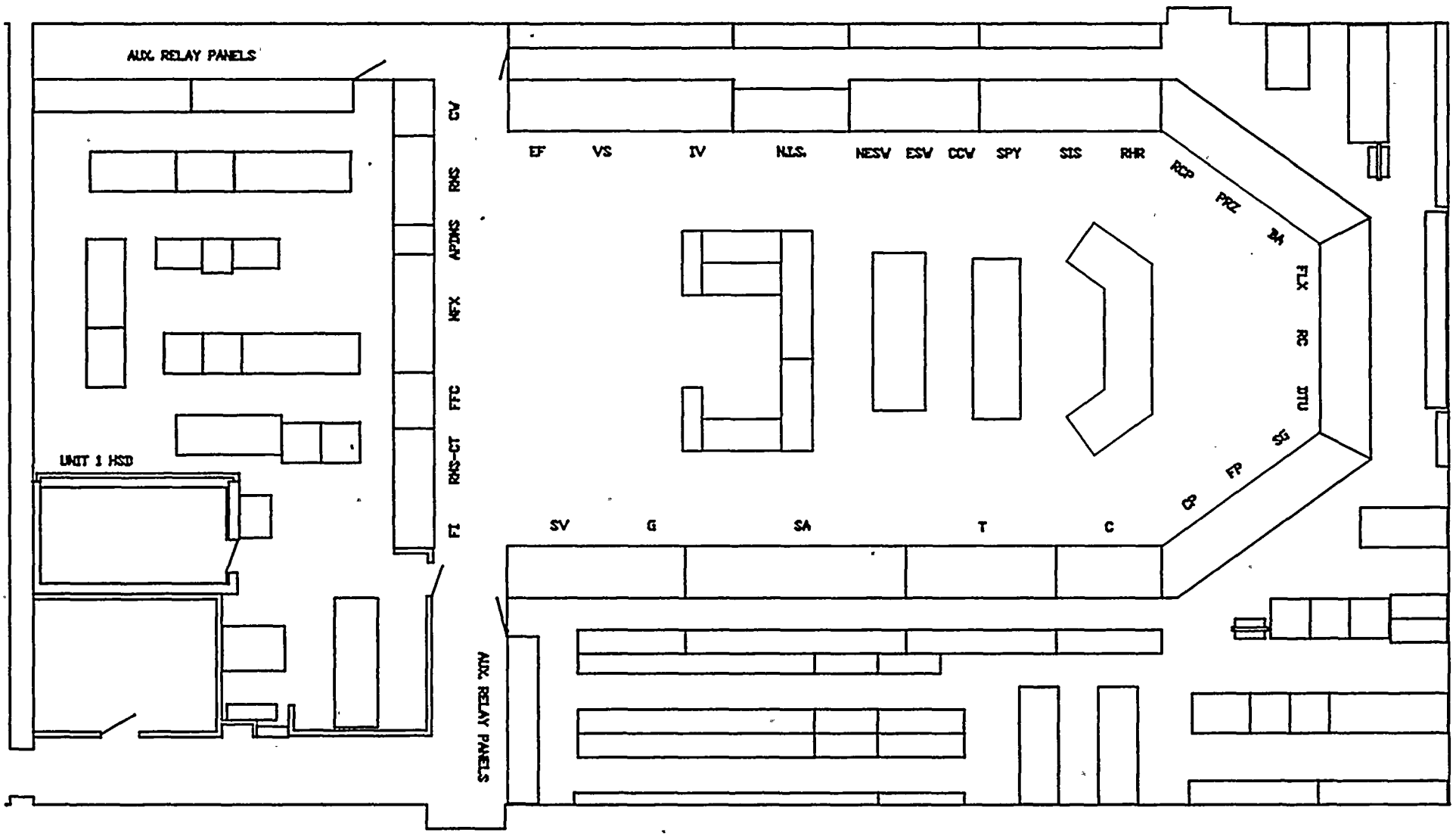
SIMULATOR CONTROL ROOM

SCALE: 1" = 9'0"



UNIT TWO CONTROL ROOM

SCALE: 1" = 9'0"



List of Panel Abbreviations for Control Room

SV	Plant Service
G	Generator
SA	Station Auxiliary
T	Turbine
C, CP	Condensate
FP	Main Feedpump
SG	Steam Generator & Auxiliary Feedpump
DTU	Delta T & Unit
RC	Rod Control
FLX	Flux
BA	Boric Acid
PRZ	Pressurizer
RCP	Reactor Coolant Pump
RHR	Residual Heat Removal
SIS	Safety Injection System
SPY	Containment Spray
CCW	Component Cooling Water
ESW	Essential Service Water
NESW	Nonessential Service Water
N.I.S.	Nuclear Instrumentation System
IV	Isolation Valves
VS	Ventilation System
EF	Emergency Fire
CW	Circulating Water
RMS	Radiation Monitoring System
APDMS	Axial Power Difference Monitoring System
MFX	Movable Incore Cabinet
FFC	Failed Fuel & Communications
RMS-CT	Control Terminal for Rad. Monitoring System
FI	Fixed Incore
HSD	Hot Shutdown Panel

COOK PLANT SIMULATOR

SIMULATOR TESTS

I. Introduction (ANS 3.5 - A.3)

Appendix A.3 addresses simulator testing to demonstrate compliance with the documentation requirements of the standard by comparison of simulator performance with the data base where applicable.

II. Implementation

The following four areas of testing were performed to demonstate compliance with the standard:

1) Computer Real Time Test (Tab Computer) (ANS 3.5 - A3.1)

2) Normal Plant Evolutions (Tab 1) (ANS 3.5 - A3.2)

3) Simulator Transient Tests (ANS 3.5 - A3.3)

TAB	
1	Reactor Vessel Head Void Formation
2	Anticipated Transient Without Scram
3	Steam Generator Tube Rupture
4	Unit Two Reactor Trip on November 13, 1985

COOK PLANT SIMULATOR

COMPUTER REAL TIME REQUIREMENT ABSTRACT

I. Introduction (ANS 3.5 - A3.1)

Section A3.1 addresses the requirement that the simulation computer complex must be verified for real time simulation. That is, the simulation dynamic performance is in the same time base relationships, sequences, durations, rates and accelerations as the dynamic performance as that of the reference plant.

II. Implementation

The Cook Plant Simulator uses Real Time Executive Tasks (RTEX) to ensure that the simulator remains in real time during all simulation. This task uses a frame counter routine that ensures that an overtime abort and simulator "freeze" condition occurs if the Real Time Executive Task fails to execute two frames in a 100 millisecond time period.

13) Core Performance Testing

A) Plant Thermal Power Calculation
B) Determination of Shutdown Margin (2-OHP-4021.001.012)
C) Determination of Critical Conditions (2-OHP-4021.001.011)
D) Low Power Physics Testing, including rod worth, temperature coefficient and flux distribution.

14) Operator Conducted Surveillance Testing

No effort has been made to single out operator conducted surveillance tests for certification. All surveillance tests that interface the operator and control room can be performed.

COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

NATURAL CIRCULATION COOLDOWN IN EXCESS OF RECOMMENDED COOLDOWN RATE

I. Introduction

The purpose of this test is to:

1) Test the simulator response to a natural circulation cooldown in excess of recommended cooldown rate (operator maloperation).

2) Ensure that the simulator functions to develop a steam void in the reactor vessel head if the control room operators either violate the recommended cooldown rate while performing a natural circulation cooldown in accordance with the Westinghouse Owners Group (WOG) emergency operating procedures (EOPs) or elect to perform the WOG EOP which allows intentional reactor vessel head void formation.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level
12) Reactor vessel level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) A void is formed in the reactor vessel head as indicated by decreasing Reactor Vessel Level Indication System (RVLIS) indication, increasing or steady Pressurizer level, and RCS wide range pressure greater than Psat for the RCS hot leg temperatures.

2) The observable change in parameters correspond in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

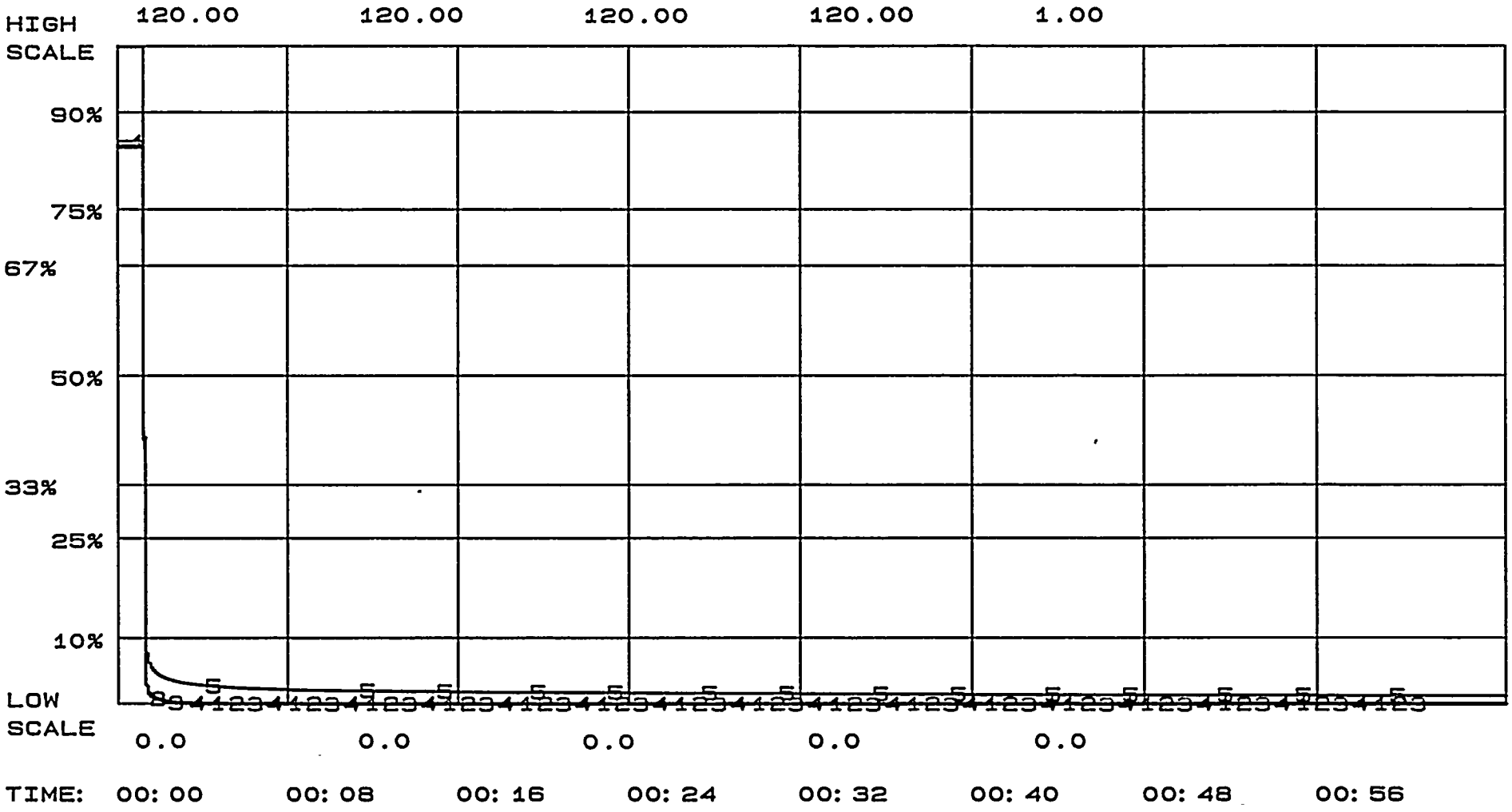
VI. Discrepancies

The team of subject matter experts felt that the response of Steam Generator level was incorrect and a Discrepancy Report was initiated to investigate and correct the condition. Steam generator level response will be corrected by 3/91.

The team concluded that other system parameters were satisfactory for the transient.

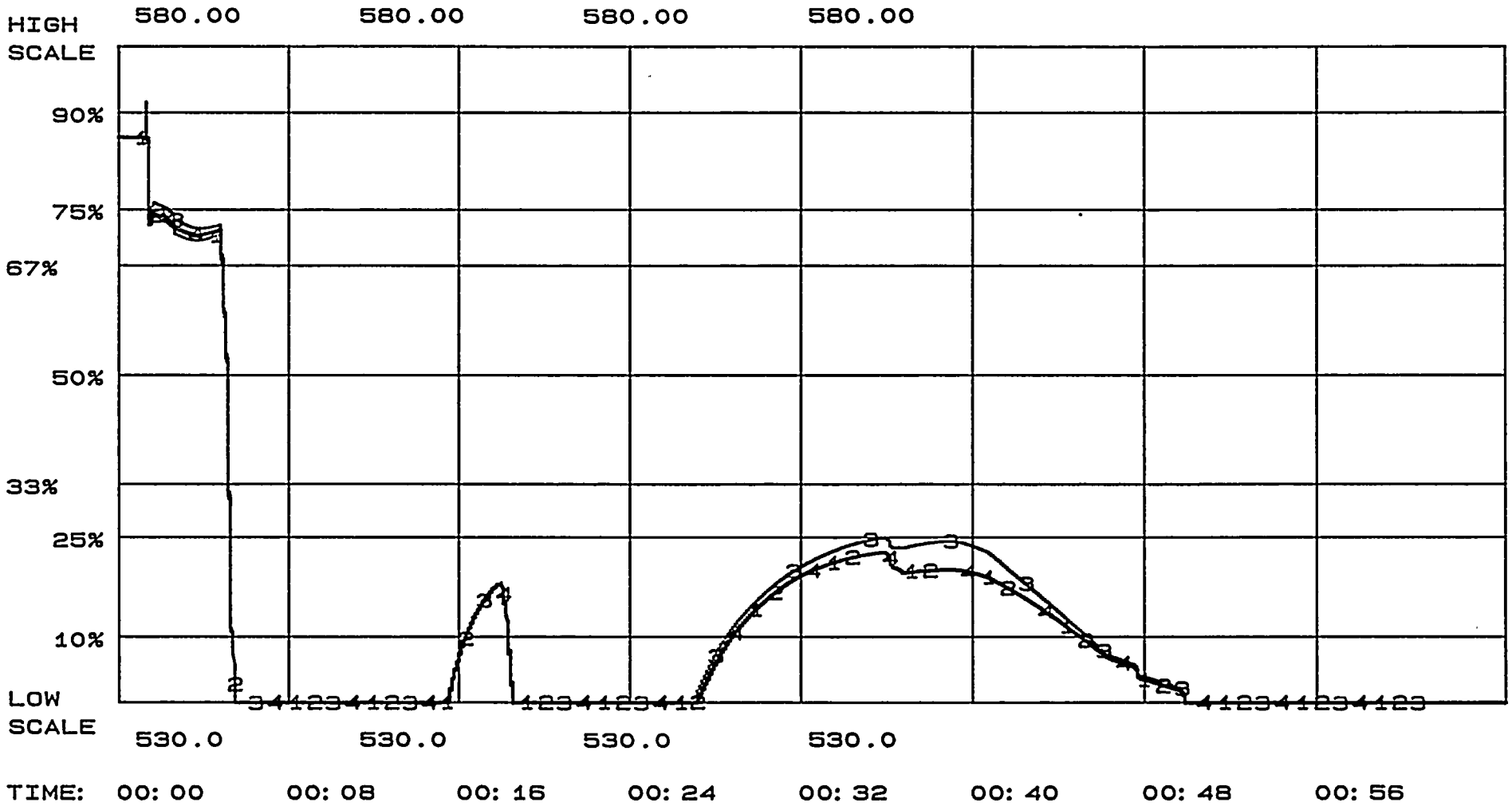
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. CHANNEL N-41	PC	TIME
2	N1013	POWER RANGE N.I. CHANNEL N-42	PC	START 00: 00: 48
3	N1014	POWER RANGE N.I. CHANNEL N-43	PC	STOP 01: 05: 34
4	N1015	POWER RANGE N.I. CHANNEL N-44	PC	
5	CRQN	REACTOR CORE HEAT FLUX	PC	
6				



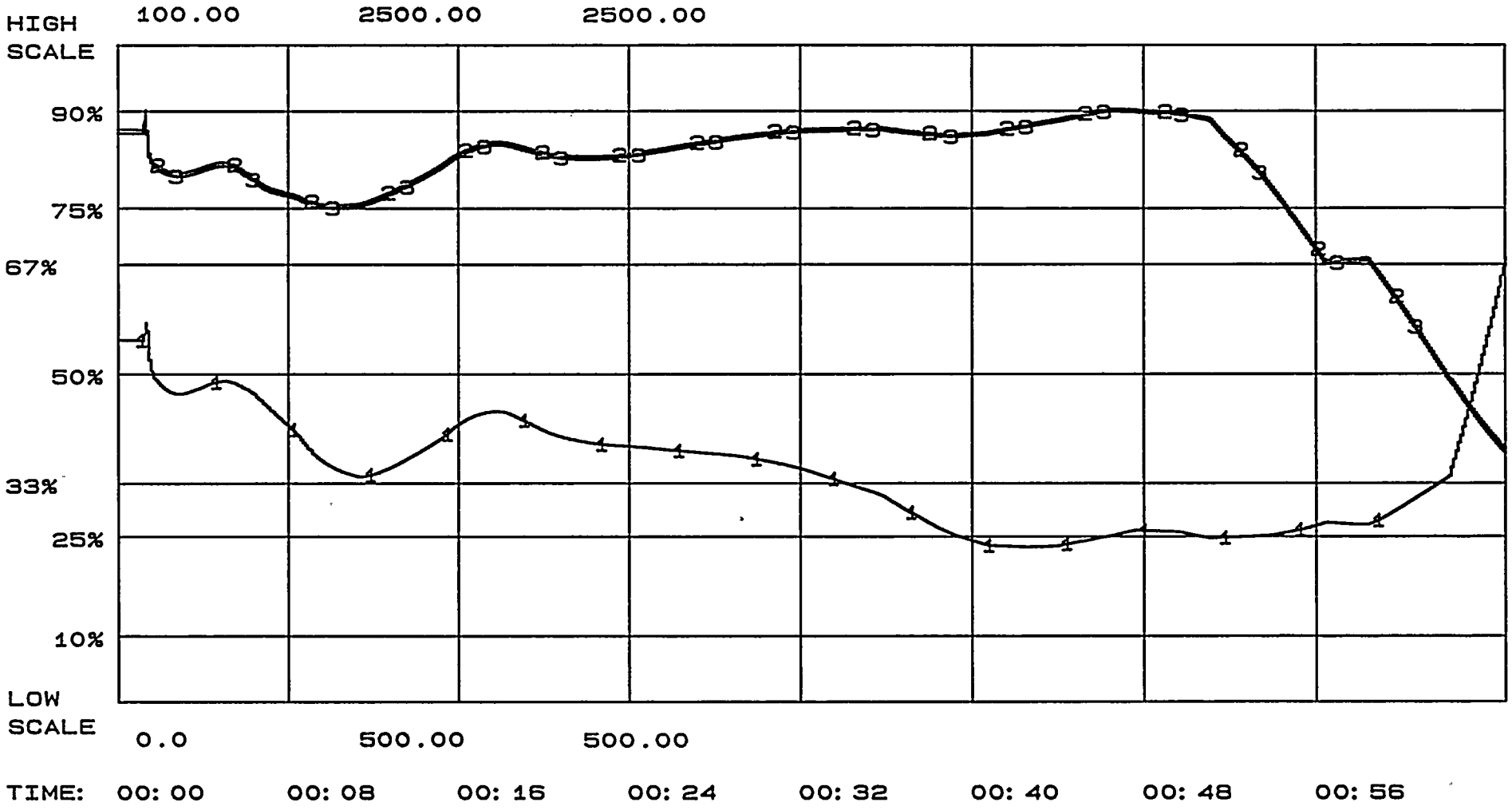
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS TAVE LOOP 1	DEG_F	TIME
2	T1102	RCS TAVE LOOP 2	DEG_F	START 00: 00: 48
3	T1103	RCS TAVE LOOP 3	DEG_F	STOP 01: 05: 34
4	T1104	RCS TAVE LOOP 4	DEG_F	
5				
6				



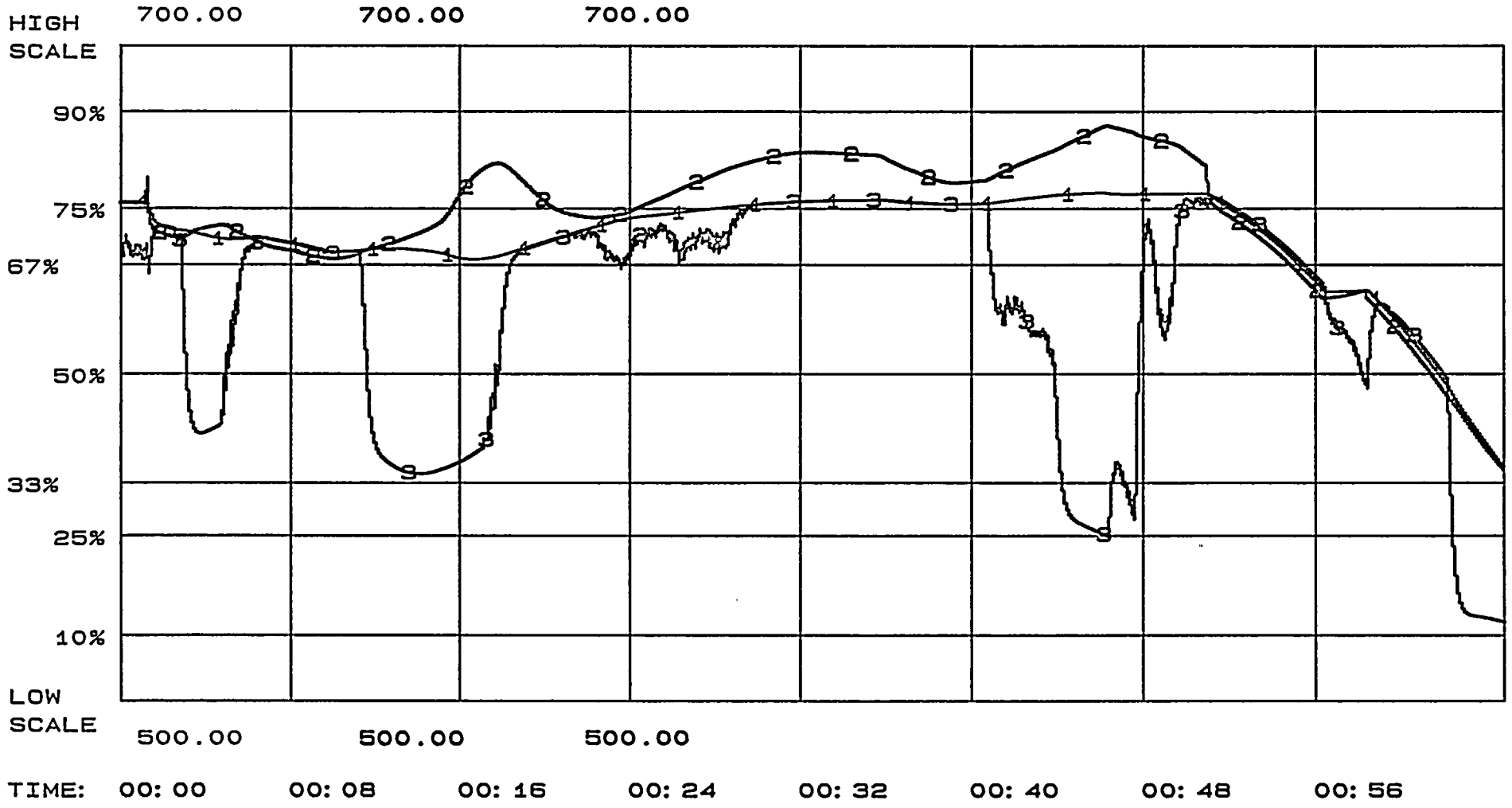
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	P1034	RCS WIDE RANGE PRESSURE	PSIG	START 00: 00: 48
3	P1036	PRESSURIZER PRESSURE	PSIG	STOP 01: 05: 34
4				
5				
6				



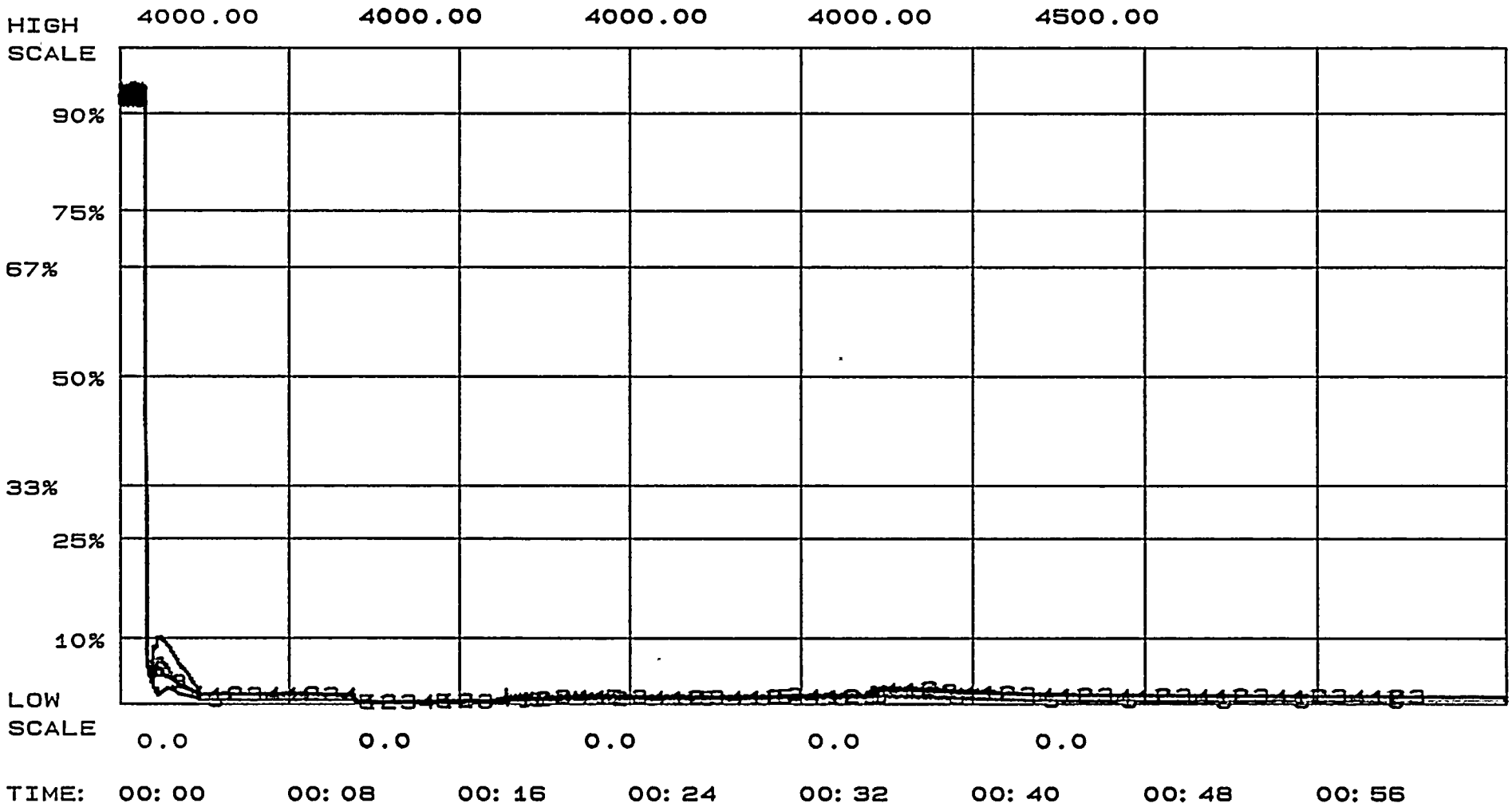
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1004	PRESSURIZER LIQUID TEMP.	DEG_F	TIME
2	T1005	PRESSURIZER STEAM TEMP.	DEG_F	START 00: 00: 48
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	STOP 01: 05: 34
4				
5				
6				



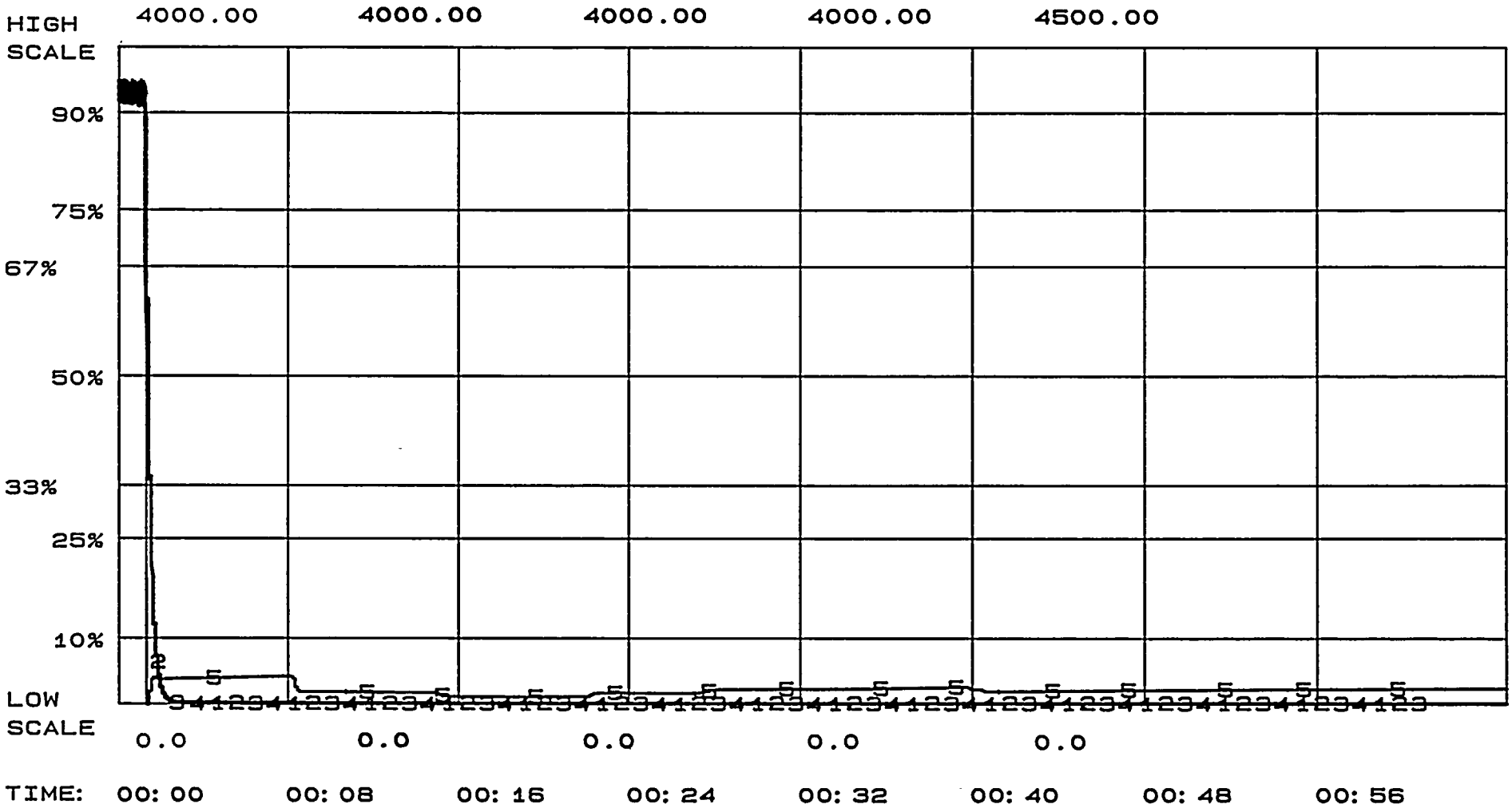
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	S/G STEAM FLOW LOOP 1	KBH	TIME
2	F1050	S/G STEAM FLOW LOOP 2	KBH	START 00: 00: 48
3	F1052	S/G STEAM FLOW LOOP 3	KBH	STOP 01: 05: 34
4	F1054	S/G STEAM FLOW LOOP 4	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



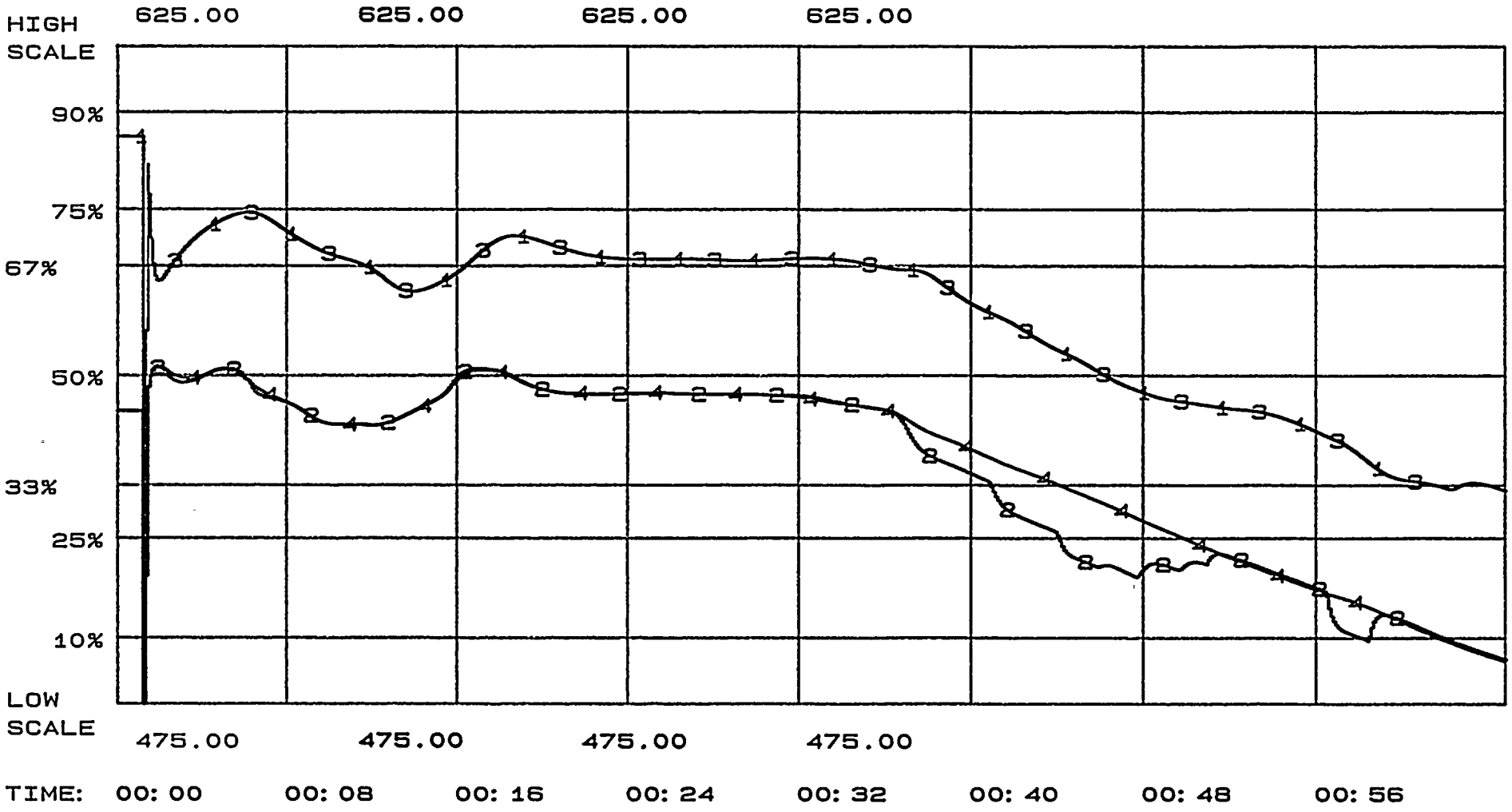
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	S/G FEED FLOW LOOP 1	KBH	TIME
2	F1201	S/G FEED FLOW LOOP 2	KBH	START 00: 00: 48
3	F1202	S/G FEED FLOW LOOP 3	KBH	STOP 01: 05: 34
4	F1203	S/G FEED FLOW LOOP 4	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AFW INCL.)	LBS_S	
6				



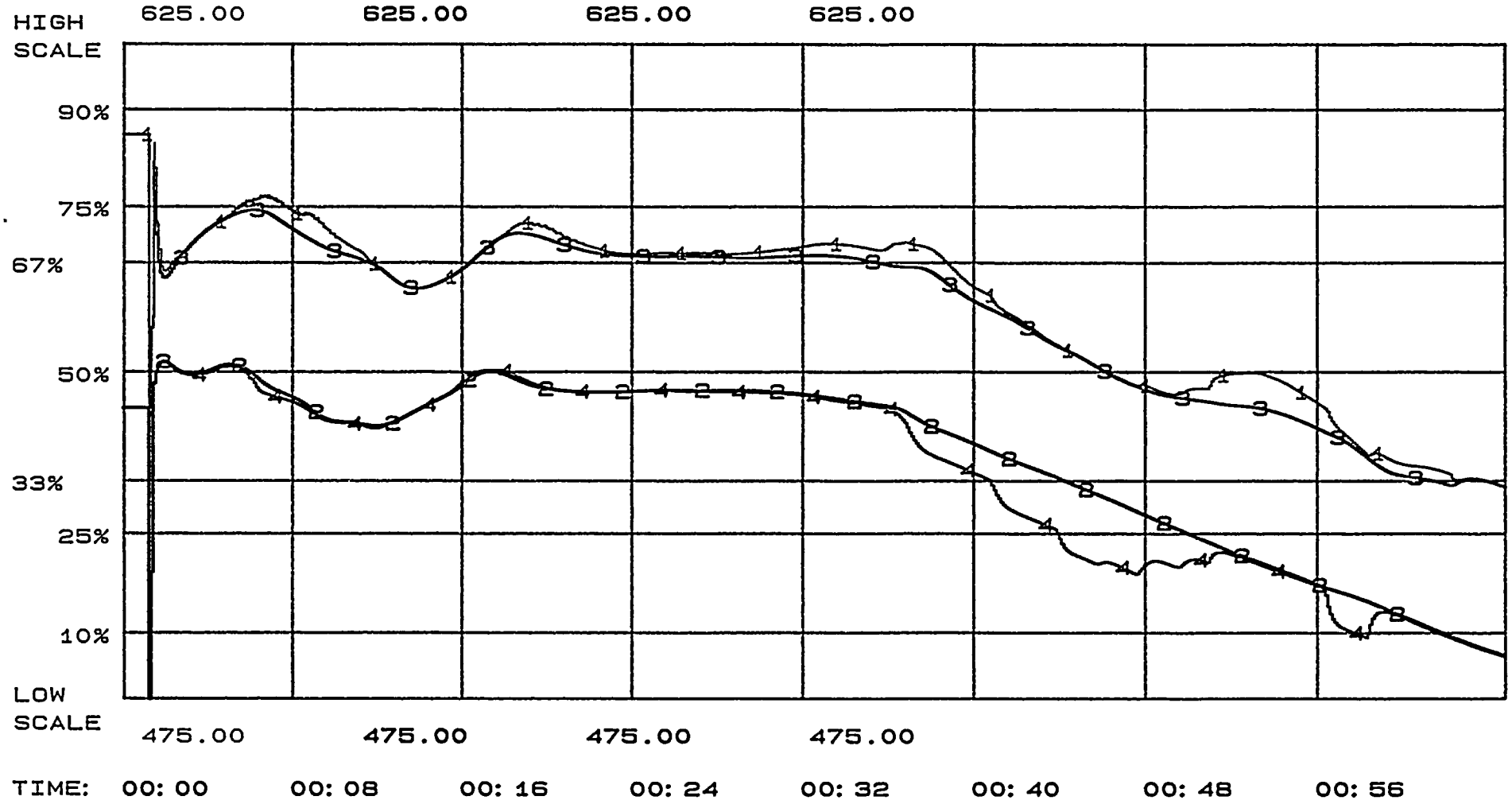
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	RCS LOOP 1 THOT	DEG_F	TIME
2	T1115	RCS LOOP 1 TCOLD	DEG_F	START 00: 00: 48
3	T1112	RCS LOOP 2 THOT	DEG_F	STOP 01: 05: 34
4	T1116	RCS LOOP 2 TCOLD	DEG_F	
5				
6				



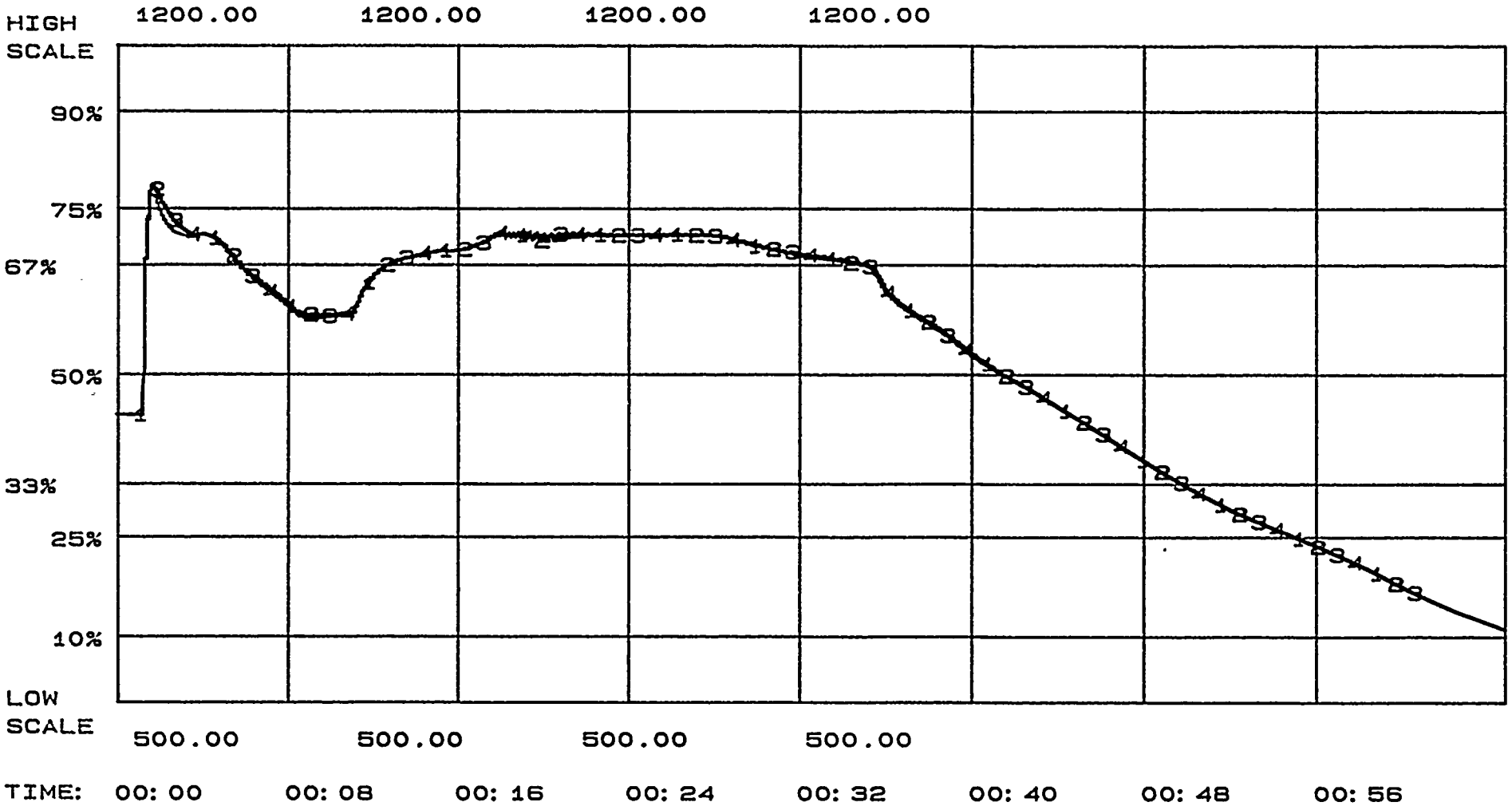
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	RCS LOOP 3 THOT	DEG_F	TIME
2	T1117	RCS LOOP 3 TCOLD	DEG_F	START 00: 00: 48
3	T1114	RCS LOOP 4 THOT	DEG_F	STOP 01: 05: 34
4	T1118	RCS LOOP 4 TCOLD	DEG_F	
5				
6				



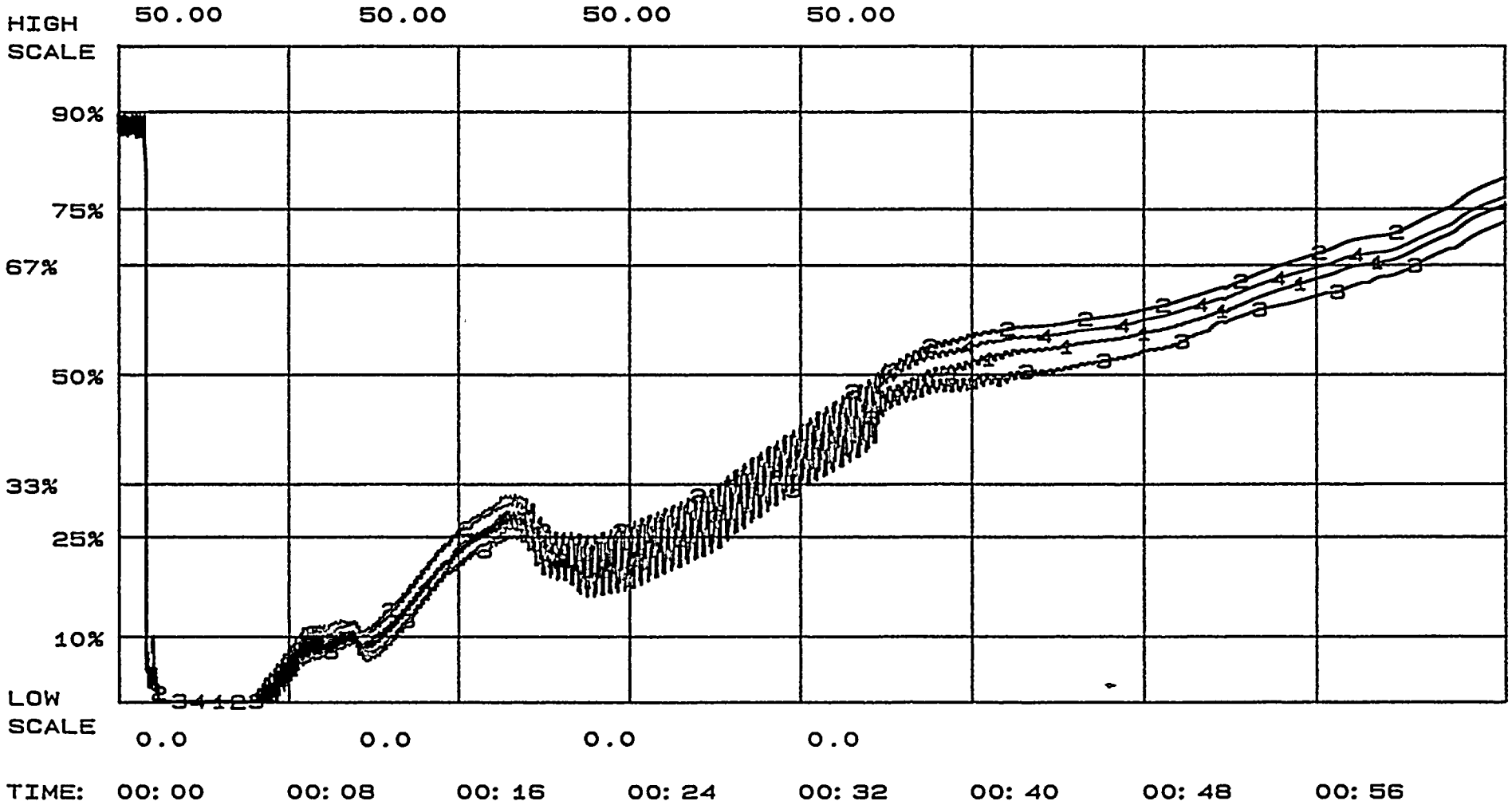
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 48
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 01: 05: 34
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



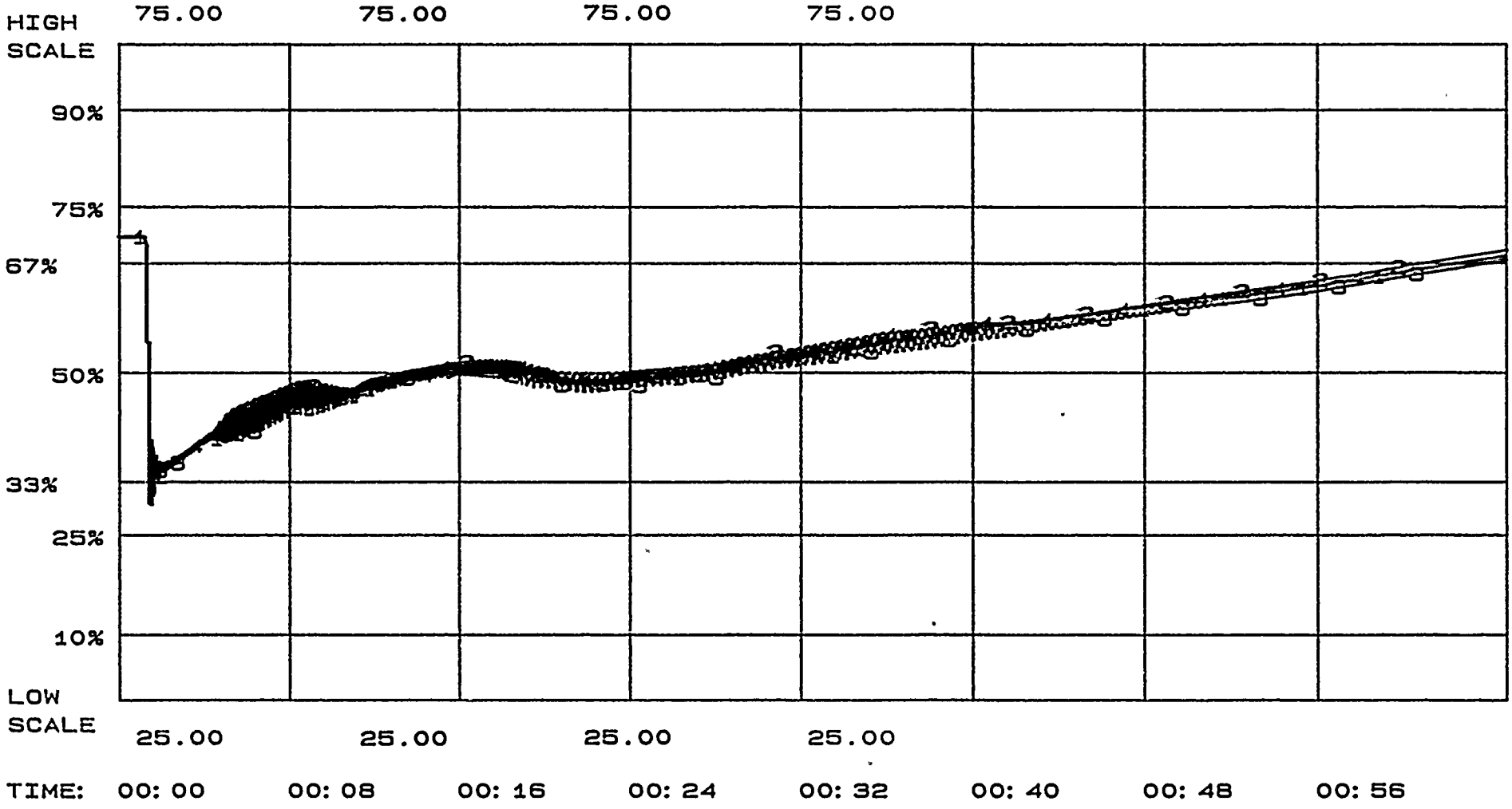
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR #1 N/R LEVEL	PC	TIME
2	L1207	STEAM GENERATOR #2 N/R LEVEL	PC	START 00: 00: 48
3	L1210	STEAM GENERATOR #3 N/R LEVEL	PC	STOP 01: 05: 34
4	L1213	STEAM GENERATOR #4 N/R LEVEL	PC	
5				
6				



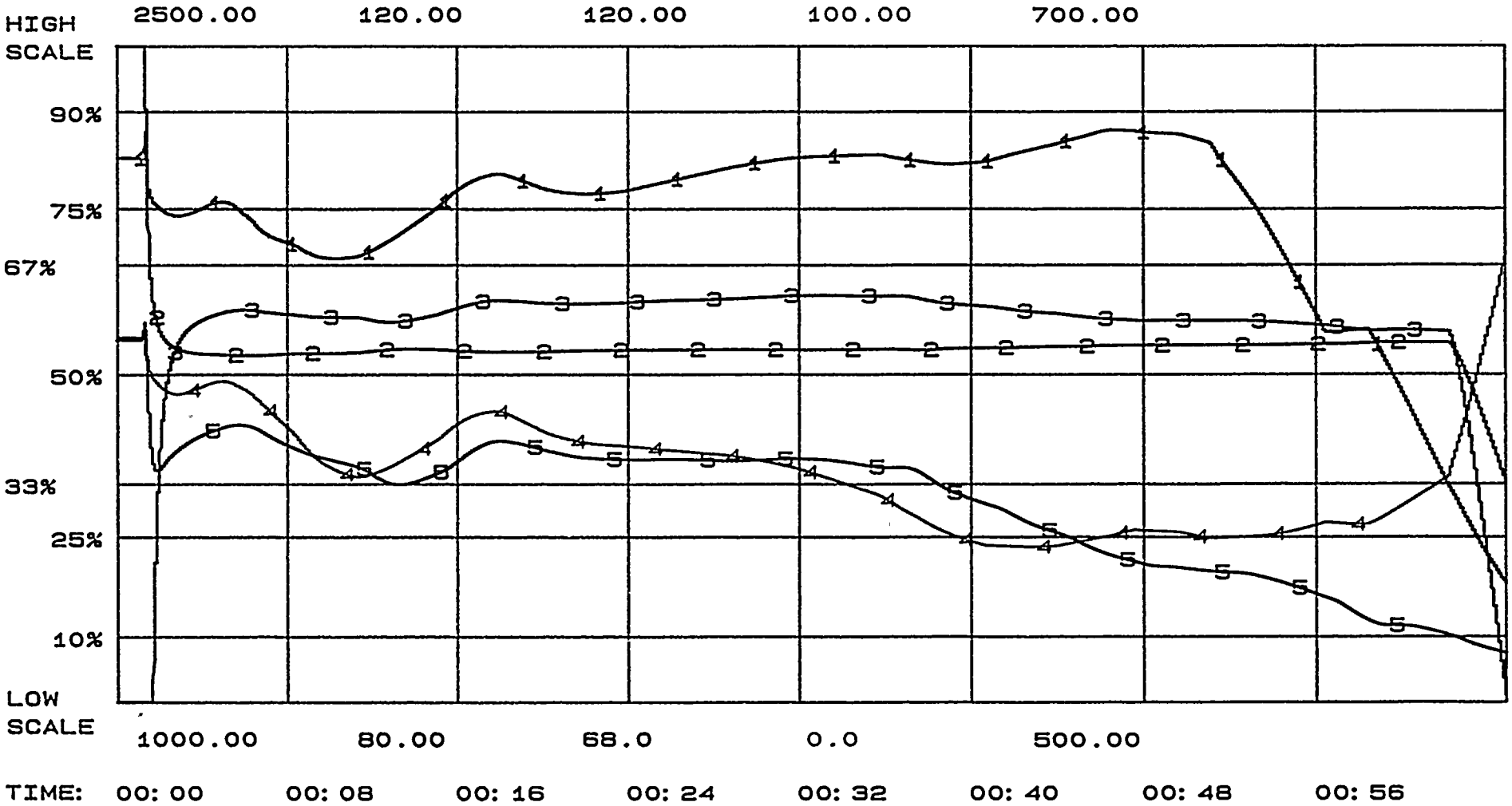
REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR #1 W/R LEVEL	PC	TIME
2	L1201	STEAM GENERATOR #2 W/R LEVEL	PC	START 00: 00: 48
3	L1202	STEAM GENERATOR #3 W/R LEVEL	PC	STOP 01: 05: 34
4	L1203	STEAM GENERATOR #4 W/R LEVEL	PC	
5				
6				



REACTOR VESSEL HEAD VOID FORMATION / NATURAL CIRCULATION COOLDOWN

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	L1220	RVLIS NARROW RANGE LEVEL	PC	START 00: 00: 48
3	L1222	RVLIS UPPER PLENUM LEVEL	PC	STOP 01: 05: 34
4	L1091	PRESSURIZER LEVEL	PC	
5	CRTTCEXIT	CORE EXIT TEMPERATURE	DEG_F	
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

ANTICIPATED TRANSIENT WITHOUT SCRAM (ATWS)

I. Introduction

The purpose of this test is to:

1) Test the simulator response to a failure of the reactor to trip from full power.

2) Ensure that the simulator functions to provide proper response to a failure of the reactor to trip after a trip of one (1) main feedpump from one hundred percent power with the operators performing actions required per 2-OHP 4023.FR-S.1 (Response to Nuclear Power Generation/ATWS).

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters correspond in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

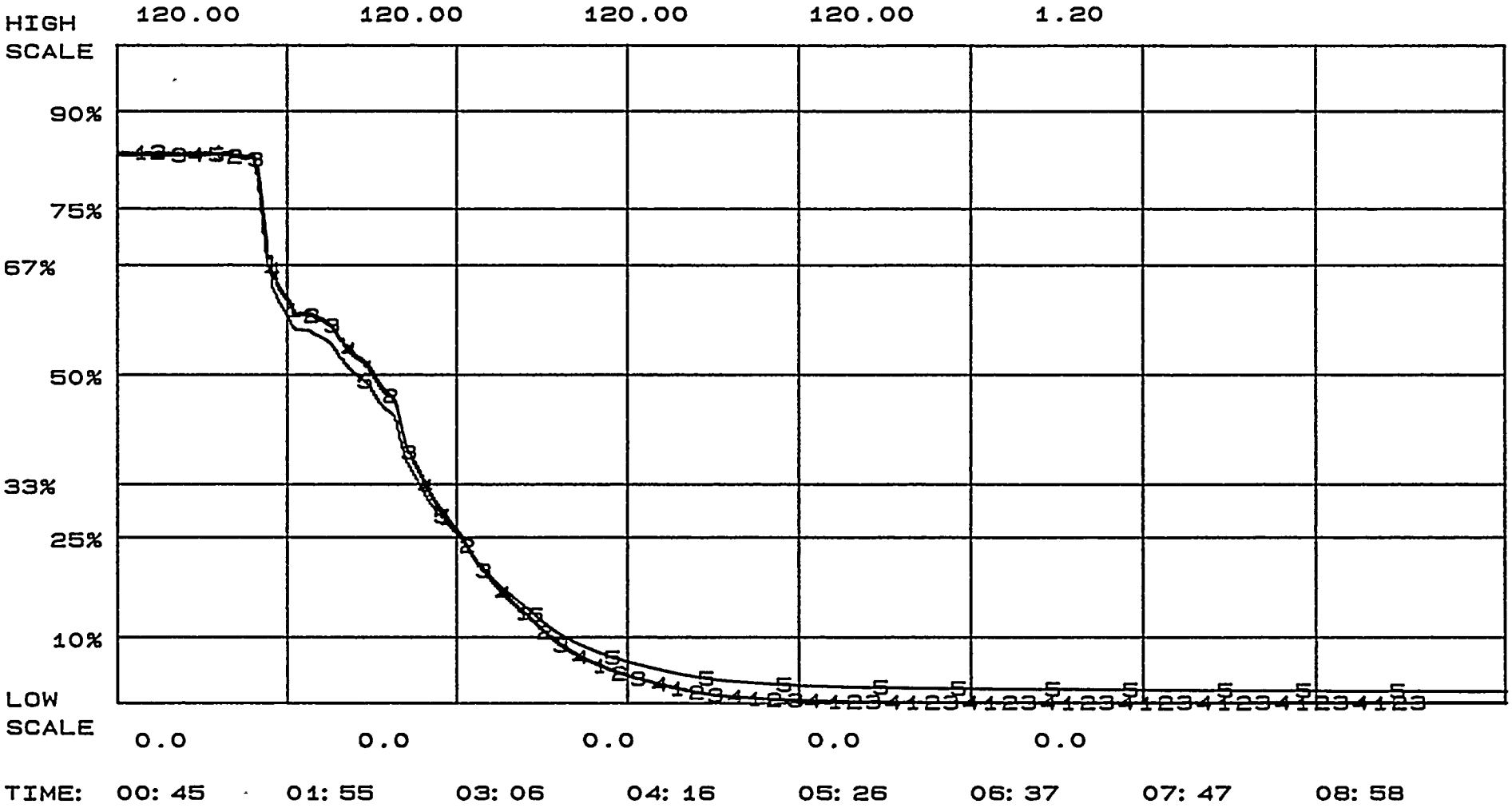
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

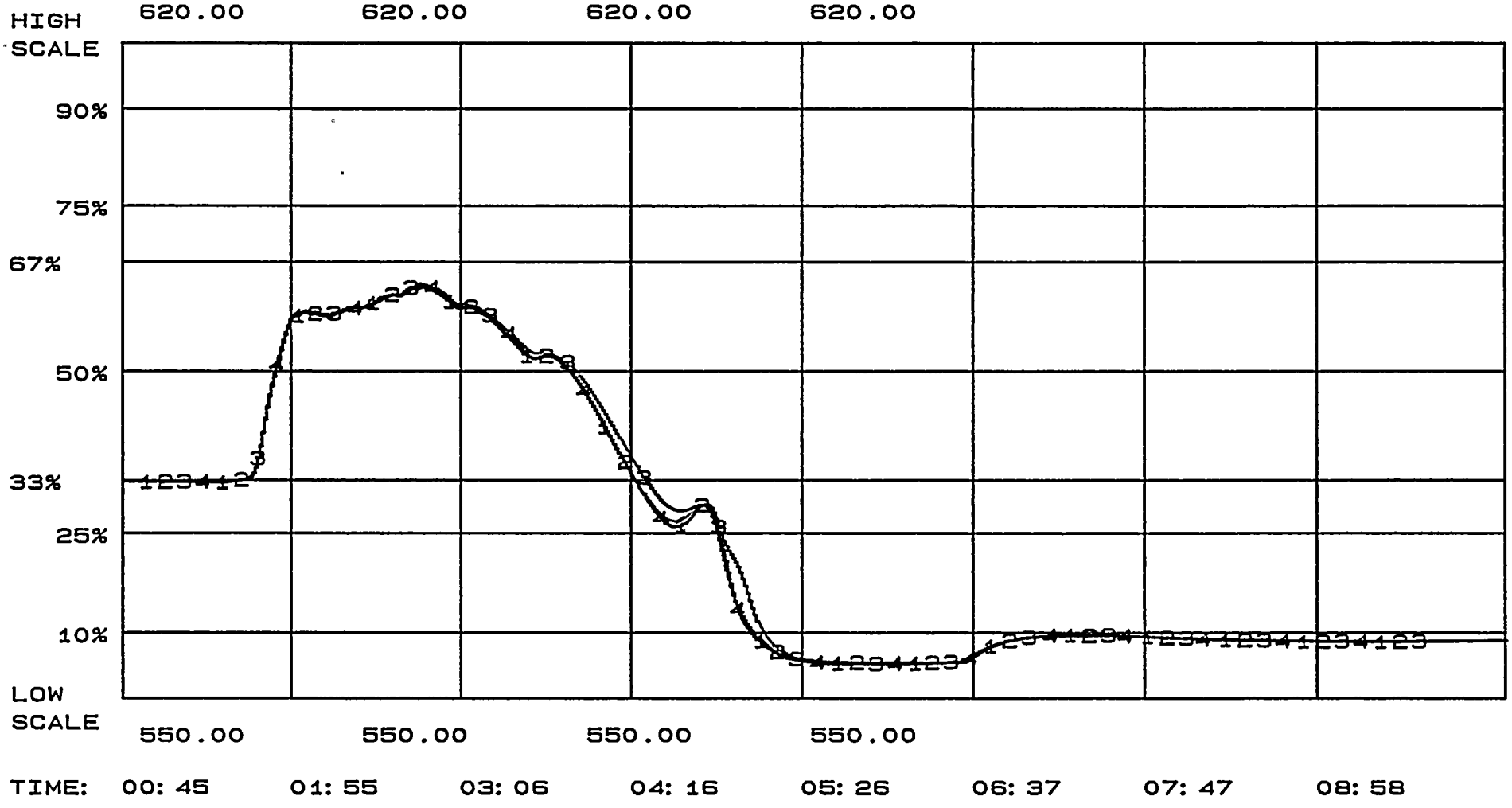
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. CHANNEL N-41	PC	TIME
2	N1013	POWER RANGE N.I. CHANNEL N-42	PC	START 00: 00: 45
3	N1014	POWER RANGE N.I. CHANNEL N-43	PC	STOP 00: 10: 15
4	N1015	POWER RANGE N.I. CHANNEL N-44	PC	
5	CRQN	REACTOR CORE HEAT FLUX	PC	
6				



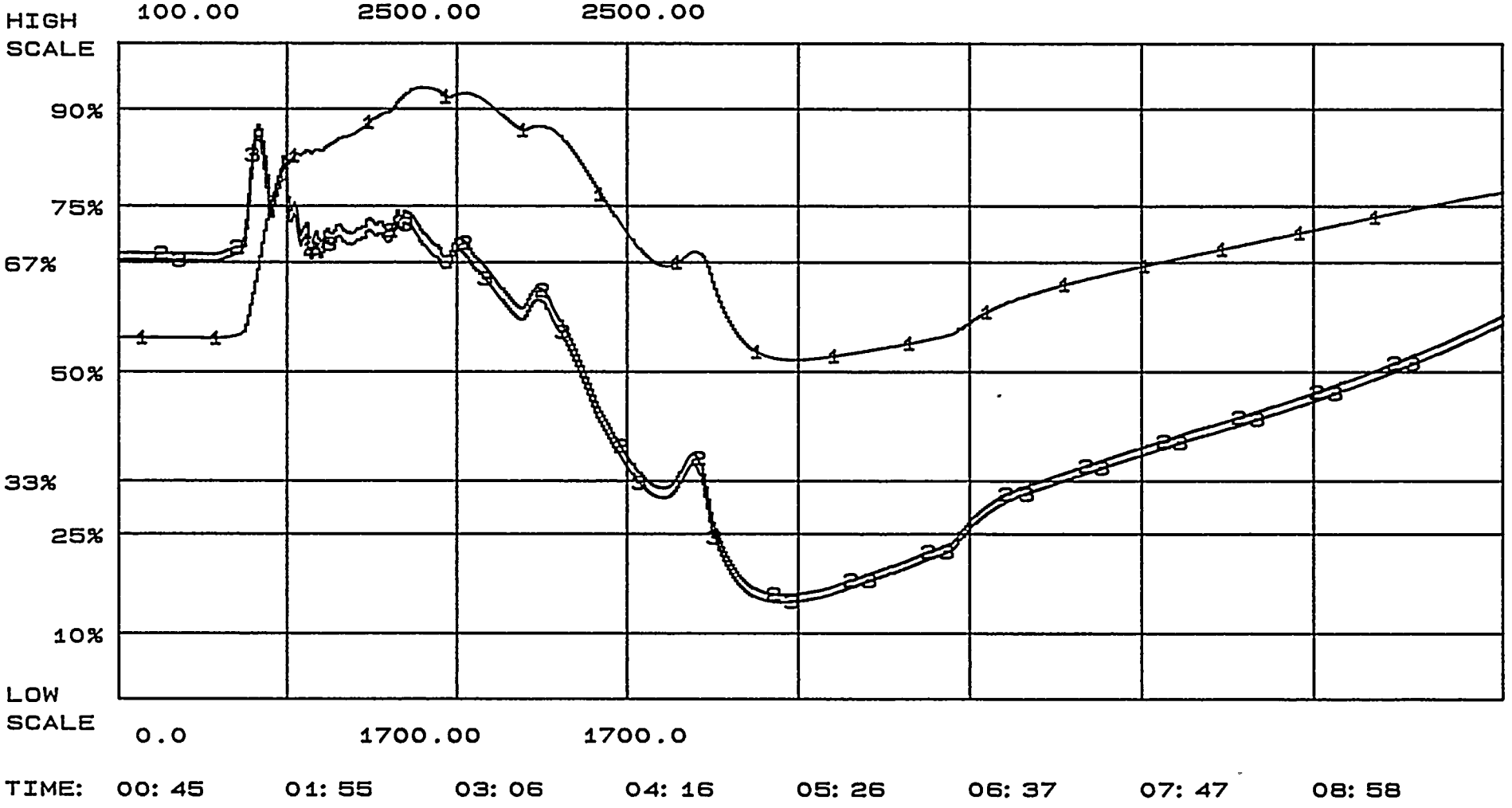
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS LOOP 1 TAVE	DEG_F	TIME
2	T1102	RCS LOOP 2 TAVE	DEG_F	START 00: 00: 45
3	T1103	RCS LOOP 3 TAVE	DEG_F	STOP 00: 10: 15
4	T1104	RCS LOOP 4 TAVE	DEG_F	
5				
6				



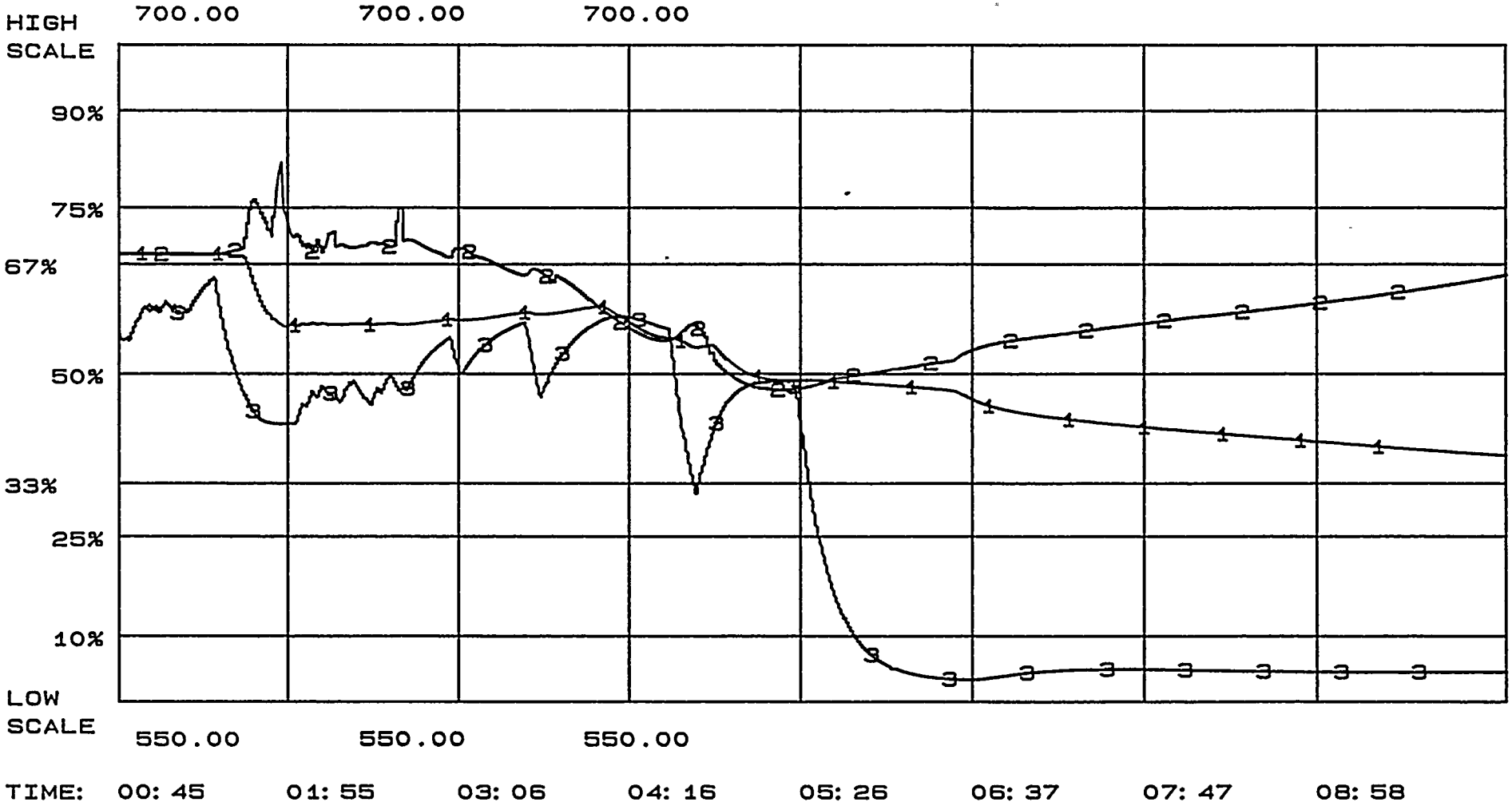
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	P1034	WIDE RANGE RCS PRESSURE	PSIG	START 00: 00: 45
3	P1036	PRESSURIZER PRESSURE	PSIG	STOP 00: 10: 15
4				
5				
6				



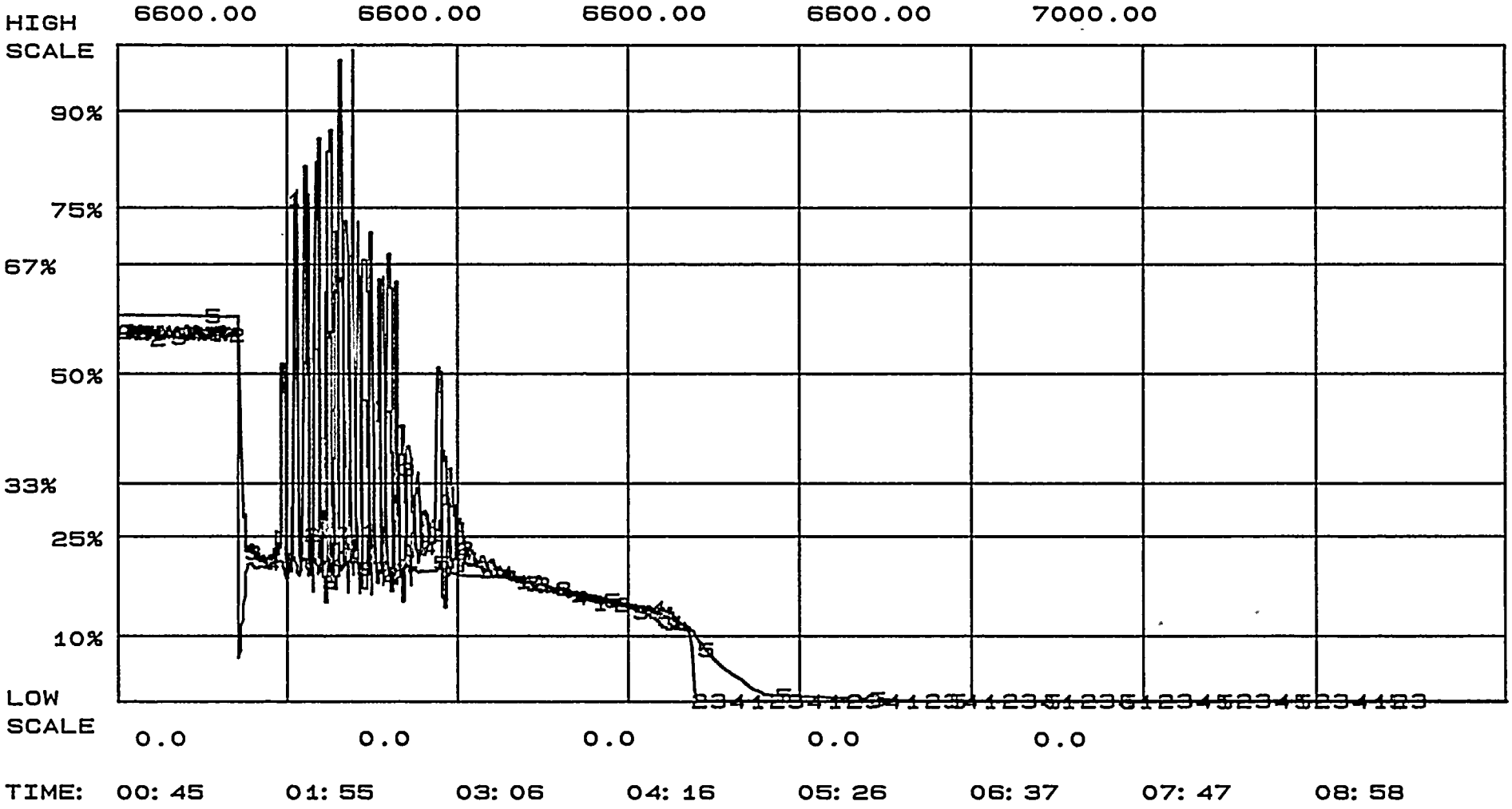
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1004	PRESSURIZER LIQUID TEMP.	DEG_F	TIME
2	T1005	PRESSURIZER STEAM TEMP.	DEG_F	START 00: 00: 45
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	STOP 00: 10: 15
4				
5				
6				



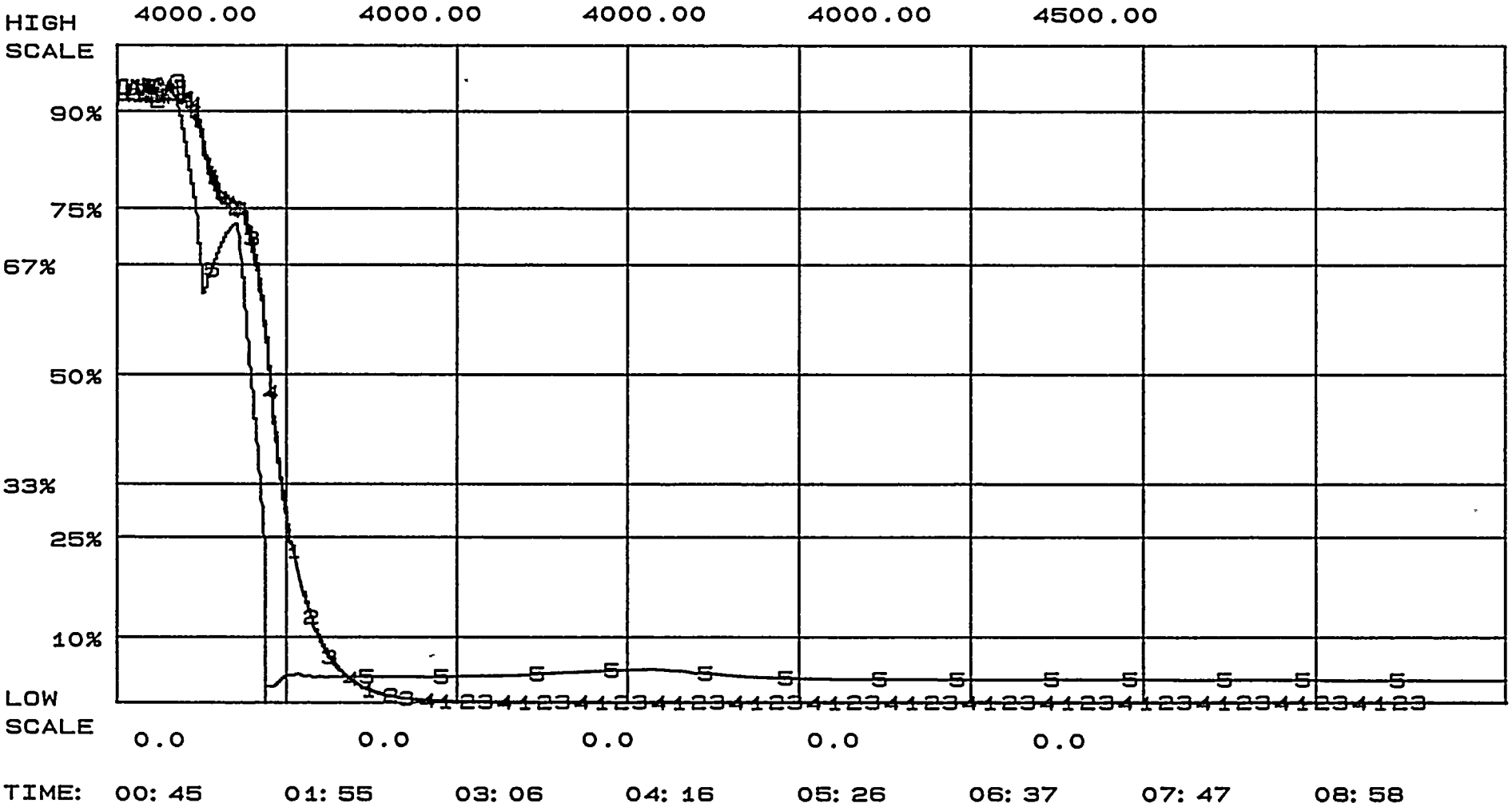
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR #1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR #2 STEAM FLOW	KBH	START 00: 00: 45
3	F1052	STEAM GENERATOR #3 STEAM FLOW	KBH	STOP 00: 10: 15
4	F1054	STEAM GENERATOR #4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



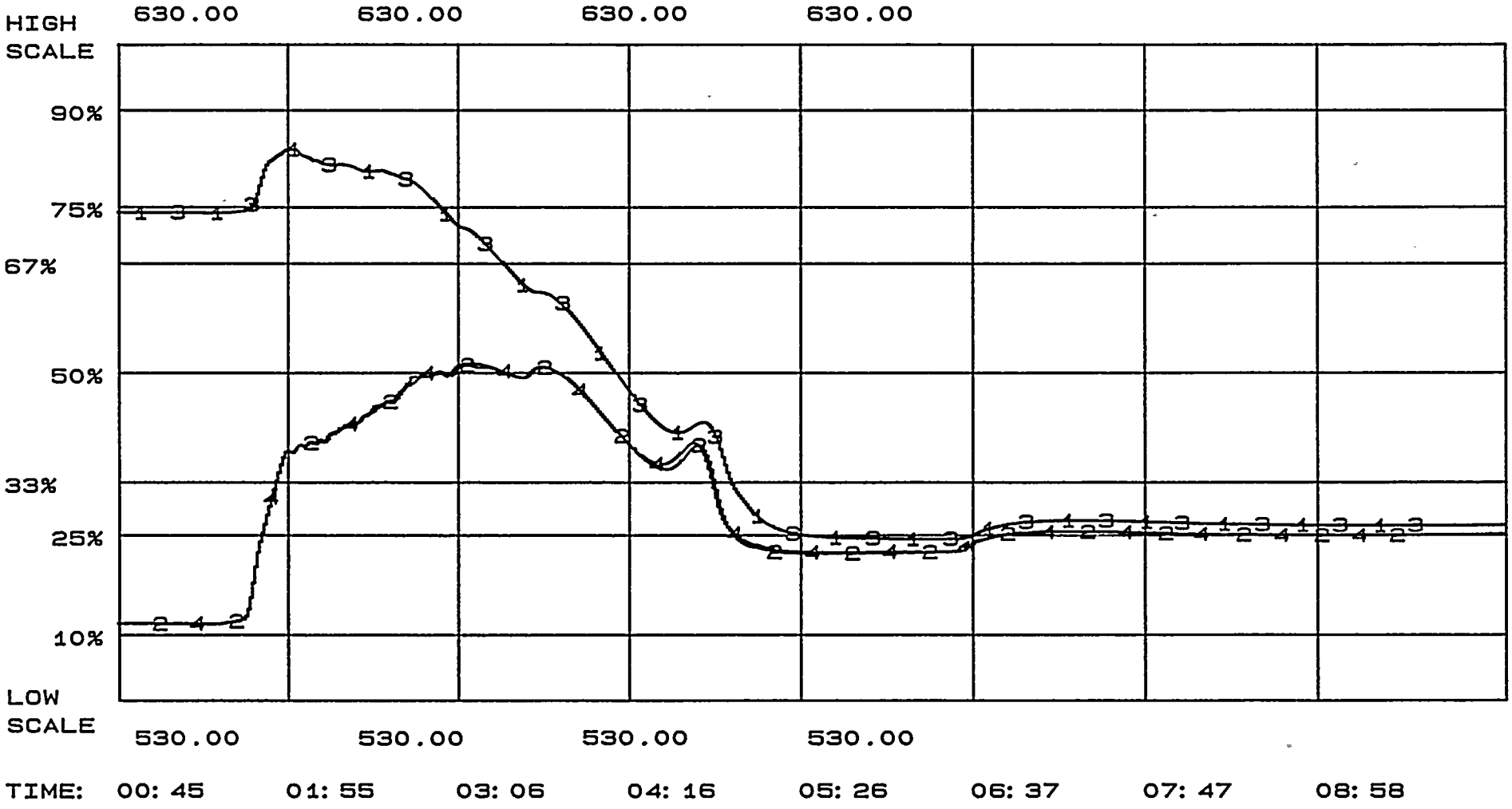
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR #1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR #2 FEED FLOW	KBH	START 00: 00: 45
3	F1202	STEAM GENERATOR #3 FEED FLOW	KBH	STOP 00: 10: 15
4	F1203	STEAM GENERATOR #4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AFW INCL)	LBS_S	
6				



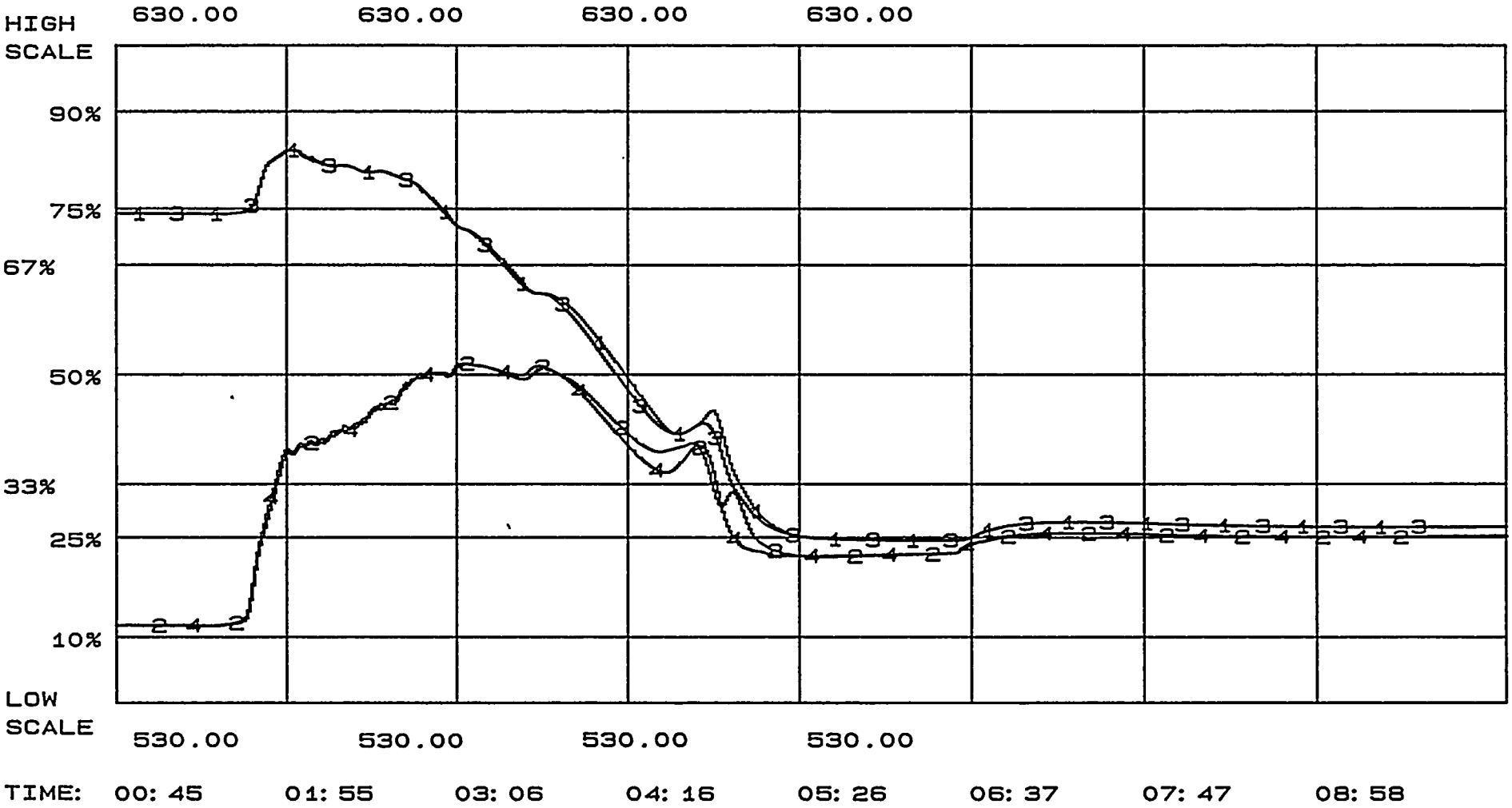
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	RCS LOOP 1 THOT	DEG_F	TIME
2	T1115	RCS LOOP 1 TCOLD	DEG_F	START 00: 00: 45
3	T1112	RCS LOOP 2 THOT	DEG_F	STOP 00: 10: 15
4	T1116	RCS LOOP 2 TCOLD	DEG_F	
5				
6				



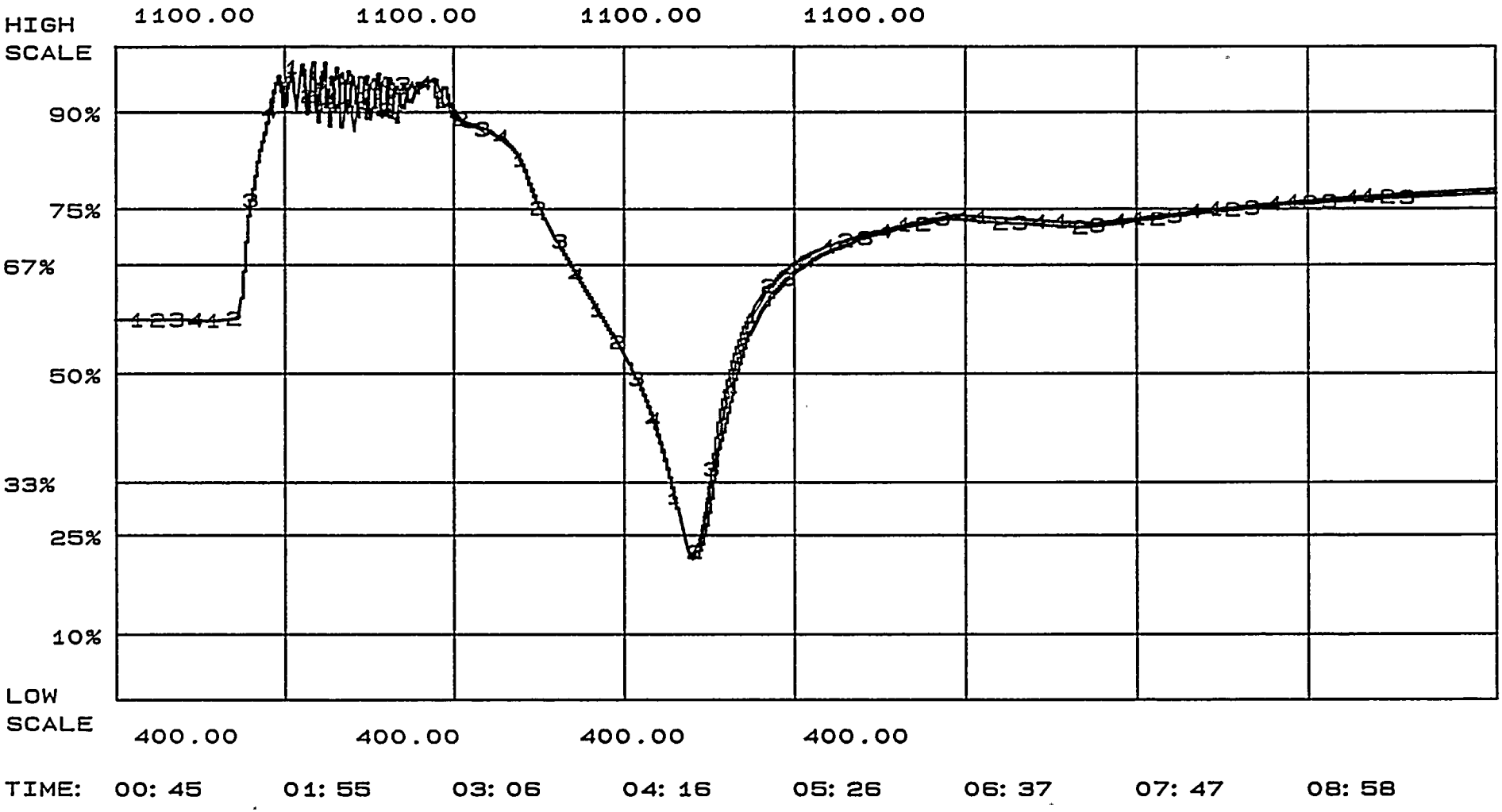
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	RCS LOOP 3 THOT	DEG_F	TIME
2	T1117	RCS LOOP 3 TCOLD	DEG_F	START 00: 00: 45
3	T1114	RCS LOOP 4 THOT	DEG_F	STOP 00: 10: 15
4	T1118	RCS LOOP 4 TCOLD	DEG_F	
5				
6				



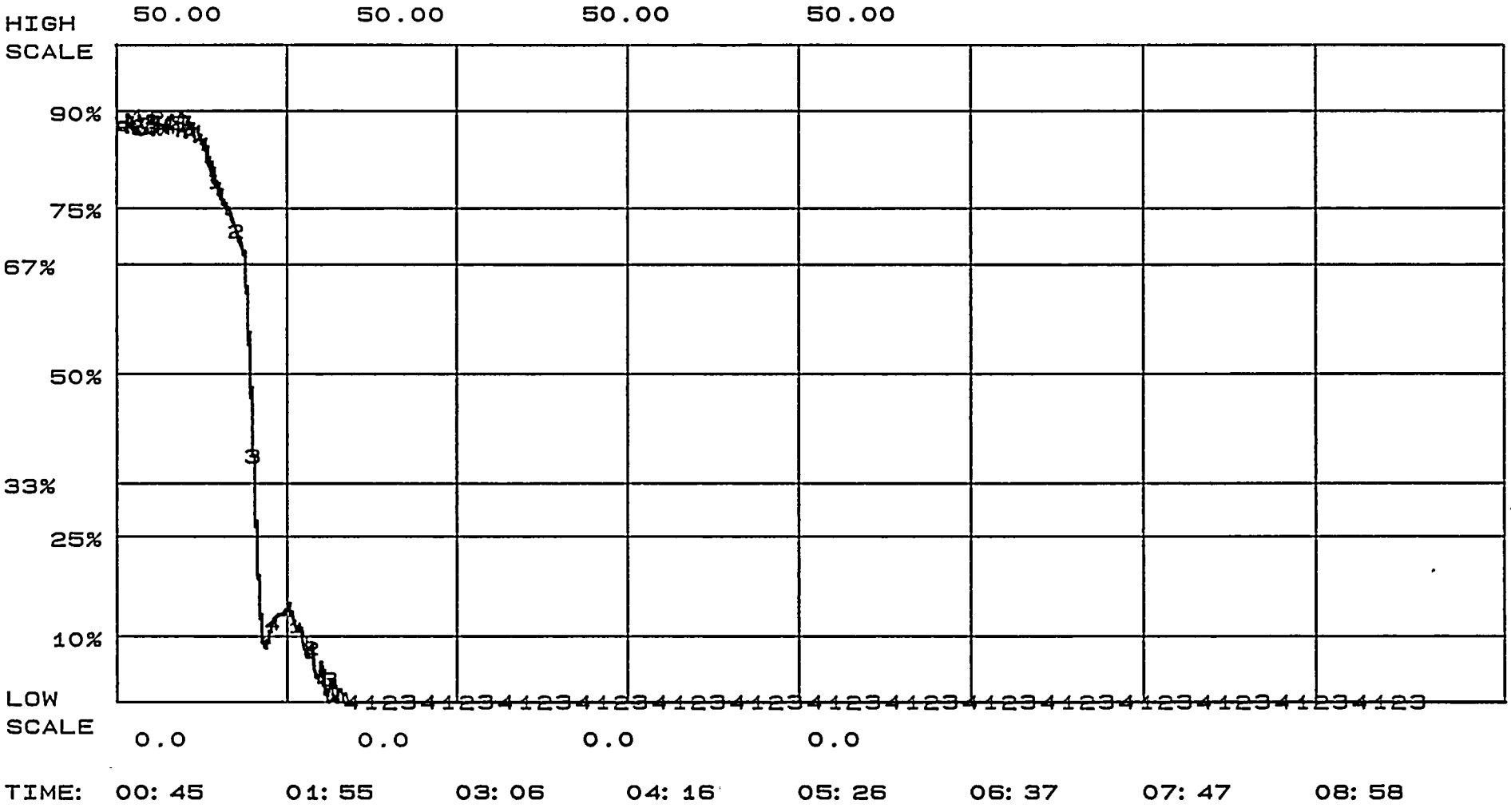
ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 45
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 10: 15
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



ANTICIPATED TRANSIENT WITHOUT SCRAM

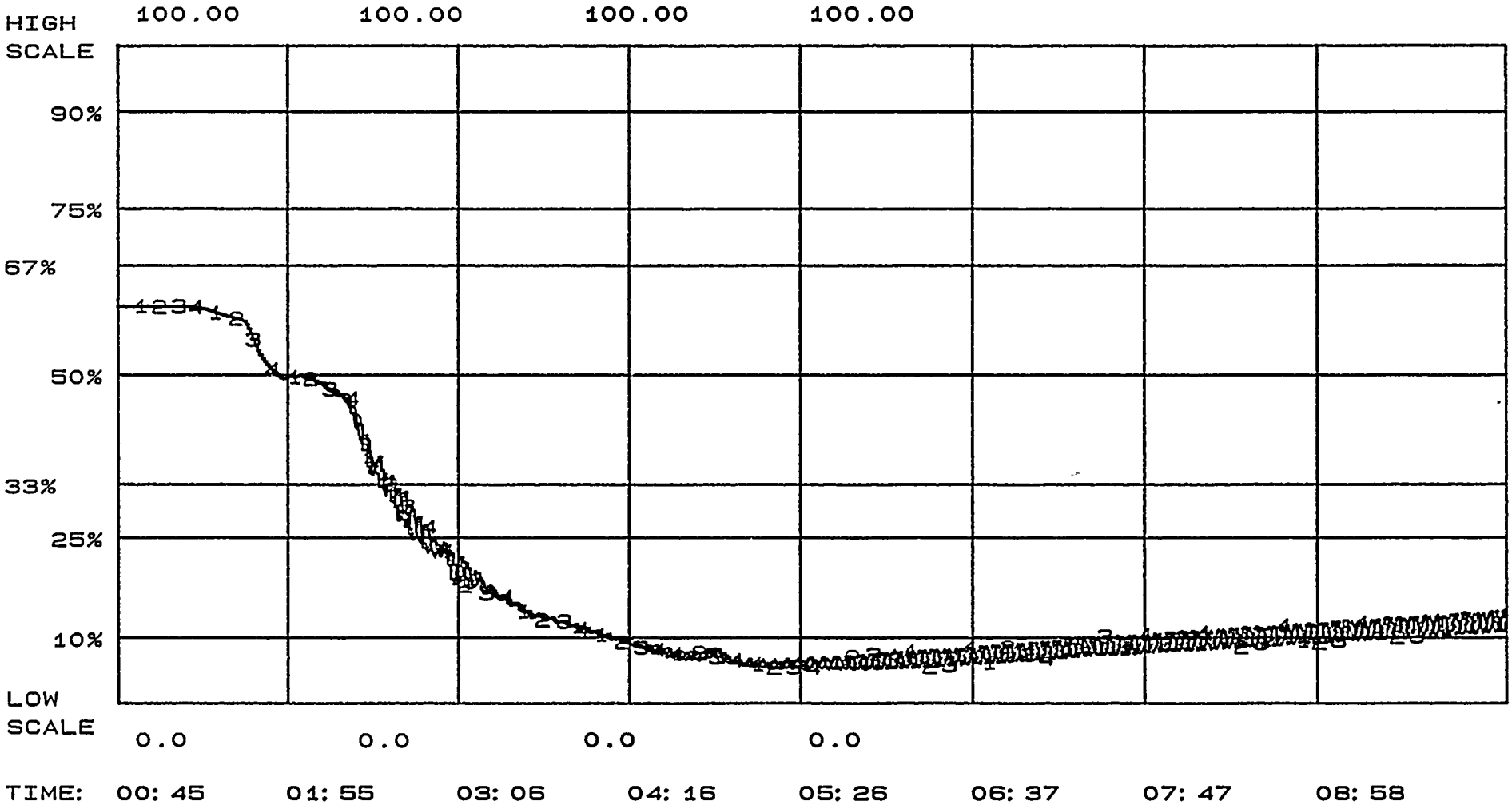
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR #1 N/R LEVEL	PC	TIME
2	L1207	STEAM GENERATOR #2 N/R LEVEL	PC	START 00: 00: 45
3	L1210	STEAM GENERATOR #3 N/R LEVEL	PC	STOP 00: 10: 15
4	L1213	STEAM GENERATOR #4 N/R LEVEL	PC	
5				
6				



ANTICIPATED TRANSIENT WITHOUT SCRAM

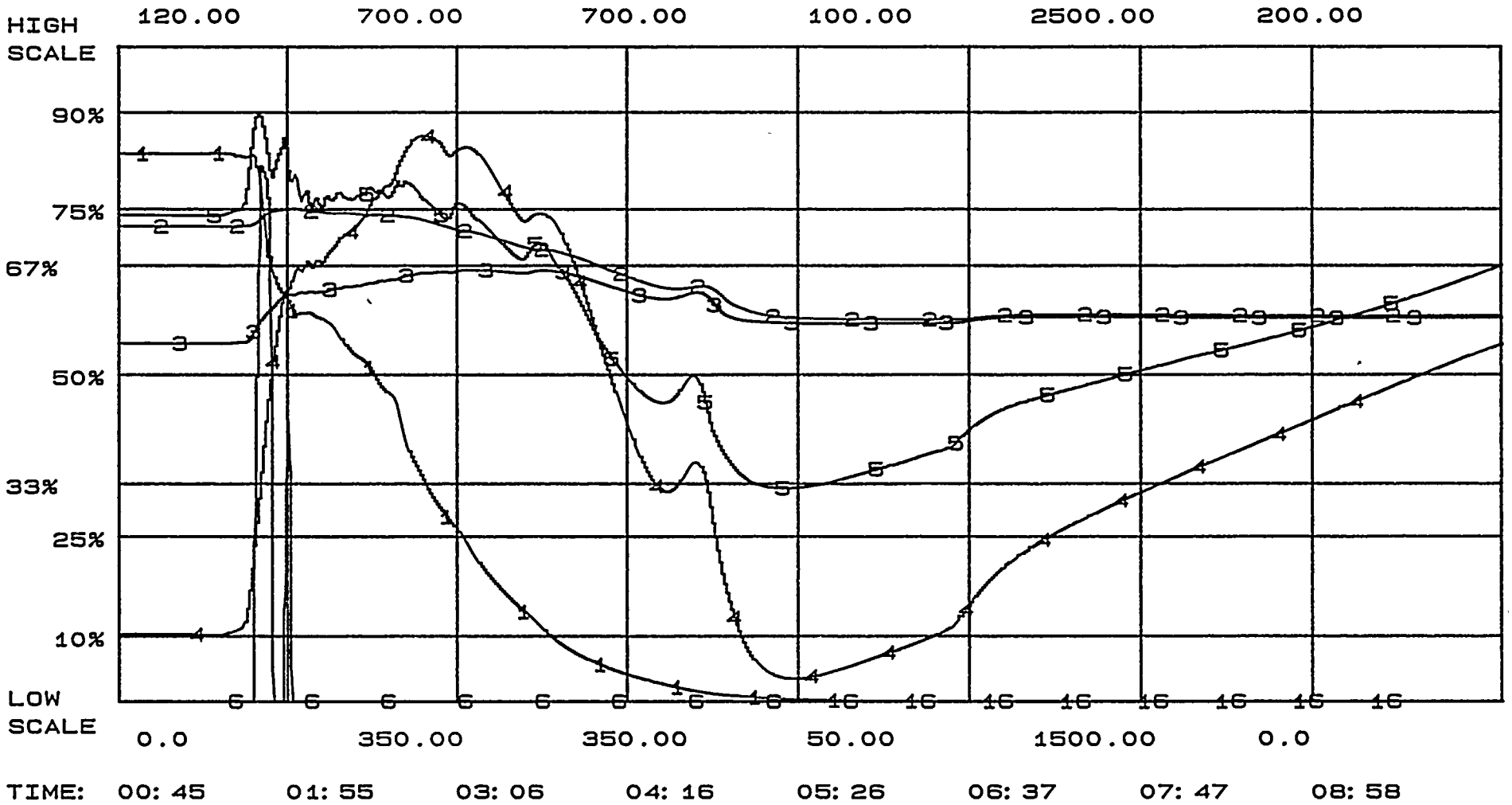
#	POINT ID	DESCRIPTION	UNITS
1	L1200	STEAM GENERATOR #1 W/R LEVEL	PC
2	L1201	STEAM GENERATOR #2 W/R LEVEL	PC
3	L1202	STEAM GENERATOR #3 W/R LEVEL	PC
4	L1203	STEAM GENERATOR #4 W/R LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 45
STOP	00: 10: 15



ANTICIPATED TRANSIENT WITHOUT SCRAM

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	REACTOR POWER CHANNEL N-41	PC	TIME
2	T1111	RCS LOOP 1 THOT	DEG_F	START 00: 00: 45
3	T1115	RCS LOOP 1 TCOLD	DEG_F	STOP 00: 10: 15
4	L1091	PRESSURIZER LEVEL	PC	
5	P1034	RCS WIDE RANGE PRESSURE	PSIG	
6	RCFPORVHDR	RCS PORV HEADER FLOW	LBS_S	



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

STEAM GENERATOR TUBE RUPTURE

I. Introduction

The purpose of this test is to:

1) Test the simulator response to a 600 gpm steam generator tube rupture.

2) Ensure that the simulator functions to provide proper response to a 600 gpm tube rupture and operator actions to mitigate the event using 2-OHP 4023.E-3 (Steam Generator Tube Rupture) and 2-OHP 4023.ES-3.1 (Post-SGTR Cooldown using Backfill).

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) A stratification layer is developed in the ruptured steam generator above the U-tubes after the ruptured steam generator is isolated as indicated by relatively constant ruptured steam generator pressure during initial cooldown.

2) Backfill through the ruptured tube is developed as indicated by increasing pressurizer level concurrent with decreasing ruptured steam generator level when RCS pressure is less than ruptured steam generator pressure.

3) The observable change in parameters correspond in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

4) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted the following discrepancies:

a) The #3 steam generator wide range level response (oscillation) after approximately 18 minutes was inappropriate for the condition.

b) The #3 steam generator steamed at a significantly higher rate than the other non-ruptured steam generators.

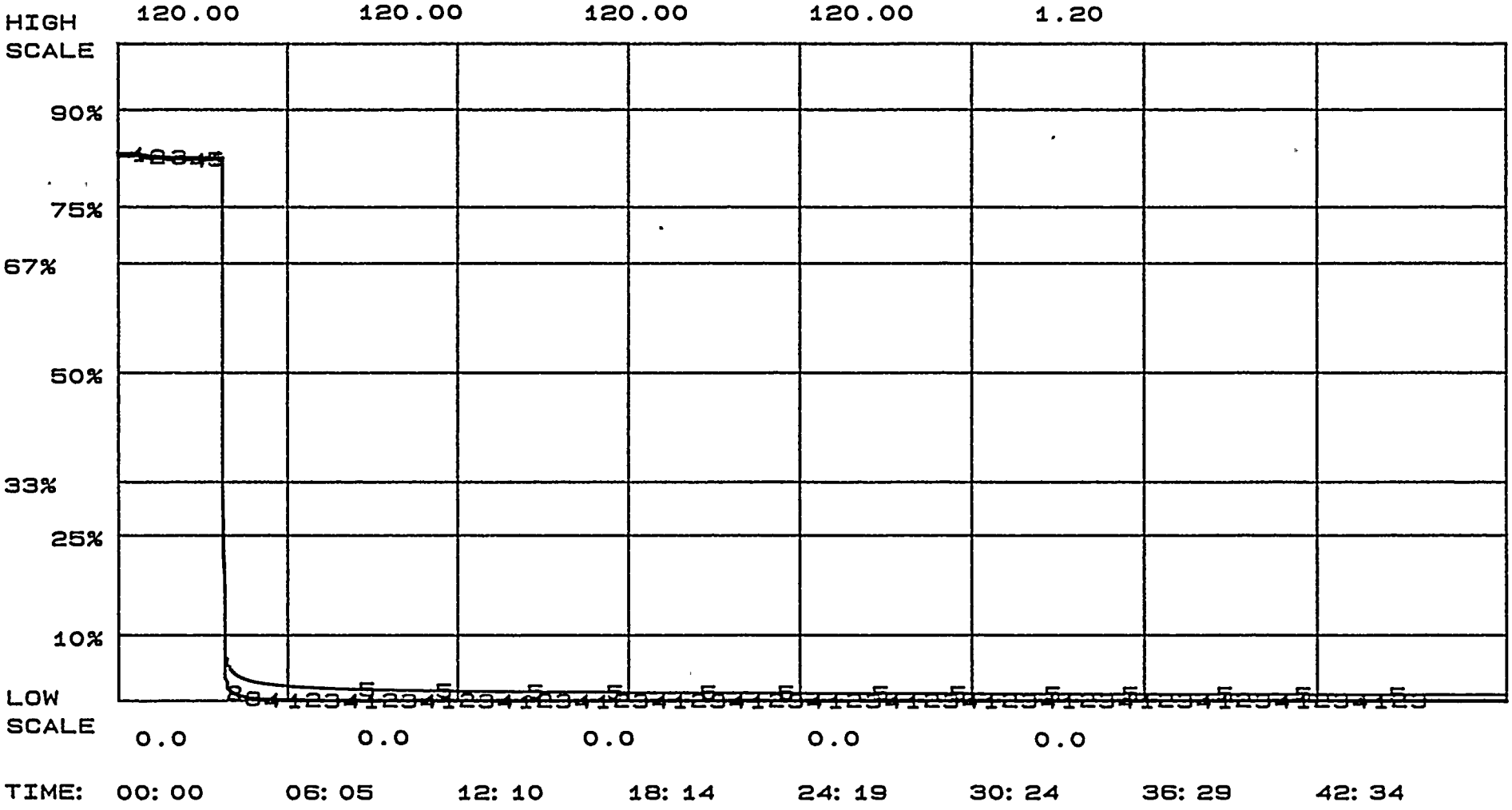
c) The pressurizer surge line response was not in the proper direction for the condition during RCS depressurization. The surge line showed no change or an outsurge when in fact pressurizer level was increasing. Data is currently being collected in the reference plant for surge line thermal stress studies which will be used to correct surge line flow response.

Discrepancy reports where written on these discrepancies to investigate and correct the condition.

600 GPM TUBE RUPTURE ON S/G #1

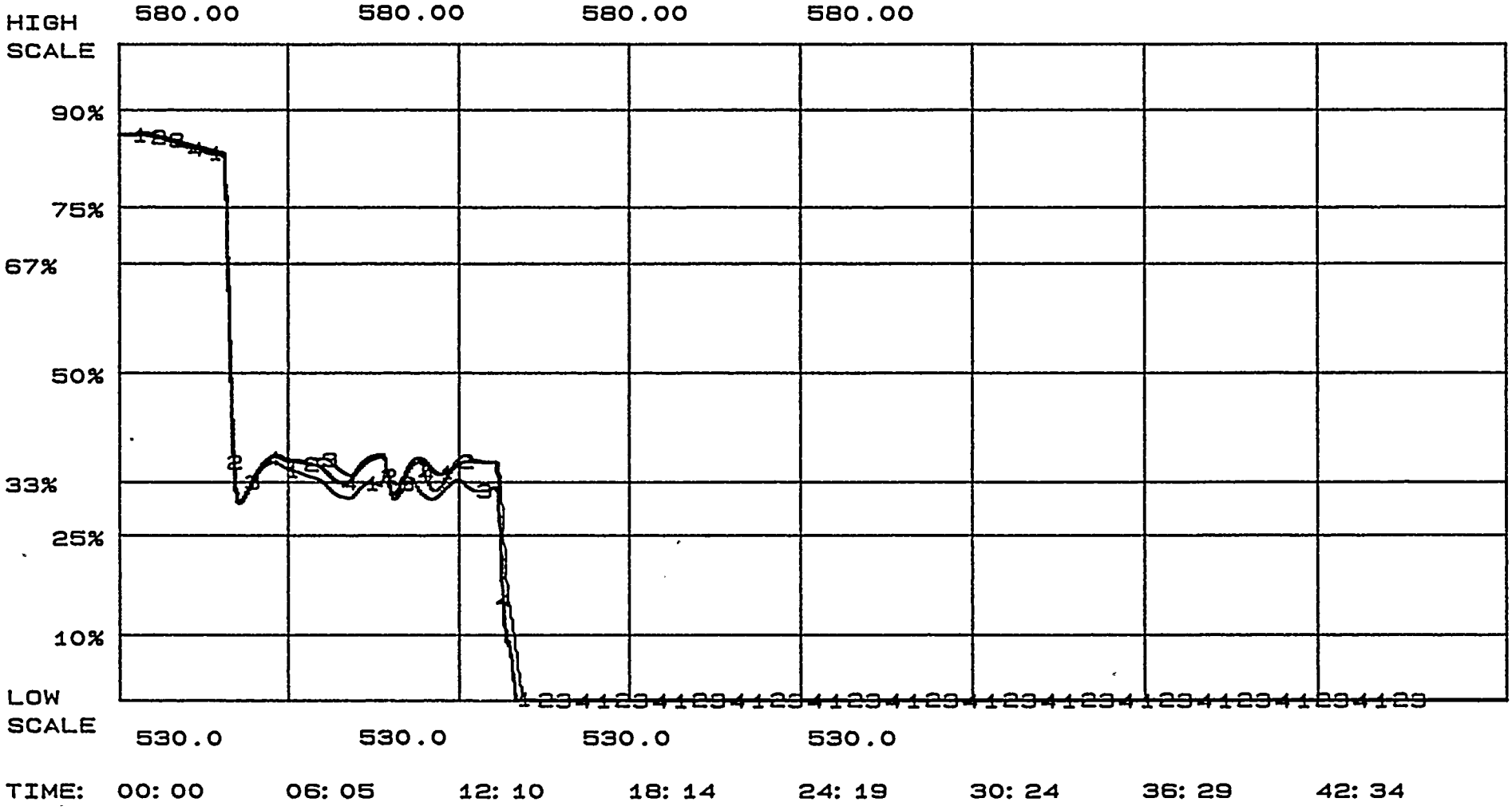
#	POINT ID	DESCRIPTION	UNITS
1	N1012	POWER RANGE N.I. CHANNEL N-41	PC
2	N1013	POWER RANGE N.I. CHANNEL N-42	PC
3	N1014	POWER RANGE N.I. CHANNEL N-43	PC
4	N1015	POWER RANGE N.I. CHANNEL N-44	PC
5	CRQN	REACTOR CORE HEAT FLUX	PC
6			

EDIT CONTROLS	
TIME	
START	00: 00: 00
STOP	00: 49: 14



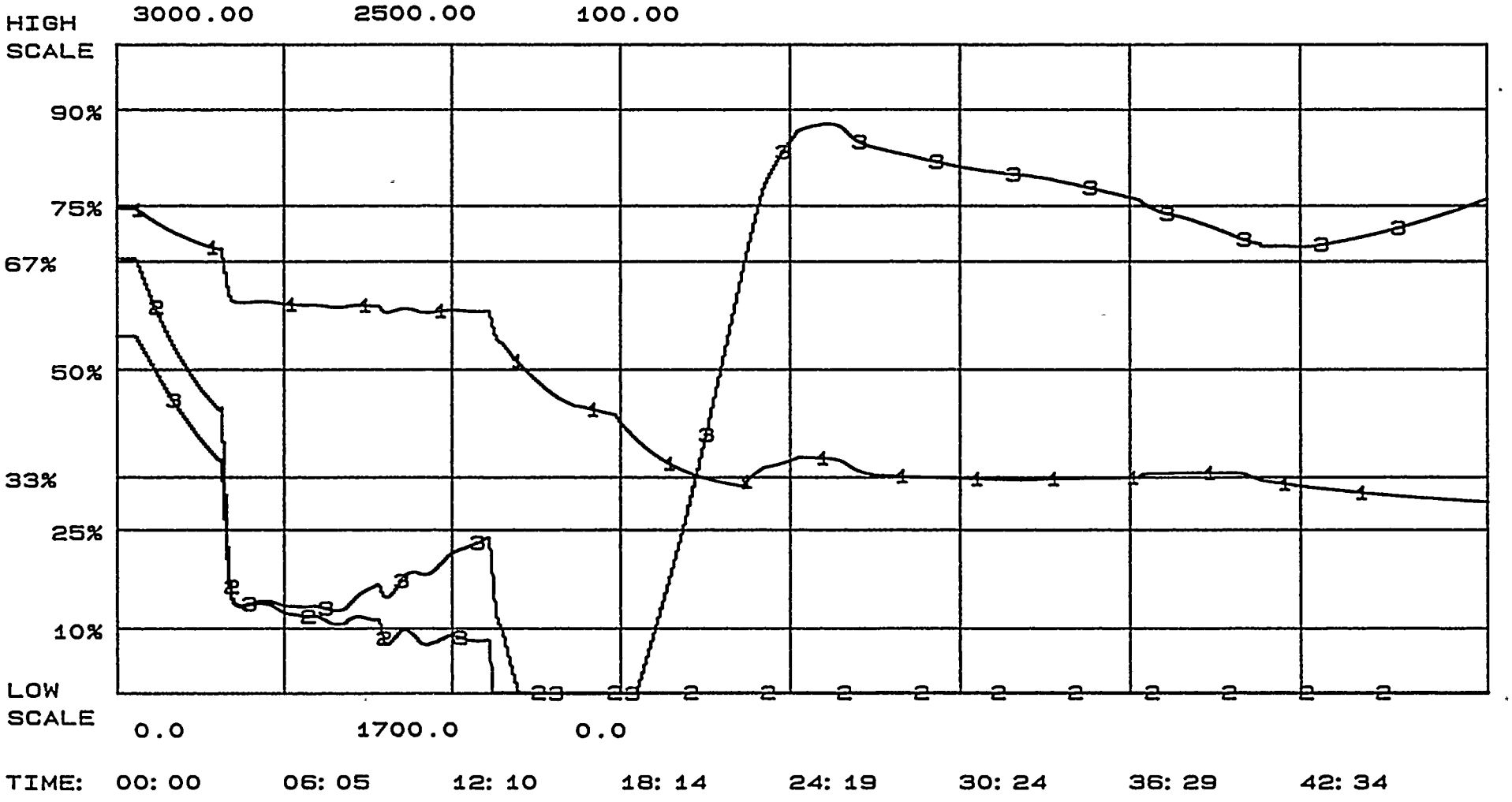
600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS TAVE LOOP 1	DEG_F	TIME
2	T1102	RCS TAVE LOOP 2	DEG_F	START 00: 00: 00
3	T1103	RCS TAVE LOOP 3	DEG_F	STOP 00: 49: 13
4	T1104	RCS TAVE LOOP 4	DEG_F	
5				
6				



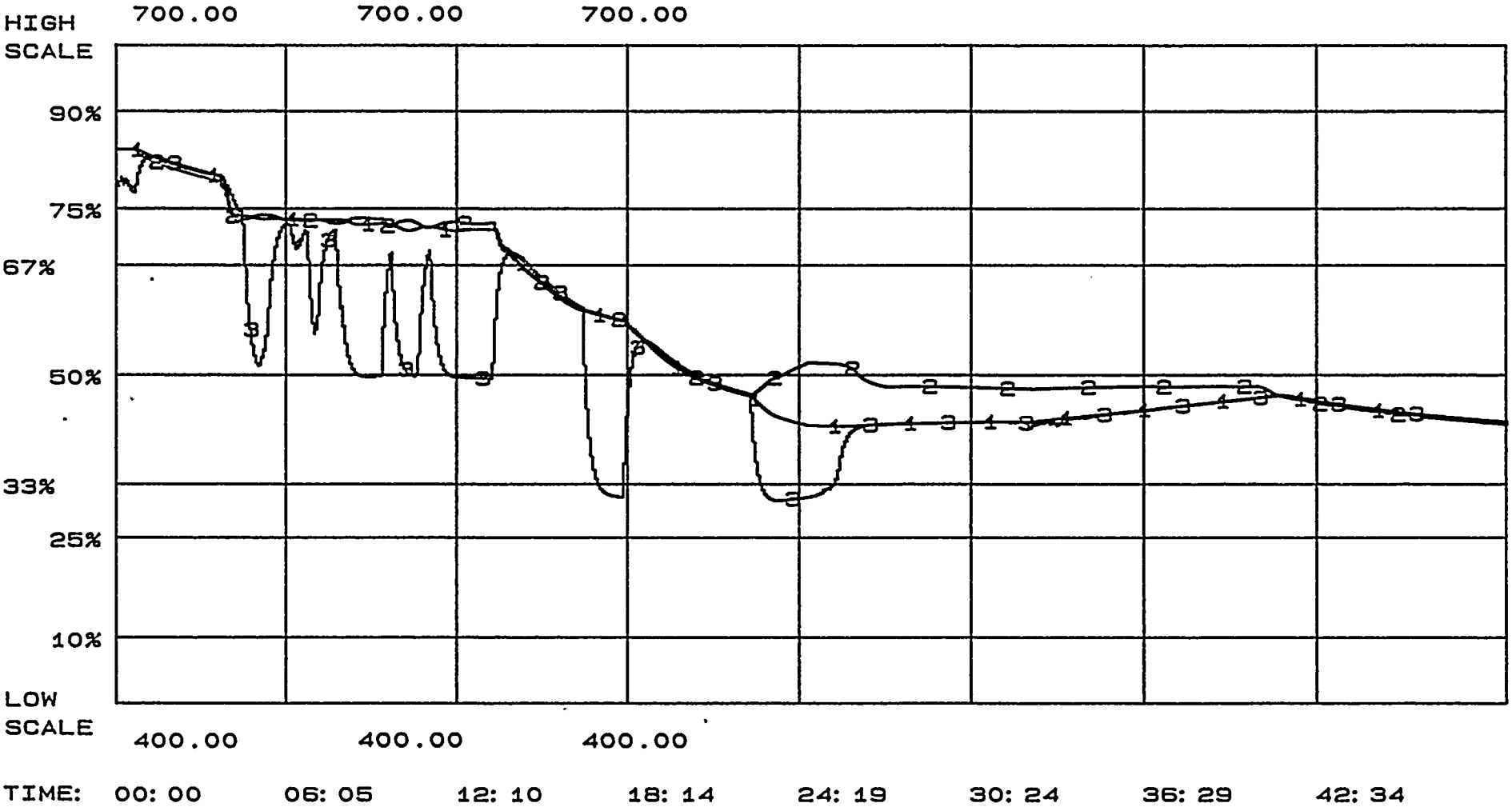
600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WIDE RANGE RCS PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3	L1091	PRESSURIZER LEVEL	PC	STOP 00: 49: 13
4				
5				
6				



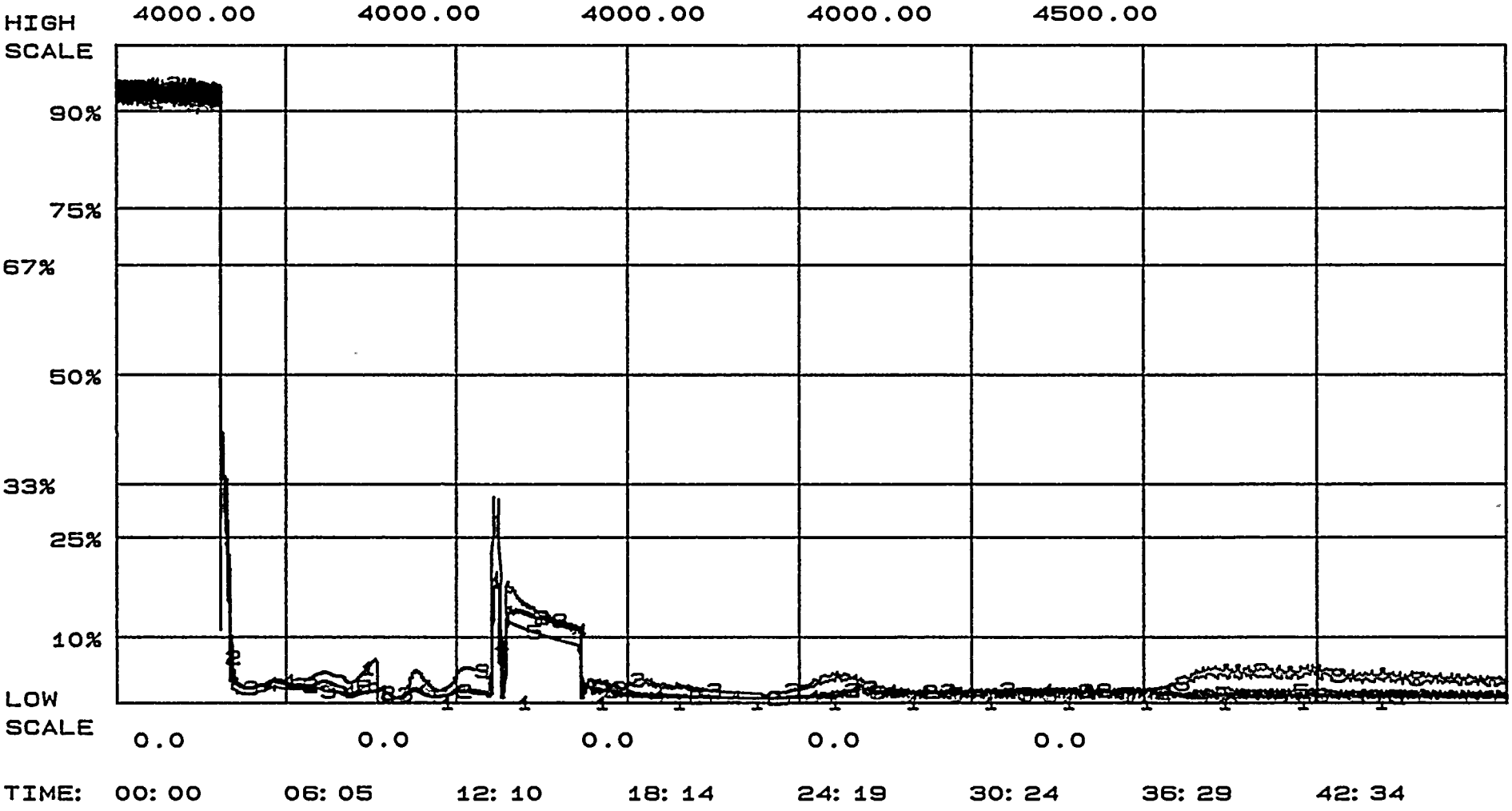
600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1004	PRESSURIZER LIQUID TEMP.	DEG_F	TIME
2	T1005	PRESSURIZER STEAM TEMP.	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	STOP 00: 49: 13
4				
5				
6				



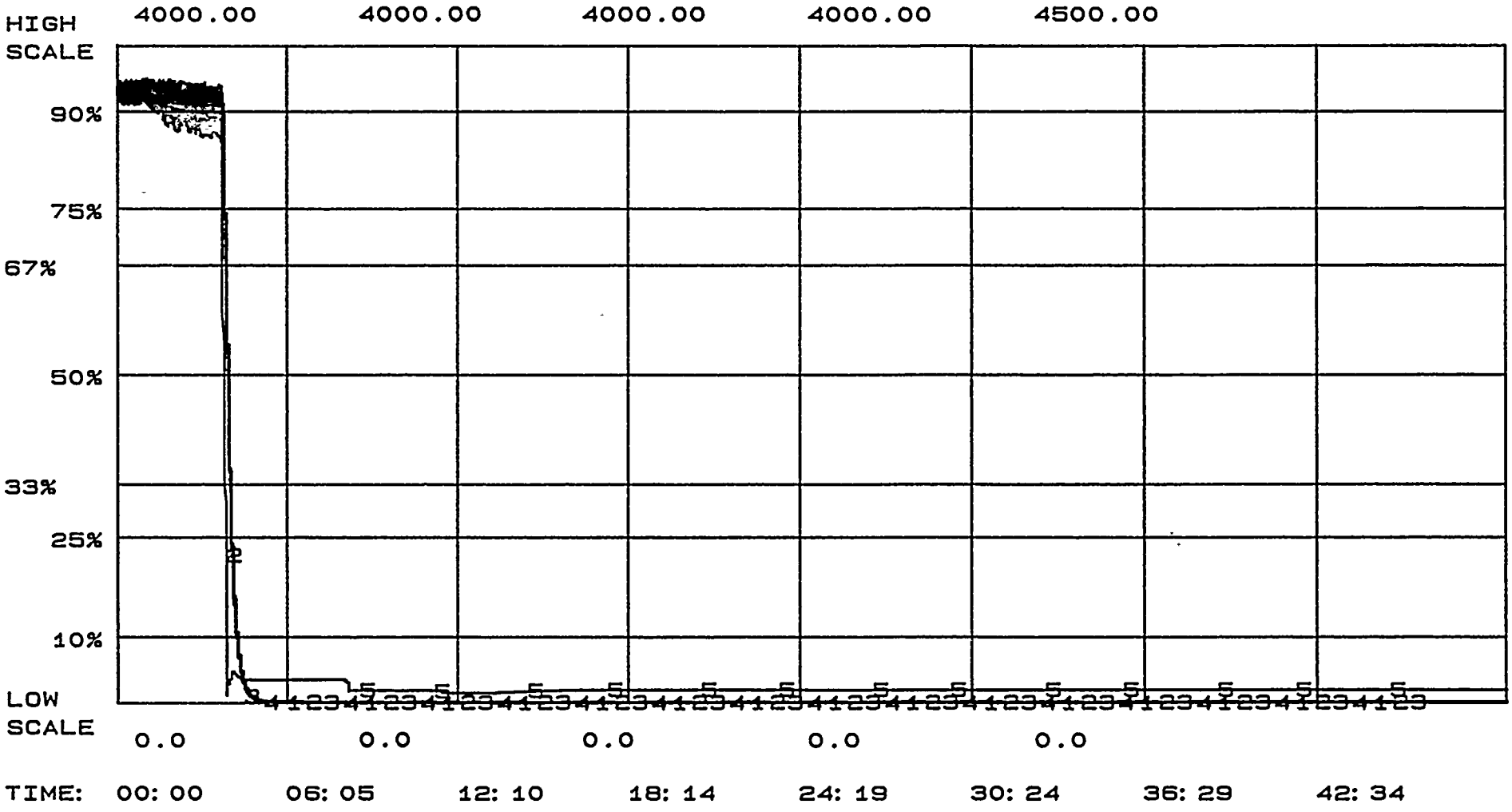
600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR #1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR #2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	STEAM GENERATOR #3 STEAM FLOW	KBH	STOP 00: 49: 13
4	F1054	STEAM GENERATOR #4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



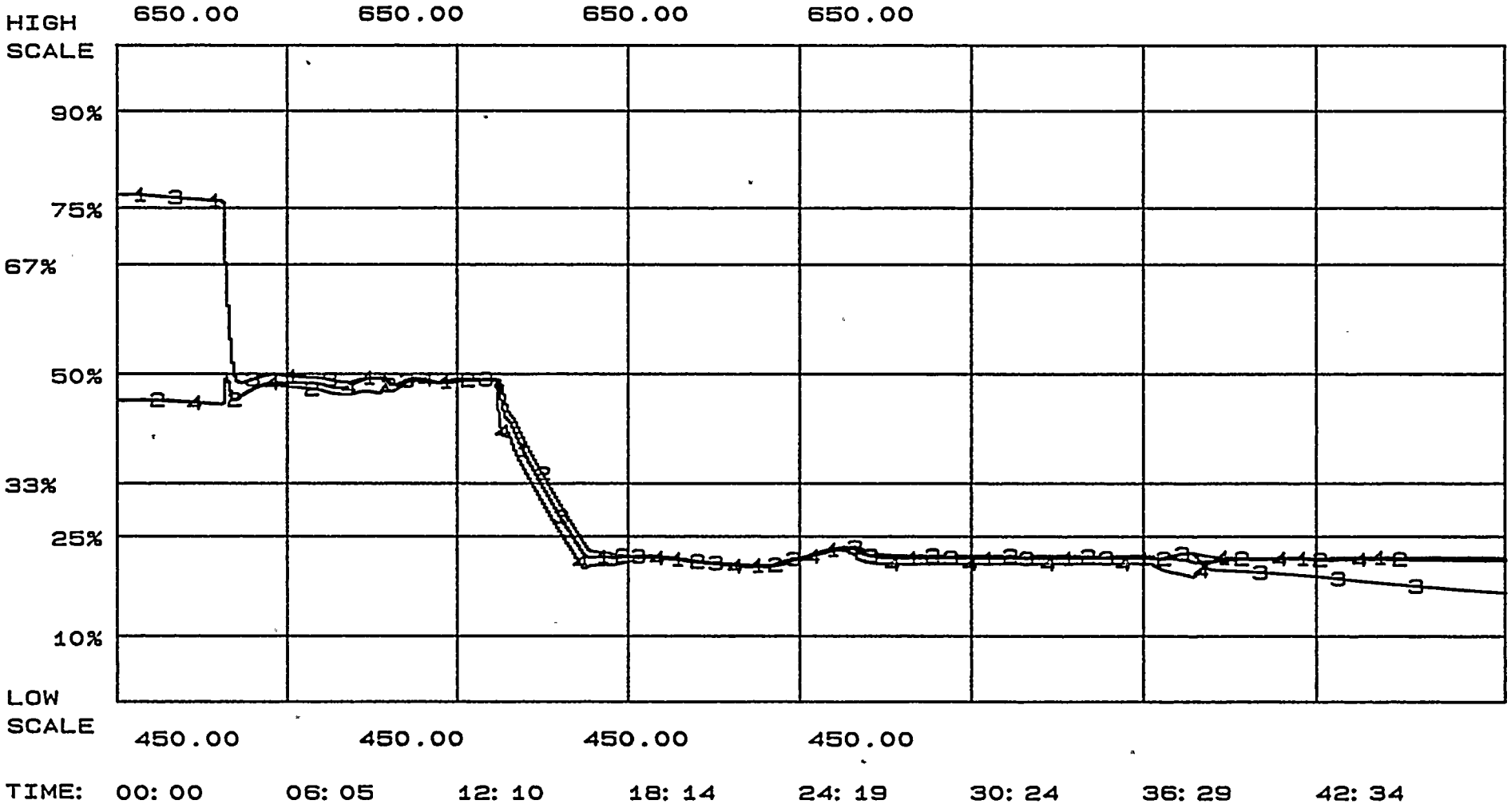
600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR #1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR #2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR #3 FEED FLOW	KBH	STOP 00: 49: 13
4	F1203	STEAM GENERATOR #4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW. (AFW INCL.)	LBS_S	
6				



600 GPM TUBE RUPTURE ON S/G #1

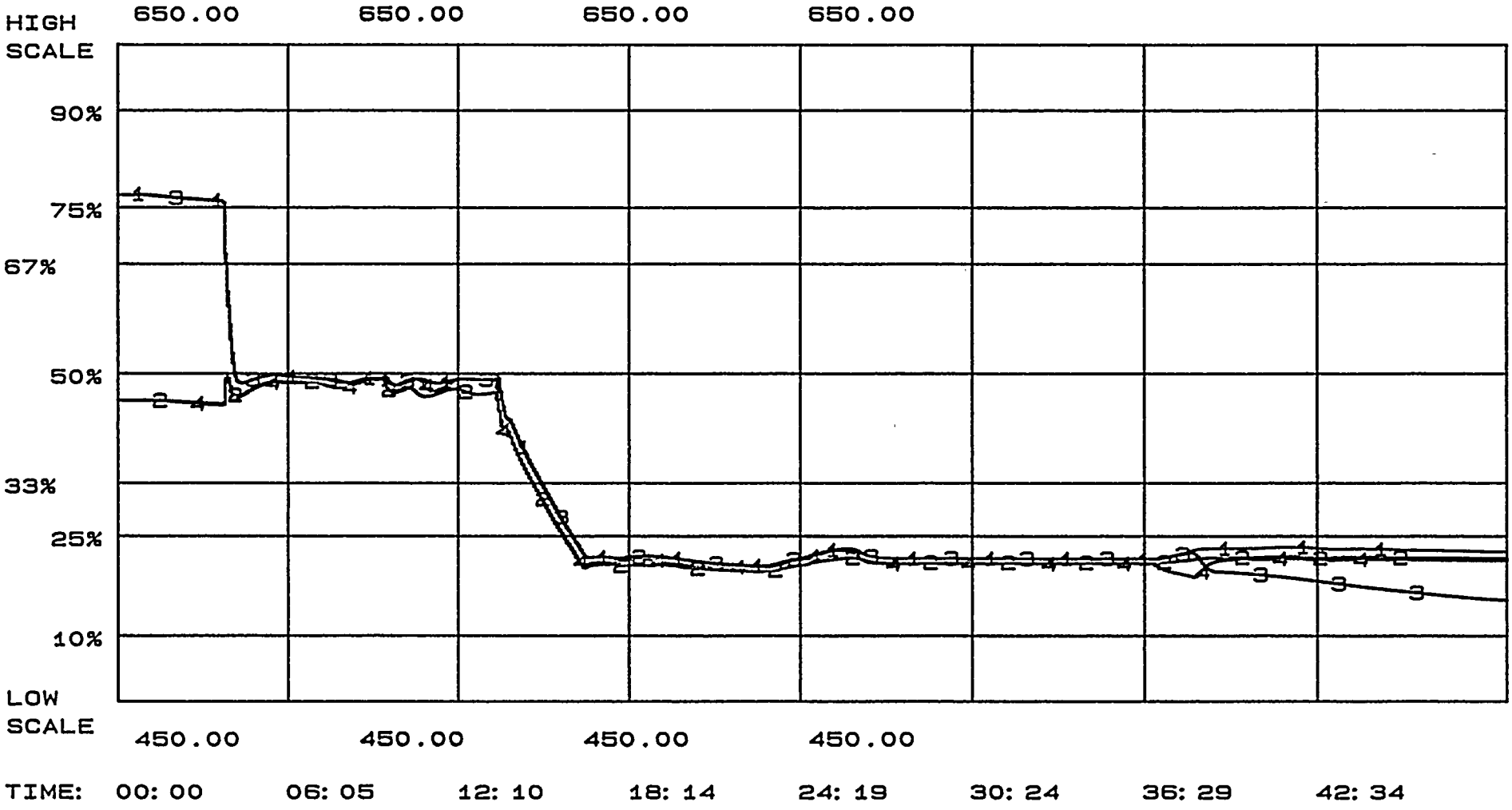
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	RCS LOOP 1 THOT	DEG_F	TIME
2	T1115	RCS LOOP 1 TCOLD	DEG_F	START 00: 00: 00
3	T1112	RCS LOOP 2 THOT	DEG_F	STOP 00: 49: 13
4	T1116	RCS LOOP 2 TCOLD	DEG_F	
5				
6				



600 GPM TUBE RUPTURE ON S/G #1

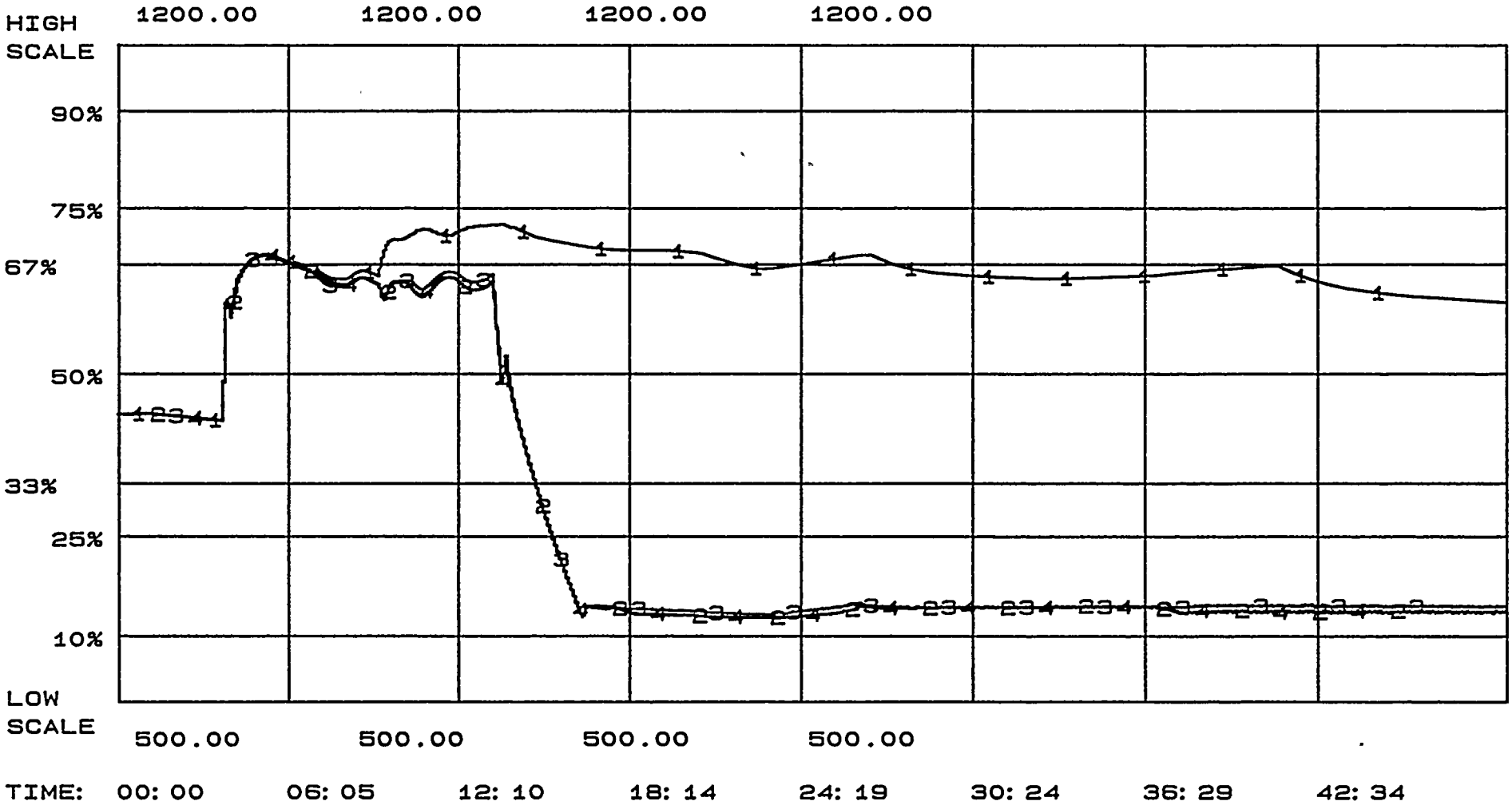
#	POINT ID	DESCRIPTION	UNITS
1	T1113	RCS LOOP 3 THOT	DEG_F
2	T1117	RCS LOOP 3 TCOLD	DEG_F
3	T1114	RCS LOOP 4 THOT	DEG_F
4	T1118	RCS LOOP 4 TCOLD	DEG_F
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 49: 13



600 GPM TUBE RUPTURE ON S/G #1

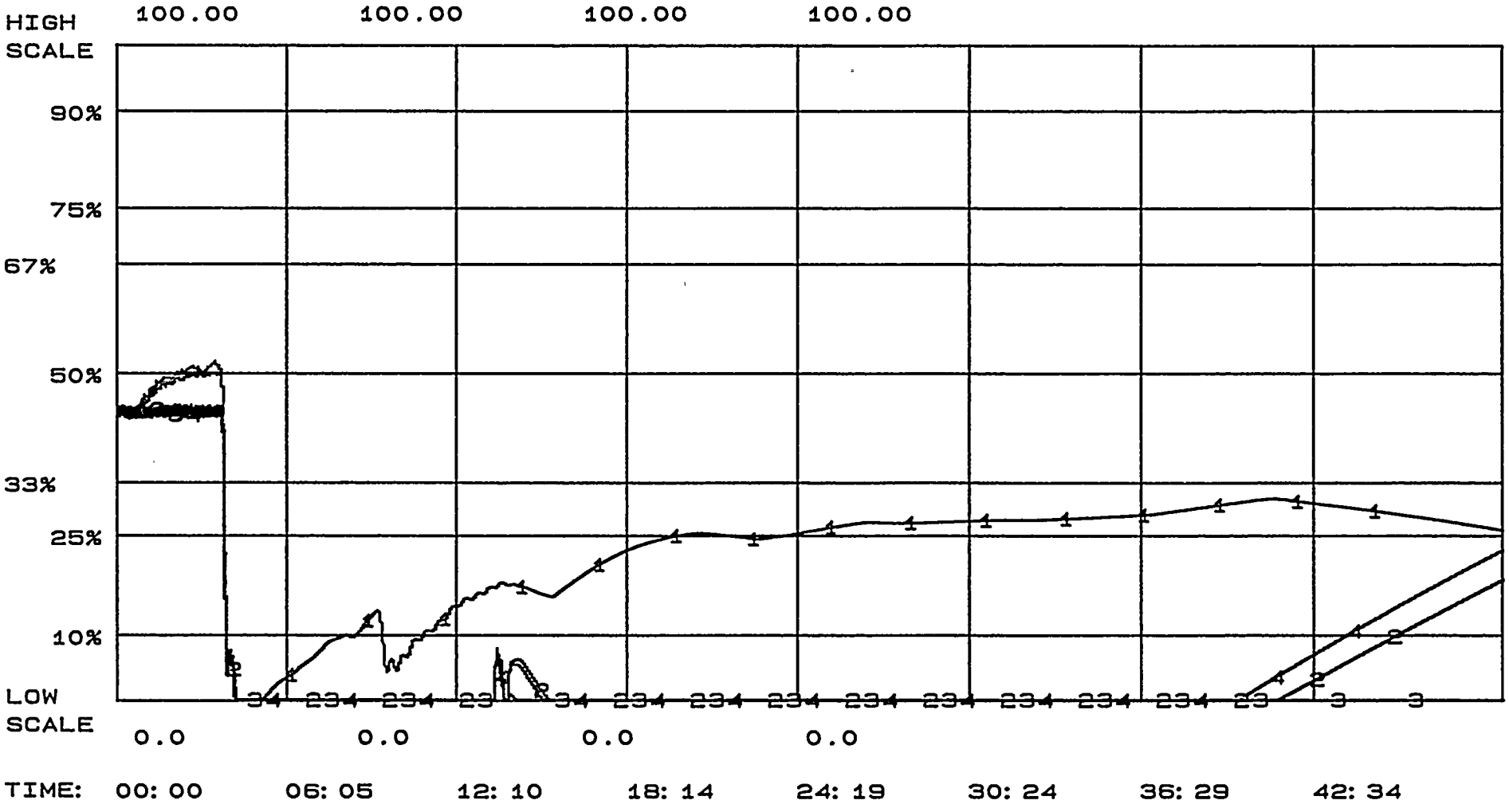
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 49: 13
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



600 GPM TUBE RUPTURE ON S/G #1

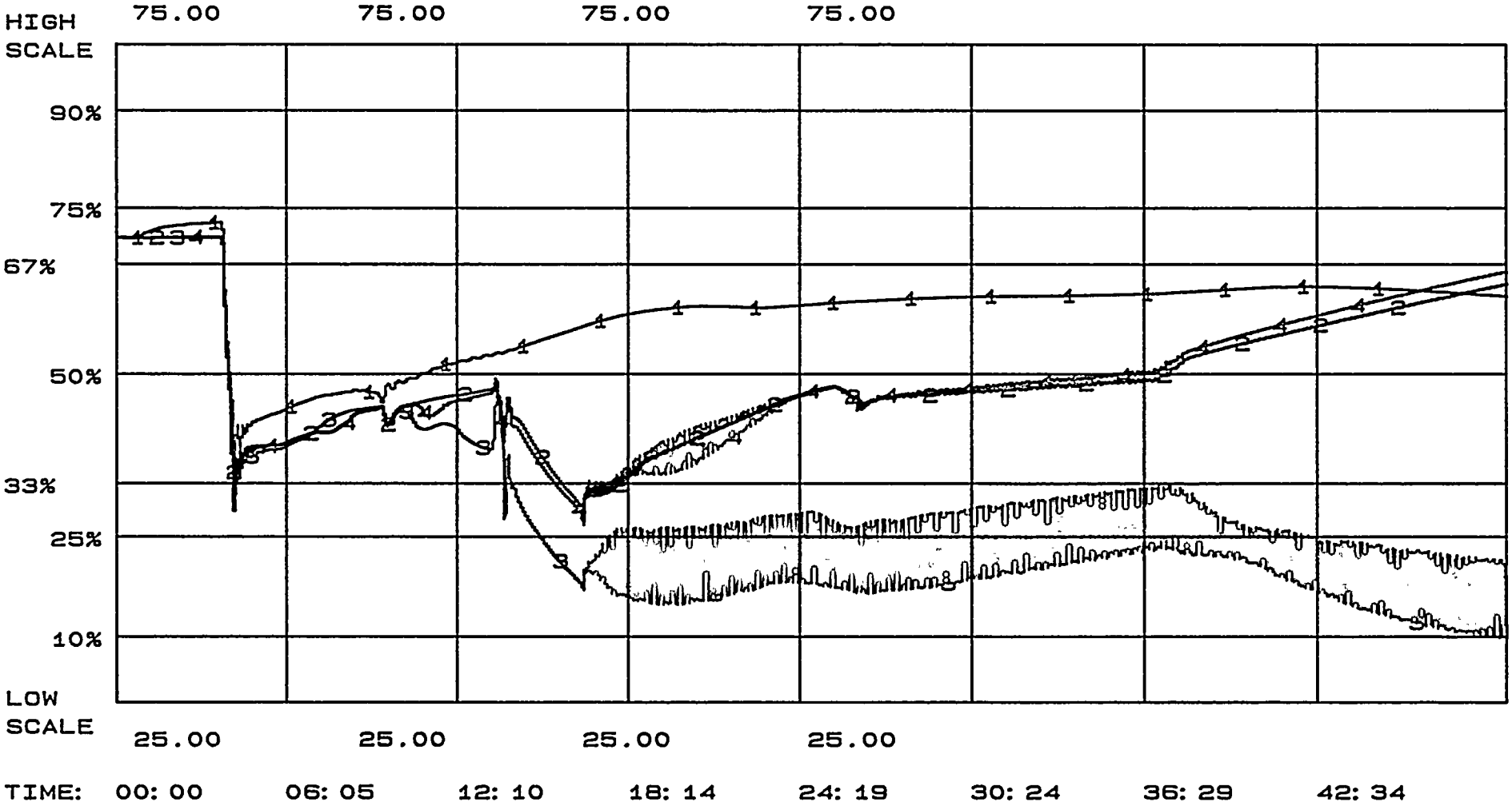
#	POINT ID	DESCRIPTION	UNITS
1	L1204	STEAM GENERATOR #1 N/R LEVEL	PC
2	L1207	STEAM GENERATOR #2 N/R LEVEL	PC
3	L1210	STEAM GENERATOR #3 N/R LEVEL	PC
4	L1213	STEAM GENERATOR #4 N/R LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 49: 13



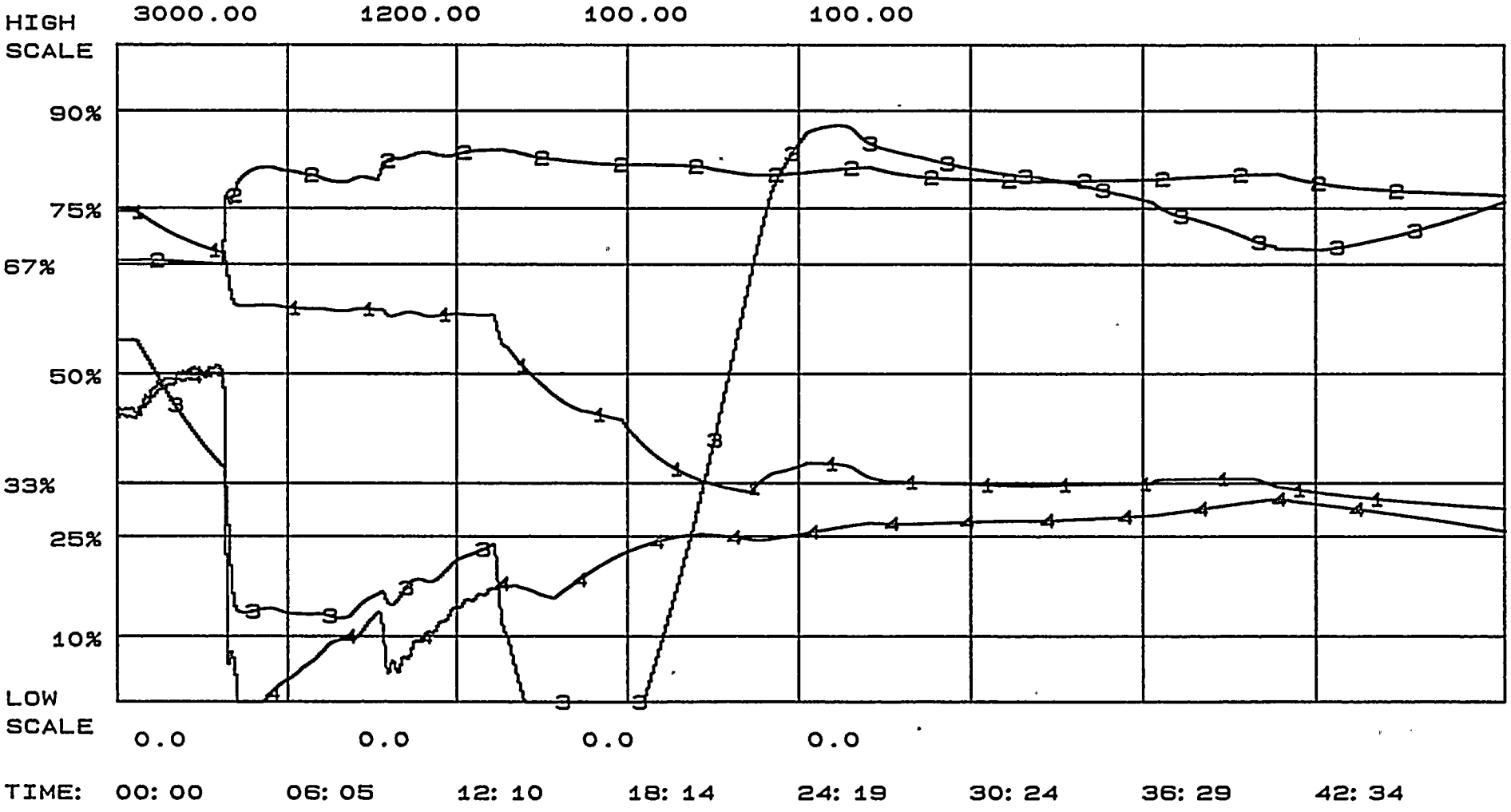
600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR #1 W/R LEVEL	PC	TIME
2	L1201	STEAM GENERATOR #2 W/R LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GENERATOR #3 W/R LEVEL	PC	STOP 00: 49: 13
4	L1203	STEAM GENERATOR #4 W/R LEVEL	PC	
5				
6				



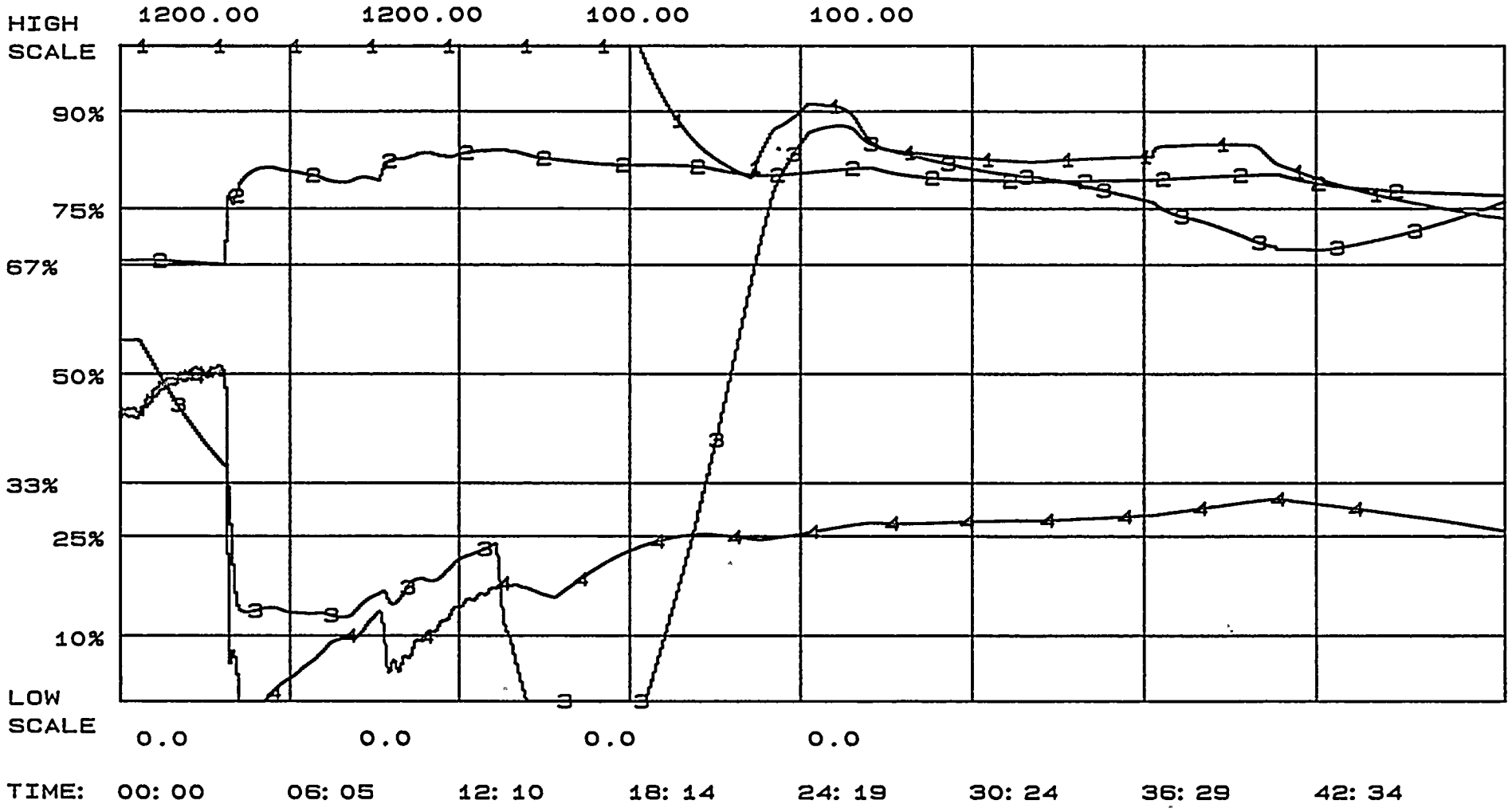
600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	START 00: 00: 00
3	L1091	PRESSURIZER LEVEL	PC	STOP 00: 49: 13
4	L1204	STEAM GENERATOR #1 LEVEL	PC	
5				
6				



600 GPM TUBE RUPTURE ON S/G #1

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	START 00: 00: 00
3	L1091	PRESSURIZER LEVEL	PC	STOP 00: 49: 13
4	L1204	STEAM GENERATOR #1 LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

UNIT TWO REACTOR TRIP , NOVEMBER 13, 1985

I. Introduction

The purpose of this test is to:

1) Test the simulator response to an actual reference plant event.

2) Ensure that the simulator functions to provide proper response to a reactor trip from 80.5 percent power, initiated by a failure of MPP-221 (No. 22 steam generator, channel 2 steam pressure) transmitter.

Note: This transient was selected due to the minimal impact upon plant response by the operators.

II. Initial Conditions

1) The simulator is operating at 80.5 percent power steady state, control rod bank D positioned to maintain axial flux difference within limits, with rod control in manual.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters correspond in direction and magnitude to reference plant data.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed by comparison to actual plant data.

VI. Discrepancies

The following discrepancies were noted by the team of subject matter experts:

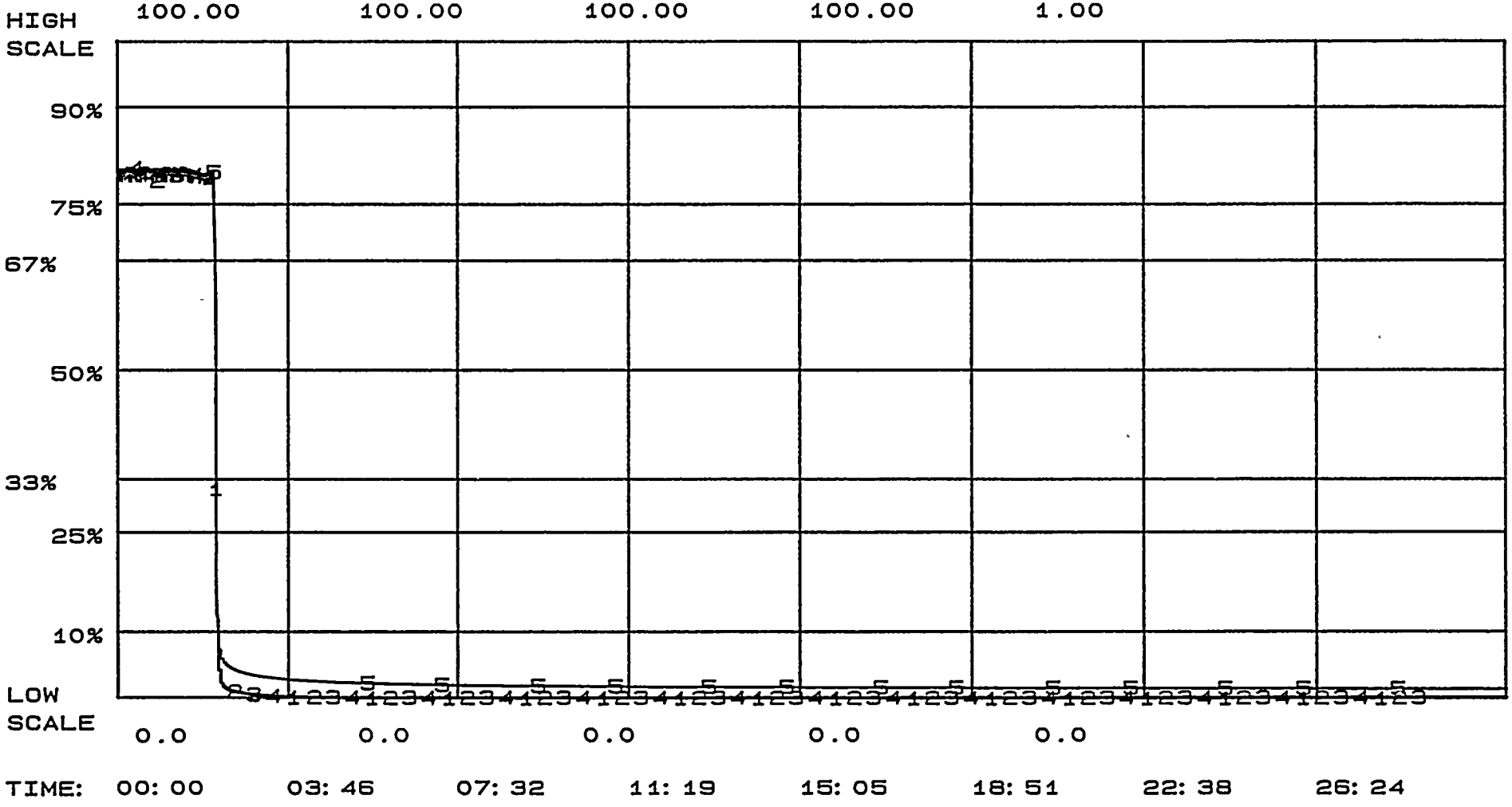
a) The #2 steam generator wide range level response was not consistent with expected, based upon narrow range level data.

b) The RCS average temperature response was not consistent with the data. The simulator did not cool down as far as the plant in the initial stage immediately following the trip.

Discrepancy reports have been written to investigate and correct the discrepancies.

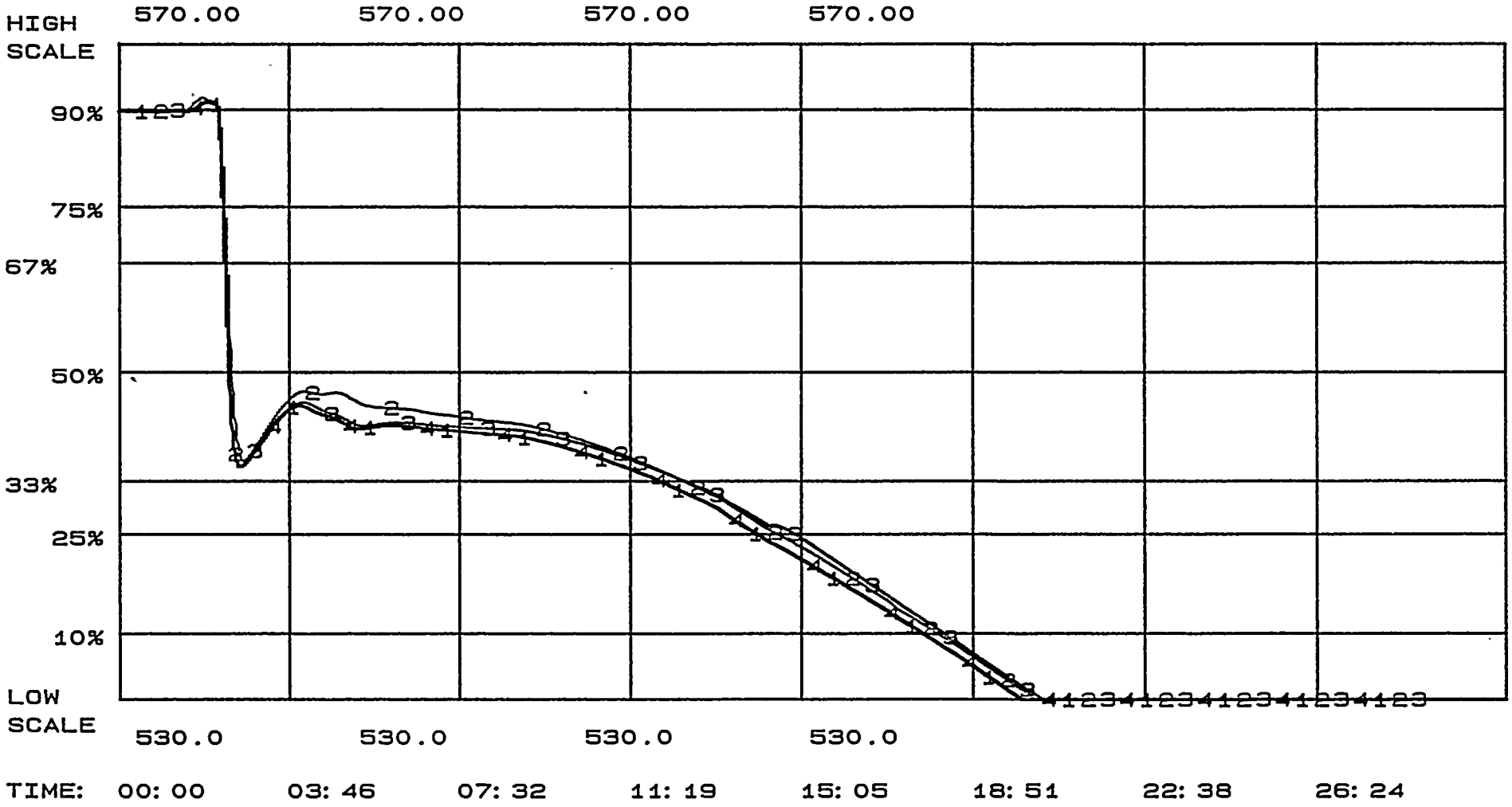
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. CHANNEL N-41	PC	TIME
2	N1013	POWER RANGE N.I. CHANNEL N-42	PC	START 00: 00: 00
3	N1014	POWER RANGE N.I. CHANNEL N-43	PC	STOP 00: 30: 32
4	N1015	POWER RANGE N.I. CHANNEL N-44	PC	
5	CRQN	REACTOR CORE HEAT FLUX	PC	
6				



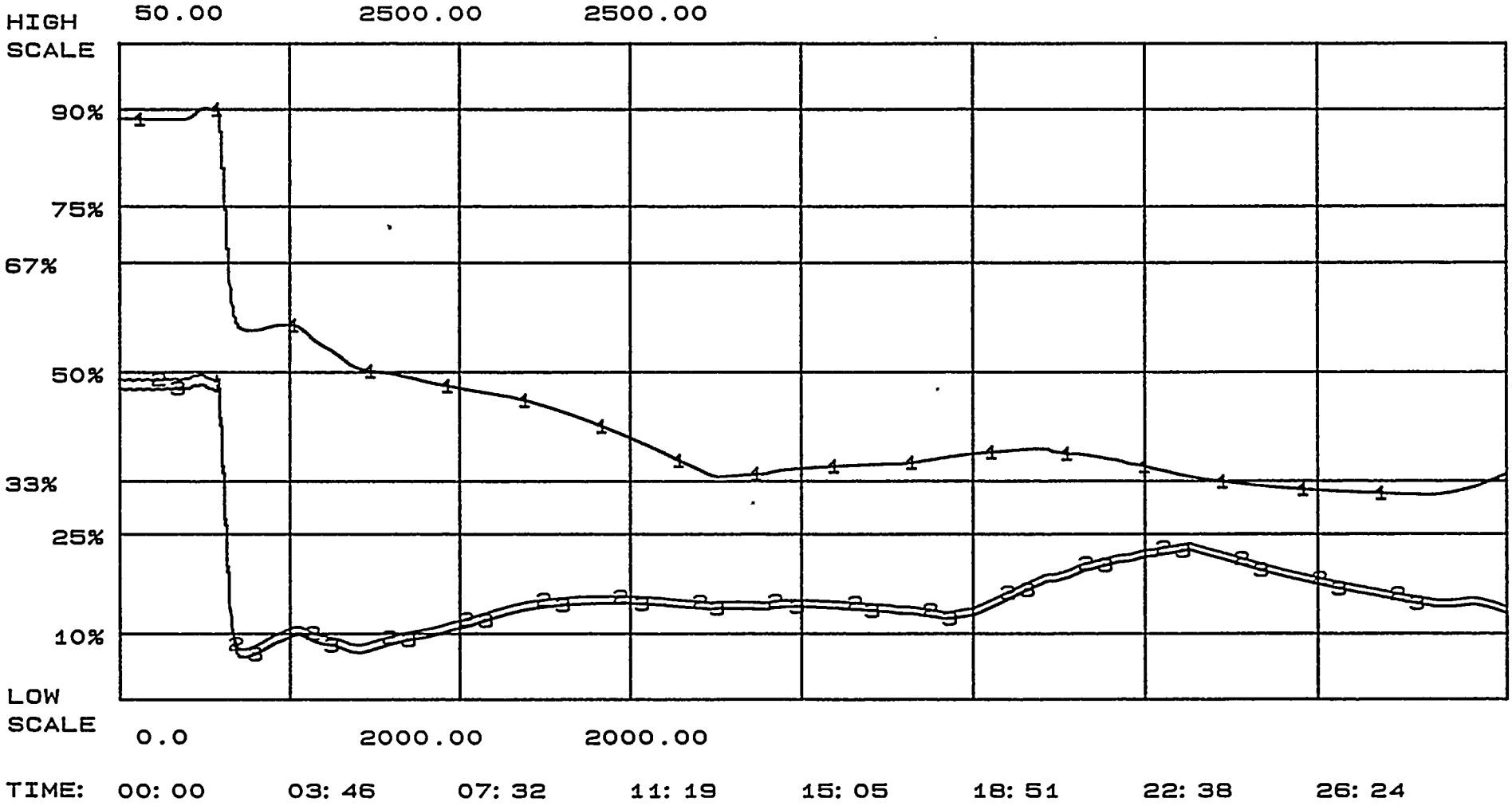
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS TAVE LOOP 1	DEG_F	TIME
2	T1102	RCS TAVE LOOP 2	DEG_F	START 00: 00: 00
3	T1103	RCS TAVE LOOP 3	DEG_F	STOP 00: 30: 32
4	T1104	RCS TAVE LOOP 4	DEG_F	
5				
6				



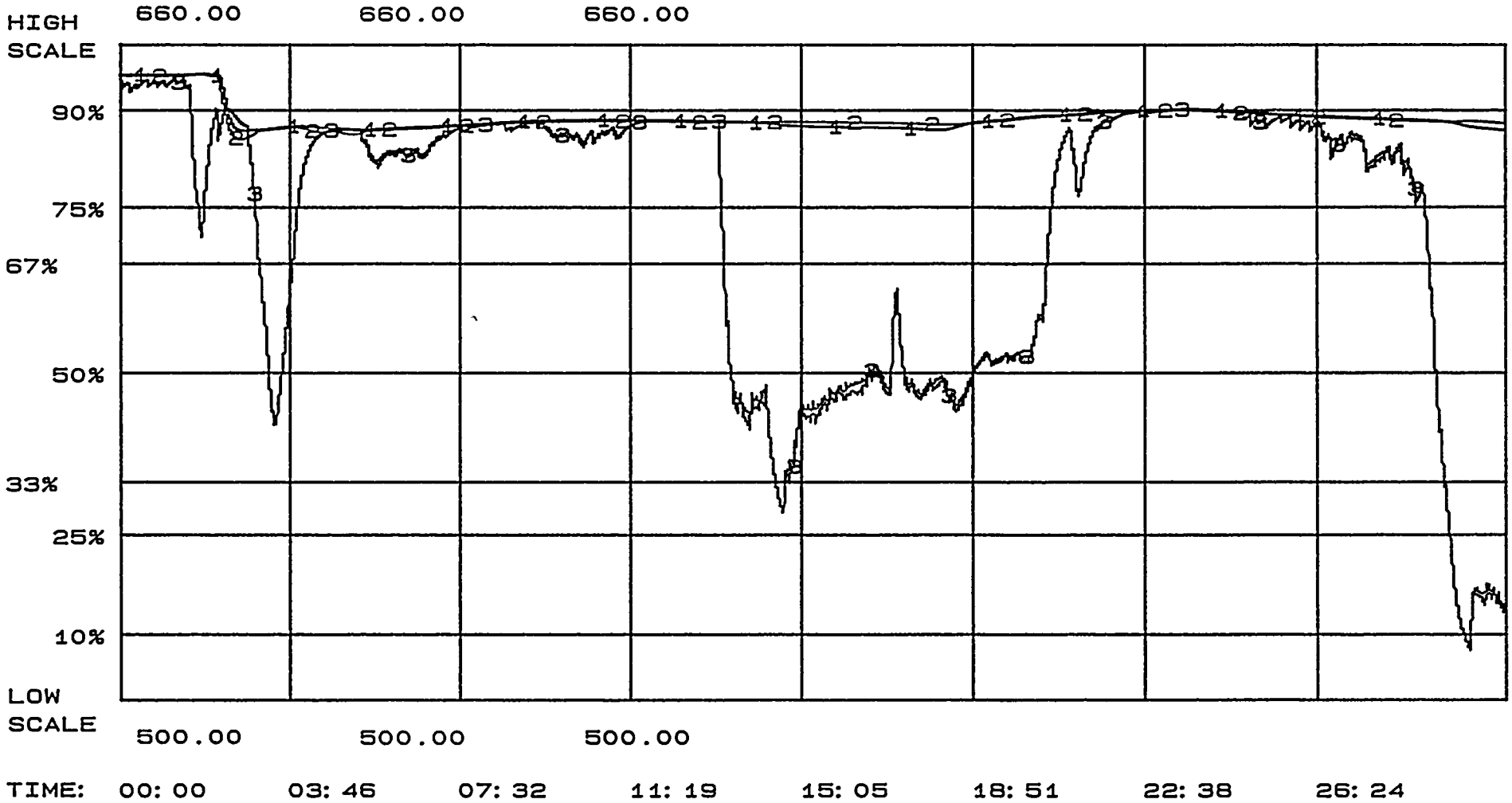
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	P1034	RCS WIDE RANGE PRESSURE	PSIG	START 00: 00: 00
3	P1036	PRESSURIZER PRESSURE	PSIG	STOP 00: 30: 32
4				
5				
6				



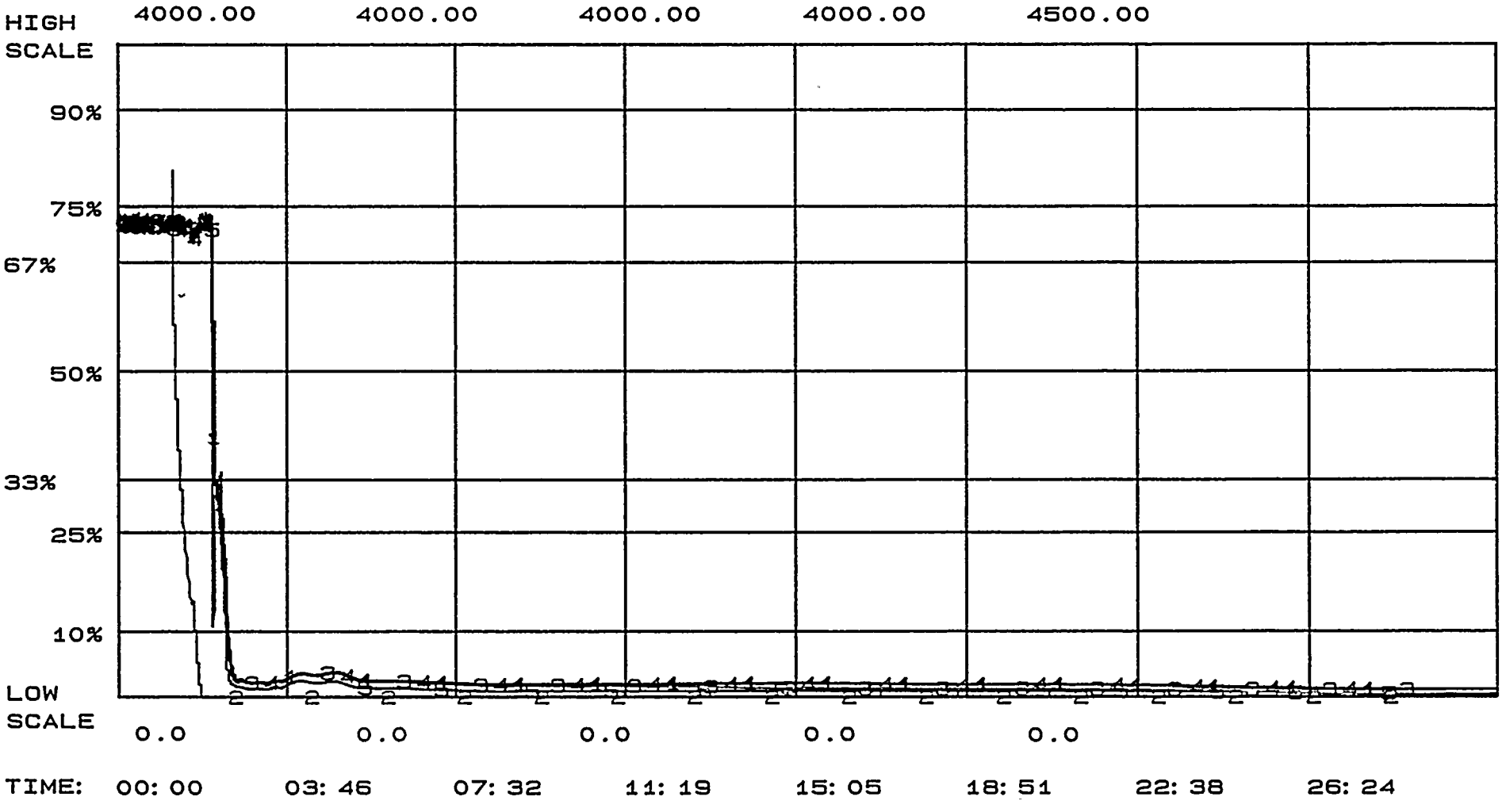
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	TIME
2	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	STOP 00: 30: 32
4				
5				
6				



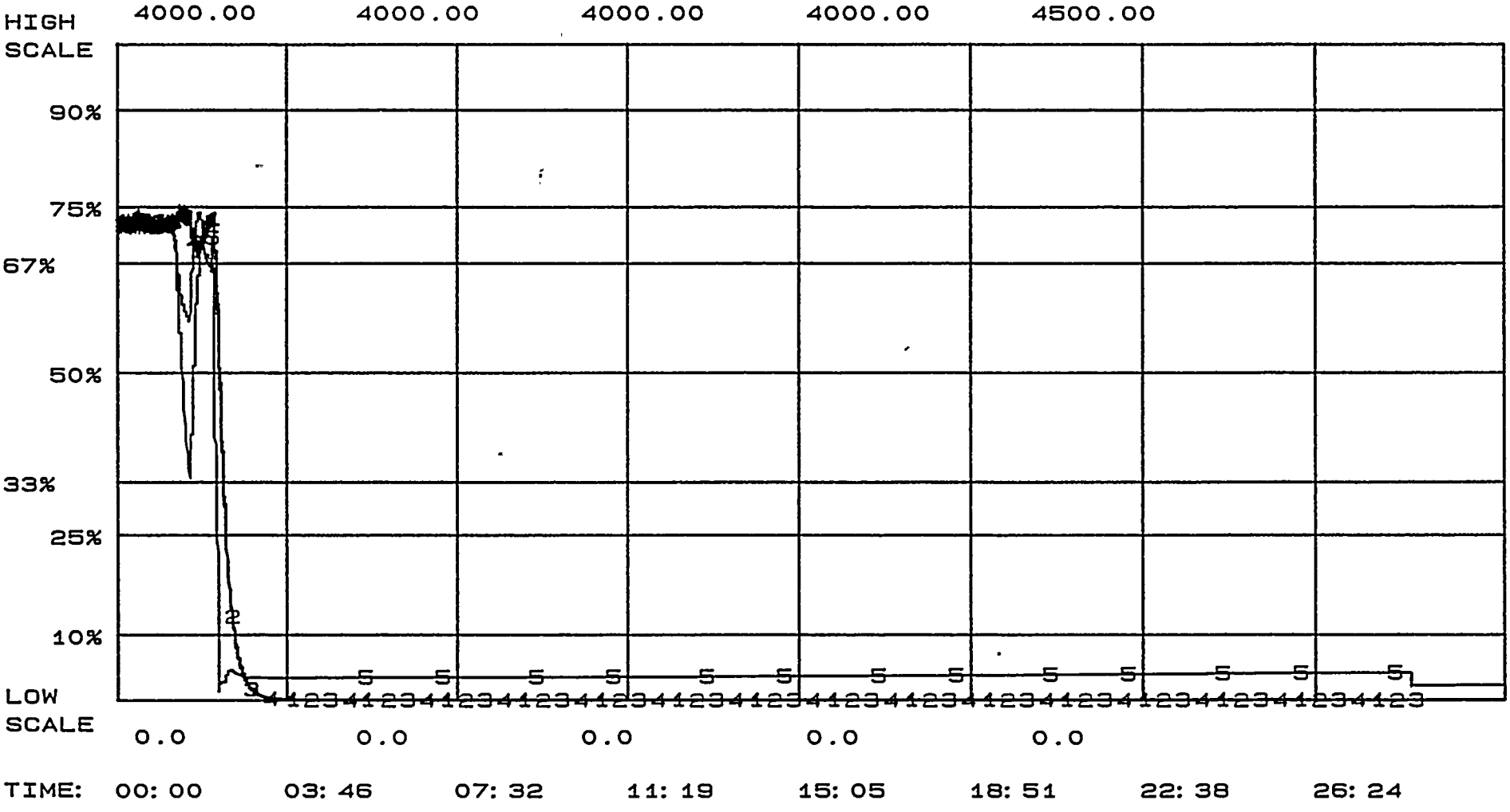
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR #1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR #2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	STEAM GENERATOR #3 STEAM FLOW	KBH	STOP 00: 30: 32
4	F1054	STEAM GENERATOR #4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



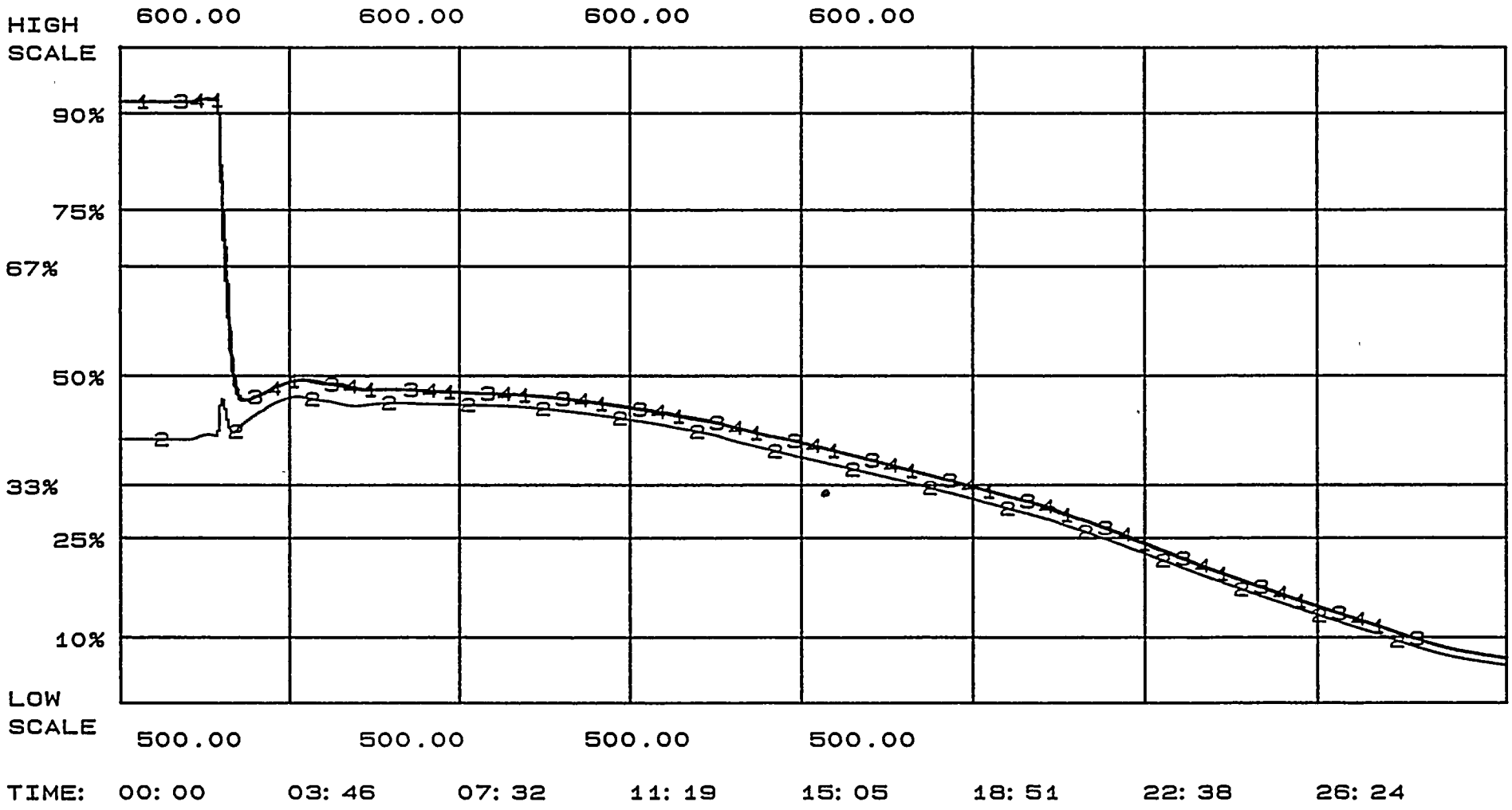
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR #1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR #2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR #3 FEED FLOW	KBH	STOP 00: 30: 32
4	F1203	STEAM GENERATOR #4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AFW INCL)	LBS_S	
6				



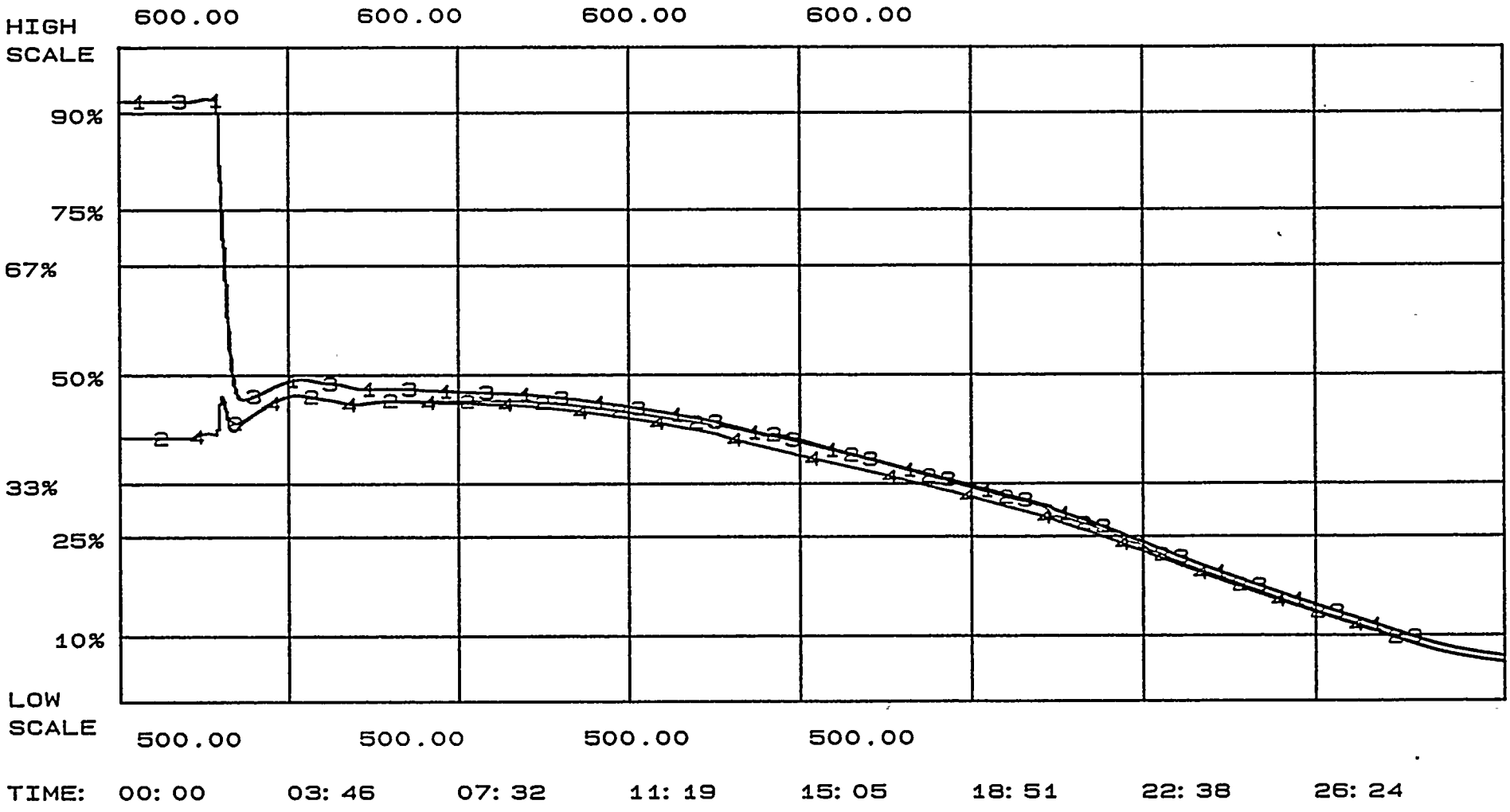
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	RCS LOOP 1 THOT	DEG_F	TIME
2	T1115	RCS LOOP 1 TCOLD	DEG_F	START 00: 00: 00
3	T1112	RCS LOOP 2 THOT	DEG_F	STOP 00: 30: 32
4	T1113	RCS LOOP 2 TCOLD	DEG_F	
5				
6				



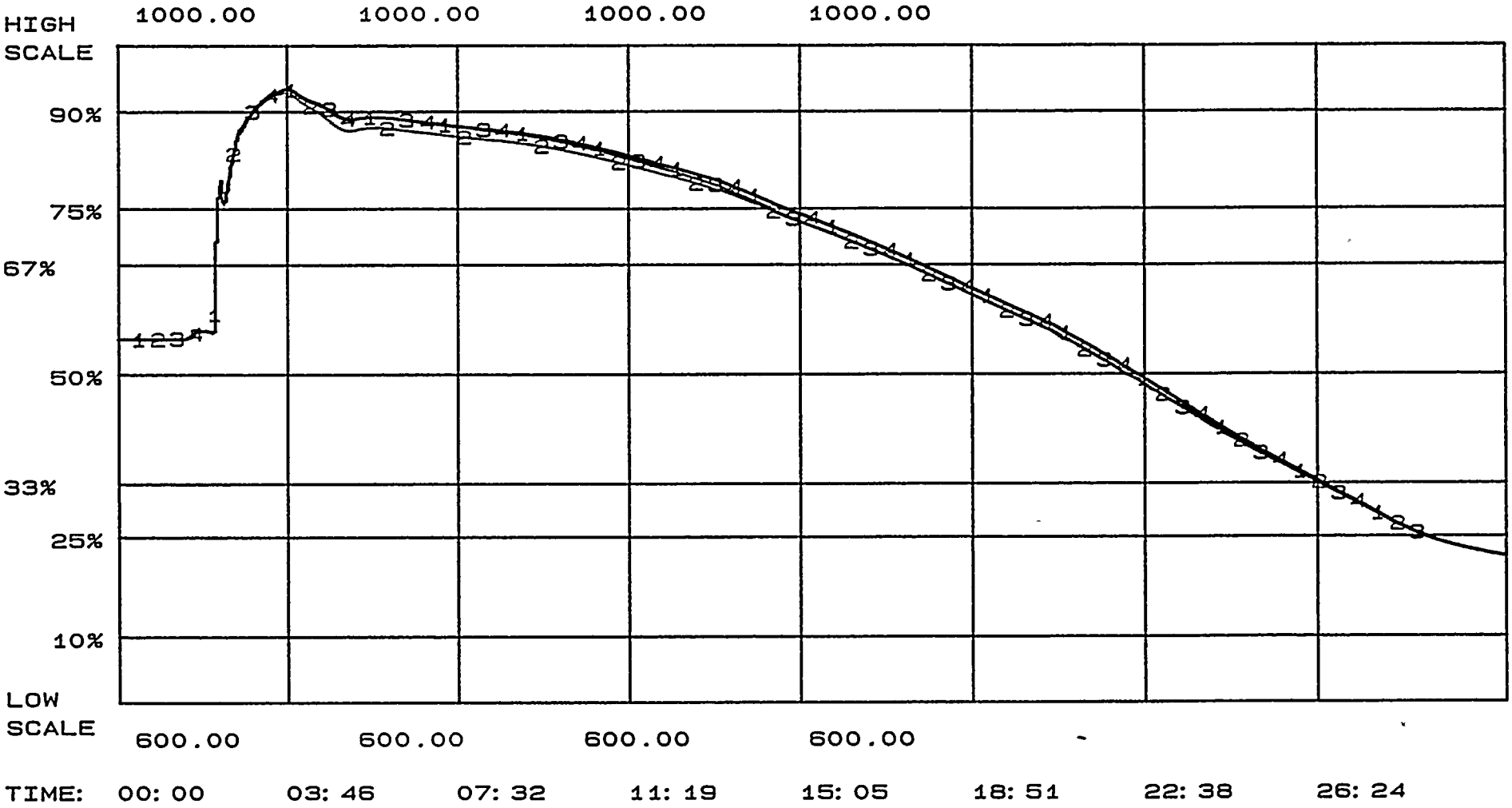
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	RCS LOOP 3 THOT	DEG_F	TIME
2	T1117	RCS LOOP 3 TCOLD	DEG_F	START 00: 00: 00
3	T1114	RCS LOOP 4 THOT	DEG_F	STOP 00: 30: 32
4	T1118	RCS LOOP 4 TCOLD	DEG_F	
5				
6				



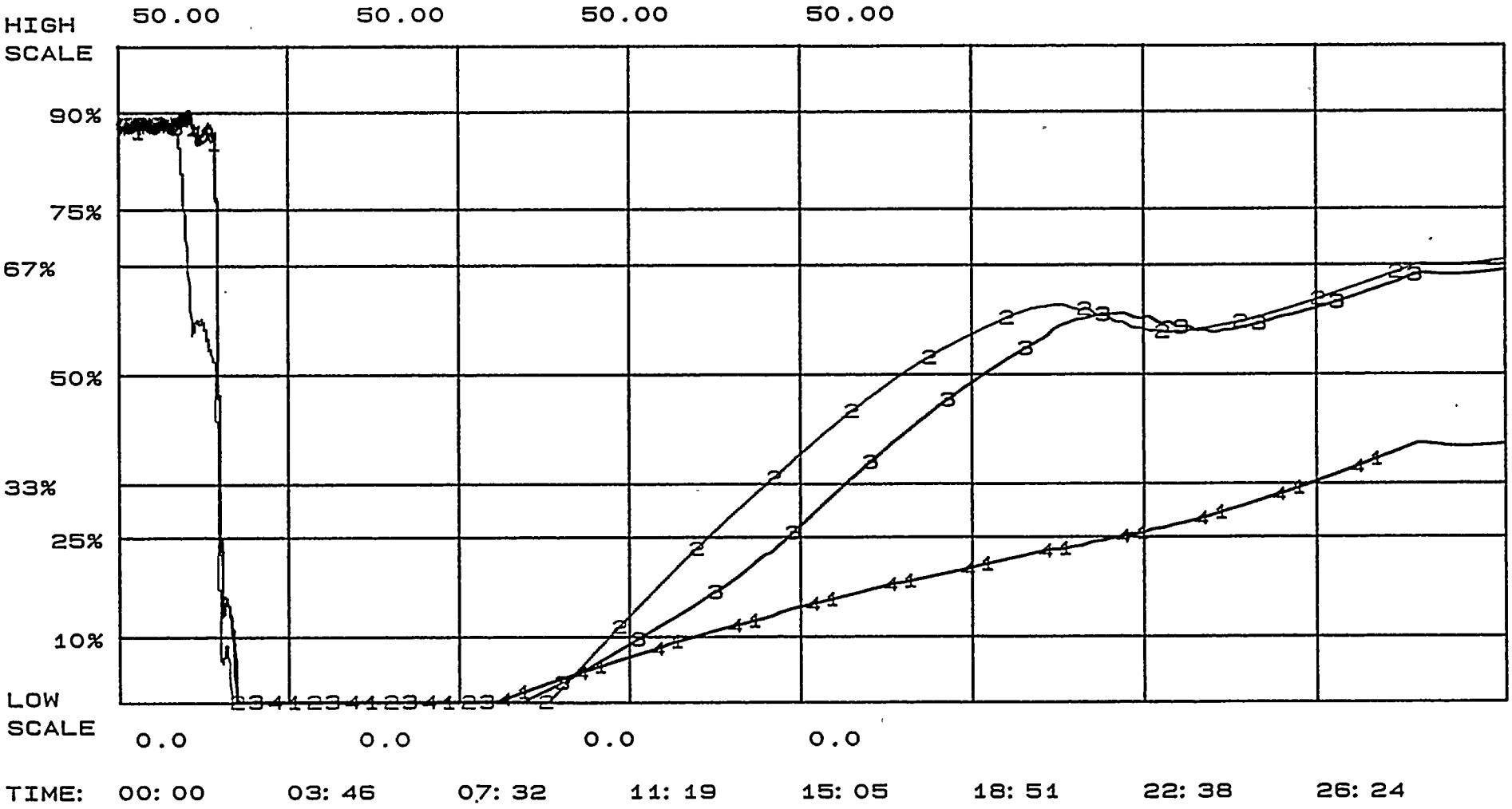
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 30: 32
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



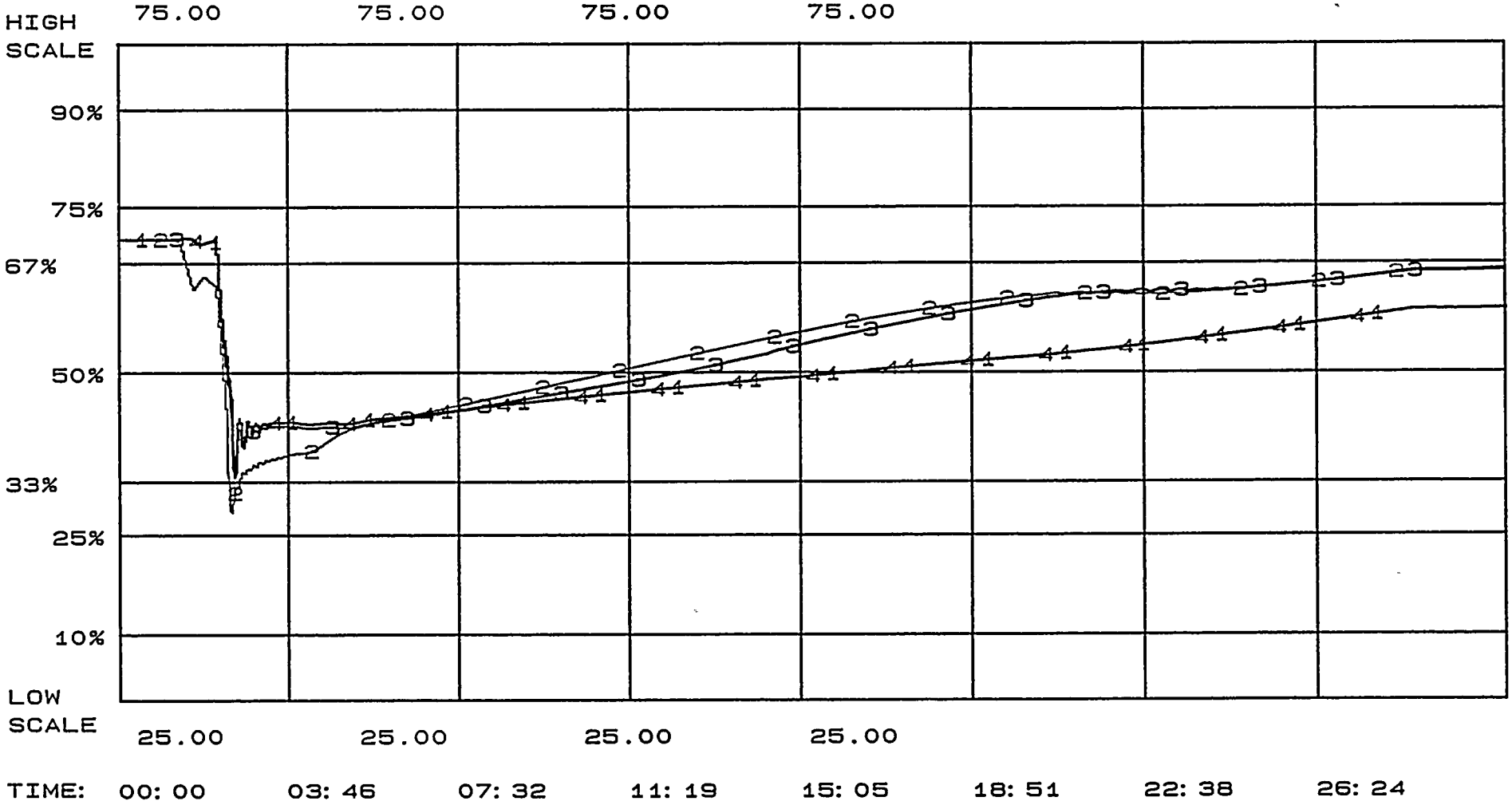
REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR #1 N/R LEVEL	PC	TIME
2	L1207	STEAM GENERATOR #2 N/R LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GENERATOR #3 N/R LEVEL	PC	STOP 00: 30: 32
4	L1213	STEAM GENERATOR #4 N/R LEVEL	PC	
5				
6				



REACTOR TRIP FROM STEAM PRESSURE INST. FAILURE MPP-221

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR #1 W/R LEVEL	PC	TIME
2	L1201	STEAM GENERATOR #2 W/R LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GENERATOR #3 W/R LEVEL	PC	STOP 00: 30: 32
4	L1203	STEAM GENERATOR #4 W/R LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

MALFUNCTION TEST ABSTRACT

I. Introduction (ANS 3.5 - 4.2.2)

Section 4 of the standard addresses conduct of simulator malfunction tests and section C.10 of the guide addresses frequency of malfunction testing.

The Cook Plant Simulator has 306 malfunctions, listed in the Instructor Station capability section, that are used to introduce transients and/or faults into the simulation for operator training.

These malfunctions were tested in their entirety during construction of the simulator (completed in May, 1988). Due to training requirements during 1989, twenty five percent of the malfunctions were tested in the first part of 1990 and another 25 percent will be tested in the last quarter of 1990 to meet the requirement that twenty five percent is to be tested each year and all malfunctions are to be tested in four years.

II. Malfunction Test Acceptance Criteria

All Cook Plant Simulator Malfunctions are compared to a Malfunction Cause and Effect Document which was prepared for acceptance testing during initial construction.

This document was prepared and approved by a team of five individuals possessing more than 30 man years of operation experience at Cook Nuclear Plant and approximately 6 man years of simulator operation experience.

This document is maintained up to date to reflect present plant conditions and is used as the base document for all malfunction tests.

1989 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
Dec 30, 1989	Mar 26, 1990	CC01	COMPONENT COOLING WATER PUMP TRIP	3.1.2(8)
Dec 30, 1989	Mar 26, 1990	CC05	MISC CCW HEADER RUPTURE IN AUXILIARY BUILDING	3.1.2(8)
Dec 30, 1989	Mar 26, 1990	CC09	CCW LEAK ON RHR PUMP SUPPLY LINE	3.1.2(8)(9)
Dec 30, 1989	Mar 27, 1990	CS02	CONTAINMENT SPRAY PUMP SUCTION BLOCKAGE	3.1.2(23)
Dec 30, 1989	Mar 26, 1990	CV02	LETDOWN LINE RUPTURE OUTSIDE CONTAINMENT	3.1.2(1b)
Dec 30, 1989	Mar 27, 1990	CV08	LETDOWN LINE RELIEF VALVE SV-51 LEAKAGE	3.1.2(22)
Dec 30, 1989	Mar 27, 1990	CV12	CENTRIFUGAL CHARGING PUMP FLOW CONTROL VALVE FAILURE	3.1.2(18)
Dec 30, 1989	Mar 27, 1990	CV16	VCT LEVEL TRANSMITTER FAILURE	3.1.2(18)
Dec 30, 1989	Mar 27, 1990	CV25	RCP THERMAL BARRIER HX RUPTURE	3.1.2(8)
Dec 30, 1989	Mar 27, 1990	CV30	REDUCED CENTRIFUGAL CHARGING PUMP CAPACITY	3.1.2(18)
Dec 30, 1989	Apr 4, 1990	CW01	CIRCULATING WATER PUMP TRIP	3.1.2(5)
Dec 30, 1989	Mar 25, 1990	ED02	LOSS OF AUXILIARY TRANSFORMER	3.1.2(3)
Dec 30, 1989	Mar 25, 1990	ED06	LOSS OF 600 VAC BUS	3.1.2(3)
Dec 30, 1989	Mar 25, 1990	ED11	LOSS OF 250 VDC BUS	3.1.2(3)
Dec 30, 1989	Mar 25, 1990	ED15	LOSS OF VITAL INSTRUMENT BUS STATIC SWITCH	3.1.2(3)
Dec 30, 1989	Jul 16, 1990	ED19	ELECTRICAL GRID LOAD REJECTION	3.1.2(3)
Dec 30, 1989	Mar 26, 1990	ED23	LOSS OF SWITCHGEAR CONTROL POWER (TRAIN A)	3.1.2(3)
Dec 30, 1989	Apr 4, 1990	EG01	MAIN GENERATOR TRIP	3.1.2(16)
Dec 30, 1989	Apr 4, 1990	EG06	DIESEL GENERATOR TRIP	3.1.2(3)
Dec 30, 1989	Apr 4, 1990	EG10	DIESEL GENERATOR FAILURE TO START	3.1.2(3)
Dec 30, 1989	May 14, 1990	EG14	DIESEL GENERATOR RUNNING RELAY FAILURE	3.1.2(3)
Dec 30, 1989	May 10, 1990	FP03	DIESEL GENERATOR ROOM CO2 ACTUATION	3.1.2(23)
Dec 30, 1989	Apr 4, 1990	FW03	MAIN FDWTR RUPTURE BETWEEN FEEDFLOW ELEMENT & FEED REG VAL	3.1.2(9)(20)
Dec 30, 1989	Apr 4, 1990	FW12	FEEDPUMP TURBINE LUBE OIL SYSTEM LEAK	3.1.2(9)
Dec 30, 1989	Apr 5, 1990	FW17	HP HEATER #6 LEVEL CONTROLLER AUTO FAILURE	3.1.2(9)
Dec 30, 1989	Apr 5, 1990	FW21	HP HEATER #5 LEVEL CONTROLLER AUTO FAILURE	3.1.2(9)
Dec 30, 1989	Apr 7, 1990	FW25	HOTWELL PUMP TRIP	3.1.2(9)
Dec 30, 1989	Apr 7, 1990	FW29	LP HEATER #3 LEVEL CONTROL TRANSMITTER FAILURE	3.1.2(9)
Dec 30, 1989	Apr 7, 1990	FW33	LP HEATER BYPASS VALVE FAILURE	3.1.2(9)
Dec 30, 1989	Apr 7, 1990	FW37	HOTWELL PUMP DISCHARGE	3.1.2(9)

1989 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
			PIPING RUPTURE	
Dec 30, 1989	Apr 8, 1990	FW41	HOTWELL LEVEL CONTROL TRANSMITTER FAILURE	3.1.2(9)
Dec 30, 1989	Apr 8, 1990	FW45	HEATER DRAIN PUMP EMERGENCY LEAK OFF VALVE FAILS OPEN	3.1.2(9)
Dec 30, 1989		FW49	AUX FEEDPUMP TRIP SUCTION PRESSURE TRIP (DELETED)	3.1.2(10)
Dec 30, 1989	Apr 9, 1990	FW54	FDWTR RUPTURE OUTSIDE CONT DOWNSTREAM AUX FEED ISOL VALVE	3.1.2(9)(10)
Dec 30, 1989	Apr 9, 1990	IA03	CONTROL AIR COMPRESSOR TRIP	3.1.2(2)
Dec 30, 1989	Apr 10, 1990	MS02	MAIN STEAM LINE BREAK AT SG EXIT AFTER FLOW RESTRICTOR	3.1.2(20)
Dec 30, 1989	Apr 10, 1990	MS06	STEAM GENERATOR SAFETY VALVE LEAK	3.1.2(20)
Dec 30, 1989	Apr 10, 1990	MS11	MSR COIL DRAIN TANK LEVEL CONTROL VALVE FAILURE	3.1.2(22)
Dec 30, 1989	Apr 10, 1990	MS16	STEAM SEAL CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1989	Apr 20, 1990	NI01	SOURCE RANGE MONITOR FAILURE	3.1.2(21)
Dec 30, 1989	Apr 20, 1990	NI05	SOURCE RANGE CHANNEL SPIKES	3.1.2(21)
Dec 30, 1989	Apr 20, 1990	NI09	POWER RANGE CHANNEL LOWER DETECTOR FAILURE	3.1.2(21)
Dec 30, 1989	Apr 20, 1990	NI13	SOURCE RANGE INSTRUMENT BLOWN FUSE	3.1.2(21)
Dec 30, 1989	Apr 20, 1990	RC02	RCS HOT LEG LOOP LEAK	3.1.2(1b)(1c)
Dec 30, 1989	Apr 20, 1990	RC06	RCS EMERGENCY VENT LEAKAGE	3.1.2(1b)(1c)
Dec 30, 1989	Apr 20, 1990	RC11	REACTOR COOLANT PUMP HIGH VIBRATION	3.1.2(4)
Dec 30, 1989	Apr 20, 1990	RC16	PRESSURIZER STEAM SPACE MANWAY LEAK	3.1.2(1b)(1c)
Dec 30, 1989	Apr 22, 1990	RC23	STEAM GENERATOR TUBE RUPTURE	3.1.2(1a)
Dec 30, 1989	Jul 20, 1990	RC27	RTD BYPASS MANIFOLD FLOW DEGRADATION	3.1.2(22)
Dec 30, 1989	Jul 16, 1990	RD03	STUCK CONTROL ROD (TRIPPABLE)	3.1.2(12)
Dec 30, 1989	Apr 22, 1990	RD07	UNCONTROLLED ROD BANK CONTINUOUS INSERTION	3.1.2(12)
Dec 30, 1989	Apr 22, 1990	RD11	AUTO CONTROL ROD SPEED FAILURE	3.1.2(12)
Dec 30, 1989	Jul 16, 1990	RD15	IRPI POWER LOSS	3.1.2(22)
Dec 30, 1989	Jul 16, 1990	RH01	RHR PUMP TRIP	3.1.2(7)
Dec 30, 1989	Jul 16, 1990	RH05	RHR HEAT EXCHANGER TUBE LEAK	3.1.2(7)
Dec 30, 1989	Jul 16, 1990	RH09	RHR PUMP SUCTION PIPE RUPTURE	3.1.2(7)
Dec 30, 1989	Apr 23, 1990	RH14	SI ACCUMULATOR TANK LEVEL LOSS	3.1.2(23)
Dec 30, 1989	Apr 23, 1990	RP01	REACTOR TRIP ACB AUTO TRIP FAILURE	3.1.2(24)

1989 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
Dec 30, 1989	Apr 23, 1990	RP07	FAILURE OF STEAM LINE ISOLATION TO ACTIVATE	3.1.2(11)
Dec 30, 1989	Apr 23, 1990	RP11	FAILURE OF SAFETY INJECTION TO MANUALLY ACTUATE	3.1.2(11)
Dec 30, 1989	Apr 23, 1990	RP15	SPURIOUS ACTUATION OF CONTAINMENT ISOLATION PHASE A	3.1.2(11)(22)
Dec 30, 1989	Apr 24, 1990	RP19	TRAIN "A" K600 RELAY FAILURE	3.1.2(11)
Dec 30, 1989	Jul 3, 1990	RX03	RCS COLD LEG TEMPERATURE TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1989	Jul 3, 1990	RX07	REDUCED PRESSURIZER HEATER CAPACITY	3.1.2(22)
Dec 30, 1989	Jul 6, 1990	RX11	STEAM GENERATOR RELIEF VALVE CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1989		RX15	STEAM DUMP SYSTEM FAILURE TO RESPOND (DELETED)	3.1.2(22)
Dec 30, 1989	Jul 6, 1990	RX19	TURBINE IMPULSE TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1989	Jul 6, 1990	RX23	STEAM GENERATOR LEVEL TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1989	Jul 10, 1990	RX27	FEED PUMP OP CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1989	Jul 10, 1990	SI03	HIGH HEAD SAFETY INJECTION LINE RUPTURE	3.1.2(1b)(23)
Dec 30, 1989	Jul 11, 1990	SW04	ESSENTIAL SERVICE WATER PUMP TRIP	3.1.2(6)
Dec 30, 1989	Jul 10, 1990	TC01	MAIN TURBINE TRIP	3.1.2(15)
Dec 30, 1989	Jul 11, 1990	TC05	MAIN TURBINE CONTROL VALVE FAILURE	3.1.2(22)
Dec 30, 1989	Jul 11, 1990	TC10	MAIN GENERATOR OPERATING DEVICE FAILURE	3.1.2(22)
Dec 30, 1989	Jul 12, 1990	TP01	TURBINE AUX COOLING PUMP TRIP	3.1.2(8)
Dec 30, 1989	Jul 12, 1990	TU01	AUXILIARY LUBE OIL PUMP TRIP	3.1.2(22)
Dec 30, 1989	Jul 12, 1990	WD01	ACCIDENTAL RELEASE OF RADIOACTIVE GAS FROM DECAY TANK	3.1.2(23)

1990 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
Dec 30, 1990		CC02	COMPONENT COOLING WATER PUMP FAILURE TO AUTO START	3.1.2(8)
Dec 30, 1990		CC06	SEAL WATER HX TUBE LEAK	3.1.2(17)(18)
Dec 30, 1990		CH01	CONTAINMENT PRESSURE RELIEF VALVE FAILURE TO CLOSE	3.1.2(23)
Dec 30, 1990		CS03	REFUELING WATER STORAGE TANK LEAK	3.1.2(17)(23)
Dec 30, 1990		CV04	LETDOWN LINE ORIFICE ISOLATION VALVE FAILURE	3.1.2(18)
Dec 30, 1990		CV09	LETDOWN TEMPERATURE CONTROL FAILURE	3.1.2(18)
Dec 30, 1990		CV13	CHARGING PUMP TRIP	3.1.2(18)
Dec 30, 1990		CV17	VOLUME CONTROL TANK LEAKAGE	3.1.2(18)
Dec 30, 1990		CV26	REACTOR COOLANT PUMP #1 SEAL FAILURE	3.1.2(1c)
Dec 30, 1990		CV31	SEAL INJ. BACKPRESSURE CONTROL VALVE FAILURE (QRV-200)	3.1.2(4)(18)
Dec 30, 1990		CW02	CIRCULATING WATER PUMP DISCHARGE VALVE FAILURE	3.1.2(5)
Dec 30, 1990		ED03	LOSS OF RESERVE AUXILIARY TRANSFORMER	3.1.2(3)
Dec 30, 1990		ED07	LOSS OF 480 VAC BUS	3.1.2(3)
Dec 30, 1990		ED12	LOSS OF 250 VDC DISTRIBUTION POWER PANELS (TRAIN A)	3.1.2(3)
Dec 30, 1990		ED16	AUXILIARIES AUTO BUS TRANSFER FAILURE	3.1.2(3)
Dec 30, 1990		ED20	ANNUNCIATOR PANEL POWER SUPPLY FAILURE	3.1.2(3)(22)
Dec 30, 1990		ED24	LOSS OF 250 VDC TRAIN "N" BATTERY	3.1.2(3)(7)(10)
Dec 30, 1990		EG03	MAIN GENERATOR AUTO VOLTAGE REGULATOR FAILURE TO MANUAL	3.1.2(3)
Dec 30, 1990		EG07	DIESEL GENERATOR SPEED CONTROL FAILURE	3.1.2(3)
Dec 30, 1990		EG11	DIESEL GENERATOR FAILURE TO TRIP	3.1.2(3)
Dec 30, 1990		EG15	MAIN GENERATOR SEAL OIL UNIT PIPING RUPTURE	3.1.2(16)
Dec 30, 1990		FP05	CONTROL ROOM CABLE VAULT FIRE	
Dec 30, 1990		FW05	MAIN FEEDPUMP TURBINE TRIP	3.1.2(9)
Dec 30, 1990		FW13	FEEDPUMP TURBINE OIL COOLING CONTROLLER FAILURE	3.1.2(9)
Dec 30, 1990		FW18	HP HEATER #6 LEVEL CONTROL VALVE FAILURE	3.1.2(9)
Dec 30, 1990		FW22	HP HEATER #5 LEVEL CONTROL VALVE FAILURE	3.1.2(9)
Dec 30, 1990		FW26	LP HEATER #4 LEVEL CONTROL TRANSMITTER FAILURE	3.1.2(9)
Dec 30, 1990		FW30	LP HEATER #3 LEVEL CONTROL VALVE FAILURE	3.1.2(9)
Dec 30, 1990		FW34	CONDENSATE BOOSTER PUMP	3.1.2(9)

1990 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
			TRIP	
Dec 30, 1990		FW38	LOSS OF CONDENSER VACUUM	3.1.2(5)
Dec 30, 1990		FW42	CONDENSATE STORAGE TANK LEAK	3.1.2(10)
Dec 30, 1990		FW46	AUX FEEDPUMP TRIP	3.1.2(7)(10)
Dec 30, 1990		FW50	TDAFW PUMP SPEED CONTROLLER FAILURE	3.1.2(7)(10)
Dec 30, 1990		FW56	FEED PUMP STEAM SUPPLY CONTROLLER FAILURE	3.1.2(9)
Dec 30, 1990		IA04	CONTROL AIR SYSTEM RUPTURE IN TURBINE BUILDING	3.1.2(2)
Dec 30, 1990		MS03	MAIN STM LINE BREAK OUTSIDE CONT BEFORE SG STOP VALVE	3.1.2(20)
Dec 30, 1990		MS08	STEAM GENERATOR STOP VALVE DRIFTS SHUT	3.1.2(17)
Dec 30, 1990		MS12	MSR DRAIN TANK ALTERNATE DRAIN LEVEL CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1990		MS17	STEAM SEAL CONTROLLER OSCILLATION	3.1.2(22)
Dec 30, 1990		NI02	SOURCE RANGE HIGH VOLTAGE FAILURE TO DEENERGIZE	3.1.2(21)
Dec 30, 1990		NI06	INTERMEDIATE RANGE MONITOR FAILURE	3.1.2(21)
Dec 30, 1990		NI10	POWER RANGE CHANNEL FAILURE	3.1.2(21)
Dec 30, 1990		NI14	INTERMEDIATE RANGE CHANNEL BLOWN FUSE	3.1.2(21)
Dec 30, 1990		RC03	RCS LEAK	3.1.2(1b)(1c)
Dec 30, 1990		RC07	REACTOR COOLANT PUMP LOCKED ROTOR	3.1.2(4)
Dec 30, 1990		RC13	REACTOR COOLANT PUMP UPPER BEARING OIL RESERVOIR LEAK	3.1.2(4)
Dec 30, 1990		RC17	PRESSURIZER POWER RELIEF VALVE FAILURE	3.1.2(1b)(1c)(1d)
Dec 30, 1990		RC24	STEAM GENERATOR TUBE LEAK	3.1.2(1b)(1c)
Dec 30, 1990		RC28	PRESSURIZER INSTRUMENT LINE LEAKAGE	3.1.2(1b)(1c)(22)
Dec 30, 1990		RD04	STUCK CONTROL ROD (UNTRIPPABLE)	3.1.2(12)
Dec 30, 1990		RD08	IN-HOLD-OUT SWITCH FAILURE	3.1.2(13)
Dec 30, 1990		RD12	FAILURE OF CONTROL RODS TO MOVE	3.1.2(13)
Dec 30, 1990		RD16	IRPI FAILURE	3.1.2(22)
Dec 30, 1990		RH02	RHR PUMP SEAL FAILURE	3.1.2(1b)(1c)
Dec 30, 1990		RH06	RHR INJECTION HEADER RELIEF VALVE (SV-104) FAILURE	3.1.2(1b)(1d)
Dec 30, 1990		RH11	RHR RETURN FLOW TRANSMITTER FAILURE (IFI-335)	3.1.2(22)
Dec 30, 1990		RH15	SI ACCUMULATOR N2 PRESSURE LOSS	3.1.2(23)
Dec 30, 1990		RP03	FAILURE OF REACTOR TRIP BREAKER	3.1.2(24)
Dec 30, 1990		RP08	SPURIOUS FEEDWATER	3.1.2(9)

1990 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
			ISOLATION TRIP	
Dec 30, 1990		RP12	SPURIOUS ACTUATION OF SAFETY INJECTION	3.1.2(23)
Dec 30, 1990		RP12	SPURIOUS ACTUATION OF SAFETY INJECTION	3.1.2(19)
Dec 30, 1990		RP16	FAILURE OF CONTAINMENT ISOLATION PHASE B TO AUTO ACTUATE	3.1.2(11)
Dec 30, 1990		RP20	TRAIN "B" K600 RELAY FAILURE	3.1.2(11)
Dec 30, 1990		RX04	PRESSURIZER PRESSURE TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1990		RX08	PRESSURIZER SPRAY VALVE AUTO CONTROL FAILURE	3.1.2(22)
Dec 30, 1990		RX12	MAIN STEAM RELIEF VALVE CONTROLLER OSCILLATION	3.1.2(22)
Dec 30, 1990		RX16	STEAM DUMP PRESSURE CONTROLLER ERRATIC OPERATION	3.1.2(22)
Dec 30, 1990		RX20	STEAM GENERATOR STEAM FLOW TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1990		RX24	FEEDWATER CONTROL VALVE CONTROLLER FAILURE	3.1.2(9)
Dec 30, 1990		RX28	LOSS OF 480V MCC	3.1.2(3)
Dec 30, 1990		SW01	NON ESSENTIAL SERVICE WATER PUMP TRIP	3.1.2(6)
Dec 30, 1990		SW05	ESSENTIAL SERVICE WATER PIPING RUPTURE	3.1.2(6)(23)
Dec 30, 1990		TC02	MAIN TURBINE FAILURE TO TRIP	3.1.2(11)(17)
Dec 30, 1990		TC06	MAIN TURBINE ERRATIC CONTROL VALVE	3.1.2(22)
Dec 30, 1990		TC11	AUTO LOAD SET OSCILLATION	3.1.2(22)
Dec 30, 1990		TP02	TURBINE AUX COOLING PIPING RUPTURE	3.1.2(9)
Dec 30, 1990		TU03	MAIN TURBINE HIGH VIBRATION	3.1.2(15)

1991 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
Dec 30, 1991		FW43	HEATER DRAIN PUMP TRIP	3.1.2(9)
Dec 30, 1991		FW47	AUX FEEDPUMP SUCTION LINE LEAKAGE	3.1.2(10)(23)
Dec 30, 1991		FW51	TURBINE DRIVEN AUX FEEDPUMP TRIP & THROTTLE VALVE FAILURE	3.1.2(10)
Dec 30, 1991		IA01	PLANT AIR COMPRESSOR TRIP	3.1.2(2)
Dec 30, 1991		IA05	CONTROL AIR SYSTEM RUPTURE IN CONTAINMENT	3.1.2(2)
Dec 30, 1991		MS04	MAIN STM LINE BREAK DOWNSTREAM SG STOP VALVES	3.1.2(1a)(1b)(20)
Dec 30, 1991		MS09	MSR TUBE RUPTURE	3.1.2(9)
Dec 30, 1991		MS13	MSR DRAIN TANK ALTERNATE LEVEL CONTROL VALVE FAILURE	3.1.2(9)
Dec 30, 1991		MS18	STEAM DUMP CONTROL VALVE FAILURE	3.1.2(17)
Dec 30, 1991		NI03	INCORRECT SOURCE RANGE CHANNEL RESPONSE	3.1.2(21)
Dec 30, 1991		NI07	INTERMEDIATE RANGE IMPROPER COMPENSATION	3.1.2(21)
Dec 30, 1991		NI11	POWER RANGE CHANNEL OUTPUT OSCILLATION	3.1.2(21)
Dec 30, 1991		NI15	POWER RANGE CHANNEL BLOWN FUSE	3.1.2(21)
Dec 30, 1991		RC04	PRESSURIZER SURGE LINE LEAK	3.1.2(1b)(1c)
Dec 30, 1991		RC08	REACTOR COOLANT PUMP SHAFT BREAK	3.1.2(4)
Dec 30, 1991		RC14	PRESSURIZER HIGH GAS CONCENTRATION IN VAPOR SPACE	3.1.2(18)
Dec 30, 1991		RC19	PRESSURIZER SAFETY VALVE FAILURE	3.1.2(1b)(1c)(1d)
Dec 30, 1991		RC25	STEAM GENERATOR BLOWDOWN LINE LEAK DOWNSTREAM CONT ISOL	3.1.2(1a)
Dec 30, 1991		RD01	DROPPED CONTROL ROD	3.1.2(12)
Dec 30, 1991		RD05	EJECTION OF ROD WITH RUPTURED MECHANISM HOUSING	3.1.2(1b)(1c)(12)
Dec 30, 1991		RD09	UNCONTROLLED ROD MOTION DEMAND (AUTOMATIC)	3.1.2(12)
Dec 30, 1991		RD13	ROD GROUP FAILURE TO MOVE	3.1.2(13)
Dec 30, 1991		RD17	ROD GROUP STEP COUNTER FAILURE	3.1.2(12)
Dec 30, 1991		RH03	RHR HEAT EXCHANGER BYPASS FLOW CONTROL VALVE FAILURE	3.1.2(7)(17)
Dec 30, 1991		RH07	RHR NORMAL COOLDOWN SUCTION LINE LEAK INSIDE CONTAINMENT	3.1.2(1c)(7)(17)
Dec 30, 1991		RH12	SI LOOP CHECK VALVE LEAKAGE	3.1.2(23)
Dec 30, 1991		RM01	AREA RADIATION MONITOR FAILURE	3.1.2(22)
Dec 30, 1991		RP09	FAILURE OF FEEDWATER ISOLATION TRIP TO OCCUR	3.1.2(22)
Dec 30, 1991		RP13	FAILURE OF CONTAINMENT	3.1.2(11)(22)

1991 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
Dec 30, 1991		CC03	COMPONENT COOLING WATER RUPTURE	3.1.2(8)
Dec 30, 1991		CC07	COMPONENT COOLING HX TUBE RUPTURE	3.1.2(8)
Dec 30, 1991		CH02	CONTAINMENT PRESSURE TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1991		CS04	RWST LEVEL TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1991		CV05	LETDOWN HEAT EXCHANGER TUBE LEAK	3.1.2(18)
Dec 30, 1991		CV10	NORMAL CHARGING LINE LEAK INSIDE CONTAINMENT	3.1.2(18)
Dec 30, 1991		CV14	CHARGING PUMP SUCTION LINE LEAKAGE	3.1.2(18)
Dec 30, 1991		CV20	INADVERTENT BORATION	3.1.2(17)
Dec 30, 1991		CV27	REACTOR COOLANT PUMP #2 SEAL FAILURE	3.1.2(1b)(1c)
Dec 30, 1991		CV32	PRIMARY WATER FLOW TRANSMITTER (QFC-422) FAILURE	3.1.2(17)(22)
Dec 30, 1991		CW03	TRAVELING WATER SCREEN FOULING	3.1.2(5)(6)
Dec 30, 1991		ED04	LOSS OF EMERGENCY POWER SUPPLY TRNASFORMER TR-12-EP	3.1.2(3)
Dec 30, 1991		ED08	LOSS OF 600V MCC	3.1.2(3)
Dec 30, 1991		ED13	LOSS OF 250 VDC DIST. PANELS (TRAIN B)	3.1.2(3)
Dec 30, 1991		ED17	LOSS OF PLANT LIGHTING	3.1.2(3)
Dec 30, 1991		ED21	4KV/600V AUX. TRANSFORMER LOSS	3.1.2(3)
Dec 30, 1991		ED25	LOSS OF 765/345KV TRANSFORMER BANK #4	3.1.2(3)
Dec 30, 1991		EG04	MAIN GENERATOR AUTO VOLTAGE REGULATOR FAILURE	3.1.2(3)
Dec 30, 1991		EG08	DIESEL GENERATOR SPEED GOVERNOR FAILURE	3.1.2(3)
Dec 30, 1991		EG12	DIESEL GENERATOR OUTPUT BREAKER FAILURE TO AUTO CLOSE	3.1.2(3)
Dec 30, 1991		FP01	FIRE PROTECTION SYSTEM RUPTURE	
Dec 30, 1991		FW01	MAIN FEEDWATER RUPTURE AT SG INLET	3.1.2(1a)(9)
Dec 30, 1991		FW06	MAIN FEEDPUMP TURBINE SHEARED SHAFT (UNRECOVERABLE)	3.1.2(9)
Dec 30, 1991		FW15	FEEDWATER CONTROL VALVE FAILURE	3.1.2(9)
Dec 30, 1991		FW19	HP HEATER #6 TUBE RUPTURE	3.1.2(9)
Dec 30, 1991		FW23	HP HEATER #5 TUBE RUPTURE	3.1.2(9)
Dec 30, 1991		FW27	LP HEATER #4 LEVEL CONTROL VALVE FAILURE	3.1.2(22)
Dec 30, 1991		FW31	LP HEATER #3 TUBE RUPTURE	3.1.2(9)
Dec 30, 1991		FW35	CONDENSATE BOOSTER PUMP DISCHARGE PIPING RUPTURE	3.1.2(9)
Dec 30, 1991		FW39	CONDENSER TUBE LEAK	3.1.2(9)

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
			ISOLATION PHASE A TO AUTO ACTUATE	
Dec 30, 1991		RP17	FAILURE OF CONTAINMENT ISOL PHASE B TO MANUALLY ACTUATE	3.1.2(11)(22)
Dec 30, 1991		RP05	REACTOR COOLANT FLOW TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1991		RX01	RCS HOT LEG PRESSURE TRANSMITTER FAILURE	3.1.2(1c)(7)(22)
Dec 30, 1991		RX05	PRESSURIZER LEVEL TRANSMITTER FAILURE (PROTECTION CHANNEL)	3.1.2(22)
Dec 30, 1991		RX09	PRESSURIZER PRESSURE MASTER CONTROLLER FAILURE	3.1.2(18)
Dec 30, 1991		RX13	STEAM DUMP "TAVG" CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1991		RX17	STEAM GENERATOR PRESSURE TRANSMITTER FAILURE	3.1.2(17)(22)
Dec 30, 1991		RX21	STEAM GENERATOR FEED FLOW TRANSMITTER FAILURE	3.1.2(9)(17)(22)
Dec 30, 1991		RX25	FEEDWATER CONTROL VALVE OSCILLATION	3.1.2(9)(17)(22)
Dec 30, 1991		SI01	SAFETY INJECTION PUMP TRIP	3.1.2(17)
Dec 30, 1991		SW02	NON ESSENTIAL SERVICE WATER PIPING RUPTURE IN TURB BLDG	3.1.2(6)
Dec 30, 1991		SW06	FEEDPUMP TURBINE OIL COOLING CONTROLLER FAILURE	3.1.2(9)(22)
Dec 30, 1991		TC03	MAIN TURBINE AUTO TRIP FAILURE	3.1.2(17)
Dec 30, 1991		TC07	MAIN TURBINE INTERCEPT VALVE FAILURE	3.1.2(17)
Dec 30, 1991		TC12	MAIN TURBINE SPEED SIGNAL FAILURE	
Dec 30, 1991		TP03	MAIN GENERATOR STATOR COOLING SYSTEM RUPTURE	3.1.2(16)
Dec 30, 1991		TU05	MAIN TURBINE BEARING FAILURE	3.1.2(15)

1992 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
Dec 30, 1992		CC04	MISC CCW HEADER RUPTURE INSIDE CONTAINMENT	3.1.2(8)
Dec 30, 1992		CC08	CCW INLEAKAGE INTO RCP UPPER BEARING OIL RESERVOIR	3.1.2(8)(4)
Dec 30, 1992		CS01	CONTAINMENT SPRAY PUMP TRIP	
Dec 30, 1992		CV01	LETDOWN LINE RUPTURE INSIDE CONTAINMENT	3.1.2(18)
Dec 30, 1992		CV06	LETDOWN LINE LOW PRESSURE CONTROL VALVE (QRV-301) FAILURE	3.1.2(18)
Dec 30, 1992		CV11	NORMAL CHARGING LINE LEAK OUTSIDE CONTAINMENT	3.1.2(18)
Dec 30, 1992		CV15	VCT LEVEL CONTROL VALVE (QRV-303) FAILURE	3.1.2(18)
Dec 30, 1992		CV21	INADVERTENT DILUTION	3.1.2(17)
Dec 30, 1992		CV28	REACTOR COOLANT PUMP #3 SEAL FAILURE	3.1.2(1b)(1c)
Dec 30, 1992		CV33	BORIC ACID FLOW CONTROLLER (QFC-421) FAILURE	3.1.2(17)(22)
Dec 30, 1992		ED01	LOSS OF 345KV BUS NO. 1	3.1.2(3)
Dec 30, 1992		ED05	LOSS OF 4160 VAC BUS	3.1.2(3)
Dec 30, 1992		ED10	LOSS OF 120 VAC CONTROL ROOM POWER DISTRIBUTION PANELS	3.1.2(3)
Dec 30, 1992		ED14	LOSS OF 250 VDC BATTERY CHARGER	3.1.2(3)
Dec 30, 1992		ED18	GRID VOLTAGE OSCILLATION	3.1.2(3)
Dec 30, 1992		ED22	LOSS OF SWITCHGEAR CONTROL POWER (TRAIN B)	3.1.2(3)
Dec 30, 1992		ED26	LOSS OF 765KV DUMONT LINE	3.1.2(3)
Dec 30, 1992		EG05	MAIN GENERATOR OUTPUT BREAKER FAILURE TO TRIP	3.1.2(3)
Dec 30, 1992		EG09	DIESEL GENERATOR VOLTAGE CONTROL FAILURE	3.1.2(3)
Dec 30, 1992		EG13	DIESEL GENERATOR OUTPUT BREAKER FAILURE TO CLOSE	3.1.2(3)
Dec 30, 1992		FP02	INADVERTENT ACTUATION OF CHARCOAL FILTER FIRE PROT SYSTEM	
Dec 30, 1992		FW02	MAIN FEEDWATER RUPTURE BEFORE STEAM GENERATOR CHECK VALVE	3.1.2(9)
Dec 30, 1992		FW07	MAIN FEEDPUMP TURBINE BEARING FAILURE	3.1.2(9)
Dec 30, 1992		FW16	HP HEATER #6 LEVEL CONTROL TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1992		FW20	HP HEATER #5 LEVEL CONTROL TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1992		FW24	HP HEATER #5 STEAM INLET RUPTURE	3.1.2(9)
Dec 30, 1992		FW28	LP HEATER #4 TUBE RUPTURE	3.1.2(22)
Dec 30, 1992		FW32	LP HEATER #3 STEAM INLET RUPTURE	3.1.2(9)
Dec 30, 1992		FW36	CONDENSATE BOOSTER PUMP RECIRC VALVE FAILURE	3.1.2(9)

1992 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
Dec 30, 1992		FW40	HOTWELL LEVEL CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1992		FW44	HEATER DRAIN PUMP BEARING FAILURE	3.1.2(9)
Dec 30, 1992		FW48	AUX FEEDPUMP AUTO START FAILURE	3.1.2(10)(17)
Dec 30, 1992		FW52	STEAM BOUND AFW PUMP	3.1.2(10)(23)
Dec 30, 1992		IA02	PLANT AIR SYSTEM RUPTURE	3.1.2(2)
Dec 30, 1992		MS01	MAIN STEAM LINE BREAK AT SG EXIT BEFORE FLOW RESTRICTOR	3.1.2(1a)(1b)(20)
Dec 30, 1992		MS05	MAIN STEAM POWER RELIEF VALVE LEAK	3.1.2(1a)
Dec 30, 1992		MS10	MSR COIL DRAIN TANK LEVEL CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1992		MS14	MSR STEAM SUPPLY VALVE FAILURE	3.1.2(9)
Dec 30, 1992		MS21	AUX. STEAM 150 # HEADER CONTROL VALVE FAILURE	3.1.2(5)
Dec 30, 1992		NI04	SOURCE RANGE ENERGIZATION AT POWER (P10 BLOCK FUNC)	3.1.2(21)
Dec 30, 1992		NI08	POWER RANGE CHANNEL UPPER DETECTOR FAILURE	3.1.2(21)
Dec 30, 1992		NI12	AUDIO COUNT RATE CHANNEL FAILURE	3.1.2(22)
Dec 30, 1992		RC01	RCS COLD LEG LOOP RUPTURE	3.1.2(1b)(1c)
Dec 30, 1992		RC05	REACTOR VESSEL HEAD FLANGE LEAK	3.1.2(1b)(1c)
Dec 30, 1992		RC09	REACTOR COOLANT PUMP TRIP	3.1.2(4)
Dec 30, 1992		RC15	PRESSURIZER SPRAY VALVE FAILURE	3.1.2(18)
Dec 30, 1992		RC21	PRESSURIZER RELIEF TANK RUPTURE DISC FAILURE	
Dec 30, 1992		RC26	FAILED FUEL ELEMENT	3.1.2(14)
Dec 30, 1992		RD02	BROKEN CONTROL ROD	3.1.2(12)
Dec 30, 1992		RD06	UNCONTROLLED ROD BANK CONTINUOUS WITHDRAWAL	3.1.2(12)
Dec 30, 1992		RD10	CONTROL RODS MOVE OPPOSITE TO DEMAND SIGNAL	3.1.2(12)
Dec 30, 1992		RD14	IMPROPER BANK OVERLAP	3.1.2(12)
Dec 30, 1992		RD18	ROD CONTROL MG SET TRIP	3.1.2(19)
Dec 30, 1992		RH04	RHR HEAT EXCHANGER FLOW CONTROL VALVE FAILURE	3.1.2(7)(17)
Dec 30, 1992		RH08	RWST SUPPLY LINE TO RHR PUMP RUPTURE	3.1.2(23)
Dec 30, 1992		RH13	SI ACCUMULATOR TANK CHECK VALVE LEAKAGE	3.1.2(23)
Dec 30, 1992		RM02	PROCESS RADIATION MONITOR FAILURE	3.1.2(22)
Dec 30, 1992		RP06	SPURIOUS STEAM LINE ISOLATION	3.1.2(22)
Dec 30, 1992		RP10	FAILURE OF SAFETY INJECTION TO AUTO ACTUATE	3.1.2(11)(22)
Dec 30, 1992		RP14	FAILURE OF CONTAINMENT ISOLATION PHASE A TO MANUAL ACTUATE	3.1.2(11)(22)
Dec 30, 1992		RP18	SPURIOUS ACTUATION OF	3.1.2(11)(22)

1992 Simulator Malfunction Test Schedule

Date Due	Date Tested	Malf.#	Description	ANS 3.5 Category
			CONTAINMENT ISOLATION PHASE B	
Dec 30, 1992		RX02	RCS HOT LEG TEMPERATURE TRANSMITTER FAILURE (NARROW RANGE)	3.1.2(17)(19)(22)
Dec 30, 1992		RX06	PRESSURIZER CALIBRATION LEVEL TRANSMITTER FAILURE	3.1.2(22)
Dec 30, 1992		RX10	PRESSURIZER WATER LEVEL CONTROLLER OSCILLATION	3.1.2(22)
Dec 30, 1992		RX14	STEAM DUMP "PRESSURE" CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1992		RX18	MAIN STEAM TURB BYPASS HEADER PRESS TRANSMITTER FAILURE	3.1.2(17)(22)
Dec 30, 1992		RX22	STEAM GENERATOR PROGRAMMED LEVEL SIGNAL FAILURE	3.1.2(9)(22)
Dec 30, 1992		RX26	FEED PUMP TURBINE SPEED CONTROLLER FAILURE	3.1.2(9)
Dec 30, 1992		SI02	SAFETY INJECTION PUMP SHEARED SHAFT	3.1.2(17)
Dec 30, 1992		SW03	NESW PIPING RUPTURE ON LOWER CONT VENT COOLER SUPPLY LINE	3.1.2(6)
Dec 30, 1992		SW07	MAIN TURBINE OIL TEMPERATURE CONTROLLER FAILURE	3.1.2(22)
Dec 30, 1992		TC04	MAIN TURBINE STOP VALVE FAILURE	3.1.2(17)
Dec 30, 1992		TC09	MAIN GENERATOR LOAD LIMITER FAILURE	3.1.2(17)
Dec 30, 1992		TC13	TURBINE RUNBACK FAILURE	3.1.2(17)
Dec 30, 1992		TP05	STATOR COOLING WATER SYSTEM HIGH CONDUCTIVITY	3.1.2(16)
Dec 30, 1992		TU06	TURBINE BLADE EJECTION	3.1.2(15)

COOK PLANT SIMULATOR

SYSTEMATIC REVIEW PROCESS

I. Items Reviewed (ANS 3.5 - 3.1.2)

The following documents are reviewed for the need to verify and create malfunctions for training:

1. Plant Licensee Event Reports
2. Plant Condition Reports
3. Plant Problem Reports
4. Other Plant Licensee Event Reports
5. Industry Events
6. INPO SOERs
7. INPO SERs

In addition, plant Probabilistic Risk Assessment results will be reviewed after completion.

COOK PLANT SIMULATOR

STEADY STATE OPERATION GENERAL INFORMATION

I. Steady State Operation (ANS 3.5 - 4.1)

To ensure compliance with the standard in regards to simulator steady state operation, the simulator has been operated at one hour intervals without operator action and compared to reference plant data for four different power levels (30%, 60%, 90% and 100%).

All simulator controls were aligned the same as the reference plant (all controls in AUTO).

Computed values were collected at one second intervals over a one hour period for each power level, graphed and compared to reference plant data, with the exception that non critical data points were not compared at power levels less than 100%.

Plant data was not available for Reactor Coolant System Hot Leg and Cold Leg temperature in the time frame during which the Steady State tests were performed for 60% and 90% power. These temperatures will be compared during performance of the next scheduled 60% and 90% Steady State tests.

All simulator instruments are calibrated on regular intervals and verified not to have errors greater than the reference plant. Instrument error was included in the allowable error range for each parameter.

Simulator discrepancy reports have been written for all data points designated by an '*'.

COOK PLANT SIMULATOR

30% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
| CRITICAL PARAMETERS |					
Nuclear Power	PR Avg.	Percent	30.5	30.4	0.3
Thermal Power	Calc.	Percent	30.5	30.5	0
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	575	563.8	1.9
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	550	543.7	1.1
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	570	563.8	1.1
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	550	543.8	1.1
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	565	563.8	0.2
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	545	543.8	0.2
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	570	563.8	1.1
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	545	543.7	0.2
Loop 1 Tavg.	NTI-13	Deg. F	550	553	-0.5
Loop 2 Tavg.	NTI-23	Deg. F	550	553	-0.5
Loop 3 Tavg.	NTI-33	Deg. F	550	553	-0.5
Loop 4 Tavg.	NTI-43	Deg. F	550	553	-0.5
Pressurizer Pressure	NPP Avg.	PSIG	2237	2239	-0.1
Pressurizer Level	NLP Avg.	Percent	26.5	29	-9.4 *
Press. Steam Temperature	NTA-252	Deg. F	645	652	-1.1
Press. Liquid Temp.	NTA-251	Deg. F	645	652	-1.1
Press. Surge Line Temp.	NTA-253	Deg. F	655	632	3.5
Steam Generator #21 Level	BLP Avg.	Percent	44	44	0
Steam Generator #22 Level	BLP Avg.	Percent	45	44	2.2
Steam Generator #23 Level	BLP Avg.	Percent	46	44	4.3
Steam Generator #24 Level	BLP Avg.	Percent	45	44	2.2
Steam Generator #21 Press	MPP Avg.	PSIG	880	912	-3.6
Steam Generator #22 Press	MPP Avg.	PSIG	880	912	-3.6
Steam Generator #23 Press	MPP Avg.	PSIG	870	912	-4.8 *
Steam Generator #24 Press	MPP Avg.	PSIG	880	912	-3.6
Total Feedwater Flow		E6 lb/hr	3.8	4.02	-5.8 *
Main Generator Elect Pwr		Megawatts	320	300	6.3 *

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	320.18	298.39	7.30	*
RC LOOP DELTA T	1	F	20.10	19.48	3.19	
T AVG TRANSM. TABLE	1	F	553.66	555.14	-.27	
T REFERENCE	1	F	553.95	555.14	-.21	
SG DOME PRESSURES	1	PSIA	927.13	926.50	.07	
MS LOOP FLOWS	1	#/S	1122.04	1118.73	.30	
FW LOOP FLOWS	1	#/S	1121.01	1118.79	.20	
HPT INLET STM FLOW	1	#/S	1056.06	1059.41	-.32	
LPT INLET STM FLOW	1	#/S	268.36	275.88	-2.73	
LPT INLET STM FLOW	2	#/S	268.37	275.88	-2.72	
LPT INLET STM FLOW	3	#/S	268.38	275.88	-2.72	
HPT EXTR. FLOW TO HTR 6A	1	#/S	28.02	23.46	19.45	*
HPT EXTR. FLOW TO HTR 5A	1	#/S	31.79	27.07	17.45	*
HPT EXTR. FLOW TO HTR 4A	1	#/S	25.76	23.71	8.64	
LPT EXTR. FLOW TO HTR 3A	1	#/S	25.30	22.30	13.42	*
LPT EXTR. FLOW TO HTR 2A	1	#/S	24.21	22.36	8.24	
LPT EXTR. FLOW TO HTR 1A	1	#/S	8.70	6.76	28.81	*
[illegible]A TUBE OUTLET TEMP	1	F	321.54	320.96	.18	
[illegible]A TUBE OUTLET TEMP	1	F	277.97	279.47	-.53	
MFP TUBE OUTLET TEMP	1	F	226.72	235.25	-3.63	
H4A TUBE OUTLET TEMP	1	F	224.79	236.29	-4.87	
H3A TUBE OUTLET TEMP	1	F	179.24	183.52	-2.33	
H2A TUBE OUTLET TEMP	1	F	138.57	139.97	-1.00	
H1A TUBE OUTLET TEMP	1	F	100.07	94.75	5.61	
DCA TUBE OUTLET TEMP	1	F	81.43	76.95	5.83	
HWP SUCTION TEMPERATURE	1	F	79.94	69.34	15.29	*
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	79.59	69.34	14.78	*
CND VAC	1	INHGA	28.78	29.35	-1.95	

DATA VALUE BASED ON 30.42 % CORE POWER

06/26/90 18:37:44 TASK # 1800014F COOK2 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.4570	DEGF
T1004	PZR LIQUID TEMP		652.5745	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		632.8086	DEG F
L1091	PRESSURIZER WATER LEVEL		29.1279	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2428	%
P1036	PRESSURIZER PRESSURE		2239.1238	PSIG
T1101	LOOP 1 AVG TEMP		553.6707	DEGF
T1102	LOOP 2 AVG TEMP		553.7080	DEGF
T1103	LOOP 3 AVG TEMP		553.7217	DEGF
T1104	LOOP 4 AVG TEMP		553.6748	DEGF
T1111	LOOP 1 HOT LEG TEMP		563.7222	DEGF
T1112	LOOP 2 HOT LEG TEMP		563.7219	DEGF
T1113	LOOP 3 HOT LEG TEMP		563.7388	DEGF
T1114	LOOP 4 HOT LEG TEMP		563.7219	DEGF
T1115	LOOP 1 COLD LEG TEMP		543.6223	DEGF
T1116	LOOP 2 COLD LEG TEMP		543.6926	DEGF
T1117	LOOP 3 COLD LEG TEMP		543.6997	DEGF
T1118	LOOP 4 COLD LEG TEMP		543.6287	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.3016	%
CPCN	03030 NORMALIZED CORE^POWER		.3042	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		912.0913	PSIG
P1025	STM GEN OUTLET PRES LP 2		912.0376	PSIG
P1028	STM GEN OUTLET PRES LP 3		912.1084	PSIG
P1031	STM GEN OUTLET PRES LP 4		912.1001	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.9373	PC
L1207	STM GEN 2 NARROW LEVEL		43.8511	PC
L1210	STM GEN 3 NARROW LEVEL		44.1269	PC
L1213	STM GEN 4 NARROW LEVEL		44.0589	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	534.2769	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	533.6353	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	533.8264	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	533.6074	F
RCBORON	11070 BORON CONC	(001)	752.0793	PPM
RCBORON	11070 BORON CONC	(002)	752.0813	PPM
RCBORON	11070 BORON CONC	(003)	752.0818	PPM

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DATA ITEM NOT IN MDD
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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		81.3926	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		81.3961	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		81.3961	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		100.1405	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		100.1305	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		100.1305	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		138.7056	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		138.6952	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		179.3938	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		179.3750	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		225.0609	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		224.9750	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		277.8972	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		277.8726	F
[illegible]TOH6A	17020 H6A TUBE OUTLET TEMP		321.5137	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		321.4731	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		225.6039	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		226.5774	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		226.0618	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		64.6911	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		103.6044	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		106.3662	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		147.1655	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		147.1611	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		185.0580	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		184.2408	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		238.4823	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		238.5038	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		287.1565	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		287.1565	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	185	
[illegible]OD	03030 ROD POSITION,ACTUAL	(053)	184	

[illegible]SD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	320.21	298.51	7.27	*
RC LOOP DELTA T	1	F	20.11	19.49	3.21	
T AVG TRANSM. TABLE	1	F	553.70	555.14	-.26	
T REFERENCE	1	F	553.96	555.14	-.21	
SG DOME PRESSURES	1	PSIA	927.43	926.47	.10	
MS LOOP FLOWS	1	#/S	1122.80	1119.29	.31	
FW LOOP FLOWS	1	#/S	1123.89	1119.25	.41	
HPT INLET STM FLOW	1	#/S	1056.25	1059.73	-.33	
LPT INLET STM FLOW	1	#/S	268.30	275.94	-2.77	
LPT INLET STM FLOW	2	#/S	268.29	275.94	-2.77	
LPT INLET STM FLOW	3	#/S	268.25	275.94	-2.79	
HPT EXTR. FLOW TO HTR 6A	1	#/S	28.13	23.46	19.90	*
HPT EXTR. FLOW TO HTR 5A	1	#/S	31.91	27.07	17.86	*
HPT EXTR. FLOW TO HTR 4A	1	#/S	26.01	23.71	9.69	
LPT EXTR. FLOW TO HTR 3A	1	#/S	25.31	22.31	13.45	*
LPT EXTR. FLOW TO HTR 2A	1	#/S	24.21	22.37	8.23	
LPT EXTR. FLOW TO HTR 1A	1	#/S	8.71	6.76	28.85	*
H5A TUBE OUTLET TEMP	1	F	321.57	320.97	.19	
H4A TUBE OUTLET TEMP	1	F	277.94	279.47	-.55	
MFP TUBE OUTLET TEMP	1	F	226.59	235.26	-3.69	
H4A TUBE OUTLET TEMP	1	F	225.03	236.29	-4.77	
H3A TUBE OUTLET TEMP	1	F	179.37	183.52	-2.26	
H2A TUBE OUTLET TEMP	1	F	138.70	139.97	-.91	
H1A TUBE OUTLET TEMP	1	F	100.12	94.75	5.66	
DCA TUBE OUTLET TEMP	1	F	81.39	76.95	5.78	
HWP SUCTION TEMPERATURE	1	F	79.94	69.34	15.29	*
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	79.59	69.34	14.78	*
CND VAC	1	INHGA	28.78	29.35	-1.95	

DATA VALUE BASED ON 30.43 % CORE POWER

06/26/90 18:20:51 TASK # 1600014A COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.4075	DEGF
T1004	PZR LIQUID TEMP		652.5186	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		636.8352	DEG F
L1091	PRESSURIZER WATER LEVEL		29.0075	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2422	%
P1036	PRESSURIZER PRESSURE		2238.2327	PSIG
T1101	LOOP 1 AVG TEMP		553.6985	DEGF
T1102	LOOP 2 AVG TEMP		553.7385	DEGF
T1103	LOOP 3 AVG TEMP		553.7527	DEGF
T1104	LOOP 4 AVG TEMP		553.7061	DEGF
T1111	LOOP 1 HOT LEG TEMP		563.7556	DEGF
T1112	LOOP 2 HOT LEG TEMP		563.7554	DEGF
T1113	LOOP 3 HOT LEG TEMP		563.7759	DEGF
T1114	LOOP 4 HOT LEG TEMP		563.7554	DEGF
T1115	LOOP 1 COLD LEG TEMP		543.6401	DEGF
T1116	LOOP 2 COLD LEG TEMP		543.7183	DEGF
T1117	LOOP 3 COLD LEG TEMP		543.7236	DEGF
T1118	LOOP 4 COLD LEG TEMP		543.6545	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.3017	%
CORN	03030 NORMALIZED CORE^POWER		.3043	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		912.3271	PSIG
P1025	STM GEN OUTLET PRES LP 2		912.3435	PSIG
P1028	STM GEN OUTLET PRES LP 3		912.3384	PSIG
P1031	STM GEN OUTLET PRES LP 4		912.3237	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.9291	PC
L1207	STM GEN 2 NARROW LEVEL		43.9008	PC
L1210	STM GEN 3 NARROW LEVEL		43.9289	PC
L1213	STM GEN 4 NARROW LEVEL		44.1390	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	533.4404	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	533.3398	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	534.6287	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	533.9067	F
RCBORON	11070 BORON CONC	(001)	752.0913	PPM
RCBORON	11070 BORON CONC	(002)	752.0913	PPM
RCBORON	11070 BORON CONC	(003)	752.0911	PPM

ISD>

06/26/90 18:19:54 TASK # 1600014A COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		81.4126	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		81.4119	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		81.4119	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		100.0983	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		100.0907	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		100.0907	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		138.5812	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		138.5956	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		179.2177	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		179.2097	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		225.0732	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		225.0231	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		277.8743	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		277.8621	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		321.4795	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		321.4868	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		225.5742	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		226.5474	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		225.9838	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		64.6911	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		103.9645	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		104.0566	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		147.0655	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		147.0762	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		184.9376	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		184.3315	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		238.1159	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		238.1251	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		287.0522	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		287.0850	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	185	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	184	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	320.37	298.51	7.32	*
RC LOOP DELTA T	1	F	20.11	19.49	3.17	
T AVG TRANSM. TABLE	1	F	553.74	555.14	-.25	
T REFERENCE	1	F	553.96	555.14	-.21	
SG DOME PRESSURES	1	PSIA	927.72	926.47	.13	
MS LOOP FLOWS	1	#/S	1122.28	1119.34	.26	
FW LOOP FLOWS	1	#/S	1121.34	1119.33	.18	
HPT INLET STM FLOW	1	#/S	1056.42	1059.81	-.32	
LPT INLET STM FLOW	1	#/S	268.46	275.97	-2.72	
LPT INLET STM FLOW	2	#/S	268.48	275.97	-2.71	
LPT INLET STM FLOW	3	#/S	268.48	275.97	-2.71	
HPT EXTR. FLOW TO HTR 6A	1	#/S	28.04	23.46	19.51	*
HPT EXTR. FLOW TO HTR 5A	1	#/S	31.84	27.08	17.59	*
HPT EXTR. FLOW TO HTR 4A	1	#/S	25.92	23.71	9.32	
LPT EXTR. FLOW TO HTR 3A	1	#/S	25.27	22.31	13.29	*
LPT EXTR. FLOW TO HTR 2A	1	#/S	24.21	22.37	8.22	
LPT EXTR. FLOW TO HTR 1A	1	#/S	8.72	6.76	29.08	*
H6A TUBE OUTLET TEMP	1	F	321.55	320.97	.18	
H5A TUBE OUTLET TEMP	1	F	277.94	279.48	-.55	
MFP TUBE OUTLET TEMP	1	F	226.72	235.26	-3.63	
H4A TUBE OUTLET TEMP	1	F	225.01	236.29	-4.77	
H3A TUBE OUTLET TEMP	1	F	179.32	183.52	-2.29	
H2A TUBE OUTLET TEMP	1	F	138.63	139.97	-.96	
H1A TUBE OUTLET TEMP	1	F	100.10	94.75	5.65	
DCA TUBE OUTLET TEMP	1	F	81.39	76.95	5.78	
HWP SUCTION TEMPERATURE	1	F	79.94	69.34	15.28	*
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	79.59	69.34	14.78	*
CND VAC	1	INHGA	28.78	29.35	-1.95	

DATA VALUE BASED ON 30.43 % CORE POWER

06/26/90 18:05:33 TASK # 05000145 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.3552	DEGF
T1004	PZR LIQUID TEMP		652.4509	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		636.5491	DEG F
L1091	PRESSURIZER WATER LEVEL		28.8694	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2415	%
P1036	PRESSURIZER PRESSURE		2237.2766	PSIG
T1101	LOOP 1 AVG TEMP		553.7456	DEGF
T1102	LOOP 2 AVG TEMP		553.7827	DEGF
T1103	LOOP 3 AVG TEMP		553.7959	DEGF
T1104	LOOP 4 AVG TEMP		553.7488	DEGF
T1111	LOOP 1 HOT LEG TEMP		563.7988	DEGF
T1112	LOOP 2 HOT LEG TEMP		563.7991	DEGF
T1113	LOOP 3 HOT LEG TEMP		563.8176	DEGF
T1114	LOOP 4 HOT LEG TEMP		563.7991	DEGF
T1115	LOOP 1 COLD LEG TEMP		543.6868	DEGF
T1116	LOOP 2 COLD LEG TEMP		543.7629	DEGF
T1117	LOOP 3 COLD LEG TEMP		543.7727	DEGF
T1118	LOOP 4 COLD LEG TEMP		543.6978	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.3018	%
C[illegible]N	03030 NORMALIZED CORE^POWER		.3043	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		912.6807	PSIG
P1025	STM GEN OUTLET PRES LP 2		912.7385	PSIG
P1028	STM GEN OUTLET PRES LP 3		912.6494	PSIG
P1031	STM GEN OUTLET PRES LP 4		912.7065	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.9458	PC
L1207	STM GEN 2 NARROW LEVEL		44.0258	PC
L1210	STM GEN 3 NARROW LEVEL		44.1957	PC
L1213	STM GEN 4 NARROW LEVEL		43.9223	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	534.7654	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	534.3384	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	533.5063	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	533.7446	F
RCBORON	11070 BORON CONC	(001)	752.0979	PPM
RCBORON	11070 BORON CONC	(002)	752.0972	PPM
RCBORON	11070 BORON CONC	(003)	752.0962	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		81.4408	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		81.4346	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		81.4346	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		100.1372	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		100.1326	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		100.1326	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		138.7072	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		138.7123	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		179.4160	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		179.3922	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		224.8334	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		224.9664	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		277.9177	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		277.9229	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		321.5830	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		321.5669	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		225.9662	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		226.9408	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		226.3760	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		64.6911	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		104.3803	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		104.9442	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		147.1537	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		147.1529	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		183.4779	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		184.2142	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		238.6265	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		238.6694	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		287.3000	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		287.3450	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	185	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	184	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	320.19	298.59	7.23	*
RC LOOP DELTA T	1	F	20.12	19.49	3.18	
T AVG TRANSM. TABLE	1	F	553.79	555.14	-.24	
T REFERENCE	1	F	553.96	555.14	-.21	
SG DOME PRESSURES	1	PSIA	928.14	926.46	.18	
MS LOOP FLOWS	1	#/S	1122.95	1119.64	.30	
FW LOOP FLOWS	1	#/S	1123.18	1119.62	.32	
HPT INLET STM FLOW	1	#/S	1056.66	1060.05	-.32	
LPT INLET STM FLOW	1	#/S	268.47	276.03	-2.74	
LPT INLET STM FLOW	2	#/S	268.45	276.04	-2.75	
LPT INLET STM FLOW	3	#/S	268.45	276.04	-2.75	
HPT EXTR. FLOW TO HTR 6A	1	#/S	28.11	23.47	19.76	*
HPT EXTR. FLOW TO HTR 5A	1	#/S	31.92	27.09	17.83	*
HPT EXTR. FLOW TO HTR 4A	1	#/S	25.93	23.72	9.35	
LPT EXTR. FLOW TO HTR 3A	1	#/S	25.28	22.31	13.30	*
LPT EXTR. FLOW TO HTR 2A	1	#/S	24.18	22.37	8.07	
LPT EXTR. FLOW TO HTR 1A	1	#/S	8.73	6.76	29.09	*
[illegible]A TUBE OUTLET TEMP	1	F	321.52	320.99	.16	
[illegible]A TUBE OUTLET TEMP	1	F	277.97	279.49	-.54	
MFP TUBE OUTLET TEMP	1	F	226.81	235.27	-3.60	
H4A TUBE OUTLET TEMP	1	F	225.15	236.31	-4.72	
H3A TUBE OUTLET TEMP	1	F	179.32	183.54	-2.30	
H2A TUBE OUTLET TEMP	1	F	138.66	139.98	-.95	
H1A TUBE OUTLET TEMP	1	F	100.12	94.76	5.66	
DCA TUBE OUTLET TEMP	1	F	81.42	76.95	5.81	
HWP SUCTION TEMPERATURE	1	F	79.94	69.34	15.28	*
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	79.59	69.34	14.77	*
CND VAC	1	INHGA	28.78	29.35	-1.95	

DATA VALUE BASED ON 30.44 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.3955	DEGF
T1004	PZR LIQUID TEMP		652.5002	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		636.4697	DEG F
L1091	PRESSURIZER WATER LEVEL		28.7008	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2407	%
P1036	PRESSURIZER PRESSURE		2238.0405	PSIG
T1101	LOOP 1 AVG TEMP		553.7939	DEGF
T1102	LOOP 2 AVG TEMP		553.8306	DEGF
T1103	LOOP 3 AVG TEMP		553.8450	DEGF
T1104	LOOP 4 AVG TEMP		553.7983	DEGF
T1111	LOOP 1 HOT LEG TEMP		563.8496	DEGF
T1112	LOOP 2 HOT LEG TEMP		563.8494	DEGF
T1113	LOOP 3 HOT LEG TEMP		563.8740	DEGF
T1114	LOOP 4 HOT LEG TEMP		563.8494	DEGF
T1115	LOOP 1 COLD LEG TEMP		543.7395	DEGF
T1116	LOOP 2 COLD LEG TEMP		543.8093	DEGF
T1117	LOOP 3 COLD LEG TEMP		543.8157	DEGF
T1118	LOOP 4 COLD LEG TEMP		543.7468	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.3018	%
CP^N	03030 NORMALIZED CORE^POWER		.3043	OMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		913.0693	PSIG
P1025	STM GEN OUTLET PRES LP 2		913.0549	PSIG
P1028	STM GEN OUTLET PRES LP 3		913.0847	PSIG
P1031	STM GEN OUTLET PRES LP 4		913.0603	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.0596	PC
L1207	STM GEN 2 NARROW LEVEL		43.8676	PC
L1210	STM GEN 3 NARROW LEVEL		44.2603	PC
L1213	STM GEN 4 NARROW LEVEL		43.9959	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	534.1648	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	534.0374	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	533.6316	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	534.0732	F
RCBORON	11070 BORON CONC	(001)	752.0957	PPM
RCBORON	11070 BORON CONC	(002)	752.0952	PPM
RCBORON	11070 BORON CONC	(003)	752.0984	PPM

ISD>

06/26/90 17:49:34 TASK # 07000140 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		81.4094	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		81.4023	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		81.4023	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		100.1391	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		100.1360	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		100.1360	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		138.6871	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		138.6849	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		179.3709	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		179.3732	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		225.0314	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		225.3663	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		278.0808	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		278.0618	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		321.6428	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		321.6340	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		225.8714	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		226.8462	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		226.2811	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		64.6911	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		103.8474	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		101.8093	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		147.0022	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		147.0543	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		184.1420	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		183.7173	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		238.5355	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		238.5678	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		287.0149	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		287.0142	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	185	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	184	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	320.40	298.58	7.31	*
RC LOOP DELTA T	1	F	20.12	19.49	3.20	
T AVG TRANSM. TABLE	1	F	553.86	555.14	-.23	
T REFERENCE	1	F	553.96	555.14	-.21	
SG DOME PRESSURES	1	PSIA	928.69	926.46	.24	
MS LOOP FLOWS	1	#/S	1123.18	1119.63	.32	
FW LOOP FLOWS	1	#/S	1123.98	1119.63	.39	
HPT INLET STM FLOW	1	#/S	1057.00	1060.06	-.29	
LPT INLET STM FLOW	1	#/S	268.51	276.03	-2.73	
LPT INLET STM FLOW	2	#/S	268.46	276.03	-2.74	
LPT INLET STM FLOW	3	#/S	268.51	276.03	-2.73	
HPT EXTR. FLOW TO HTR 6A	1	#/S	28.12	23.47	19.82	*
HPT EXTR. FLOW TO HTR 5A	1	#/S	31.90	27.09	17.76	*
HPT EXTR. FLOW TO HTR 4A	1	#/S	25.94	23.72	9.38	
LPT EXTR. FLOW TO HTR 3A	1	#/S	25.31	22.31	13.43	*
LPT EXTR. FLOW TO HTR 2A	1	#/S	24.22	22.37	8.25	
LPT EXTR. FLOW TO HTR 1A	1	#/S	8.74	6.76	29.33	*
H6A TUBE OUTLET TEMP	1	F	321.60	320.99	.19	
H5A TUBE OUTLET TEMP	1	F	278.03	279.49	-.52	
MFP TUBE OUTLET TEMP	1	F	226.75	235.27	-3.62	
H4A TUBE OUTLET TEMP	1	F	225.20	236.31	-4.70	
H3A TUBE OUTLET TEMP	1	F	179.27	183.54	-2.32	
H2A TUBE OUTLET TEMP	1	F	138.61	139.98	-.98	
H1A TUBE OUTLET TEMP	1	F	100.07	94.76	5.61	
DCA TUBE OUTLET TEMP	1	F	81.37	76.95	5.75	
HWP SUCTION TEMPERATURE	1	F	79.94	69.34	15.28	*
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	79.59	69.34	14.77	*
CND VAC	1	INHGA	28.78	29.35	-1.95	

DATA VALUE BASED ON 30.44 % CORE POWER

06/26/90 17:35:20 TASK # 1C000128 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.5183	DEGF
T1004	PZR LIQUID TEMP		652.6394	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		643.1641	DEG F
L1091	PRESSURIZER WATER LEVEL		28.6240	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2403	%
P1036	PRESSURIZER PRESSURE		2240.0557	PSIG
T1101	LOOP 1 AVG TEMP		553.8599	DEGF
T1102	LOOP 2 AVG TEMP		553.8975	DEGF
T1103	LOOP 3 AVG TEMP		553.9097	DEGF
T1104	LOOP 4 AVG TEMP		553.8667	DEGF
T1111	LOOP 1 HOT LEG TEMP		563.9192	DEGF
T1112	LOOP 2 HOT LEG TEMP		563.9194	DEGF
T1113	LOOP 3 HOT LEG TEMP		563.9412	DEGF
T1114	LOOP 4 HOT LEG TEMP		563.9194	DEGF
T1115	LOOP 1 COLD LEG TEMP		543.8000	DEGF
T1116	LOOP 2 COLD LEG TEMP		543.8723	DEGF
T1117	LOOP 3 COLD LEG TEMP		543.8777	DEGF
T1118	LOOP 4 COLD LEG TEMP		543.8125	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.3020	%
C[illegible]N	03030 NORMALIZED CORE^POWER		.3044	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		913.6248	PSIG
P1025	STM GEN OUTLET PRES LP 2		913.6152	PSIG
P1028	STM GEN OUTLET PRES LP 3		913.6509	PSIG
P1031	STM GEN OUTLET PRES LP 4		913.6221	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.1037	PC
L1207	STM GEN 2 NARROW LEVEL		44.1445	PC
L1210	STM GEN 3 NARROW LEVEL		44.1592	PC
L1213	STM GEN 4 NARROW LEVEL		44.1019	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	532.6394	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	533.8171	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	533.9167	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	534.3181	F
RCBORON	11070 BORON CONC	(001)	752.1001	PPM
RCBORON	11070 BORON CONC	(002)	752.1003	PPM
RCBORON	11070 BORON CONC	(003)	752.1003	PPM

ISD>

06/26/90 17:34:19 TASK # 1C000128 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	79.5860	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	79.5860	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		79.9368	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		81.4563	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		81.4101	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		81.4101	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		100.0724	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		100.0615	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		100.0615	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		138.5649	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		138.5722	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		179.2102	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		179.2098	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		225.0958	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		225.4644	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		278.0247	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		278.0278	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		321.5769	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		321.6030	F

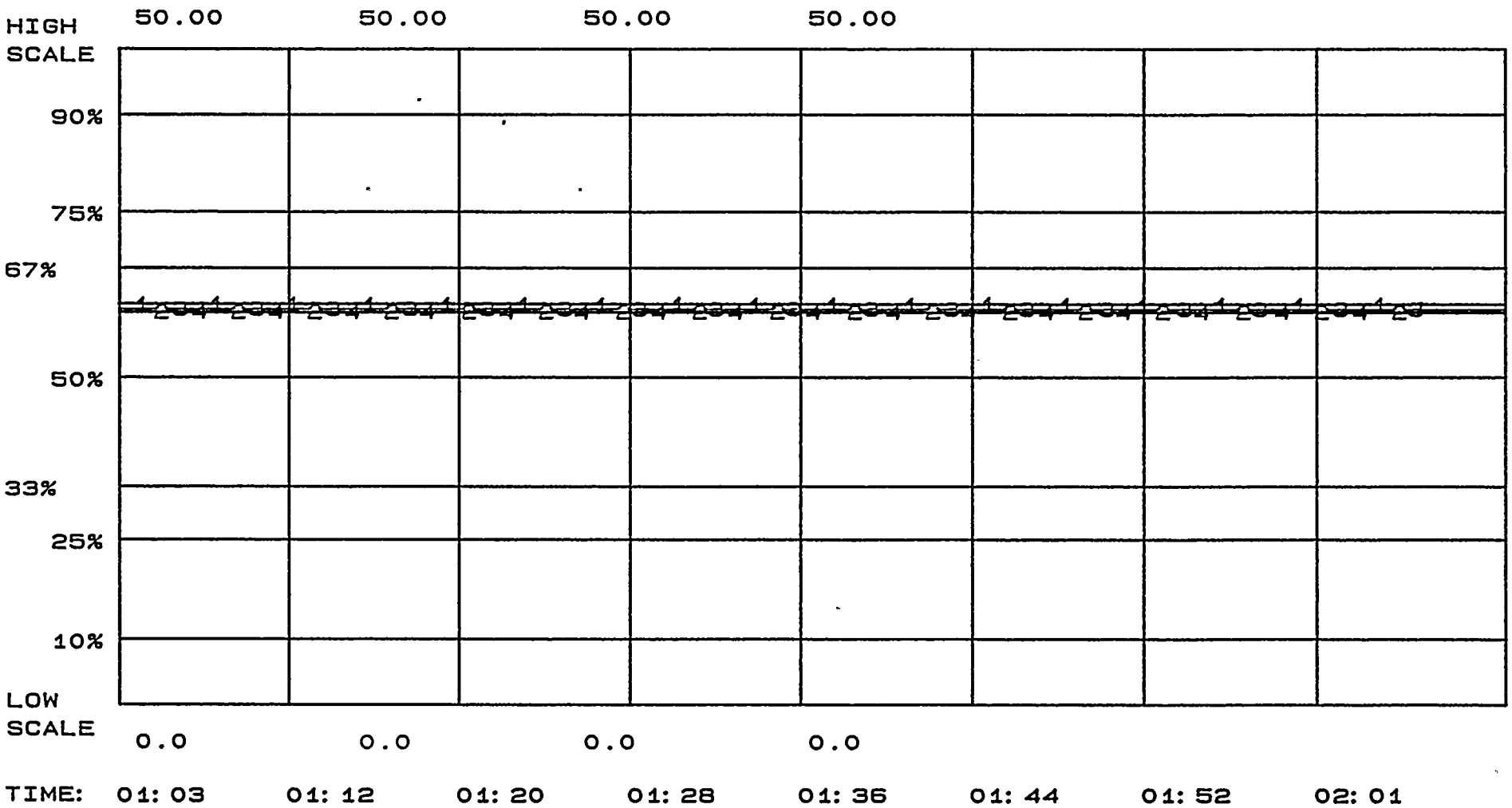
ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		226.1409	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		227.1159	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		226.5505	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		64.6911	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6000	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6000	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		104.7755	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		103.9988	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		147.1317	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		147.1729	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		184.2151	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		183.1913	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		238.8356	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		238.8386	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		287.2698	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		287.2939	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	185	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	184	

ISD>

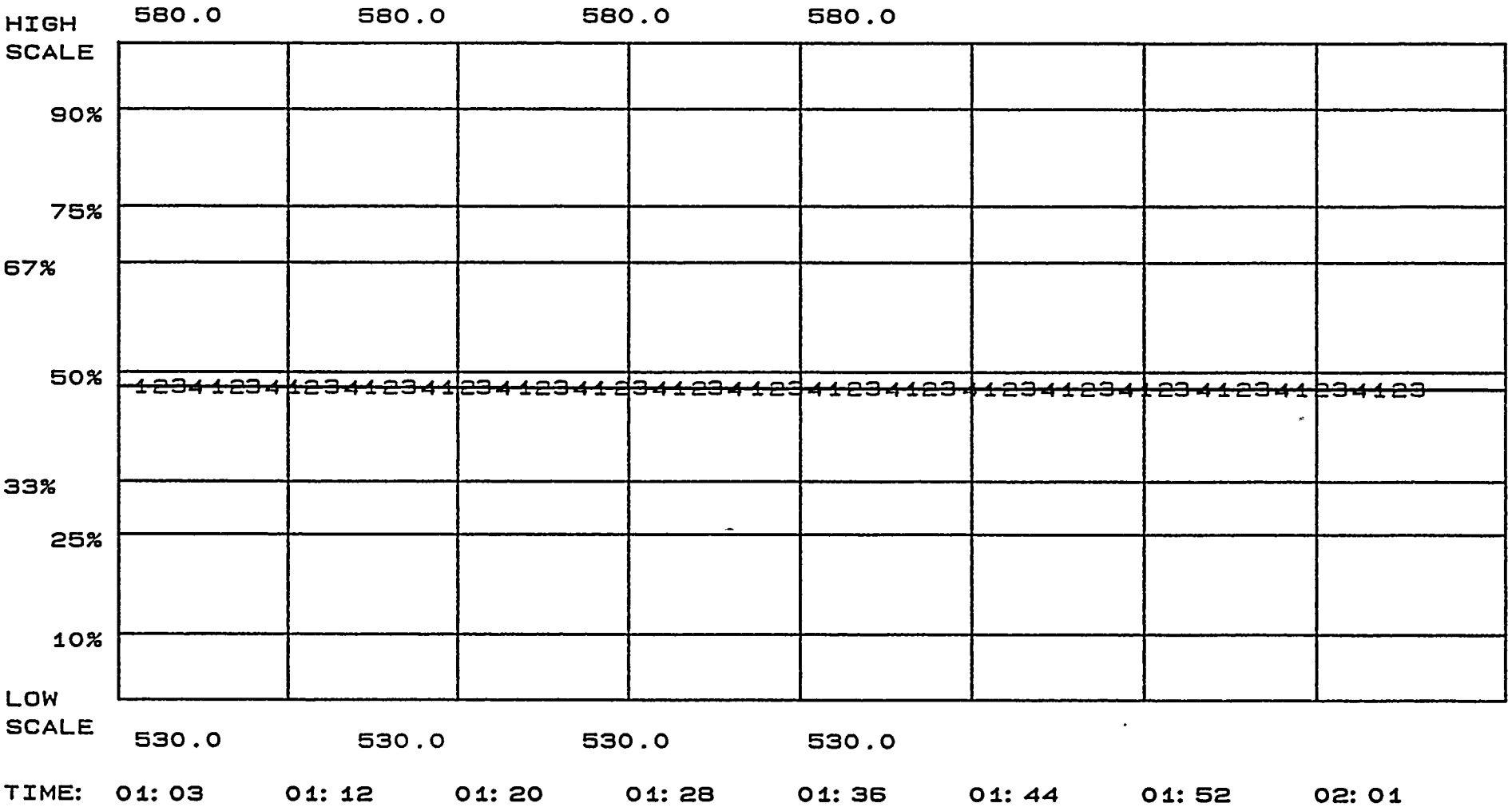
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. N41	PC	TIME
2	N1013	POWER RANGE N.I. N42	PC	START 01: 03: 51
3	N1014	POWER RANGE N.I. N43	PC	STOP 02: 10: 02
4	N1015	POWER RANGE N.I. N44	PC	
5				
6				



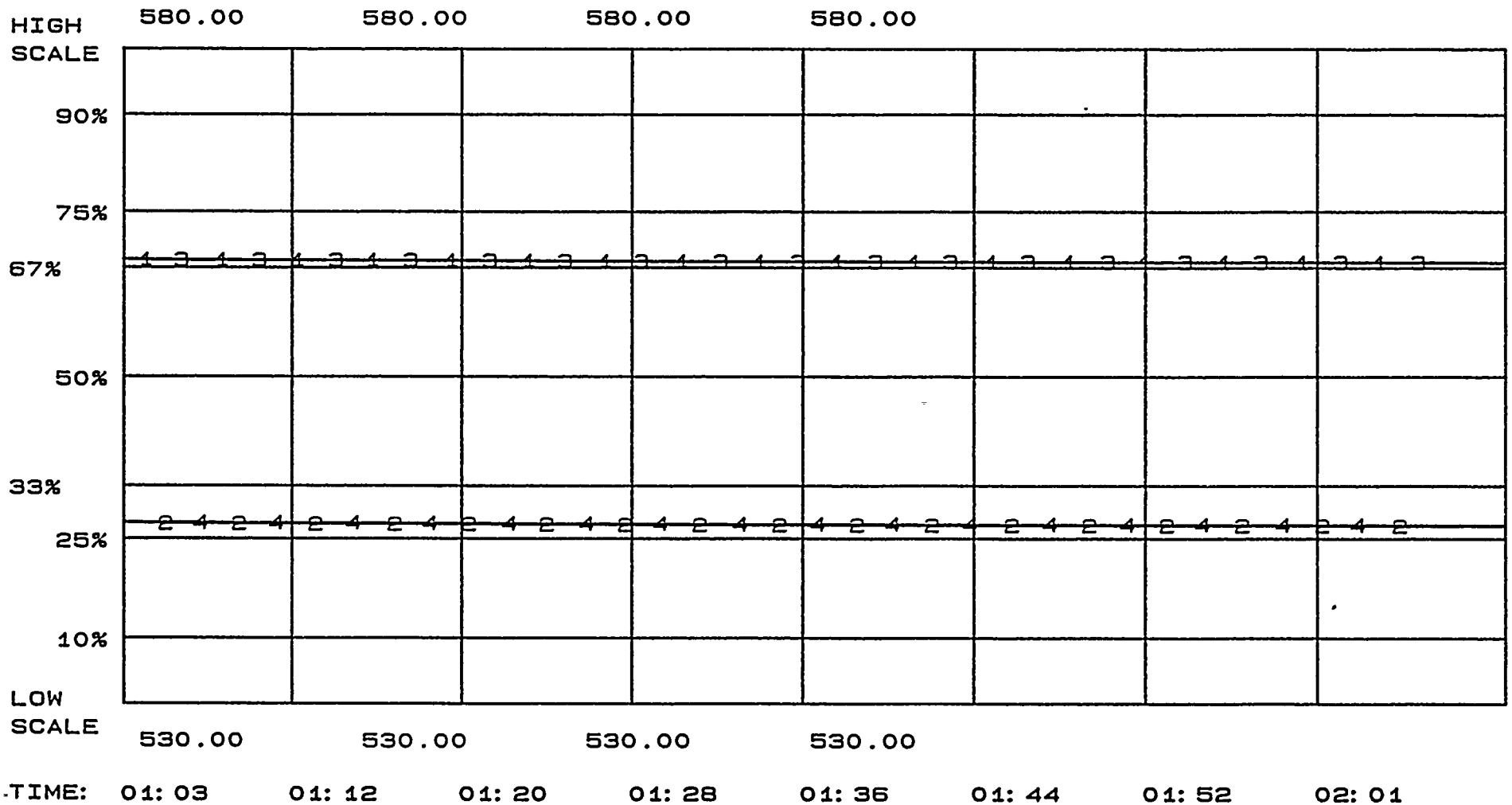
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	TAVG LOOP 1	DEG_F	TIME
2	T1102	TAVG LOOP 2	DEG_F	START 01: 03: 51
3	T1103	TAVG LOOP 3	DEG_F	STOP 02: 10: 02
4	T1104	TAVG LOOP 4	DEG_F	
5				
6				



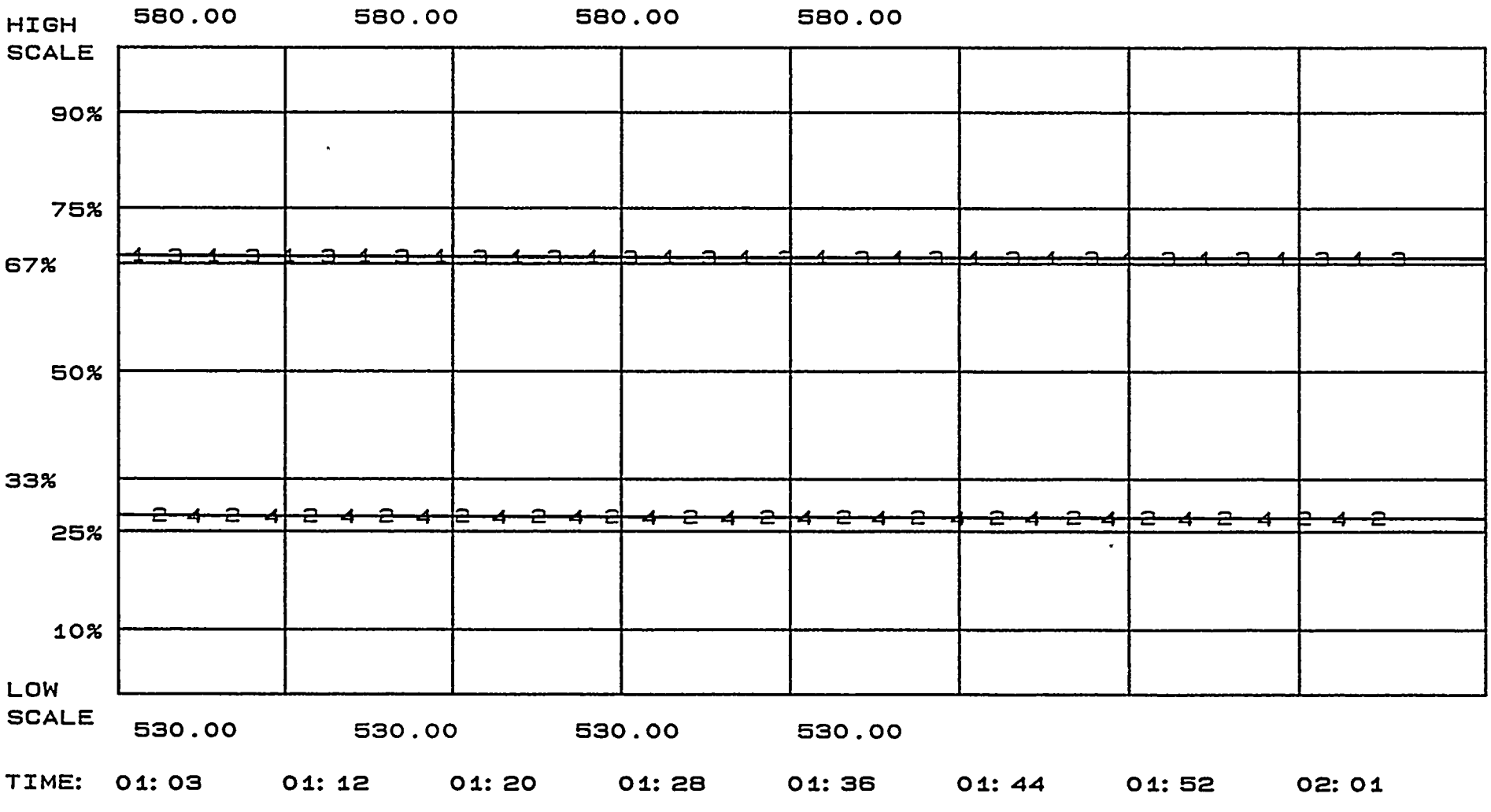
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	THOT LOOP 1	DEG_F	TIME
2	T1115	TCOLD LOOP 1	DEG_F	START 01: 03: 51
3	T1112	THOT LOOP 2	DEG_F	STOP 02: 10: 02
4	T1116	TCOLD LOOP 2	DEG_F	
5				
6				



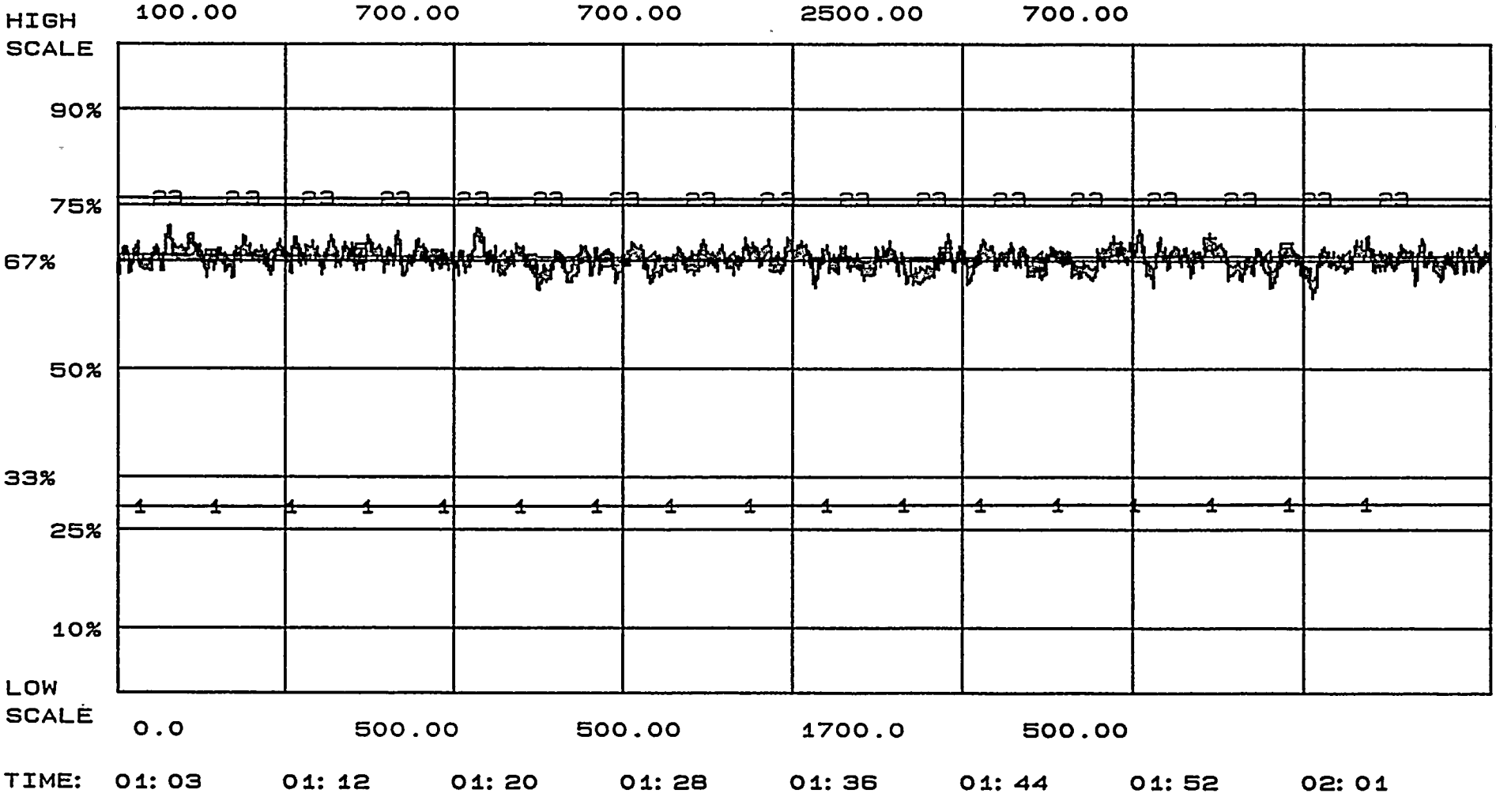
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	THOT LOOP 3	DEG_F	TIME
2	T1117	TCOLD LOOP 3	DEG_F	START 01: 03: 51
3	T1114	THOT LOOP 4	DEG_F	STOP 02: 10: 02
4	T1118	TCOLD LOOP 4	DEG_F	
5				
6				



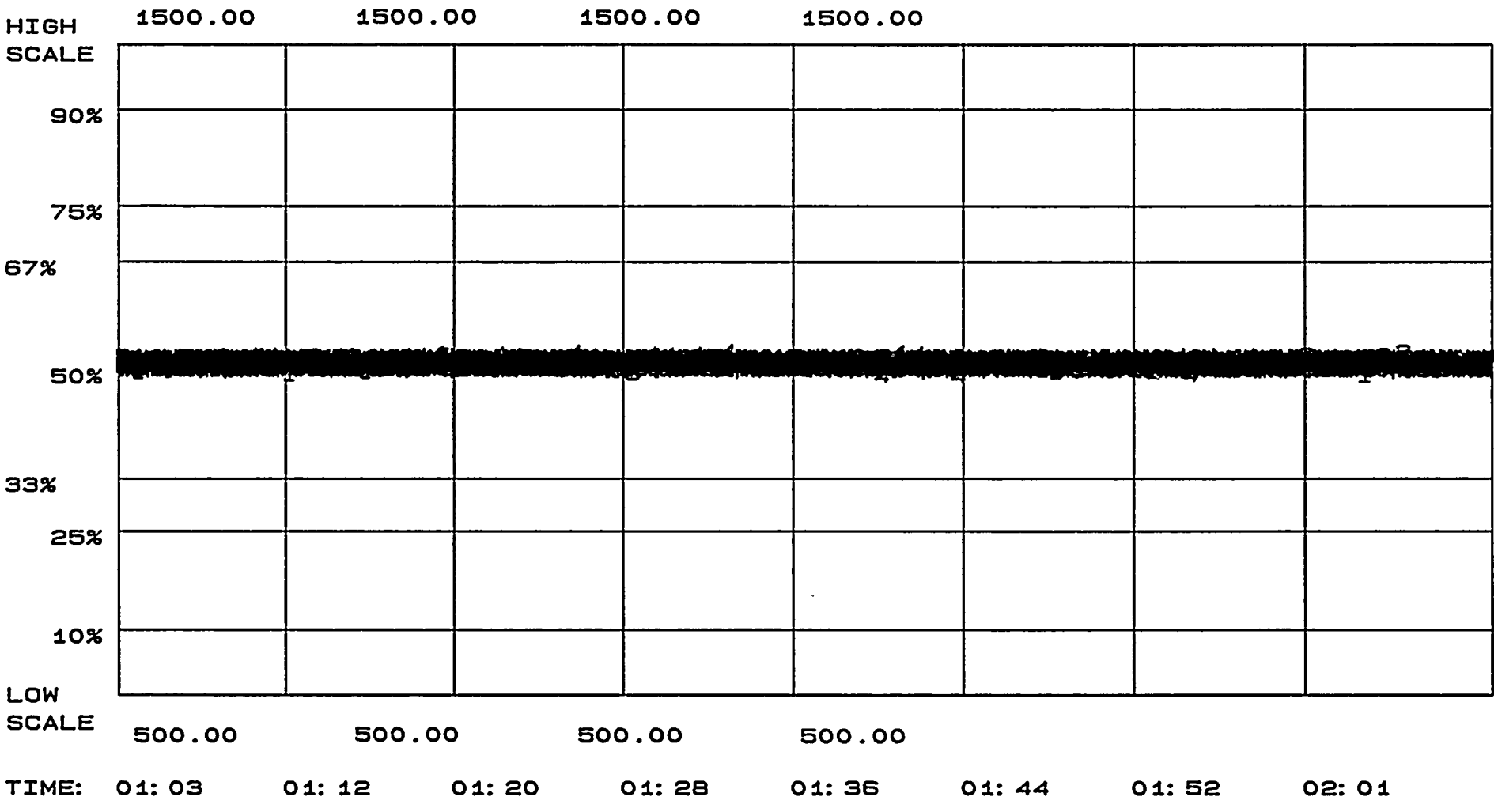
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMP.	DEG_F	START 01: 03: 51
3	T1005	PRESSURIZER STEAM TEMP.	DEG_F	STOP 02: 10: 02
4	P1036	PRESSURIZER PRESSURE	PSIG	
5	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	
6				



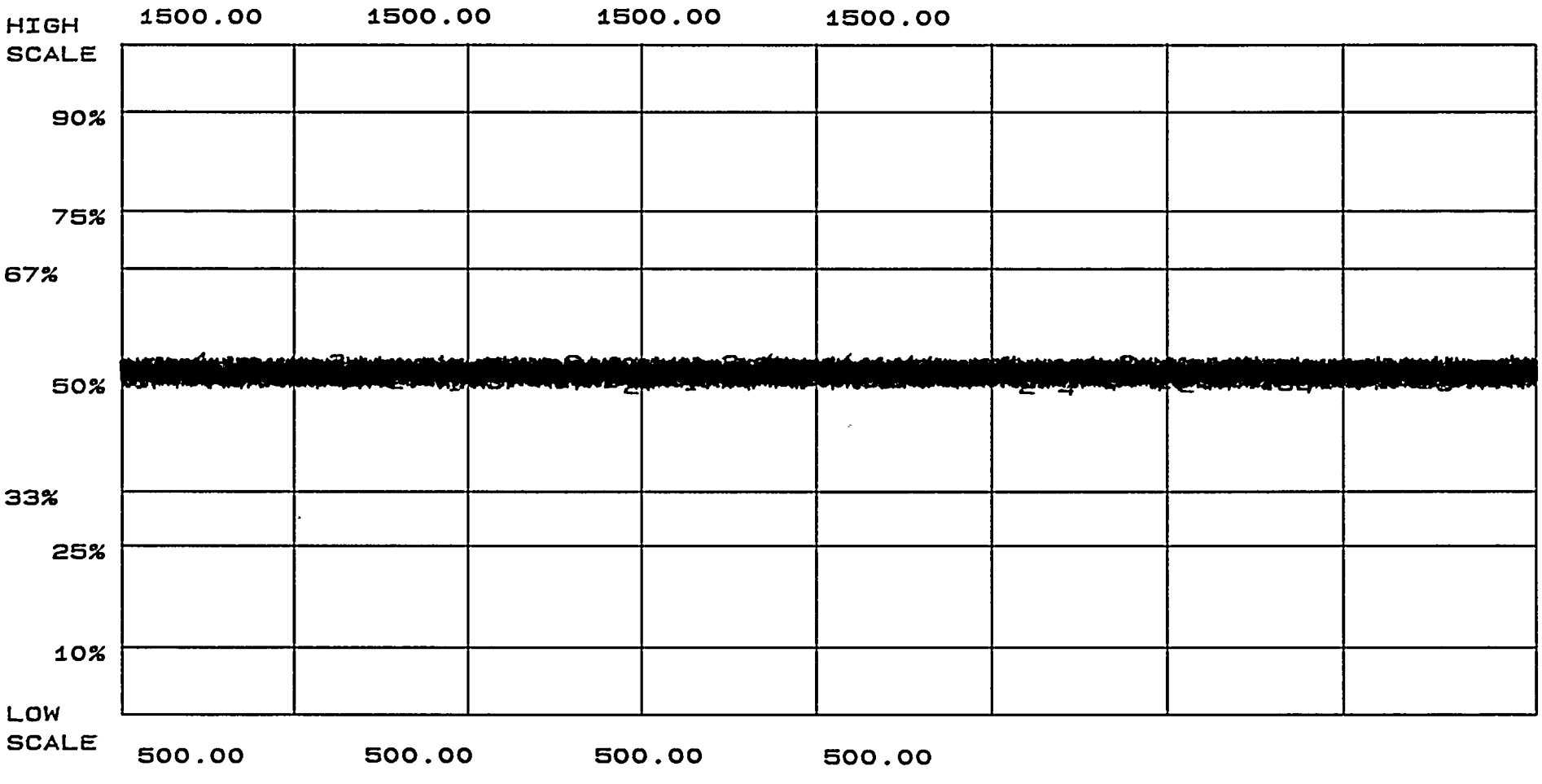
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 01: 03: 51
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 02: 10: 02
4	F1054	STEAM FLOW LOOP 4	KBH	
5				
6				



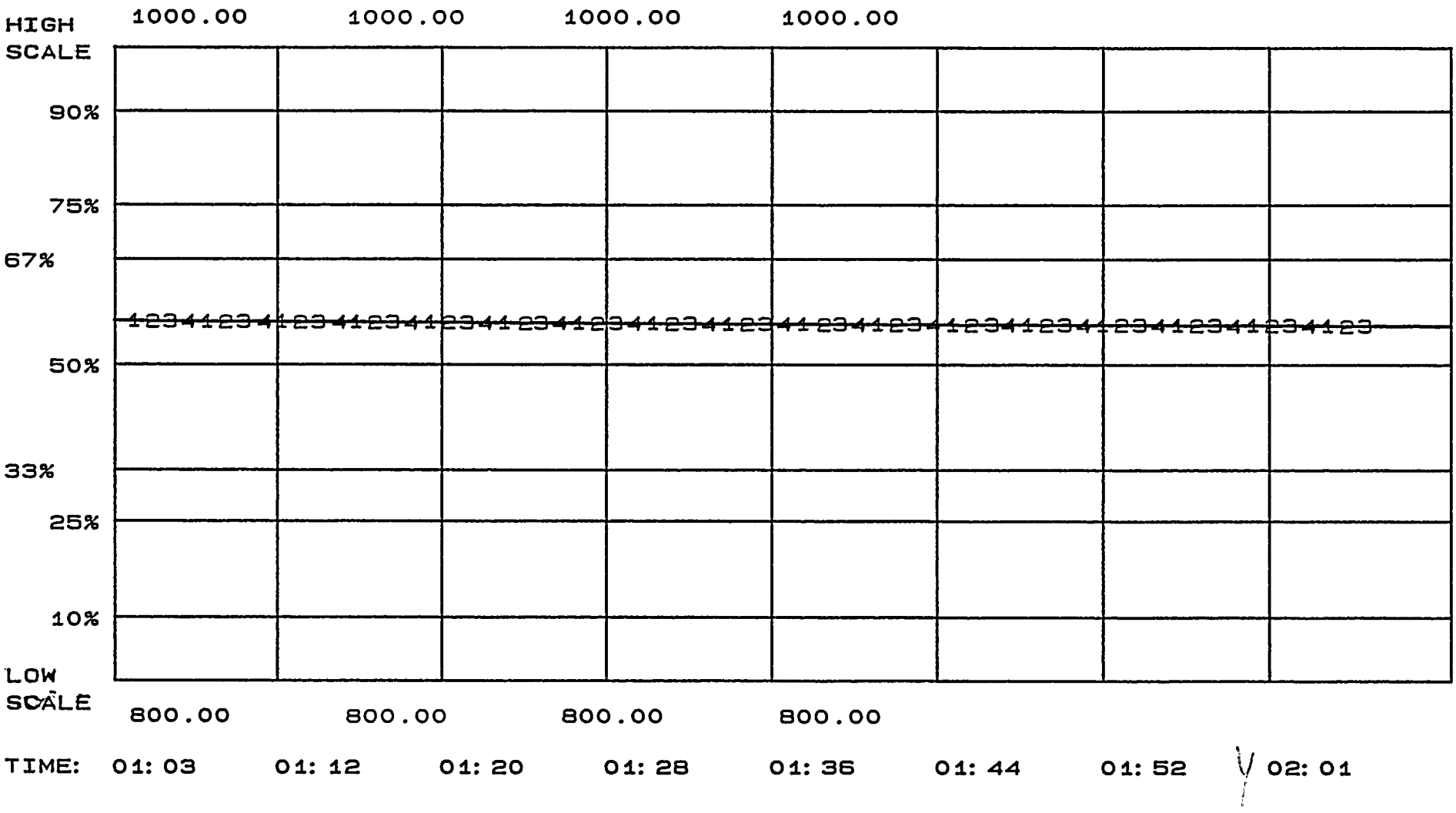
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 01: 03: 51
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 02: 10: 02
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5				
6				



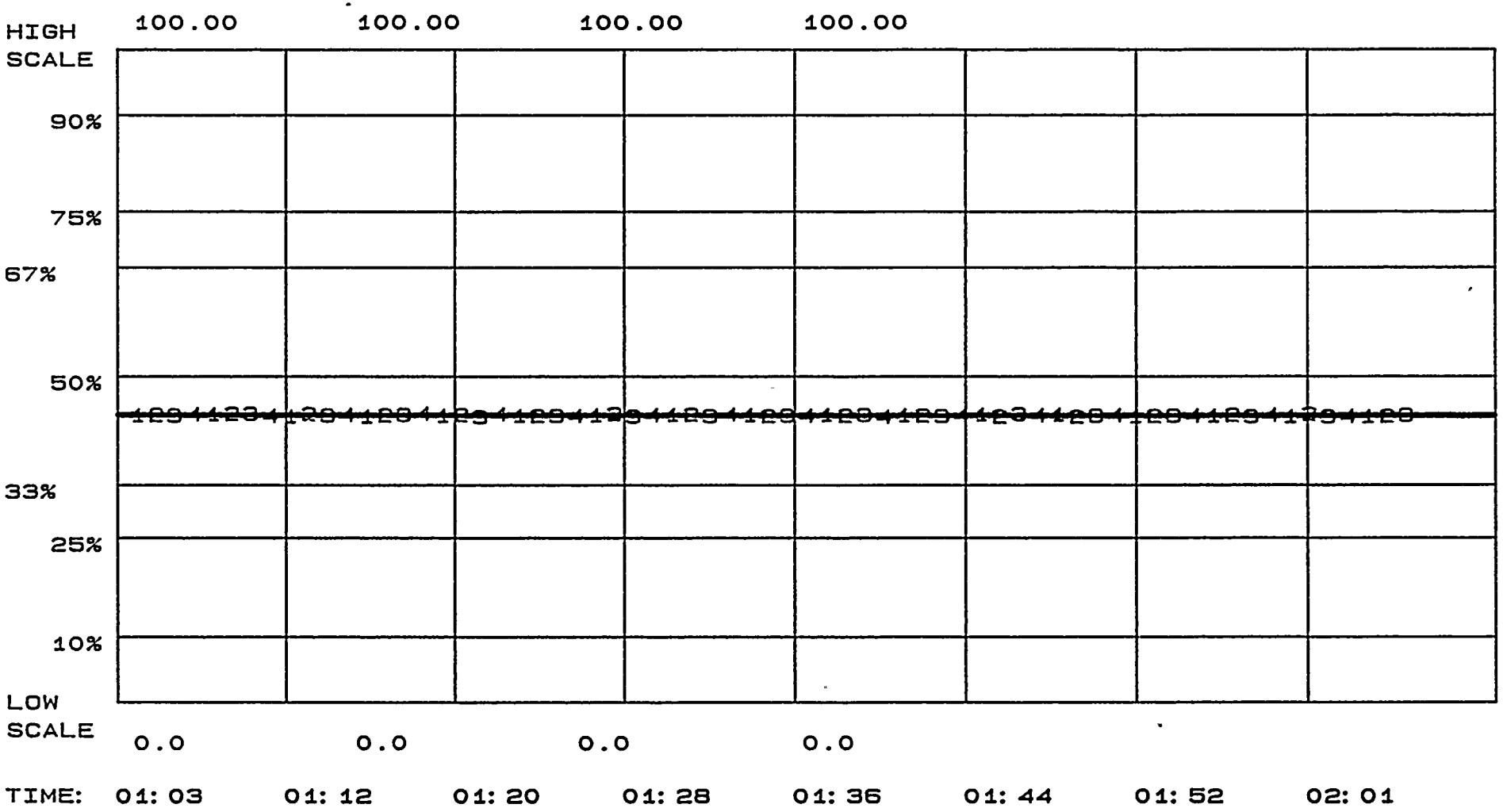
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 01: 03: 51
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 02: 10: 02
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



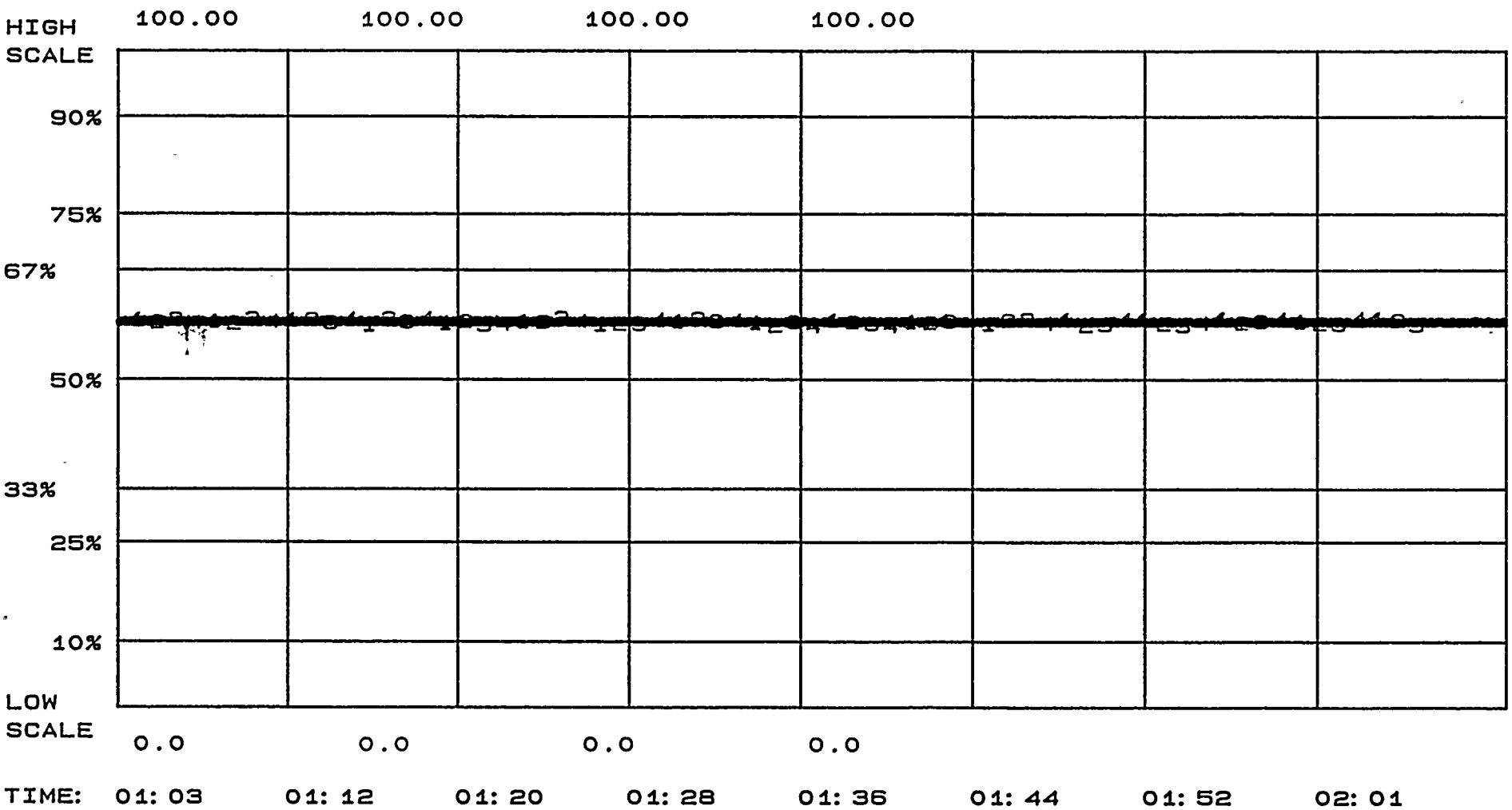
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GEN #1 NARROW RANGE LEVEL	PC	TIME
2	L1207	STEAM GEN #2 NARROW RANGE LEVEL	PC	START 01: 03: 51
3	L1210	STEAM GEN #3 NARROW RANGE LEVEL	PC	STOP 02: 10: 02
4	L1213	STEAM GEN #4 NARROW RANGE LEVEL	PC	
5				
6				



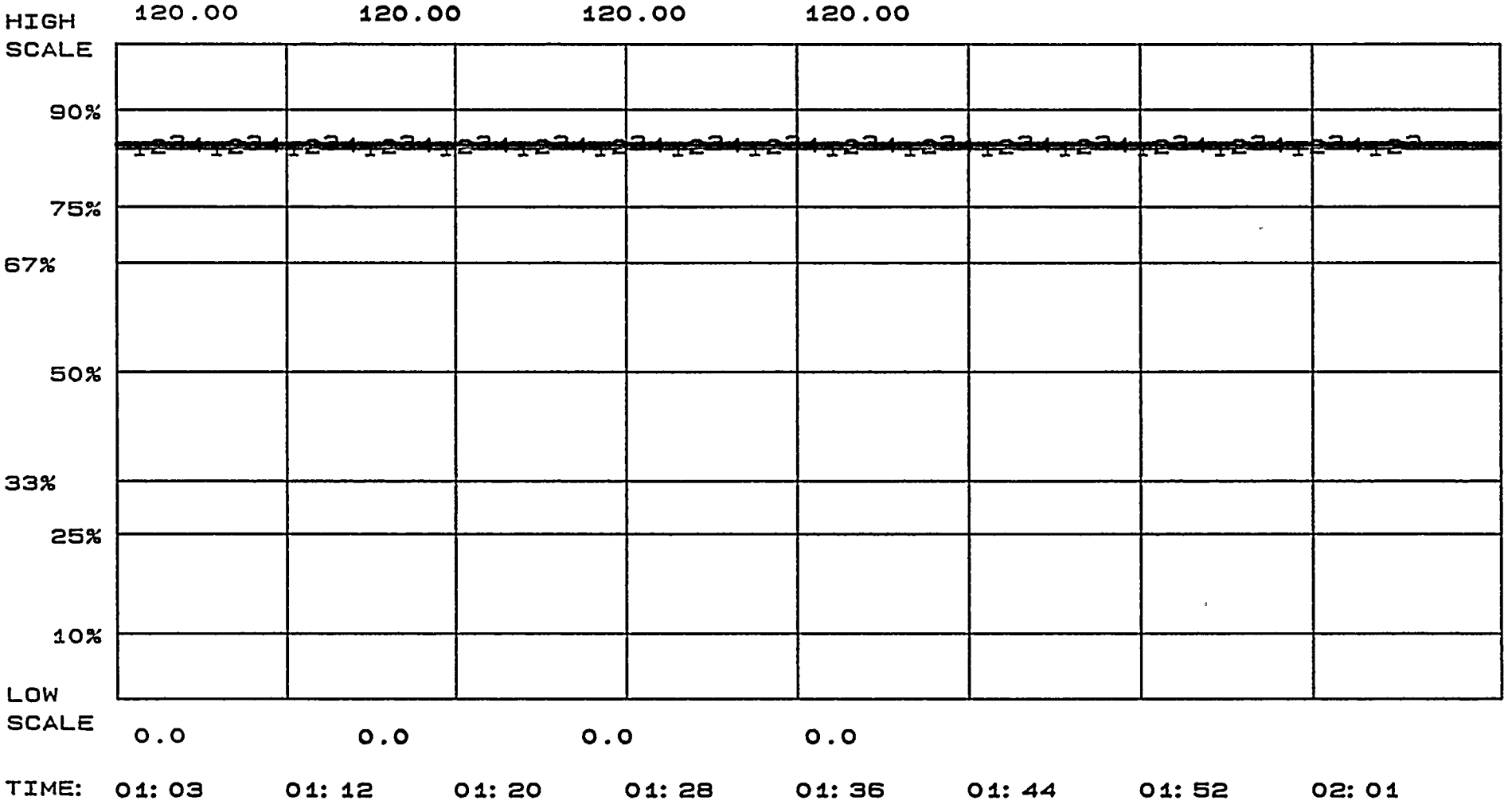
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN. #1 LEVEL W/R	PC	TIME
2	L1201	STEAM GEN. #2 LEVEL W/R	PC	START 01: 03: 51
3	L1202	STEAM GEN. #3 LEVEL W/R	PC	STOP 02: 10: 02
4	L1203	STEAM GEN. #4 LEVEL W/R	PC	
5				
6				



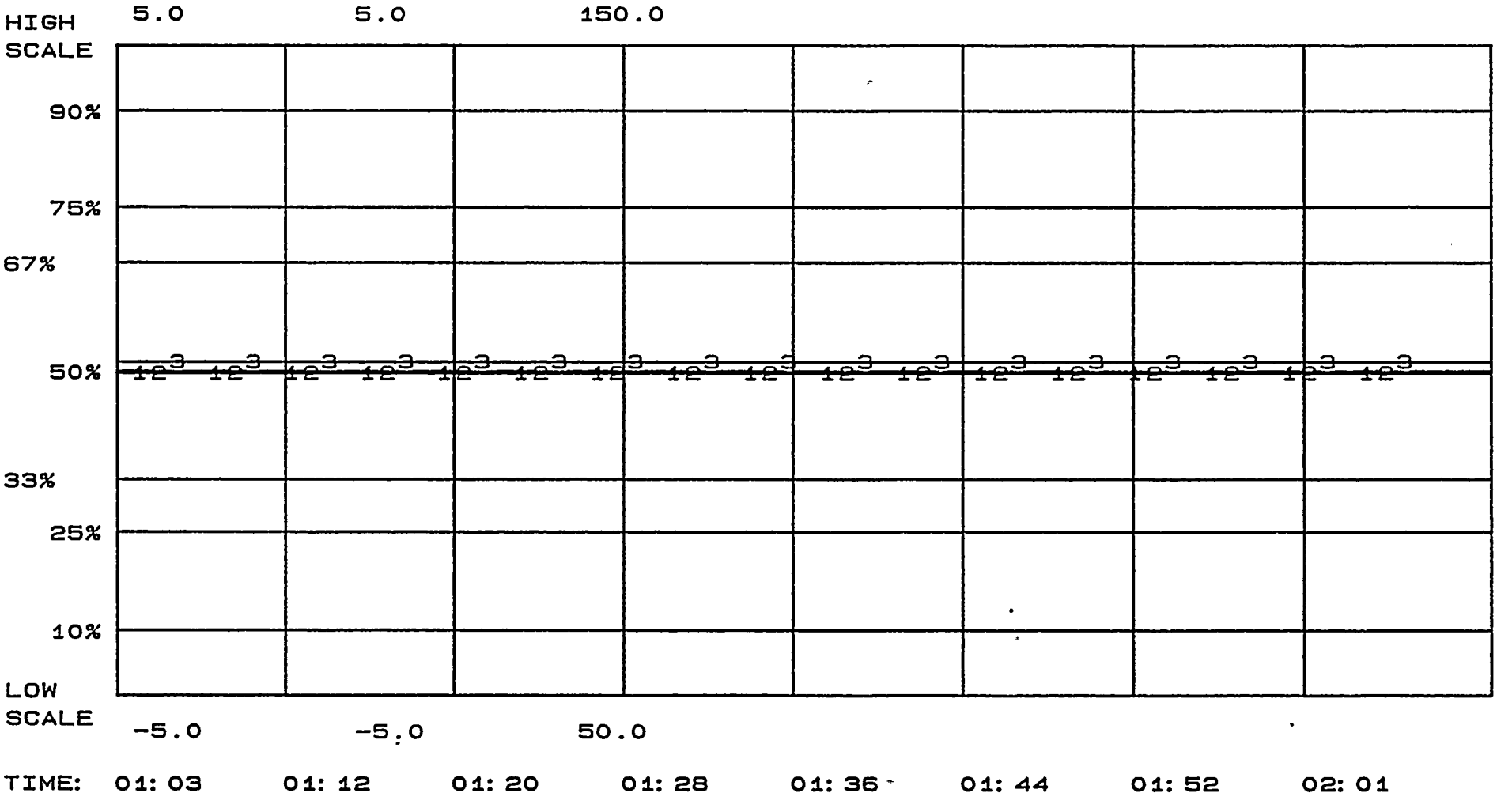
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1089	RCS FLOW LOOP 1	PC	TIME
2	F1092	RCS FLOW LOOP 2	PC	START 01: 03: 51
3	F1095	RCS FLOW LOOP 3	PC	STOP 02: 10: 02
4	F1098	RCS FLOW LOOP 4	PC	
5				
6				



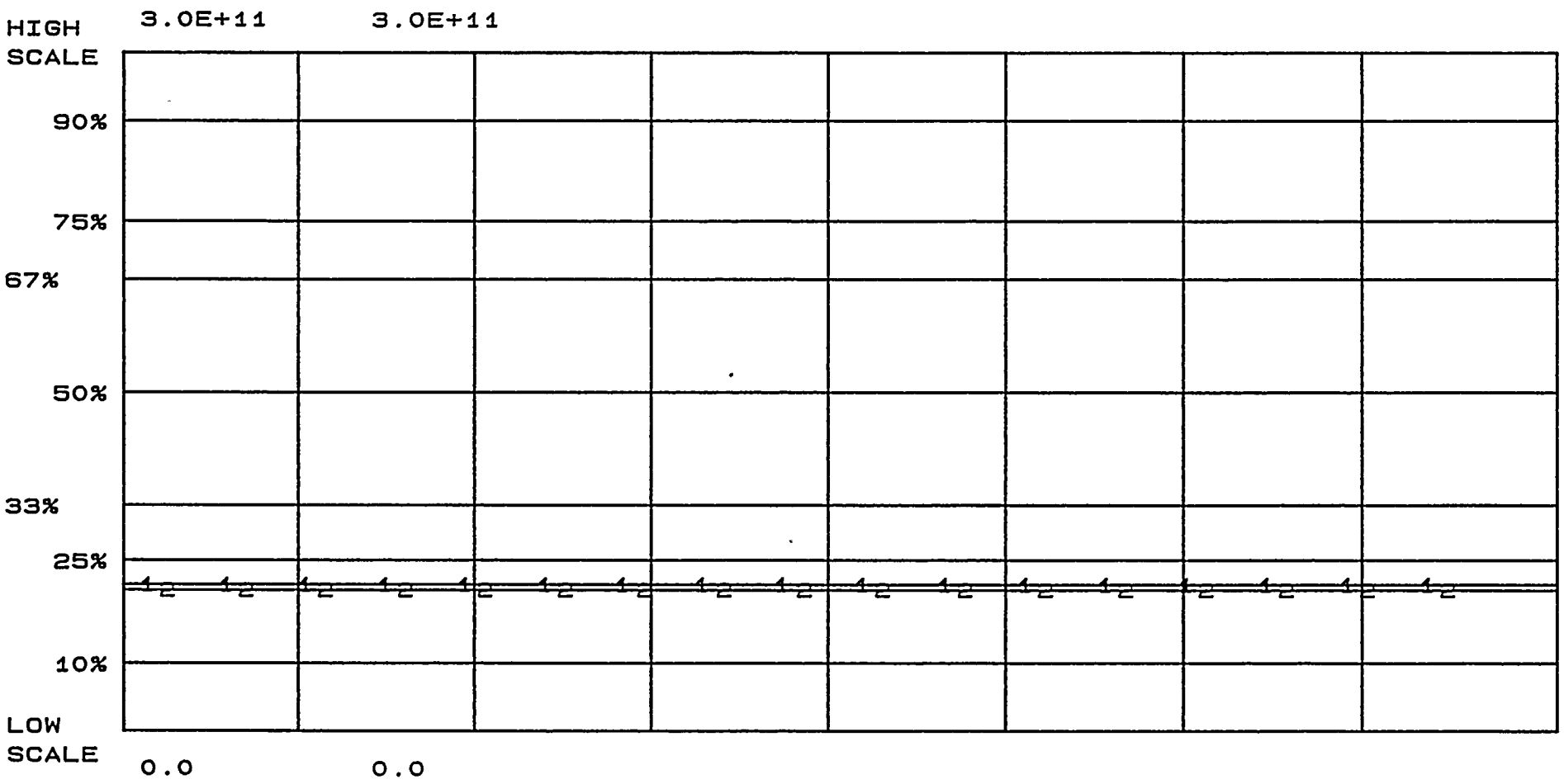
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 01: 03: 51
3	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	STOP 02: 10: 02
4				
5				
6				



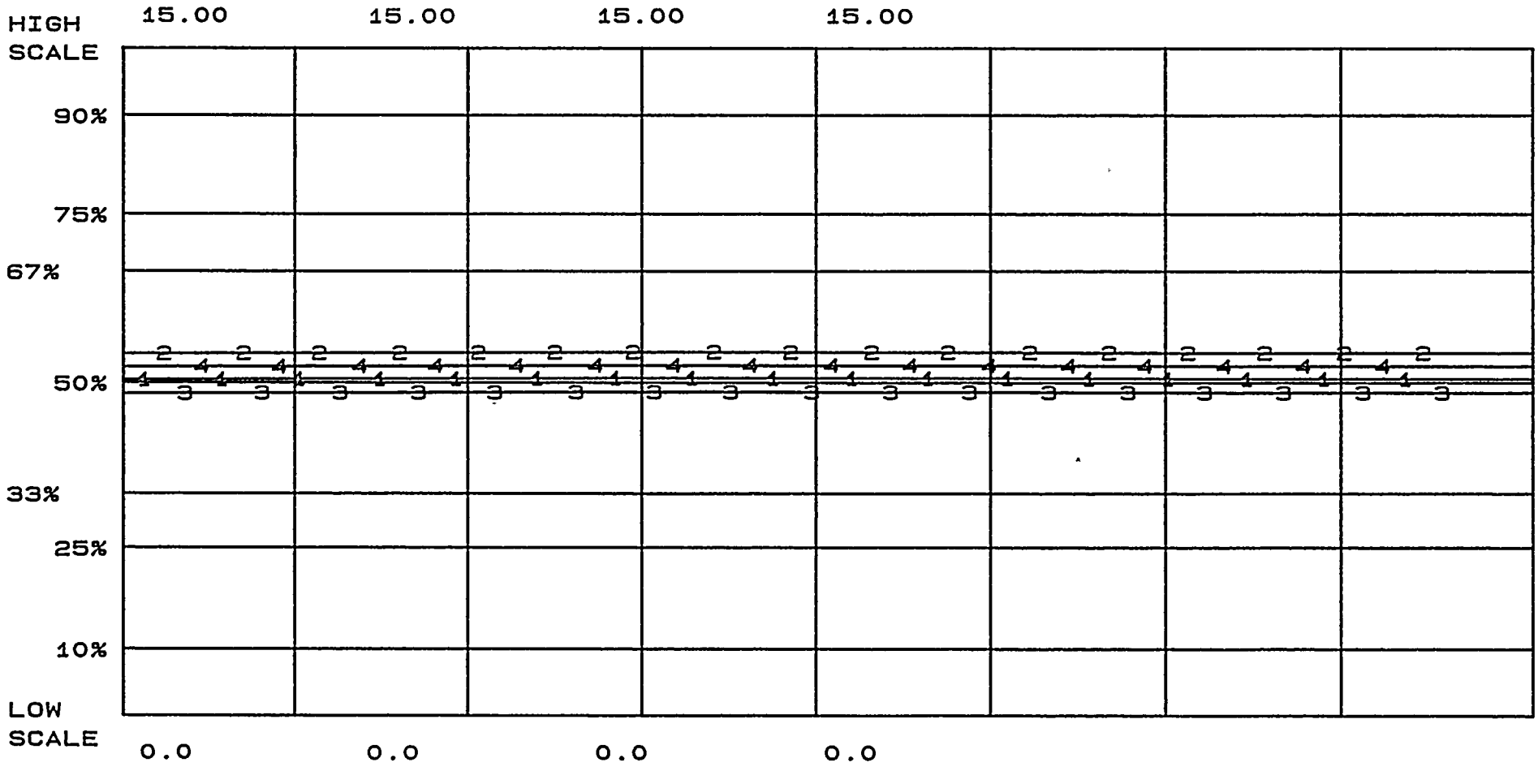
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU(1)	SOURCE RANGE N-31	CPS	TIME
2	NILDTOU(2)	SOURCE RANGE N-32	CPS	START 01:03:51
3				STOP 02:10:02
4				
5				
6				



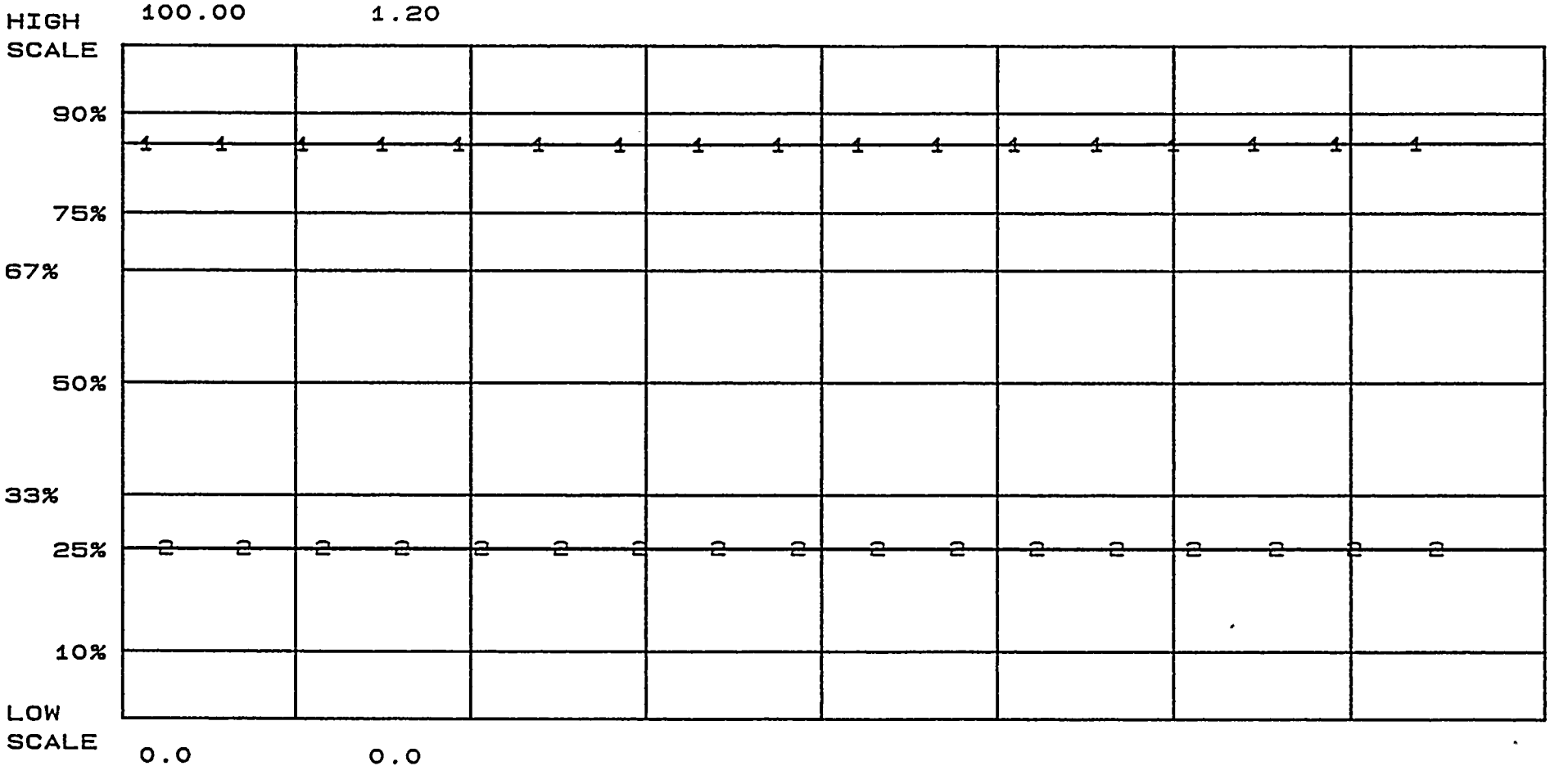
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	RCP SEAL FLOW LOOP 1	GPM	TIME
2	F1001	RCP SEAL FLOW LOOP 2	GPM	START 01: 03: 51
3	F1002	RCP SEAL FLOW LOOP 3	GPM	STOP 02: 10: 02
4	F1003	RCP SEAL FLOW LOOP 4	GPM	
5				
6				



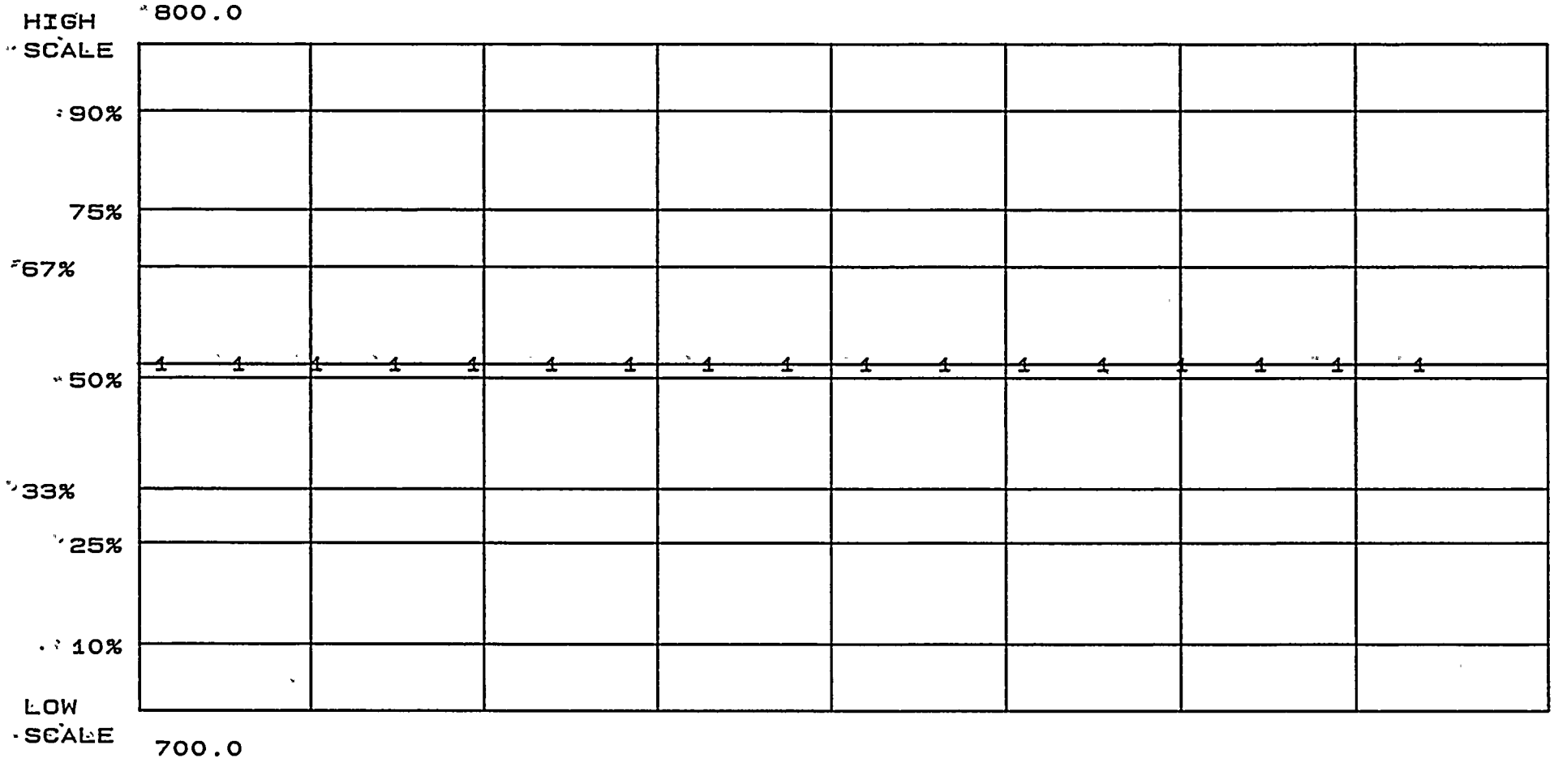
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RXTSC	SATURATION MARGIN	DEG_F	TIME
2	CRQN	CORE HEAT FLUX	PC	START 01: 03: 51
3				STOP 02: 10: 02
4				
5				
6				



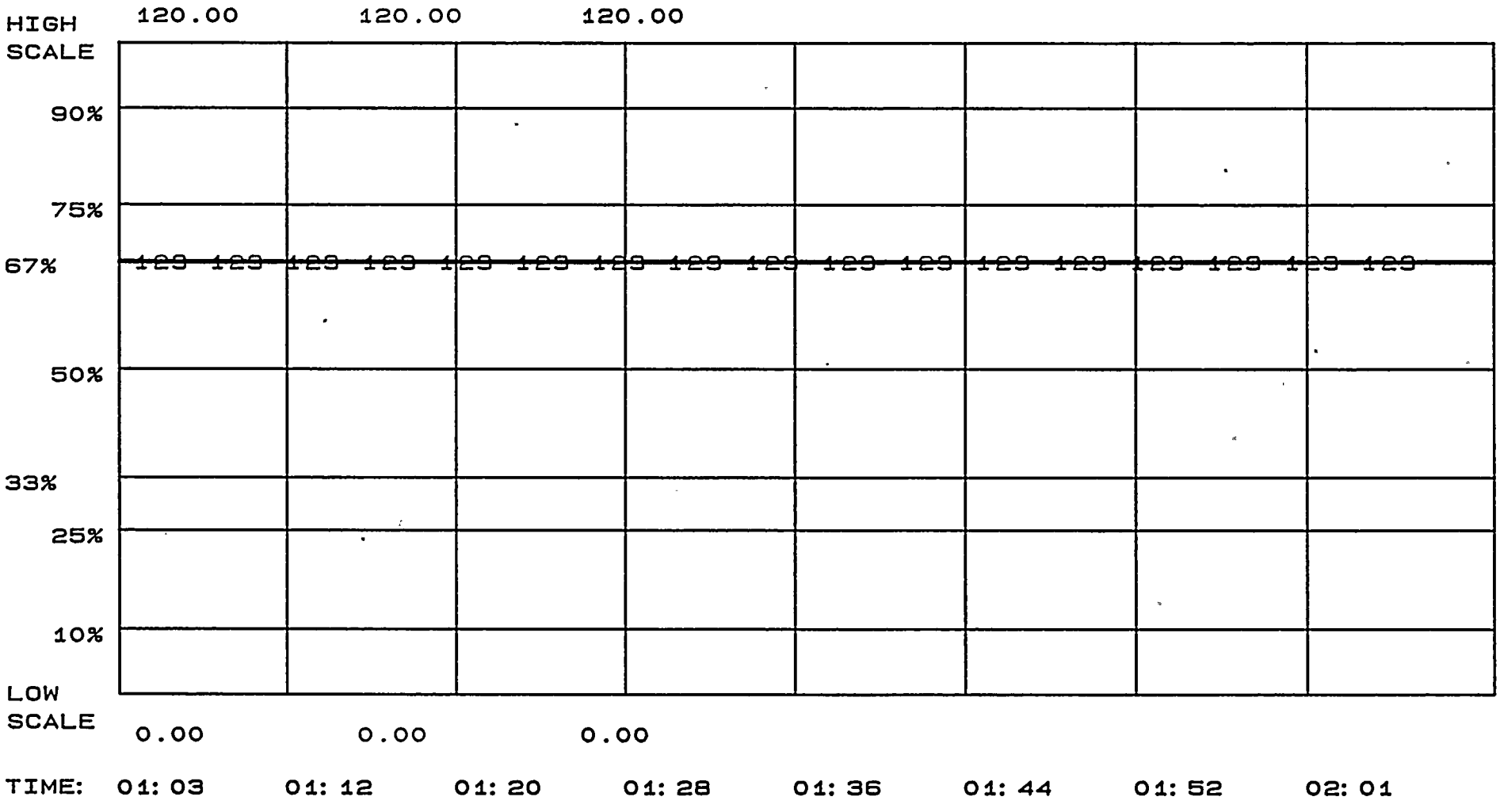
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCBORON (1)	RCS BORON CONCENTRATION	PPM	TIME
2				START 01: 03: 51
3				STOP 02: 10: 02
4				
5				
6				



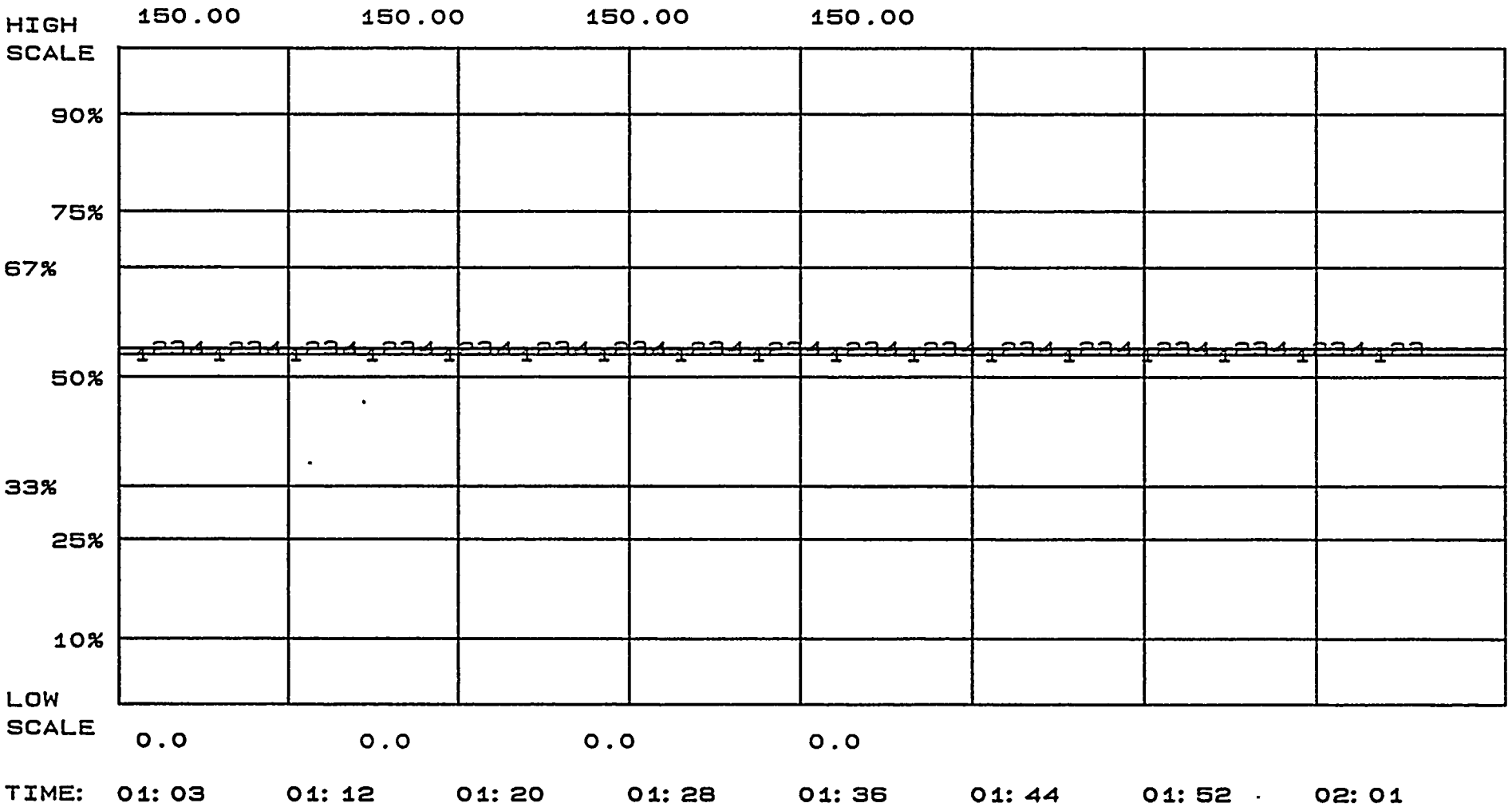
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN(1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN(2)	CONDENSER B TEMPERATURE	DEG_F	START 01:03:51
3	FWTCN(3)	CONDENSER C TEMPERATURE	DEG_F	STOP 02:10:02
4				
5				
6				



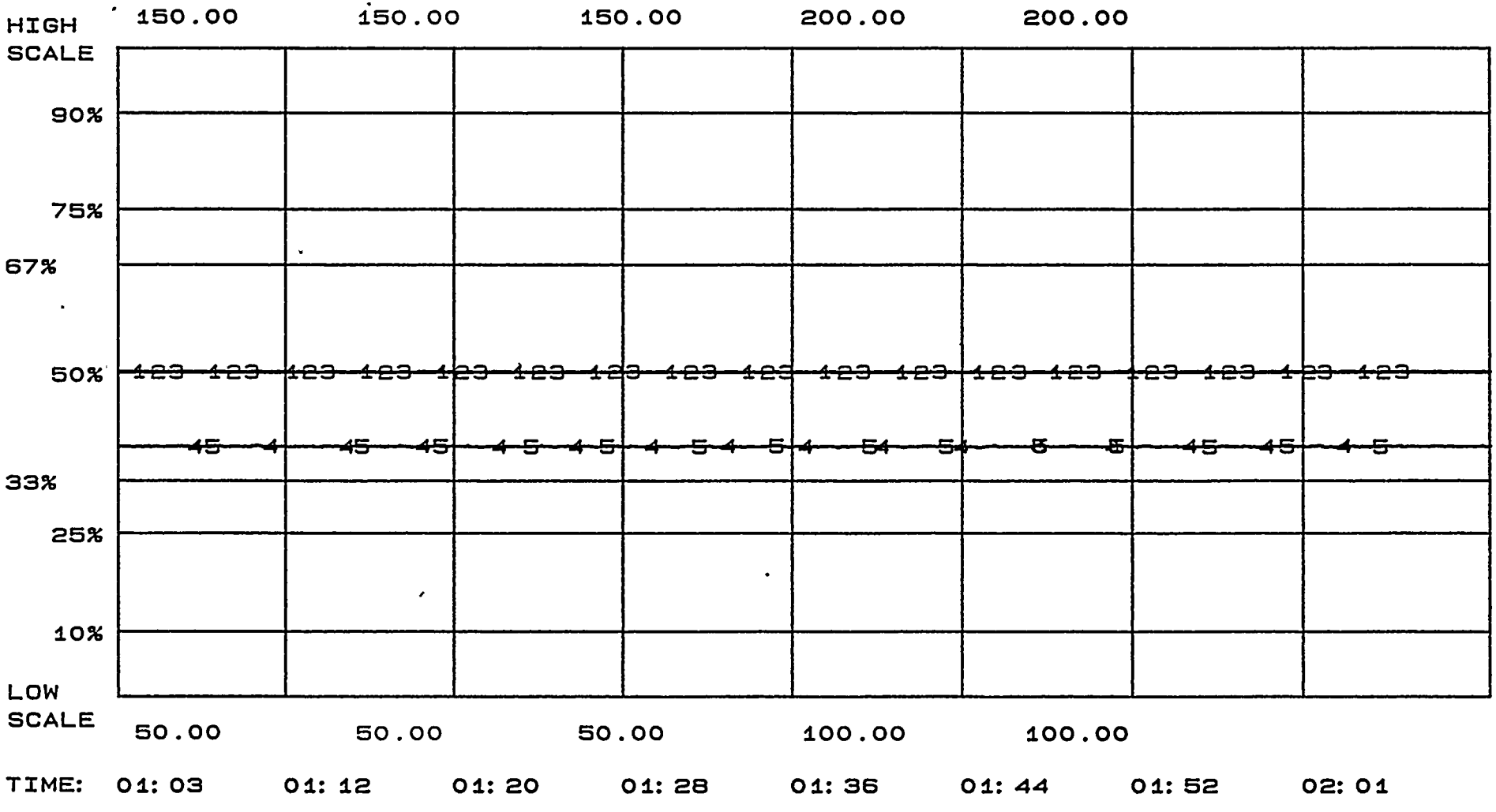
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP DISC. HDR. TEMP.	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 01: 03: 51
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 02: 10: 02
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



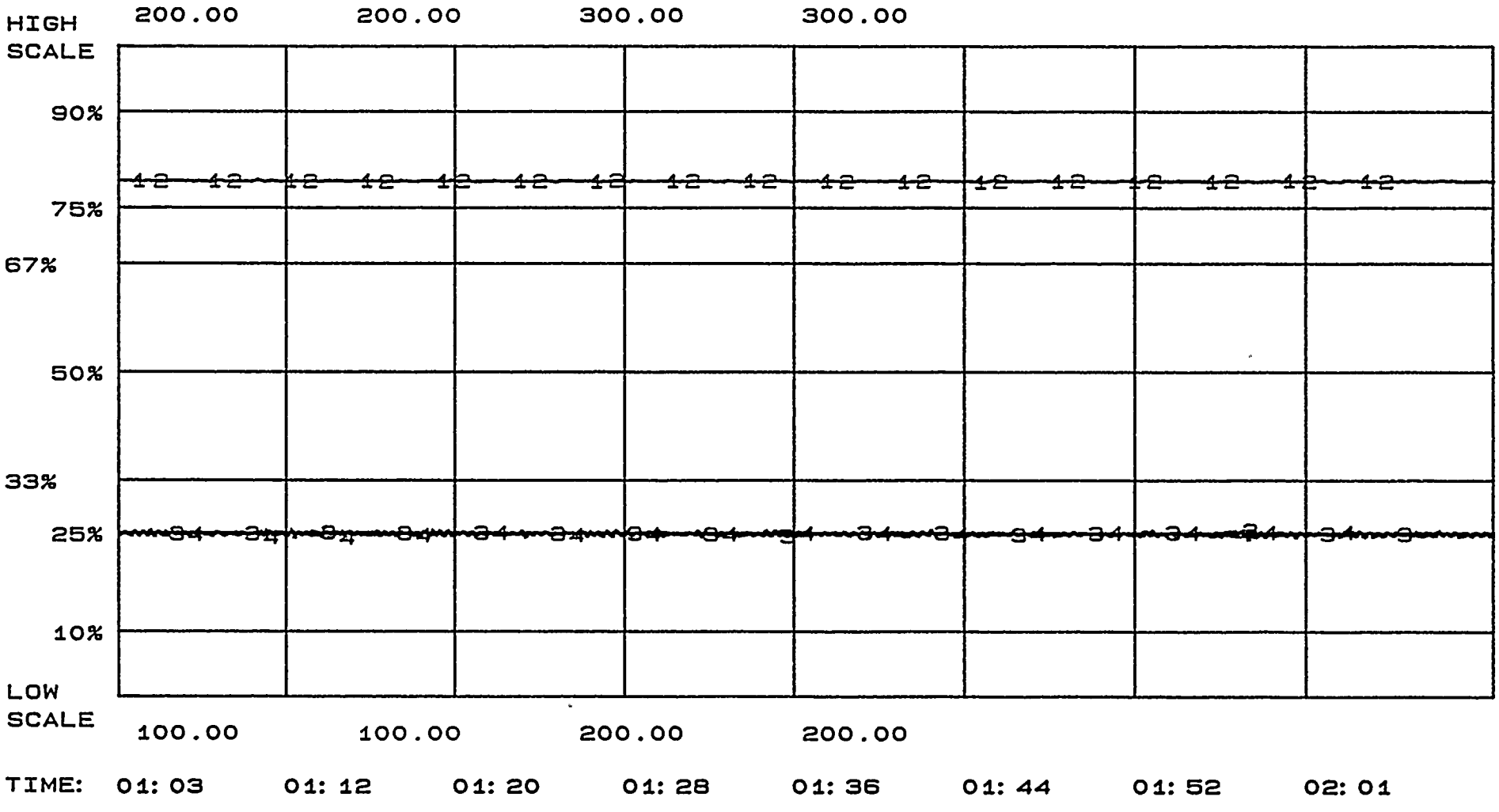
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH1A	HEATER 1A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH1B	HEATER 1B TUBE OUTLET TEMP.	DEG_F	START 01: 03: 51
3	FWTTOH1C	HEATER 1C TUBE OUTLET TEMP.	DEG_F	STOP 02: 10: 02
4	FWTTOH2A	HEATER 2A TUBE OUTLET TEMP.	DEG_F	
5	FWTTOH2B	HEATER 2B TUBE OUTLET TEMP.	DEG_F	
6				



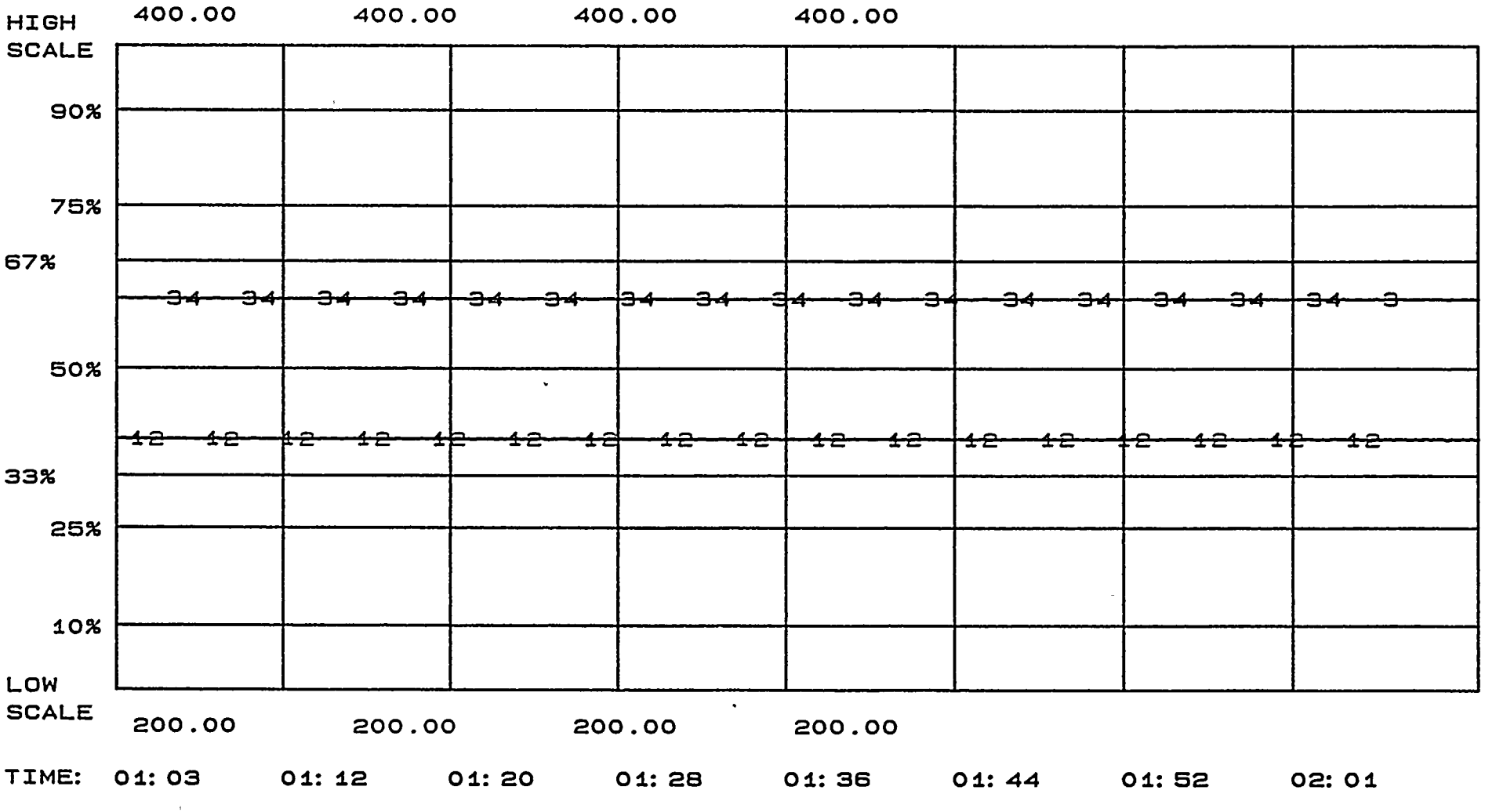
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP.	DEG_F	START 01: 03: 51
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP.	DEG_F	STOP 02: 10: 02
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP.	DEG_F	
5				
6				



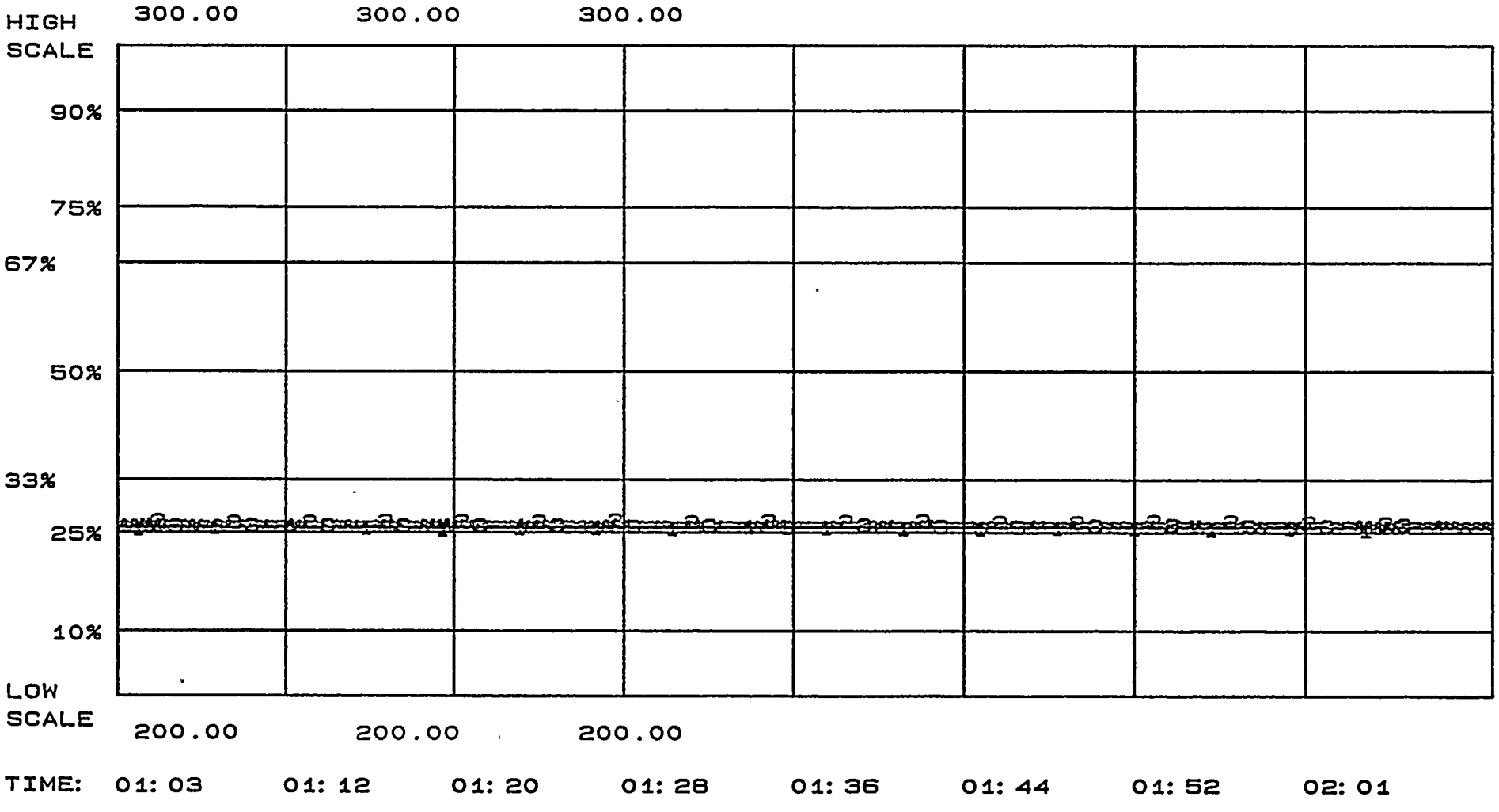
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP	DEG_F	START 01: 03: 51
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP.	DEG_F	STOP 02: 10: 02
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP.	DEG_F	
5				
6				



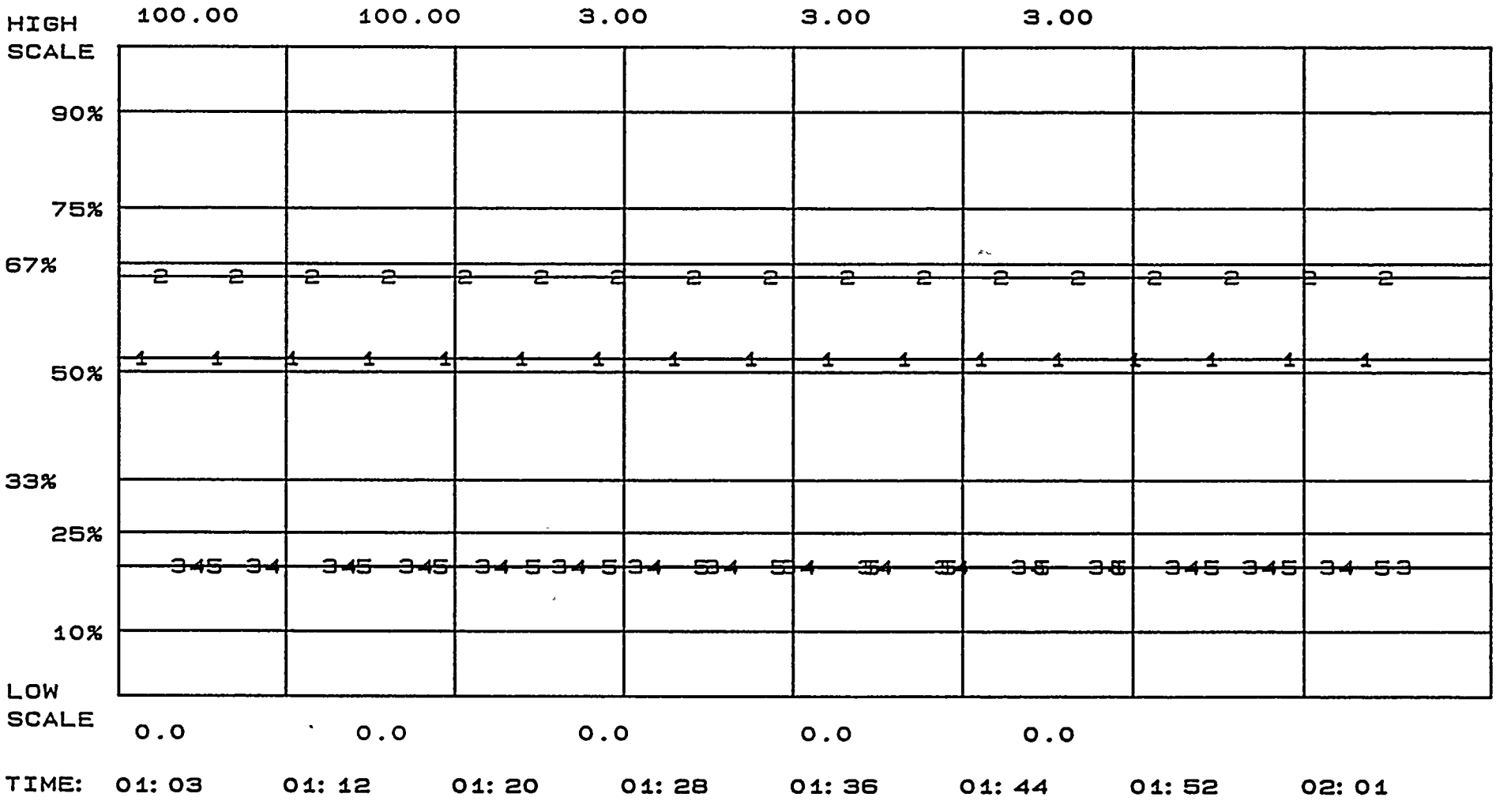
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	MAIN FEEDPUMP SUCTION TEMP.	DEG_F	TIME
2	FWTDEMFP	EAST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	START 01: 03: 51
3	FWTDWMFP	WEST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	STOP 02: 10: 02
4				
5				
6				



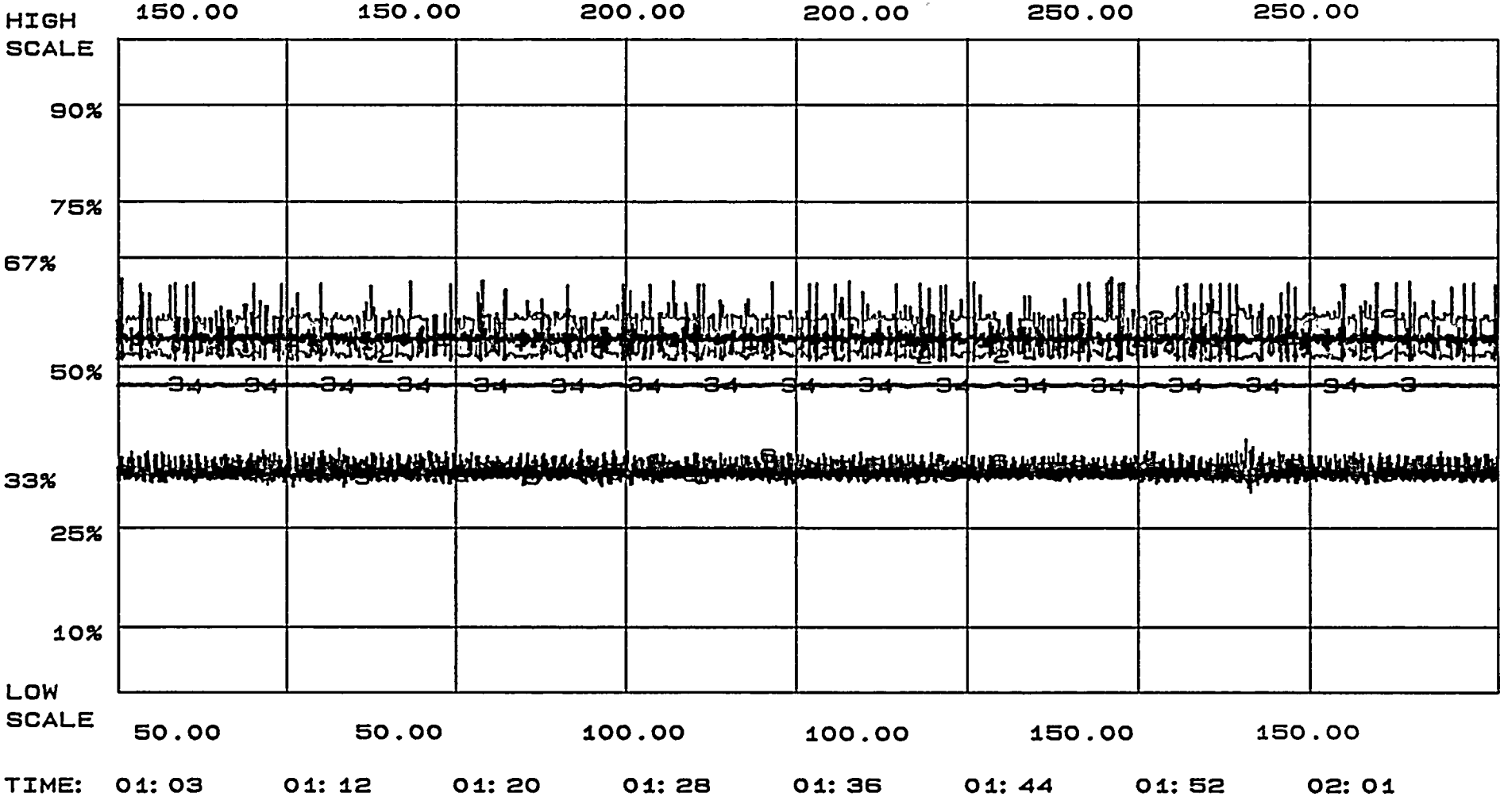
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER AVG. INLET TEMP.	DEG_F	TIME
2	CWTAVGOUT	CONDENSER AVG. OUTLET TEMP.	DEG_F	START 01: 03: 51
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 02: 10: 02
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



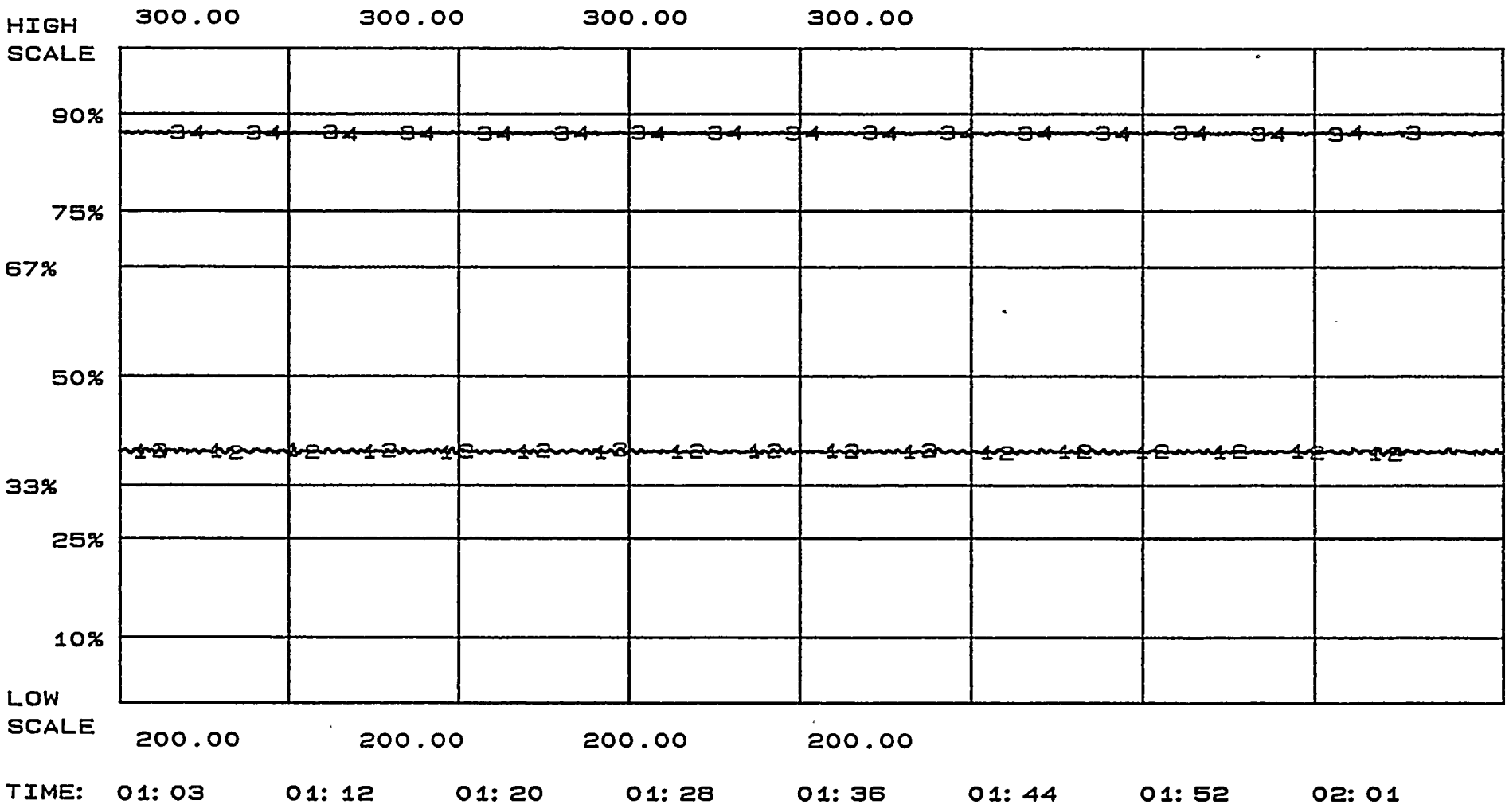
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F	START 01: 03: 51
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F	STOP 02: 10: 02
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F	
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATRUE	DEG_F	
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F	



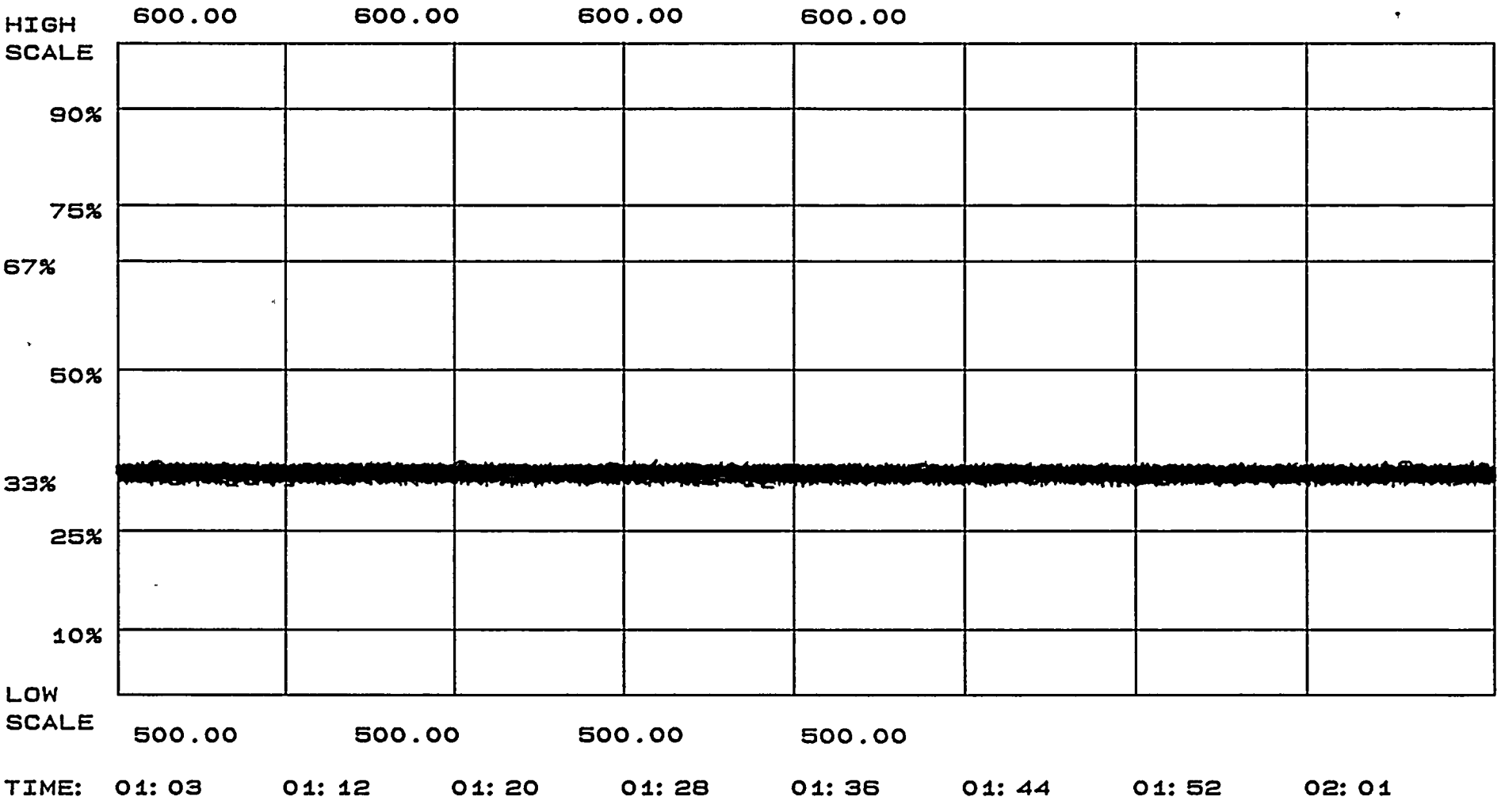
30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 01: 03: 51
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 02: 10: 02
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



30% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCTSGDM(1)	STEAM GENERATOR #1 DOME TEMP.	DEG_F	TIME
2	RCTSGDM(2)	STEAM GENERATOR #2 DOME TEMP.	DEG_F	START 01:03:51
3	RCTSGDM(3)	STEAM GENERATOR #3 DOME TEMP.	DEG_F	STOP 02:10:02
4	RCTSGDM(4)	STEAM GENERATOR #4 DOME TEMP.	DEG_F	
5				
6				



COOK PLANT SIMULATOR

60% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
| CRITICAL PARAMETERS |					
Nuclear Power	PR Avg.	Percent	60.5	60	0.8
Thermal Power	Calc.	Percent	60	60	0
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	NOT AVAIL	579.8	ERR *
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	NOT AVAIL	541	ERR *
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	NOT AVAIL	579.8	ERR *
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	NOT AVAIL	541	ERR *
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	NOT AVAIL	579.9	ERR *
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	NOT AVAIL	541	ERR *
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	NOT AVAIL	579.8	ERR *
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	NOT AVAIL	541	ERR *
Loop 1 Tavg.	NTI-13	Deg. F	561	560.4	0.1
Loop 2 Tavg.	NTI-23	Deg. F	561	560.4	0.1
Loop 3 Tavg.	NTI-33	Deg. F	561	560.5	0.1
Loop 4 Tavg.	NTI-43	Deg. F	561	560.4	0.1
Pressurizer Pressure	NPP Avg.	PSIG	2238.75	2245	-0.3
Pressurizer Level	NLP Avg.	Percent	45	39	13.3 *
Press. Steam Temperature	NTA-252	Deg. F	645	653	-1.2
Press. Liquid Temp.	NTA-251	Deg. F	645	653	-1.2
Press. Surge Line Temp.	NTA-253	Deg. F	655	649	0.9
Steam Generator #21 Level	BLP Avg.	Percent	44	44	0
Steam Generator #22 Level	BLP Avg.	Percent	45	44	2.2
Steam Generator #23 Level	BLP Avg.	Percent	46.5	44	5.4 *
Steam Generator #24 Level	BLP Avg.	Percent	46.7	44	5.8 *
Steam Generator #21 Press	MPP Avg.	PSIG	853	851	0.2
Steam Generator #22 Press	MPP Avg.	PSIG	847	850	-0.4
Steam Generator #23 Press	MPP Avg.	PSIG	843	851	-0.9
Steam Generator #24 Press	MPP Avg.	PSIG	847	851	-0.5
Total Feedwater Flow		E6 lb/hr	7.35	8.3	-12.9 *
Main Generator Elect Pwr		Megawatts	653	681	-4.3 *

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	681.05	653.80	4.17 *
RC LOOP DELTA T	1	F	38.89	33.49	1.04
T AVG TRANSM. TABLE	1	F	560.44	562.99	-.45
T REFERENCE	1	F	560.77	562.99	-.40
SG DOME PRESSURES	1	PSIA	866.02	880.03	-1.59
MS LOOP FLOWS	1	#/S	2325.46	2310.35	.65
FW LOOP FLOWS	1	#/S	2324.77	2310.34	.62
HPT INLET STM FLOW	1	#/S	2010.72	2035.01	-1.19
LPT INLET STM FLOW	1	#/S	521.09	521.85	-.15
LPT INLET STM FLOW	2	#/S	521.09	521.85	-.15
LPT INLET STM FLOW	3	#/S	521.12	521.85	-.14
HPT EXTR. FLOW TO HTR 6A	1	#/S	41.39	40.10	3.23
HPT EXTR. FLOW TO HTR 5A	1	#/S	66.60	64.68	2.97
HPT EXTR. FLOW TO HTR 4A	1	#/S	37.47	36.63	2.28
LPT EXTR. FLOW TO HTR 3A	1	#/S	40.05	39.83	.56
LPT EXTR. FLOW TO HTR 2A	1	#/S	39.27	39.41	-.37
LPT EXTR. FLOW TO HTR 1A	1	#/S	19.75	17.42	13.37 *
H6A TUBE OUTLET TEMP	1	F	374.97	376.37	-.37
H5A TUBE OUTLET TEMP	1	F	325.69	327.27	-.48
MFP TUBE OUTLET TEMP	1	F	271.89	272.08	-.07
H4A TUBE OUTLET TEMP	1	F	285.59	285.27	.11
H3A TUBE OUTLET TEMP	1	F	226.29	226.68	-.17
H2A TUBE OUTLET TEMP	1	F	174.67	174.68	-.01
H1A TUBE OUTLET TEMP	1	F	122.15	121.19	.80
DCA TUBE OUTLET TEMP	1	F	86.90	89.19	-2.57
HWP SUCTION TEMPERATURE	1	F	81.60	79.90	2.13
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	80.71	79.89	1.02
CND VAC	1	INHGA	28.74	28.97	-.80

DATA VALUE BASED ON 59.98 % CORE POWER

06/26/90 19:56:56 TASK # 18000155 COOK2 GOULD C.S.D. MPX-32

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.9336	DEGF
T1004	PZR LIQUID TEMP		653.0671	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		649.2317	DEG F
L1091	PRESSURIZER WATER LEVEL		38.7733	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2911	%
P1036	PRESSURIZER PRESSURE		2245.0085	PSIG
T1101	LOOP 1 AVG TEMP		560.4431	DEGF
T1102	LOOP 2 AVG TEMP		560.4551	DEGF
T1103	LOOP 3 AVG TEMP		560.4866	DEGF
T1104	LOOP 4 AVG TEMP		560.4490	DEGF
T1111	LOOP 1 HOT LEG TEMP		579.8848	DEGF
T1112	LOOP 2 HOT LEG TEMP		579.8850	DEGF
T1113	LOOP 3 HOT LEG TEMP		579.9668	DEGF
T1114	LOOP 4 HOT LEG TEMP		579.8826	DEGF
T1115	LOOP 1 COLD LEG TEMP		540.9966	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.0266	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.0249	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.0151	DEGF
NI^PRAV	02050 AVG POWER RANGE^FLUX		.6001	%
[redacted]N	03030 NORMALIZED CORE^POWER		.5999	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		851.0081	PSIG
P1025	STM GEN OUTLET PRES LP 2		850.9678	PSIG
P1028	STM GEN OUTLET PRES LP 3		850.9727	PSIG
P1031	STM GEN OUTLET PRES LP 4		851.0120	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.0351	PC
L1207	STM GEN 2 NARROW LEVEL		44.0368	PC
L1210	STM GEN 3 NARROW LEVEL		44.0587	PC
L1213	STM GEN 4 NARROW LEVEL		44.0426	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	525.0759	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	525.3269	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	525.0457	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	524.2124	F
RCBORON	11070 BORON CONC	(001)	665.2603	PPM
RCBORON	11070 BORON CONC	(002)	665.2600	PPM
RCBORON	11070 BORON CONC	(003)	665.2605	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	80.7415	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	80.7215	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	80.6853	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		81.4968	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		86.9826	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		86.9517	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		86.9498	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		122.0758	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		122.1045	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		122.0917	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		174.5699	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		174.5527	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		226.0705	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		226.0983	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		285.0796	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		285.1353	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		325.6992	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		325.7212	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		375.0313	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		375.0410	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		270.4155	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		270.4155	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		271.4482	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.2292	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6206	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6202	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6195	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		131.9610	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		131.8360	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		183.8042	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		184.1084	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		233.7062	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		234.7070	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		281.4919	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		281.4932	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		335.5396	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		335.5759	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	204	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	203	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	681.30	653.56	4.24 *
RC LOOP DELTA T	1	F	38.88	38.49	1.02
T AVG TRANSM. TABLE	1	F	560.43	562.99	-.46
T REFERENCE	1	F	560.77	562.99	-.40
SG DOME PRESSURES	1	PSIA	865.97	880.04	-1.60
MS LOOP FLOWS	1	#/S	2325.39	2310.30	.65
FW LOOP FLOWS	1	#/S	2324.75	2310.29	.63
HPT INLET STM FLOW	1	#/S	2010.57	2034.97	-1.20
LPT INLET STM FLOW	1	#/S	521.12	521.82	-.13
LPT INLET STM FLOW	2	#/S	521.10	521.82	-.14
LPT INLET STM FLOW	3	#/S	521.08	521.82	-.14
HPT EXTR. FLOW TO HTR 6A	1	#/S	41.26	40.09	2.90
HPT EXTR. FLOW TO HTR 5A	1	#/S	66.56	64.68	2.92
HPT EXTR. FLOW TO HTR 4A	1	#/S	38.00	36.63	3.74
LPT EXTR. FLOW TO HTR 3A	1	#/S	40.29	39.82	1.17
LPT EXTR. FLOW TO HTR 2A	1	#/S	39.47	39.40	.16
LPT EXTR. FLOW TO HTR 1A	1	#/S	19.90	17.42	14.22 *
H6A TUBE OUTLET TEMP	1	F	374.98	376.35	-.36
H5A TUBE OUTLET TEMP	1	F	325.55	327.25	-.52
HWP TUBE OUTLET TEMP	1	F	271.40	272.06	-.24
H4A TUBE OUTLET TEMP	1	F	285.04	285.24	-.07
H3A TUBE OUTLET TEMP	1	F	226.01	226.65	-.28
H2A TUBE OUTLET TEMP	1	F	174.47	174.66	-.11
H1A TUBE OUTLET TEMP	1	F	122.07	121.17	.74
DCA TUBE OUTLET TEMP	1	F	86.86	89.19	-2.61
HWP SUCTION TEMPERATURE	1	F	81.62	79.89	2.16
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	80.72	79.89	1.03
CND VAC	1	INHGA	28.74	28.97	-.80

DATA VALUE BASED ON 59.98 % CORE POWER

06/26/90 20:09:50 TASK # 1C000160 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		653.2727	DEGF
T1004	PZR LIQUID TEMP		653.1660	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		650.6763	DEG F
L1091	PRESSURIZER WATER LEVEL		38.7152	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2908	%
P1036	PRESSURIZER PRESSURE		2246.1594	PSIG
T1101	LOOP 1 AVG TEMP		560.4290	DEGF
T1102	LOOP 2 AVG TEMP		560.4453	DEGF
T1103	LOOP 3 AVG TEMP		560.4990	DEGF
T1104	LOOP 4 AVG TEMP		560.4424	DEGF
T1111	LOOP 1 HOT LEG TEMP		579.8716	DEGF
T1112	LOOP 2 HOT LEG TEMP		579.8718	DEGF
T1113	LOOP 3 HOT LEG TEMP		579.9561	DEGF
T1114	LOOP 4 HOT LEG TEMP		579.8726	DEGF
T1115	LOOP 1 COLD LEG TEMP		540.9910	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.0127	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.0281	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.0107	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.6000	%.
C[illegible]N	03030 NORMALIZED CORE^POWER		.5998	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		850.8884	PSIG
P1025	STM GEN OUTLET PRES LP 2		850.9175	PSIG
P1028	STM GEN OUTLET PRES LP 3		850.9602	PSIG
P1031	STM GEN OUTLET PRES LP 4		850.8594	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.0184	PC
L1207	STM GEN 2 NARROW LEVEL		44.0236	PC
L1210	STM GEN 3 NARROW LEVEL		44.0130	PC
L1213	STM GEN 4 NARROW LEVEL		44.0192	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	524.4661	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	525.0518	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	525.0073	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	525.2661	F
RCBORON	11070 BORON CONC	(001)	665.2576	PPM
RCBORON	11070 BORON CONC	(002)	665.2568	PPM
RCBORON	11070 BORON CONC	(003)	665.2563	PPM

ISD>

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	80.7227	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	80.7026	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	80.6648	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		81.4764	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		86.9180	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		86.8997	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		86.8979	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		121.9418	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		121.9195	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		121.9068	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		174.3007	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		174.3221	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		225.7667	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		225.7755	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		284.8545	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		284.3430	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		325.6570	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		325.6250	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		375.0044	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		374.9963	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		270.3877	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		270.4500	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		271.4822	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.2215	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6204	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6200	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6194	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		132.5703	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		133.6910	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		184.0826	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		184.1316	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		234.7493	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		234.8710	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		281.4294	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		281.4634	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		335.5164	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		335.5295	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	204	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	203	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	680.93	653.63	4.18	*
RC LOOP DELTA T	1	F	38.88	38.48	1.04	
T AVG TRANSM. TABLE	1	F	560.39	562.99	-.46	
T REFERENCE	1	F	560.76	562.99	-.40	
SG DOME PRESSURES	1	PSIA	865.71	880.05	-1.63	
MS LOOP FLOWS	1	#/S	2325.06	2309.91	.66	
FW LOOP FLOWS	1	#/S	2324.24	2309.90	.62	
HPT INLET STM FLOW	1	#/S	2010.30	2034.65	-1.20	
LPT INLET STM FLOW	1	#/S	520.84	521.76	-.18	
LPT INLET STM FLOW	2	#/S	520.84	521.76	-.18	
LPT INLET STM FLOW	3	#/S	520.82	521.76	-.18	
HPT EXTR. FLOW TO HTR 6A	1	#/S	41.33	40.09	3.08	
HPT EXTR. FLOW TO HTR 5A	1	#/S	66.60	64.67	2.99	
HPT EXTR. FLOW TO HTR 4A	1	#/S	38.27	36.63	4.49	
LPT EXTR. FLOW TO HTR 3A	1	#/S	40.44	39.82	1.57	
LPT EXTR. FLOW TO HTR 2A	1	#/S	39.62	39.40	.54	
LPT EXTR. FLOW TO HTR 1A	1	#/S	19.90	17.42	14.25	*
H6A TUBE OUTLET TEMP	1	F	374.93	376.34	-.38	
H5A TUBE OUTLET TEMP	1	F	325.62	327.25	-.50	
HFP TUBE OUTLET TEMP	1	F	271.65	272.06	-.15	
H4A TUBE OUTLET TEMP	1	F	285.13	285.24	-.04	
H3A TUBE OUTLET TEMP	1	F	226.08	226.65	-.25	
H2A TUBE OUTLET TEMP	1	F	174.51	174.66	-.08	
H1A TUBE OUTLET TEMP	1	F	122.13	121.17	.79	
DCA TUBE OUTLET TEMP	1	F	86.88	89.19	-2.59	
HWP SUCTION TEMPERATURE	1	F	81.59	79.89	2.13	
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	80.69	79.89	1.01	
CND VAC	1	INHGA	28.74	28.97	-.80	

DATA VALUE BASED ON 59.97 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		653.1206	DEGF
T1004	PZR LIQUID TEMP		653.1841	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		650.8933	DEG F
L1091	PRESSURIZER WATER LEVEL		38.7355	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2910	%
P1036	PRESSURIZER PRESSURE		2246.3037	PSIG
T1101	LOOP 1 AVG TEMP		560.3914	DEGF
T1102	LOOP 2 AVG TEMP		560.4028	DEGF
T1103	LOOP 3 AVG TEMP		560.4473	DEGF
T1104	LOOP 4 AVG TEMP		560.4014	DEGF
T1111	LOOP 1 HOT LEG TEMP		579.8308	DEGF
T1112	LOOP 2 HOT LEG TEMP		579.8308	DEGF
T1113	LOOP 3 HOT LEG TEMP		579.9192	DEGF
T1114	LOOP 4 HOT LEG TEMP		579.8311	DEGF
T1115	LOOP 1 COLD LEG TEMP		540.9482	DEGF
T1116	LOOP 2 COLD LEG TEMP		540.9761	DEGF
T1117	LOOP 3 COLD LEG TEMP		540.9858	DEGF
T1118	LOOP 4 COLD LEG TEMP		540.9727	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.5999	%
C[illegible]N	03030 NORMALIZED CORE^POWER		.5998	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		850.6421	PSIG
P1025	STM GEN OUTLET PRES LP 2		850.6013	PSIG
P1028	STM GEN OUTLET PRES LP 3		850.6753	PSIG
P1031	STM GEN OUTLET PRES LP 4		850.6648	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.0156	PC
L1207	STM GEN 2 NARROW LEVEL		44.0107	PC
L1210	STM GEN 3 NARROW LEVEL		44.0110	PC
L1213	STM GEN 4 NARROW LEVEL		44.0086	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	524.9709	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	525.0676	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	525.0500	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	525.2039	F
RCBORON	11070 BORON CONC	(001)	665.2534	PPM
RCBORON	11070 BORON CONC	(002)	665.2524	PPM
RCBORON	11070 BORON CONC	(003)	665.2520	PPM

ISD>

06/26/90 20:24:25 TASK # 0E00016D COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	80.7154	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	80.6954	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	80.6559	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		81.4690	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		86.7731	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		86.7699	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		86.7681	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		121.7586	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		121.7429	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		121.7224	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		174.1627	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		174.1286	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		225.6058	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		225.6048	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		284.3311	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		284.6433	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		325.4880	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		325.4819	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		374.9587	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		374.9634	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		270.5405	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		270.5405	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		271.4282	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.2093	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6196	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6193	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6187	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		132.7126	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		131.6181	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		184.7589	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		184.7666	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		235.3764	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		235.3993	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		281.5886	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		281.5884	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		335.4160	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		335.3970	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	204	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	203	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	680.84	653.52	4.18	*
RC LOOP DELTA T	1	F	38.88	38.49	1.02	
T AVG TRANSM. TABLE	1	F	560.35	562.99	-.47	
T REFERENCE	1	F	560.76	562.99	-.40	
SG DOME PRESSURES	1	PSIA	865.43	880.04	-1.66	
MS LOOP FLOWS	1	#/S	2324.88	2310.20	.64	
FW LOOP FLOWS	1	#/S	2324.26	2310.07	.61	
HPT INLET STM FLOW	1	#/S	2009.96	2034.79	-1.22	
LPT INLET STM FLOW	1	#/S	520.70	521.78	-.21	
LPT INLET STM FLOW	2	#/S	520.70	521.78	-.21	
LPT INLET STM FLOW	3	#/S	520.67	521.78	-.21	
HPT EXTR. FLOW TO HTR 6A	1	#/S	41.28	40.09	2.96	
HPT EXTR. FLOW TO HTR 5A	1	#/S	66.62	64.66	3.02	
HPT EXTR. FLOW TO HTR 4A	1	#/S	38.25	36.62	4.44	
LPT EXTR. FLOW TO HTR 3A	1	#/S	40.24	39.82	1.07	
LPT EXTR. FLOW TO HTR 2A	1	#/S	39.53	39.40	.32	
LPT EXTR. FLOW TO HTR 1A	1	#/S	19.81	17.42	13.76	*
H5A TUBE OUTLET TEMP	1	F	374.92	376.32	-.37	
H5 TUBE OUTLET TEMP	1	F	325.54	327.23	-.52	
MFP TUBE OUTLET TEMP	1	F	271.13	272.04	-.34	
H4A TUBE OUTLET TEMP	1	F	284.31	285.23	-.32	
H3A TUBE OUTLET TEMP	1	F	225.72	226.63	-.40	
H2A TUBE OUTLET TEMP	1	F	174.22	174.65	-.24	
H1A TUBE OUTLET TEMP	1	F	121.84	121.16	.56	
DCA TUBE OUTLET TEMP	1	F	86.83	89.18	-2.63	
HWP SUCTION TEMPERATURE	1	F	81.60	79.88	2.15	
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	80.70	79.88	1.02	
CND VAC	1	INHGA	28.74	28.97	-.80	

DATA VALUE BASED ON 59.95 % CORE POWER

06/26/90 20:40:00 TASK # 08000175 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		653.1111	DEGF
T1004	PZR LIQUID TEMP		653.0452	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		652.3445	DEG F
L1091	PRESSURIZER WATER LEVEL		38.9513	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2920	%
P1036	PRESSURIZER PRESSURE		2244.1079	PSIG
T1101	LOOP 1 AVG TEMP		560.3474	DEGF
T1102	LOOP 2 AVG TEMP		560.3618	DEGF
T1103	LOOP 3 AVG TEMP		560.4211	DEGF
T1104	LOOP 4 AVG TEMP		560.3586	DEGF
T1111	LOOP 1 HOT LEG TEMP		579.7825	DEGF
T1112	LOOP 2 HOT LEG TEMP		579.7825	DEGF
T1113	LOOP 3 HOT LEG TEMP		579.8901	DEGF
T1114	LOOP 4 HOT LEG TEMP		579.7825	DEGF
T1115	LOOP 1 COLD LEG TEMP		540.9111	DEGF
T1116	LOOP 2 COLD LEG TEMP		540.9407	DEGF
T1117	LOOP 3 COLD LEG TEMP		540.9539	DEGF
T1118	LOOP 4 COLD LEG TEMP		540.9348	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.5997	%
CP^N	03030 NORMALIZED CORE^POWER		.5996	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		850.3582	PSIG
P1025	STM GEN OUTLET PRES LP 2		850.4063	PSIG
P1028	STM GEN OUTLET PRES LP 3		850.4175	PSIG
P1031	STM GEN OUTLET PRES LP 4		850.4829	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.0074	PC
L1207	STM GEN 2 NARROW LEVEL		44.0112	PC
L1210	STM GEN 3 NARROW LEVEL		43.9960	PC
L1213	STM GEN 4 NARROW LEVEL		44.0005	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	524.7319	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	525.1765	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	525.0056	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	524.8706	F
RCBORON	11070 BORON CONC	(001)	665.2458	PPM
RCBORON	11070 BORON CONC	(002)	665.2463	PPM
RCBORON	11070 BORON CONC	(003)	665.2476	PPM

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	80.7433	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	80.7231	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	80.6853	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		81.4970	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		86.7853	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		86.7792	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		86.7775	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		121.7715	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		121.7461	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		121.7335	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		174.2015	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		174.2129	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		225.6526	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		225.6569	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		284.4685	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		284.4436	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		325.6367	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		325.6748	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		375.0364	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		375.0483	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		270.4189	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		270.4189	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		270.9971	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.2250	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6203	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6199	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6192	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		132.7885	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		133.0763	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		183.9669	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		184.0443	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		237.7456	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		236.3404	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		281.3201	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		281.3037	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		335.3796	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		335.3875	F
RDPROD	03030 ROD POSITION,ACTUAL	(045)	204	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	203	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR	
MG OUTPUT REAL POWER	1	MW	680.73	653.48	4.17	*
RC LOOP DELTA T	1	F	38.87	38.48	1.03	
T AVG TRANSM. TABLE	1	F	560.32	562.99	-.47	
T REFERENCE	1	F	560.76	562.99	-.40	
SG DOME PRESSURES	1	PSIA	865.21	880.05	-1.69	
MS LOOP FLOWS	1	#/S	2323.97	2309.92	.61	
FW LOOP FLOWS	1	#/S	2323.93	2309.88	.61	
HPT INLET STM FLOW	1	#/S	2009.75	2034.61	-1.22	
LPT INLET STM FLOW	1	#/S	520.82	521.75	-.18	
LPT INLET STM FLOW	2	#/S	520.82	521.75	-.18	
LPT INLET STM FLOW	3	#/S	520.84	521.75	-.18	
HPT EXTR. FLOW TO HTR 6A	1	#/S	41.37	40.09	3.20	
HPT EXTR. FLOW TO HTR 5A	1	#/S	66.60	64.66	2.99	
HPT EXTR. FLOW TO HTR 4A	1	#/S	37.51	36.62	2.42	
LPT EXTR. FLOW TO HTR 3A	1	#/S	40.09	39.82	.69	
LPT EXTR. FLOW TO HTR 2A	1	#/S	39.29	39.40	-.27	
LPT EXTR. FLOW TO HTR 1A	1	#/S	19.79	17.42	13.61	*
H6A TUBE OUTLET TEMP	1	F	374.93	376.32	-.37	
H5A TUBE OUTLET TEMP	1	F	325.74	327.23	-.46	
HWP TUBE OUTLET TEMP	1	F	271.43	272.05	-.23	
H4A TUBE OUTLET TEMP	1	F	285.07	285.23	-.06	
H3A TUBE OUTLET TEMP	1	F	225.96	226.64	-.30	
H2A TUBE OUTLET TEMP	1	F	174.41	174.65	-.14	
H1A TUBE OUTLET TEMP	1	F	122.02	121.16	.71	
DCA TUBE OUTLET TEMP	1	F	86.84	89.18	-2.63	
HWP SUCTION TEMPERATURE	1	F	81.61	79.89	2.16	
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00	
CONDENSER TEMPERATURE	1	F	80.71	79.88	1.04	
CND VAC	1	INHGA	28.74	28.97	-.80	

DATA VALUE BASED ON 59.96 % CORE POWER

06/26/90 20:52:50 TASK # 1A000178 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		653.1128	DEGF
T1004	PZR LIQUID TEMP		653.0281	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		648.4624	DEG F
L1091	PRESSURIZER WATER LEVEL		39.2229	PC
RXLCOLDC	05350 PRZ COLD CALIB		.2934	%
P1036	PRESSURIZER PRESSURE		2243.7859	PSIG
T1101	LOOP 1 AVG TEMP		560.3159	DEGF
T1102	LOOP 2 AVG TEMP		560.3308	DEGF
T1103	LOOP 3 AVG TEMP		560.3872	DEGF
T1104	LOOP 4 AVG TEMP		560.3267	DEGF
T1111	LOOP 1 HOT LEG TEMP		579.7507	DEGF
T1112	LOOP 2 HOT LEG TEMP		579.7507	DEGF
T1113	LOOP 3 HOT LEG TEMP		579.8589	DEGF
T1114	LOOP 4 HOT LEG TEMP		579.7507	DEGF
T1115	LOOP 1 COLD LEG TEMP		540.8828	DEGF
T1116	LOOP 2 COLD LEG TEMP		540.9106	DEGF
T1117	LOOP 3 COLD LEG TEMP		540.9265	DEGF
T1118	LOOP 4 COLD LEG TEMP		540.9082	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.6000	%
C[illegible]N	03030 NORMALIZED CORE^POWER		.5996	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		850.2666	PSIG
P1025	STM GEN OUTLET PRES LP 2		850.1812	PSIG
P1028	STM GEN OUTLET PRES LP 3		850.1985	PSIG
P1031	STM GEN OUTLET PRES LP 4		850.1704	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.0219	PC
L1207	STM GEN 2 NARROW LEVEL		44.0200	PC
L1210	STM GEN 3 NARROW LEVEL		44.0007	PC
L1213	STM GEN 4 NARROW LEVEL		44.0092	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	525.4331	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	525.1013	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	525.5320	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	524.9165	F
RCBORON	11070 BORON CONC	(001)	665.2354	PPM
RCBORON	11070 BORON CONC	(002)	665.2361	PPM
RCBORON	11070 BORON CONC	(003)	665.2349	PPM

ISD>

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	80.7109	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	80.6908	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	80.6529	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		81.4641	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		87.0181	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		86.8960	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		86.8942	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		121.9667	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		121.9516	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		121.9389	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		174.3338	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		174.3551	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		225.8223	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		225.8205	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		284.4663	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		284.6770	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		325.6316	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		325.6262	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		374.9512	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		374.9480	F

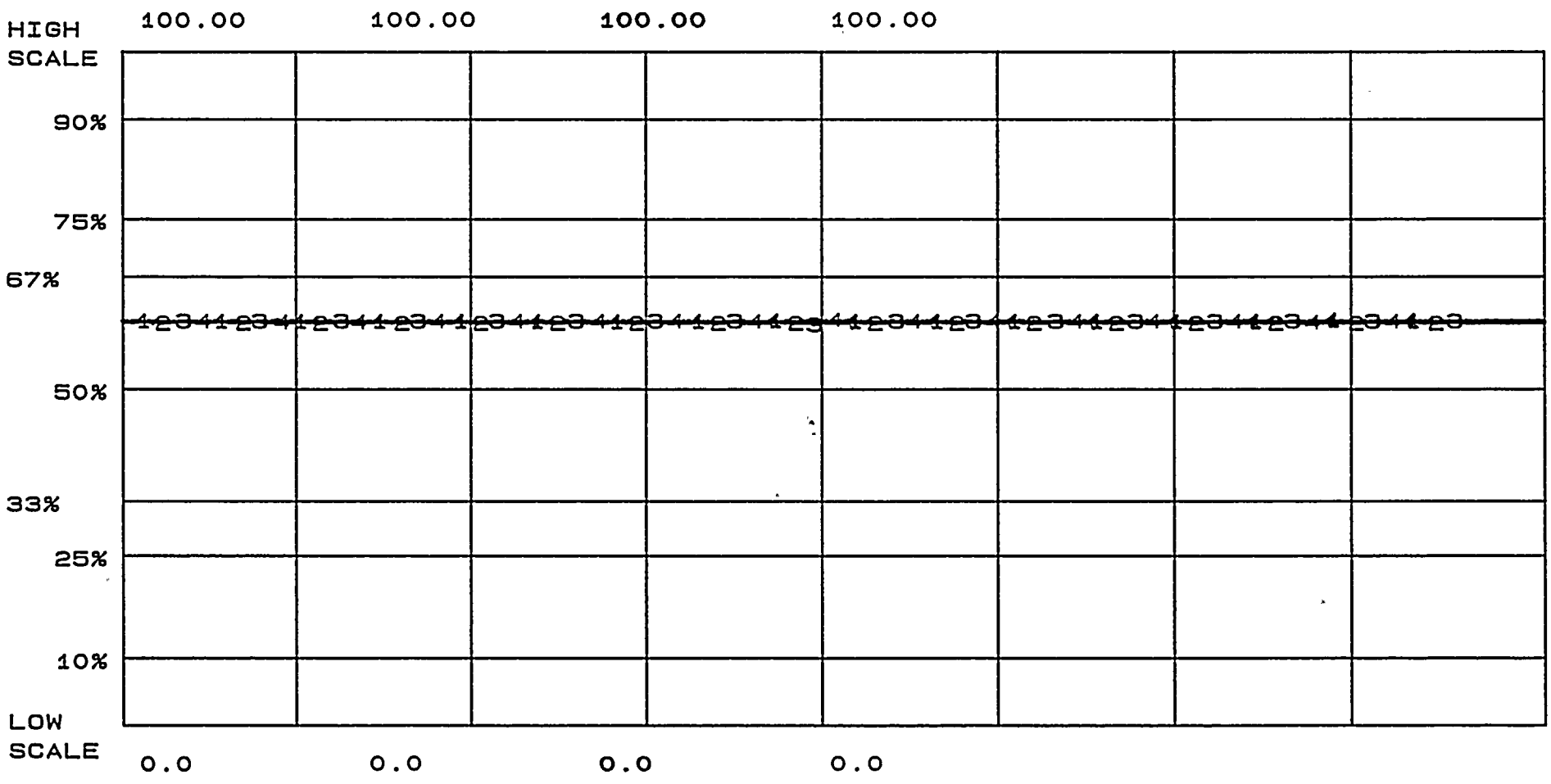
ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		270.3789	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		270.3789	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		271.4121	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		62.2208	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.6201	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.6198	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.6191	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		132.1104	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		131.6096	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		184.1718	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		184.2176	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		232.9232	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		235.0458	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		281.4609	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		281.3711	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		335.4092	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		335.4126	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	204	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	203	

ISD>

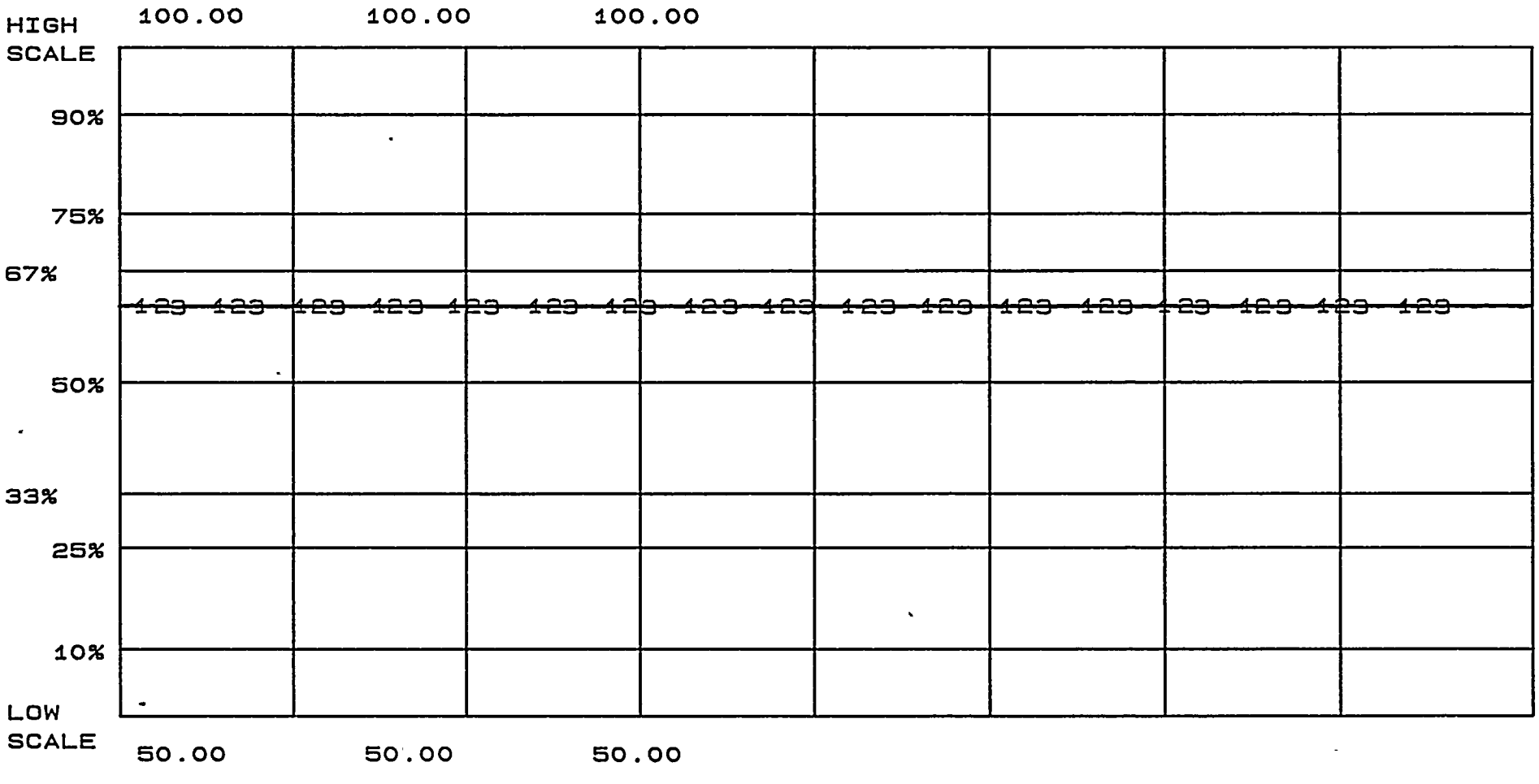
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. N41	PC	TIME
2	N1013	POWER RANGE N.I. N42	PC	START 00: 01: 05
3	N1014	POWER RANGE N.I. N43	PC	STOP 01: 02: 58
4	N1015	POWER RANGE N.I. N44	PC	
5				
6				



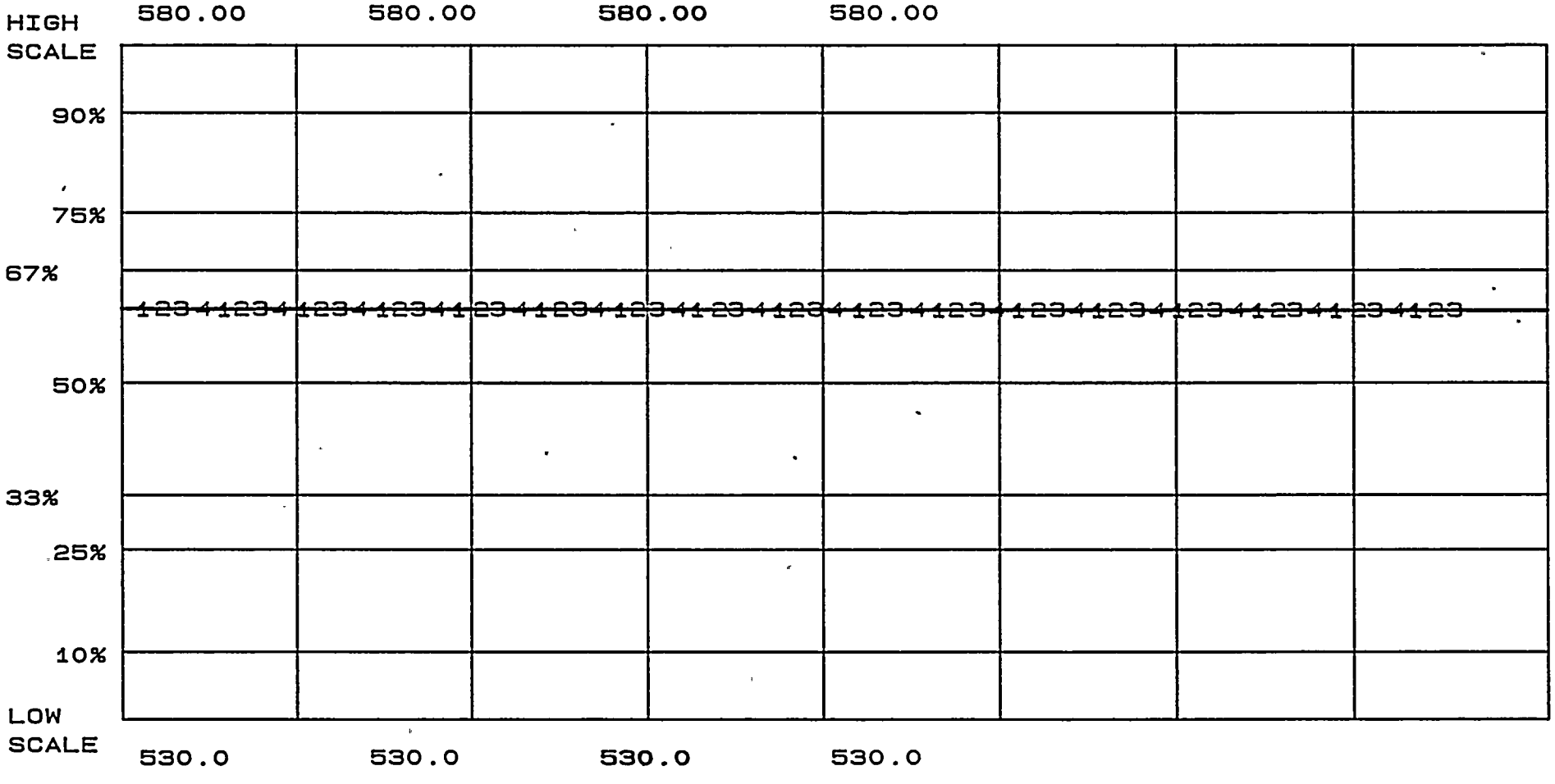
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN (1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN (2)	CONDENSER B TEMPERATURE	DEG_F	START 00: 01: 05
3	FWTCN (3)	CONDENSER C TEMPERATURE	DEG_F	STOP 01: 02: 58
4				
5				
6				



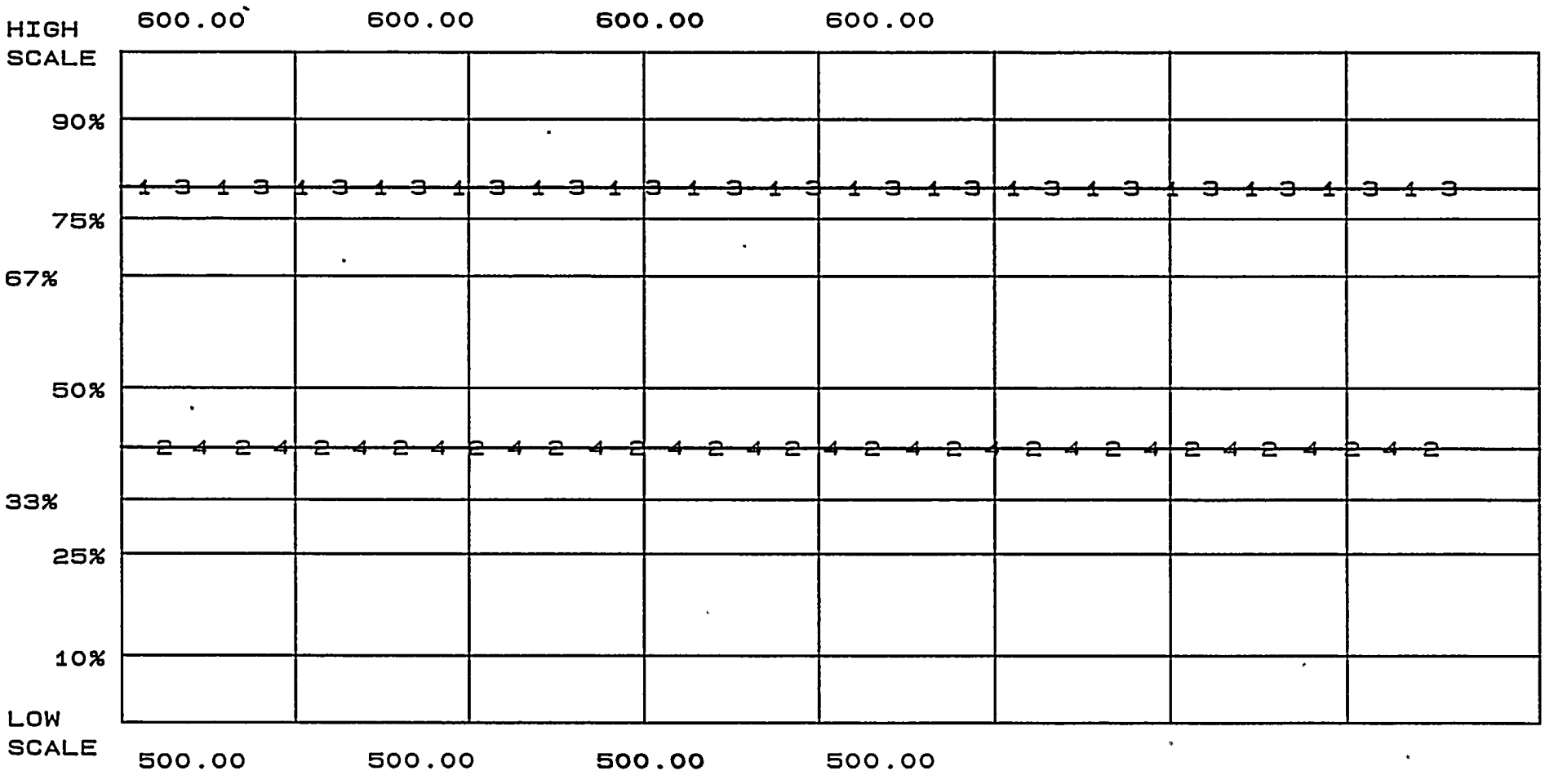
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	TAVG LOOP 1	DEG_F	TIME
2	T1102	TAVG LOOP 2	DEG_F	START 00: 01: 05
3	T1103	TAVG LOOP 3	DEG_F	STOP 01: 02: 57
4	T1104	TAVG LOOP 4	DEG_F	
5				
6				



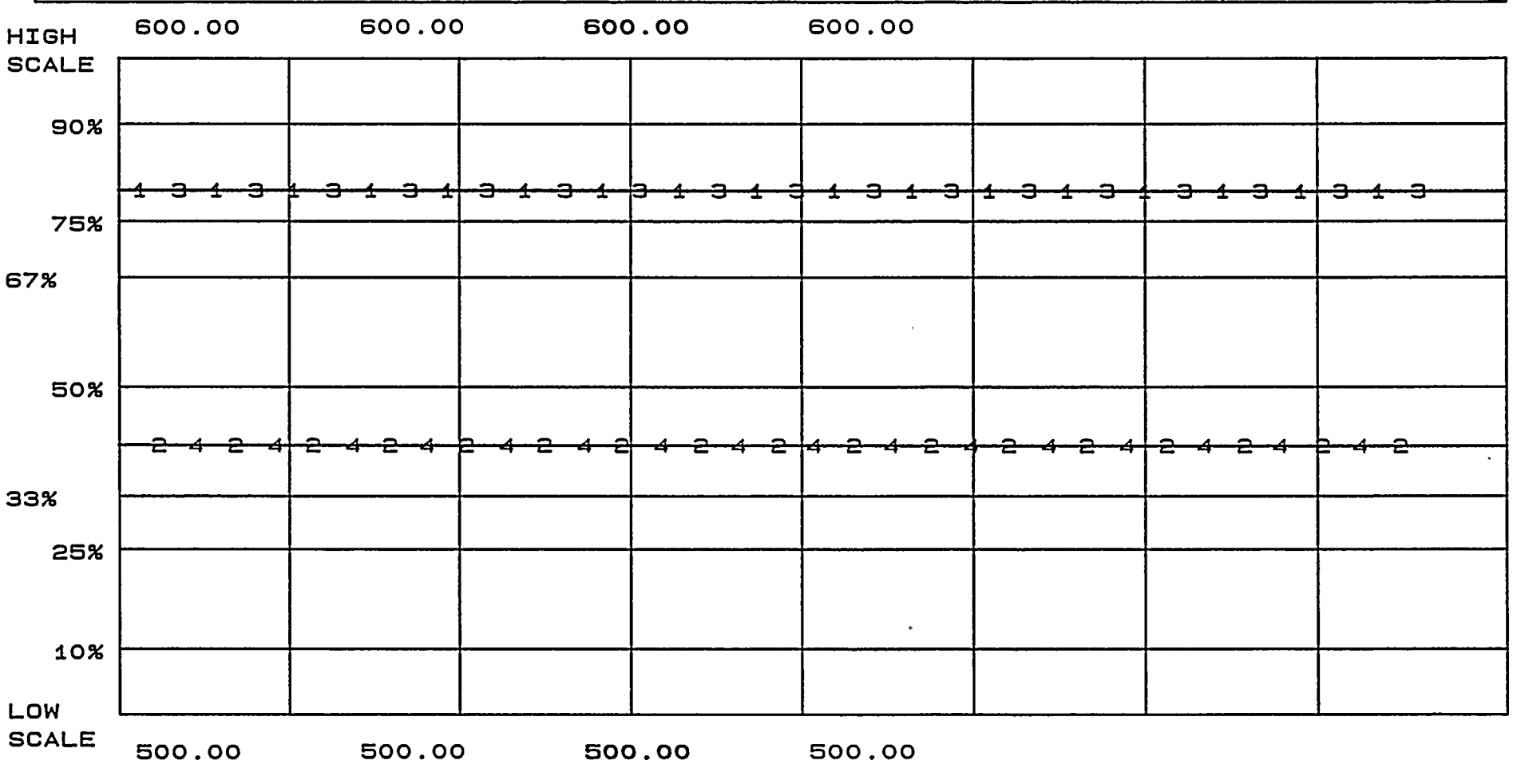
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1115	LOOP 1 COLD LEG TEMP	DEG_F	START 00: 01: 05
3	T1112	LOOP 2 HOT LEG TEMP	DEG_F	STOP 01: 02: 58
4	T1116	LOOP 2 COLD LEG TEMP	DEG_F	
5				
6				



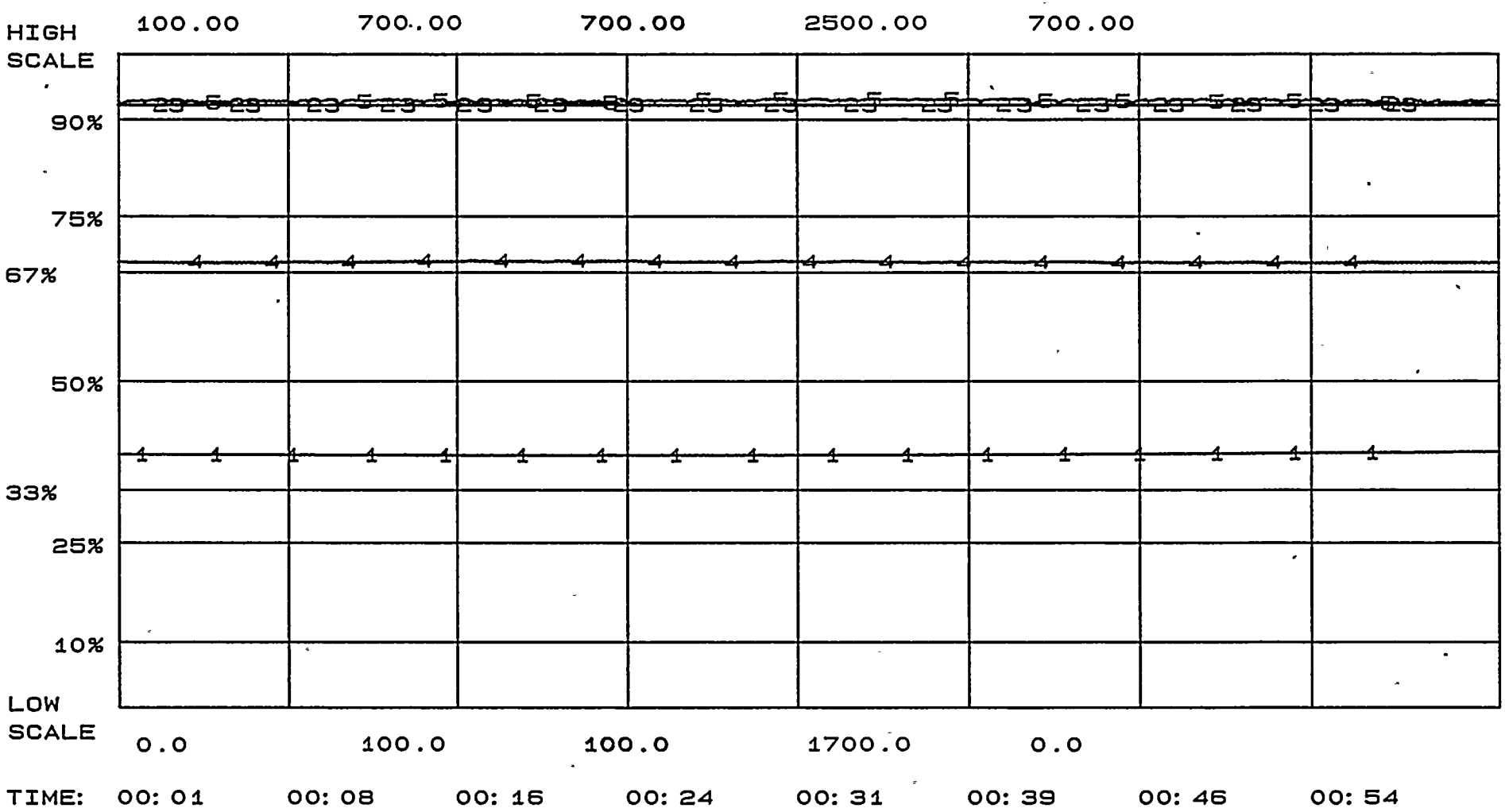
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	LOOP 3 HOT LEG TEMP	DEG_F	TIME
2	T1117	LOOP 3 COLD LEG TEMP	DEG_F	START 00: 01: 05
3	T1114	LOOP 4 HOT LEG TEMP	DEG_F	STOP 01: 02: 57
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



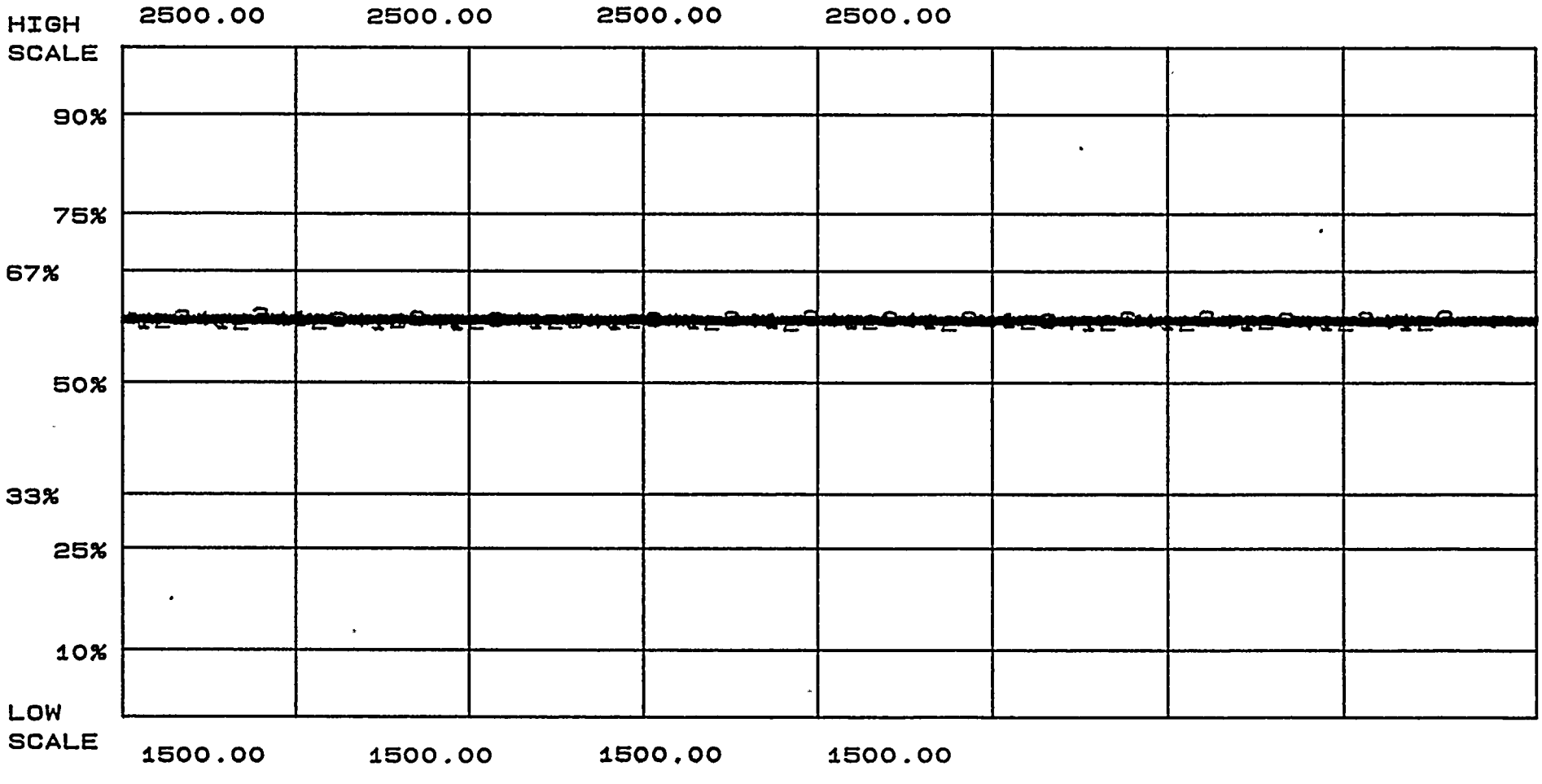
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER WATER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMP.	DEG_F	START 00: 01: 05
3	T1005	PRESSURIZER STEAM TEMP.	DEG_F	STOP 01: 02: 57
4	P1036	PRESSURIZER PRESSURE	PSIG	
5	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	
6				



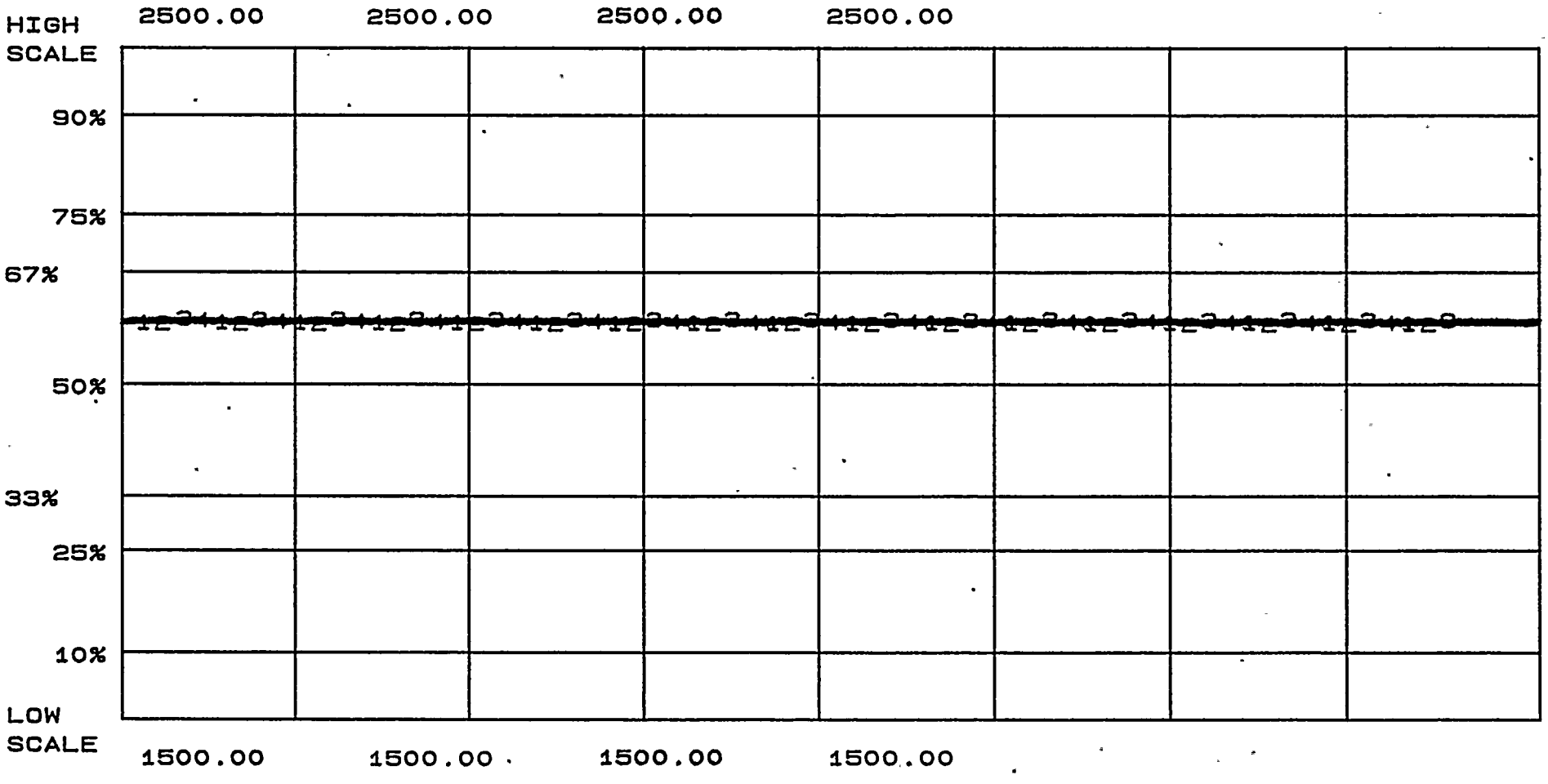
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 01: 05
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 01: 02: 57
4	F1054	STEAM FLOW LOOP 4	KBH	
5				
6				



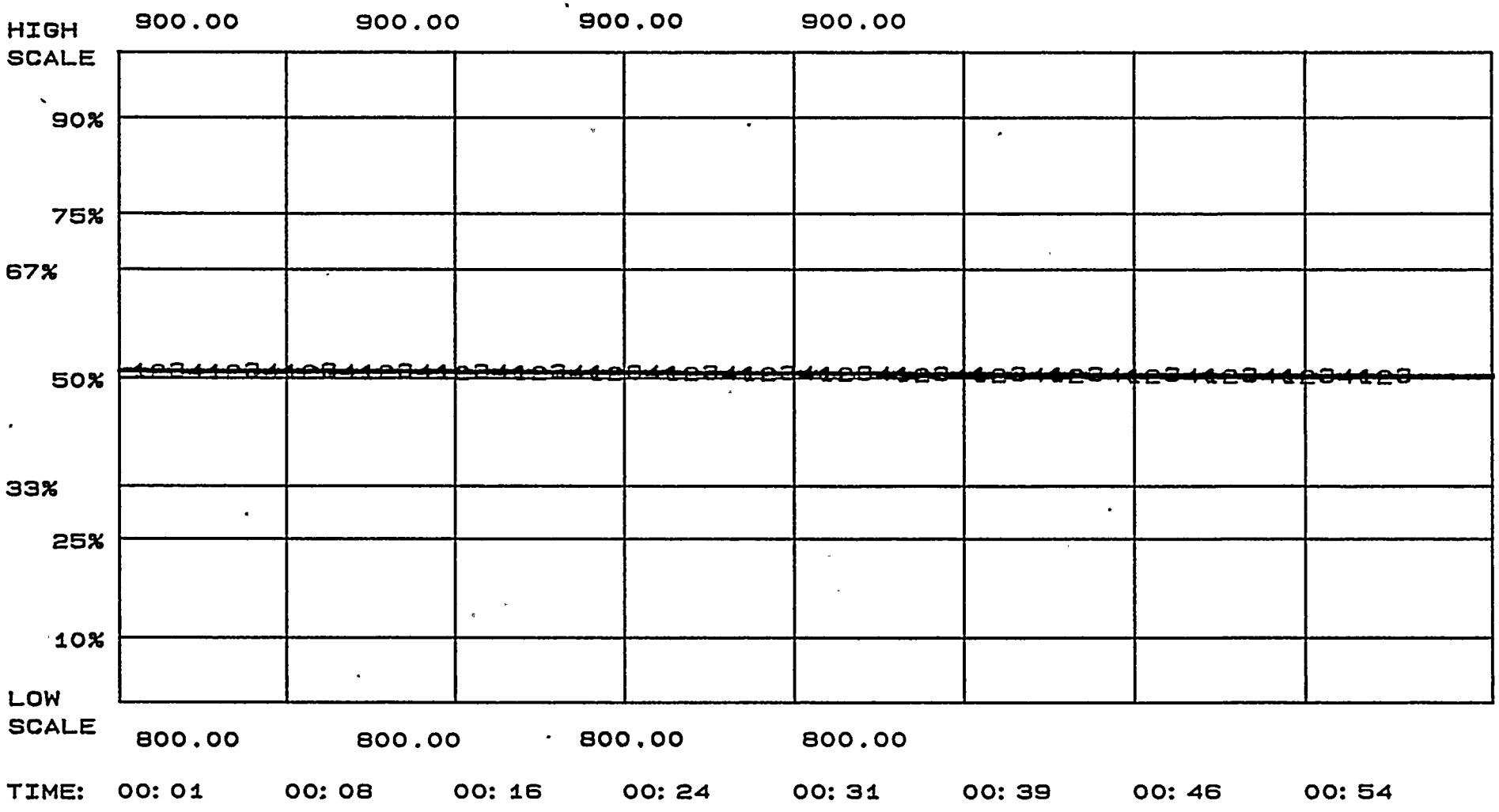
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 01: 05
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 01: 02: 57
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5				
6				



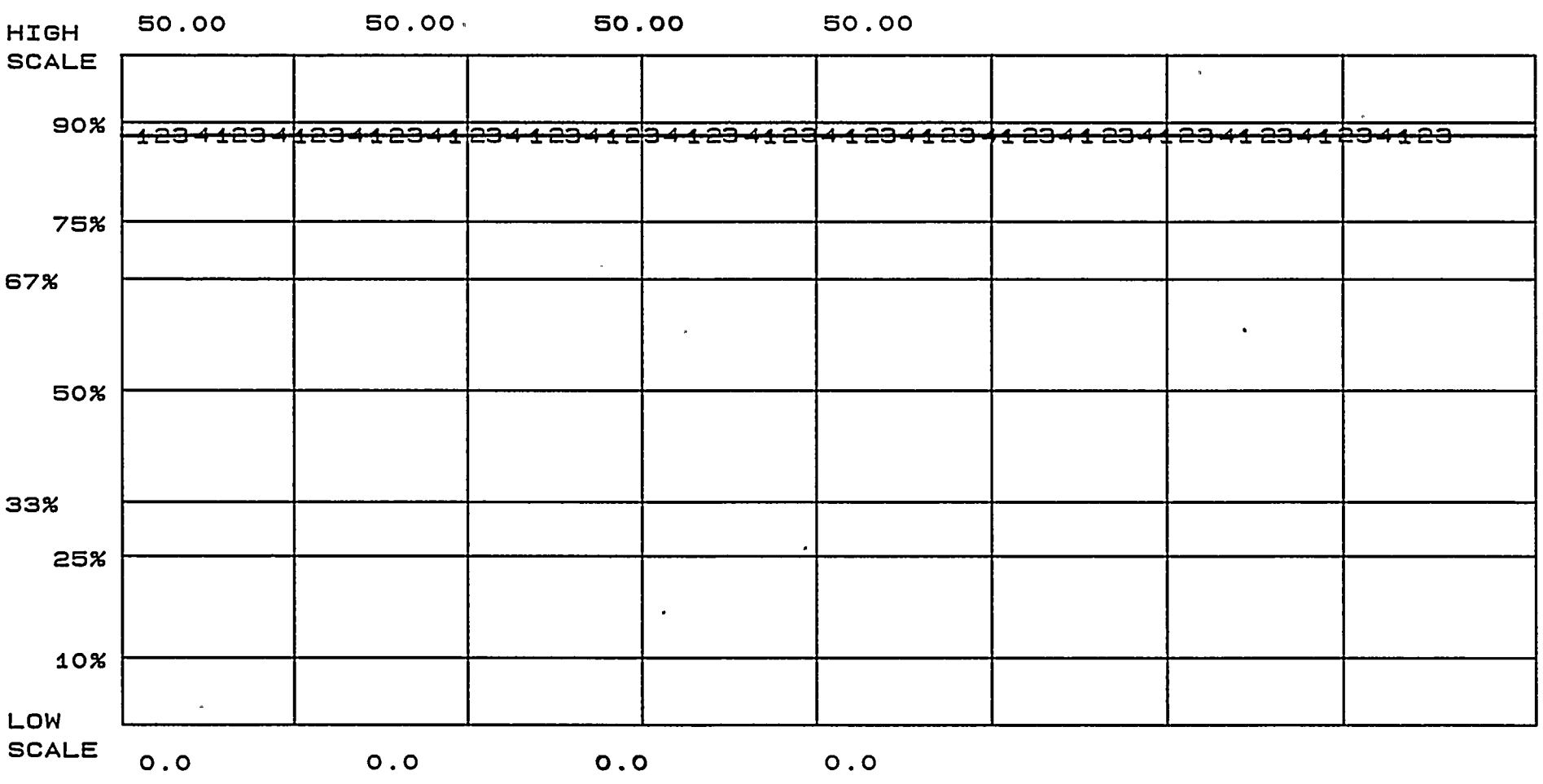
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 01: 05
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 01: 02: 58
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



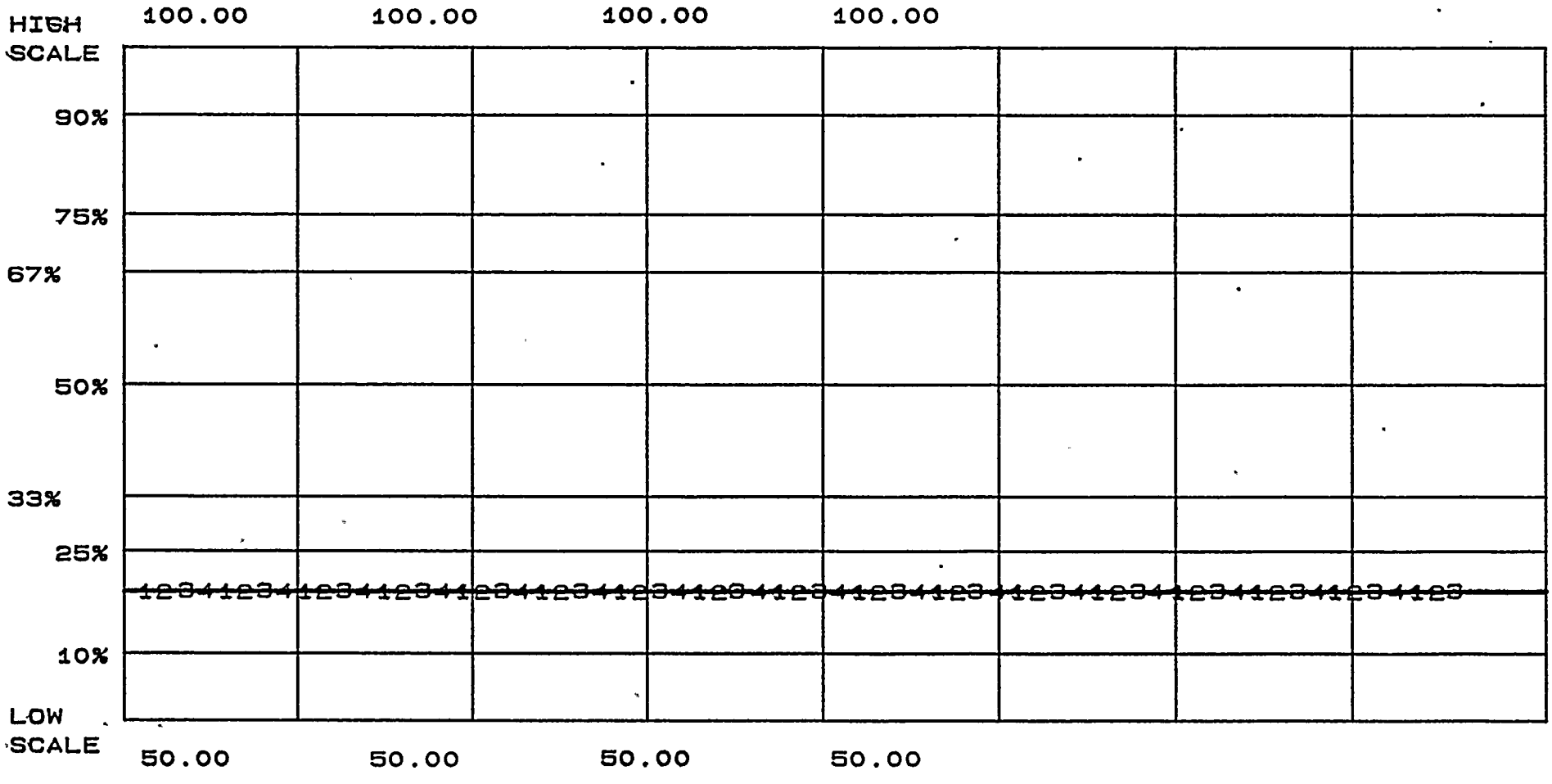
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR 1 N.R. LEVEL	PC	TIME
2	L1207	STEAM GENERATOR 2 N.R. LEVEL	PC	START 00: 01: 05
3	L1210	STEAM GENERATOR 3 N.R. LEVEL	PC	STOP 01: 02: 57
4	L1213	STEAM GENERATOR 4 N.R. LEVEL	PC	
5				
6				



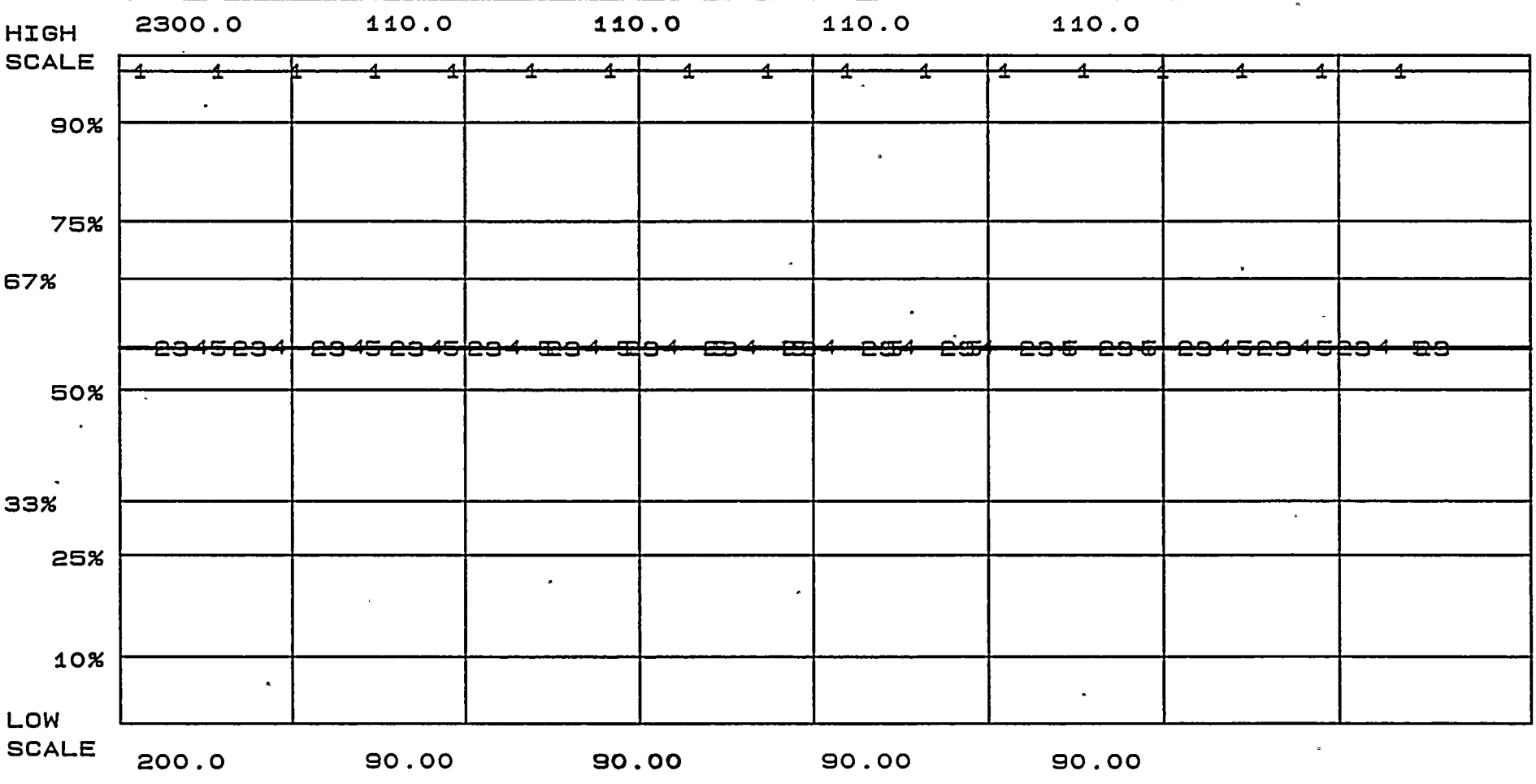
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR #1 W.R. LEVEL	PC	TIME
2	L1201	STEAM GENERATOR #2 W.R. LEVEL	PC	START 00: 01: 05
3	L1202	STEAM GENERATOR #3 W.R. LEVEL	PC	STOP 01: 02: 57
4	L1203	STEAM GENERATOR #4 W.R. LEVEL	PC	
5				
6				



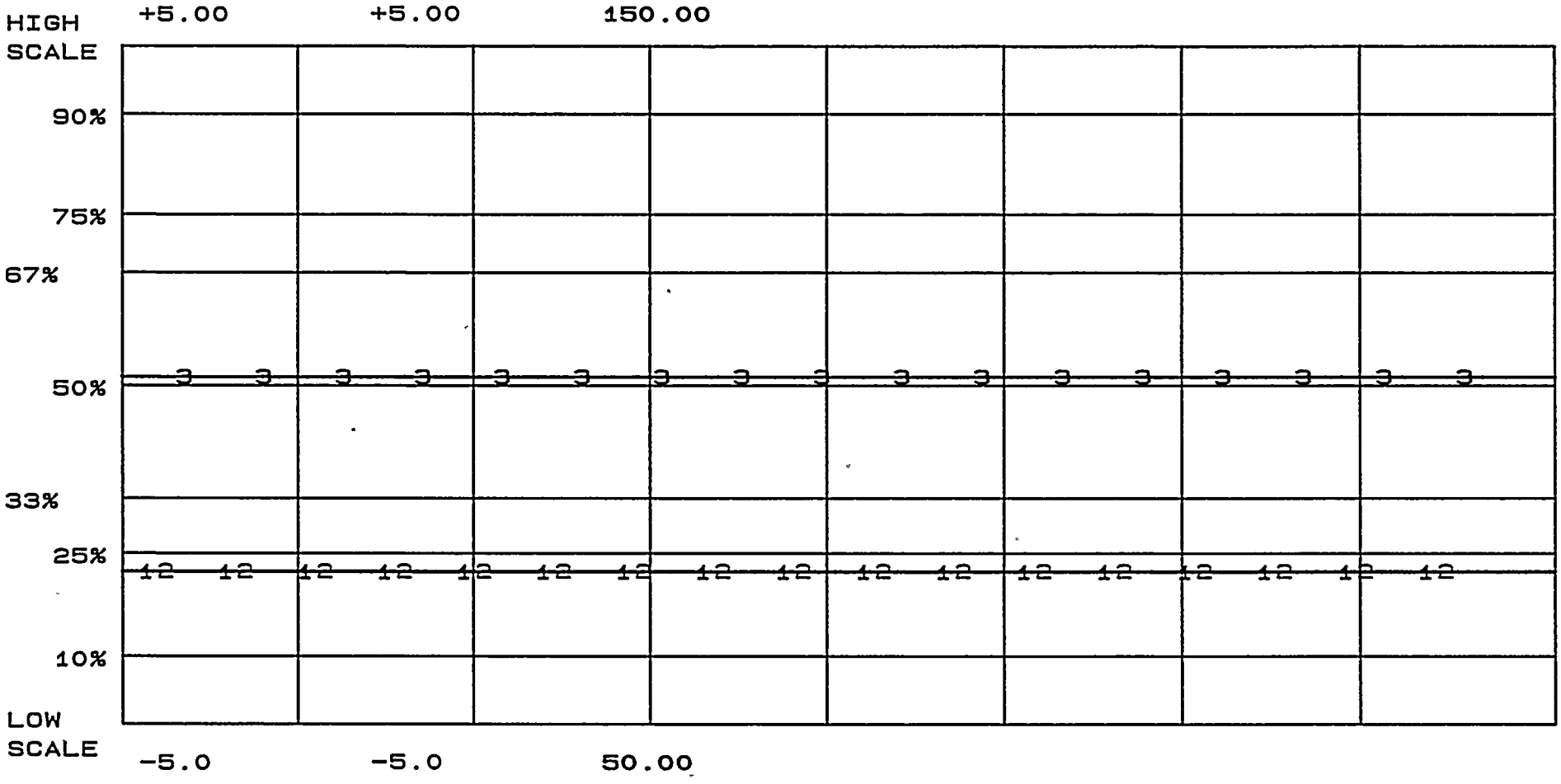
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	F1089	RCS FLOW LOOP 1	PC	START 00: 01: 05
3	F1092	RCS FLOW LOOP 2	PC	STOP 01: 02: 57
4	F1095	RCS FLOW LOOP 3	PC	
5	F1098	RCS FLOW LOOP 4	PC	
6				



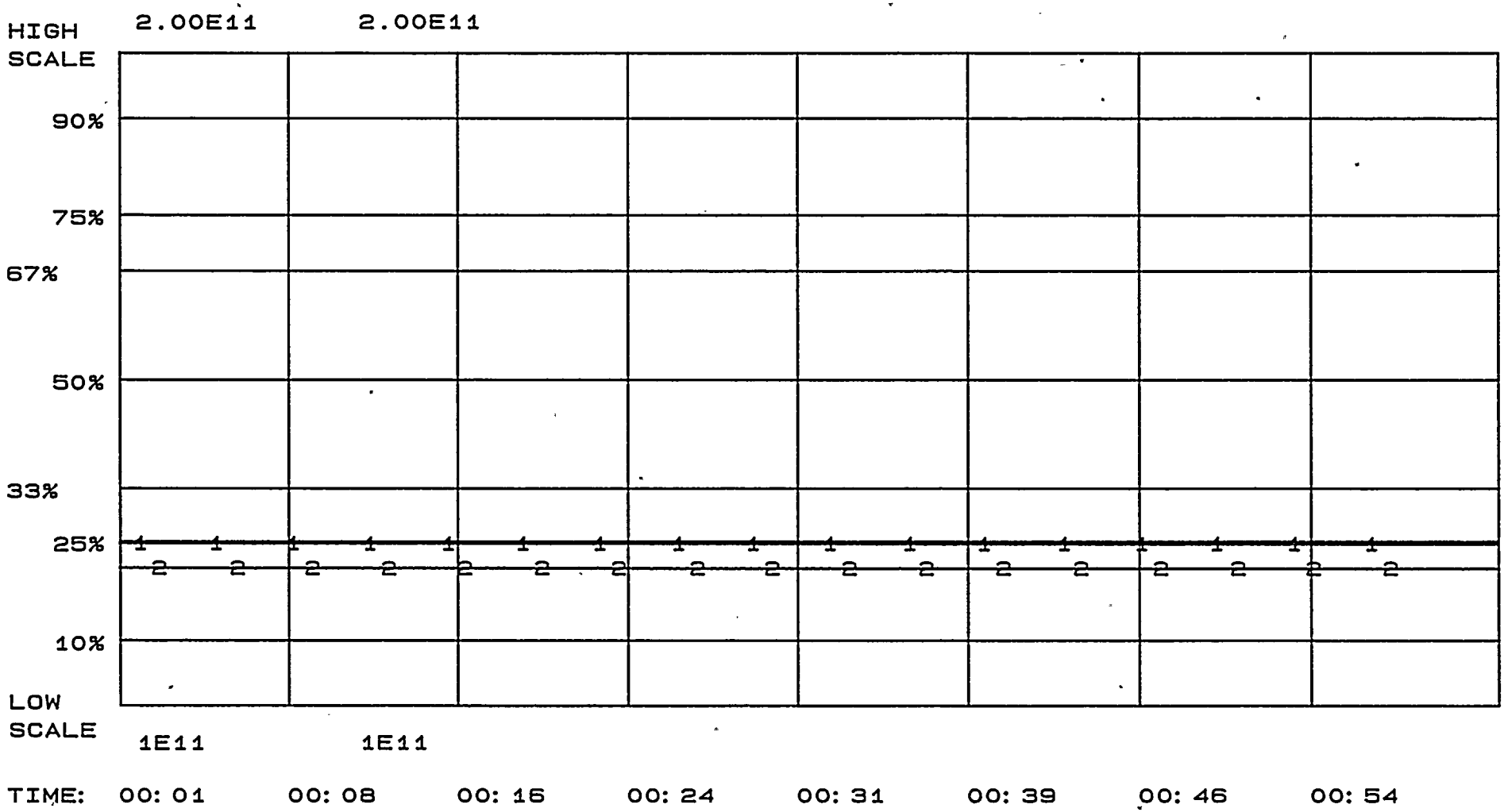
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 01: 05
3	T1162	LOWER CONTAINMENT PRESSURE	DEG_F	STOP 01: 02: 57
4				
5				
6				



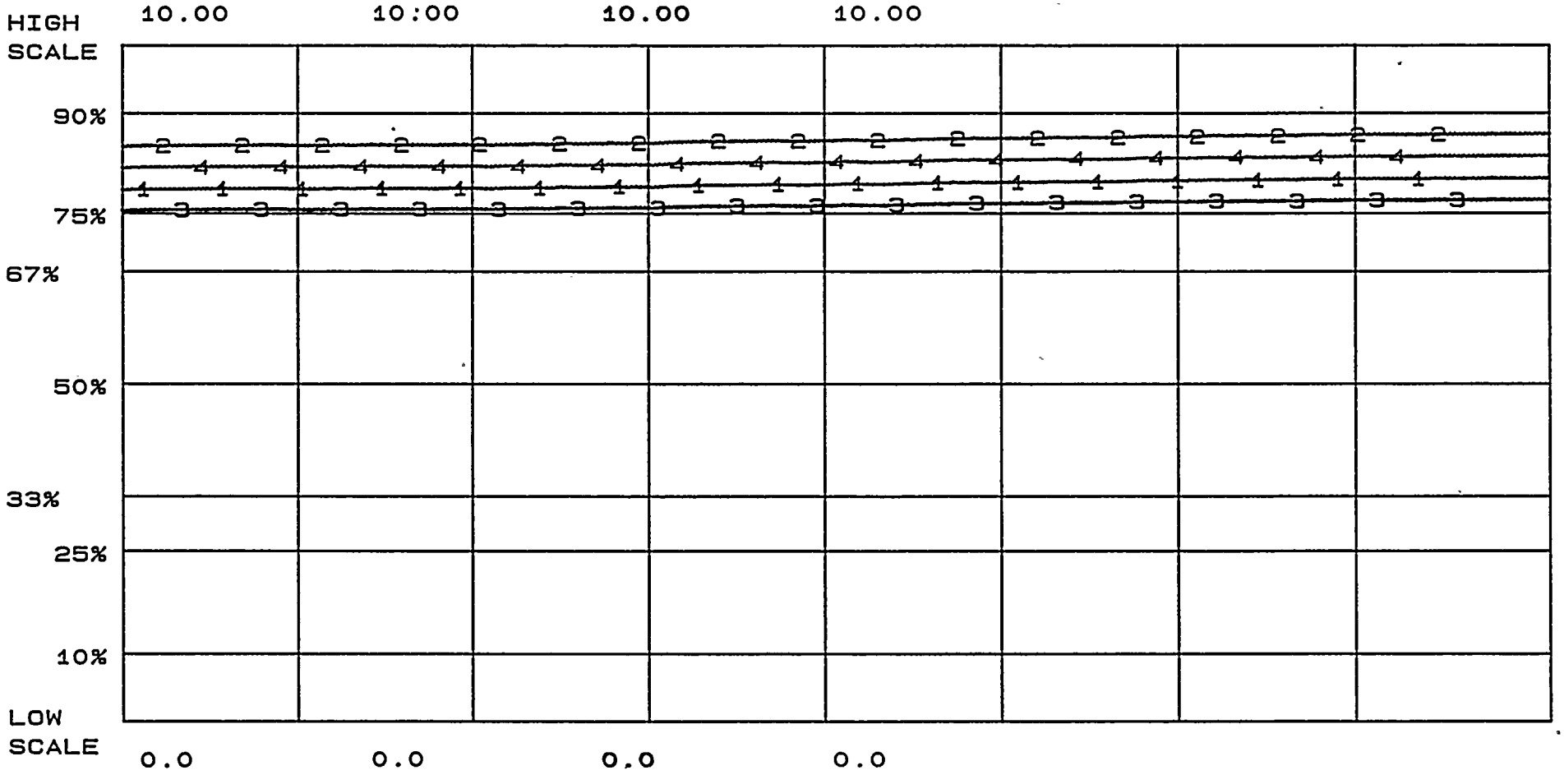
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU(1)	SOURCE RANGE N-31 DETECT. OUTPUT	CPS	TIME
2	NILDTOU(2)	SOURCE RANGE N-32 DETECT. OUTPUT	CPS	START 00:01:05
3				STOP 01:02:57
4				
5				
6				



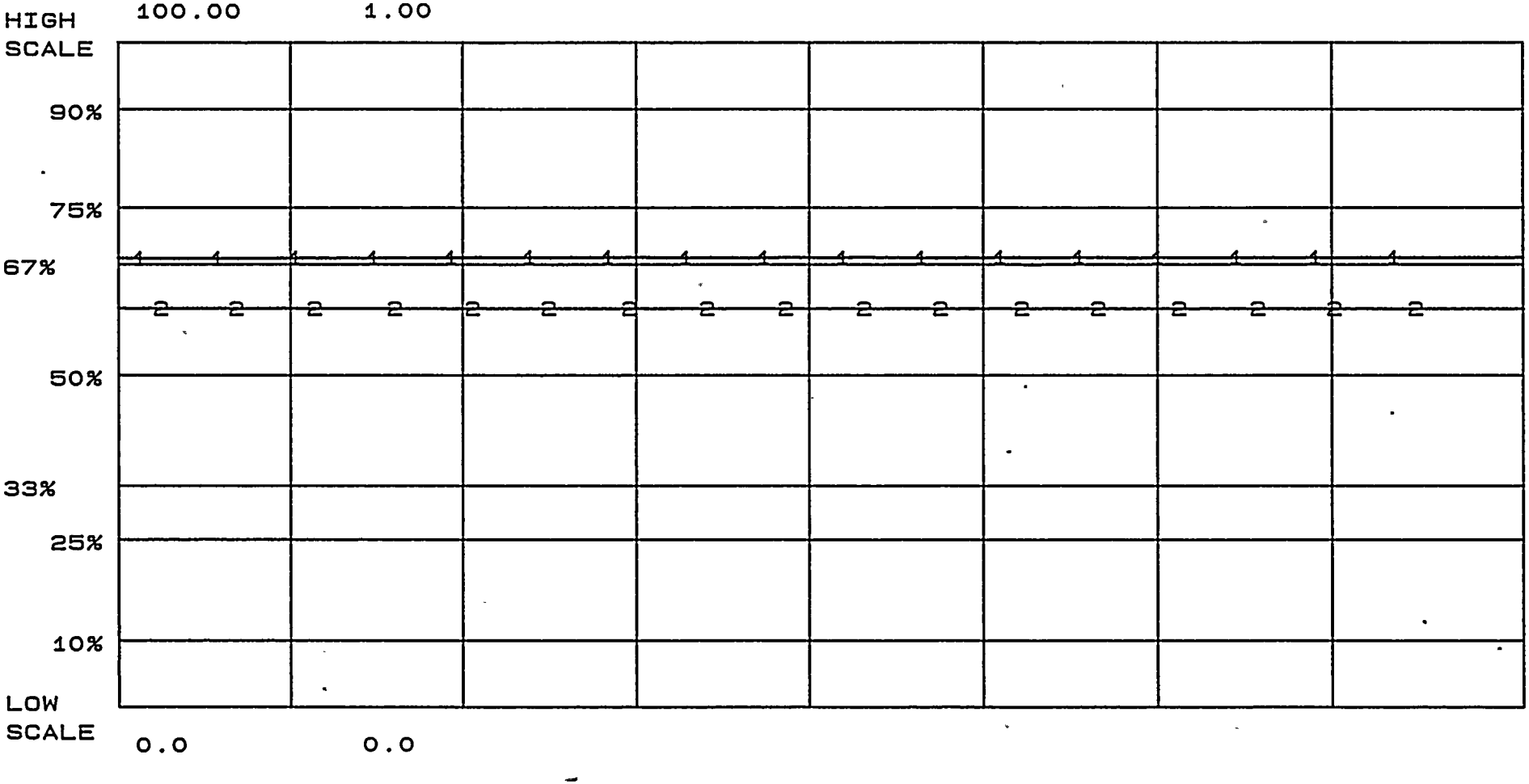
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	RCP SEAL FLOW LOOP 1	GPM	TIME
2	F1001	RCP SEAL FLOW LOOP 2	GPM	START 00: 01: 05
3	F1002	RCP SEAL FLOW LOOP 3	GPM	STOP 01: 02: 57
4	F1003	RCP SEAL FLOW LOOP 4	GPM	
5				
6				



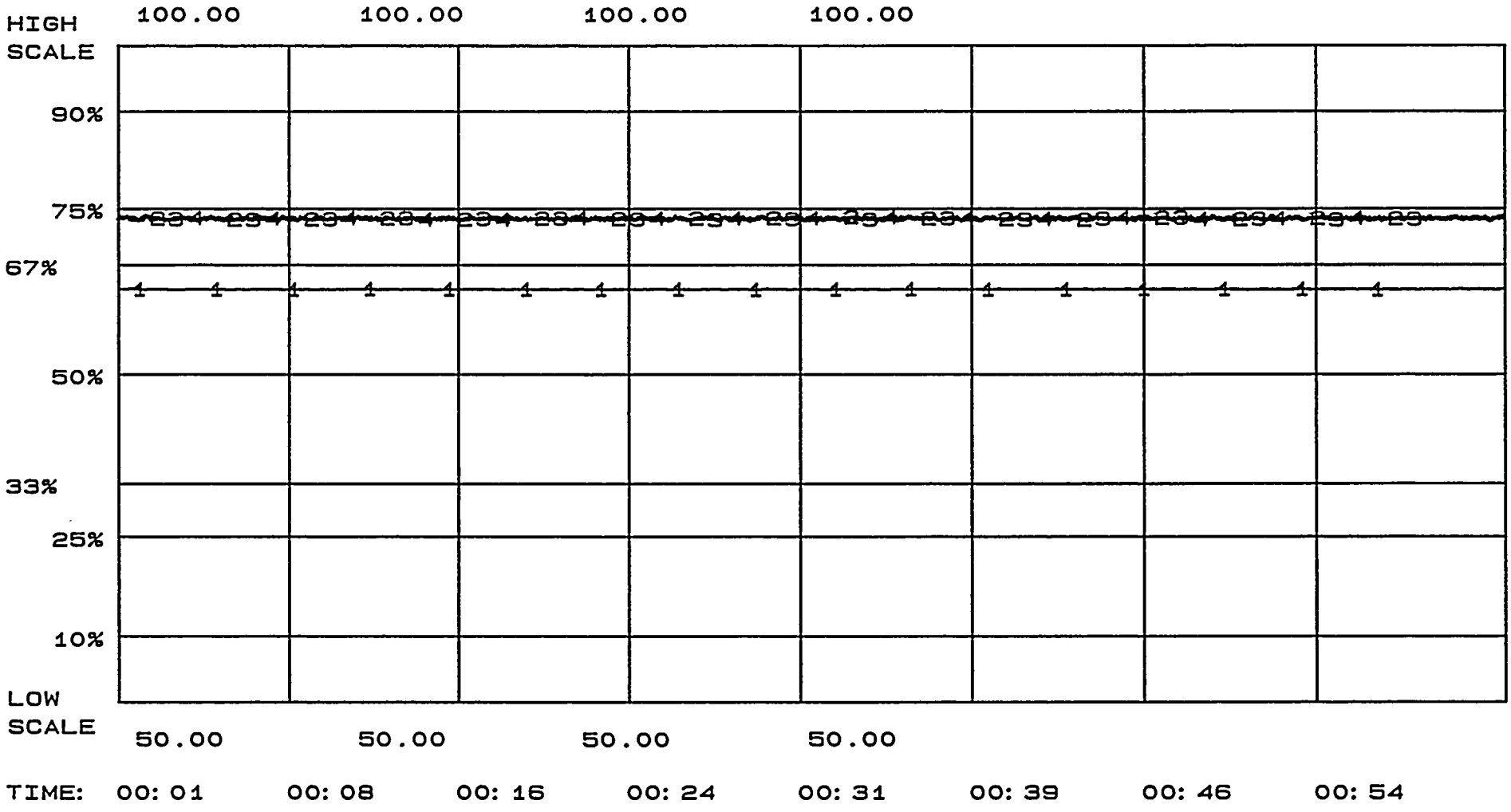
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RXTSC	SATURATION MARGIN	DEG_F	TIME
2	CRQN	CORE HEAT FLUX	PC	START 00: 01: 05
3				STOP 01: 02: 57
4				
5				
6				



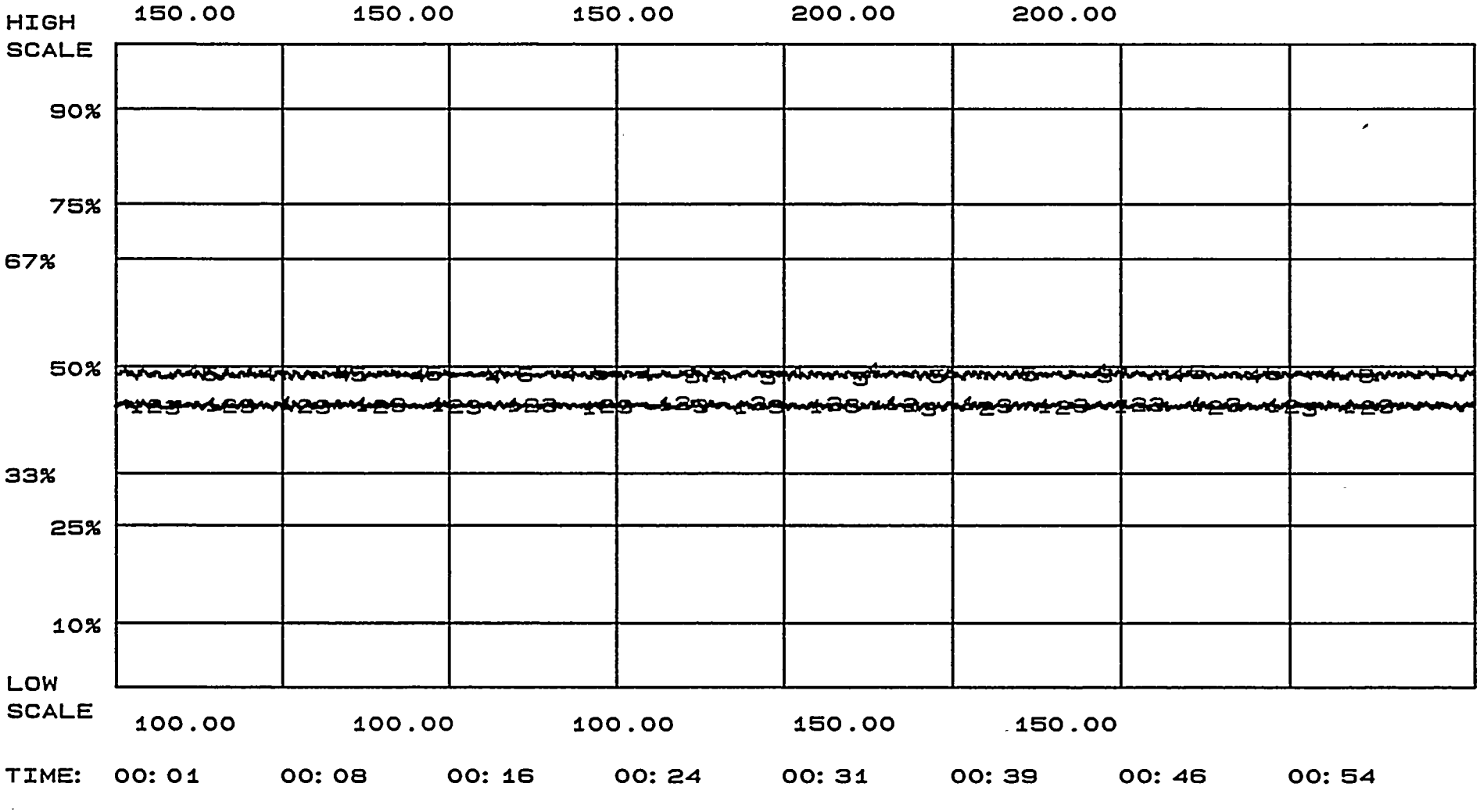
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP DISC. HDR. TEMP.	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 00: 01: 05
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 58
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



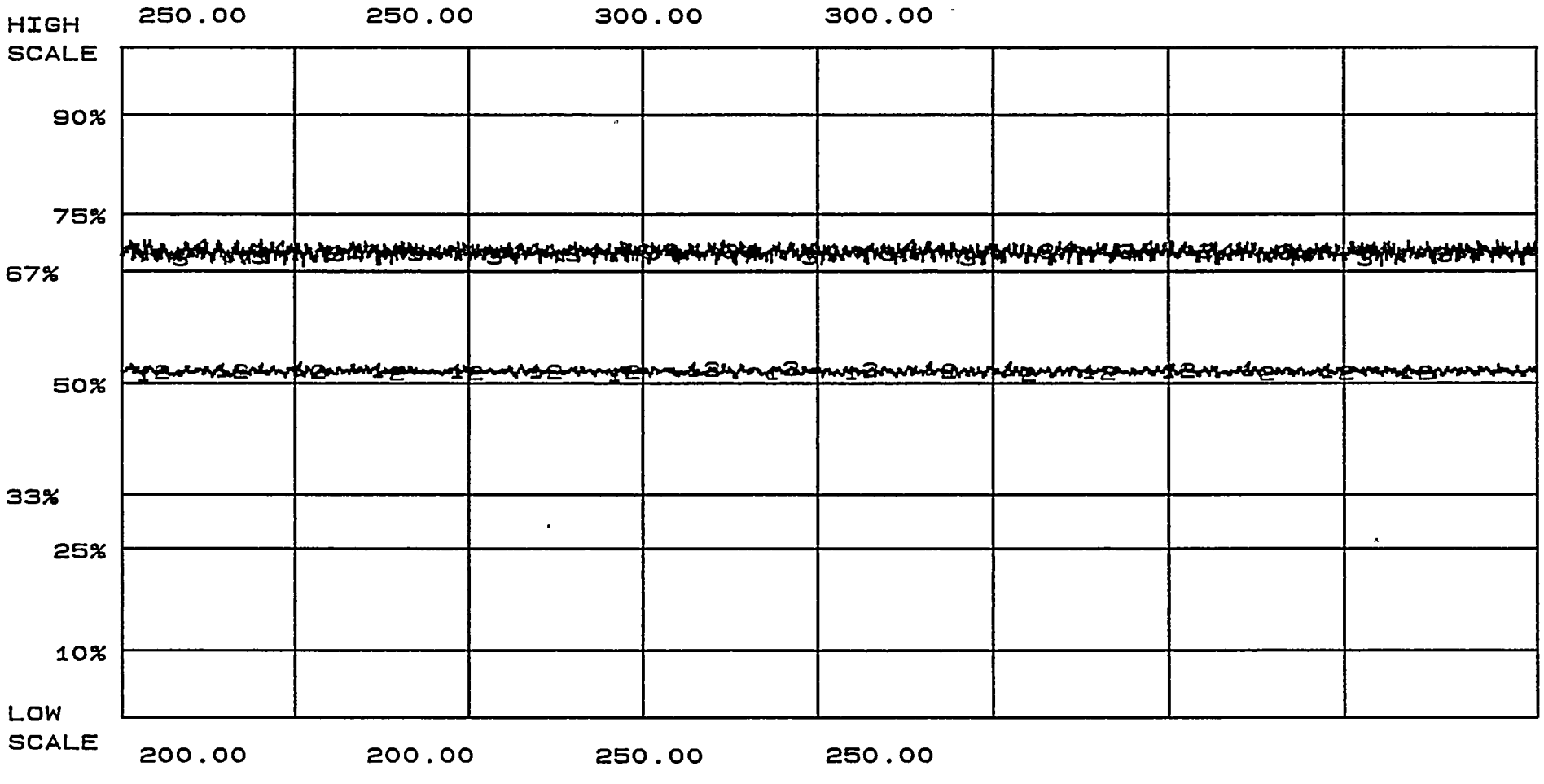
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH1A	HEATER 1A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH1B	HEATER 1B TUBE OUTELT TEMP.	DEG_F	START 00: 01: 05
3	FWTTOH1C	HEATER 1C TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 58
4	FWTTOH2A	HEATER 2A TUBE OUTLET TEMP.	DEG_F	
5	FWTTOH2B	HEATER 2B TUBE OUTLET TEMP.	DEG_F	
6				



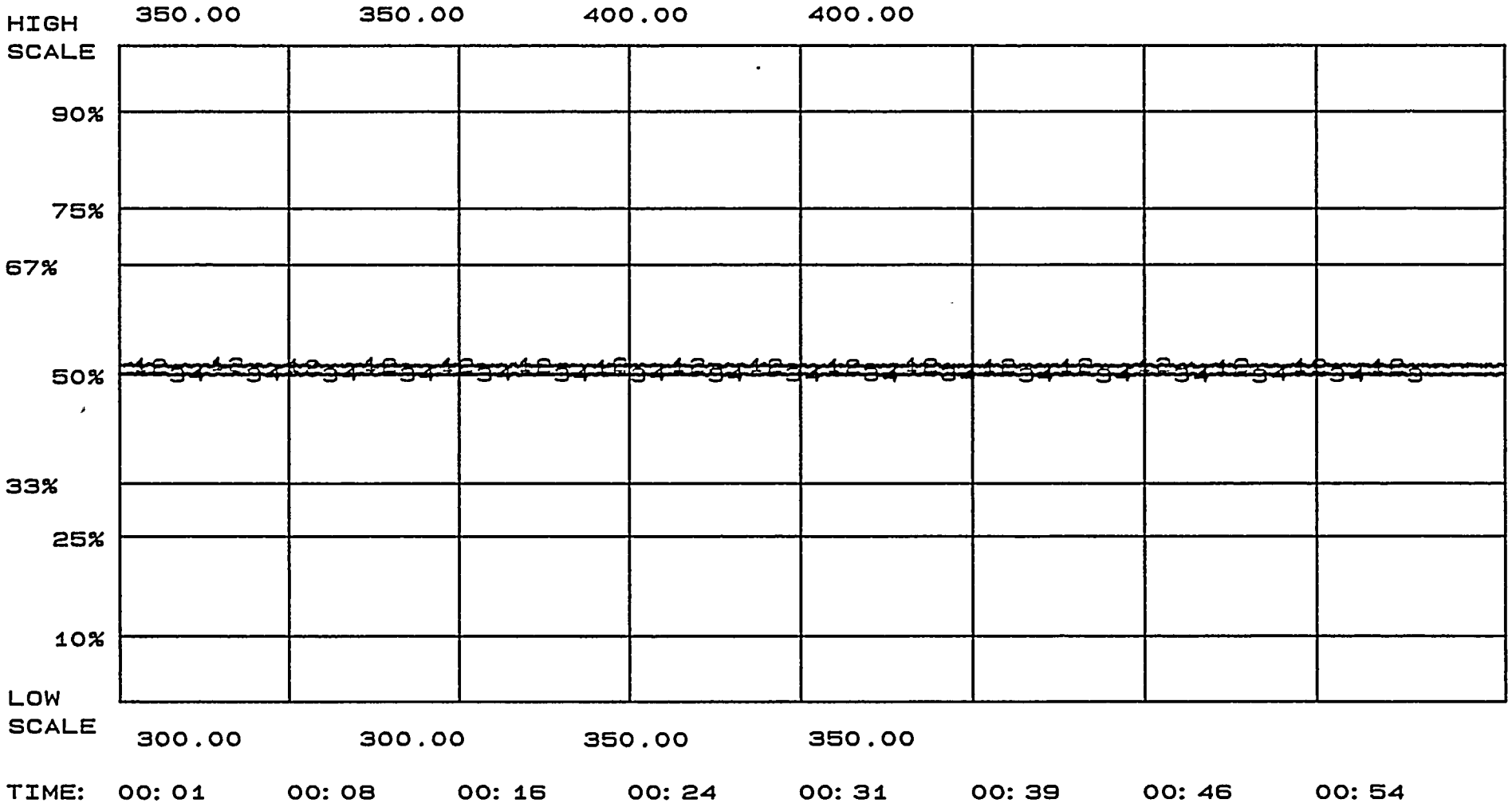
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP.	DEG_F	START 00: 01: 05
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 58
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP.	DEG_F	
5				
6				



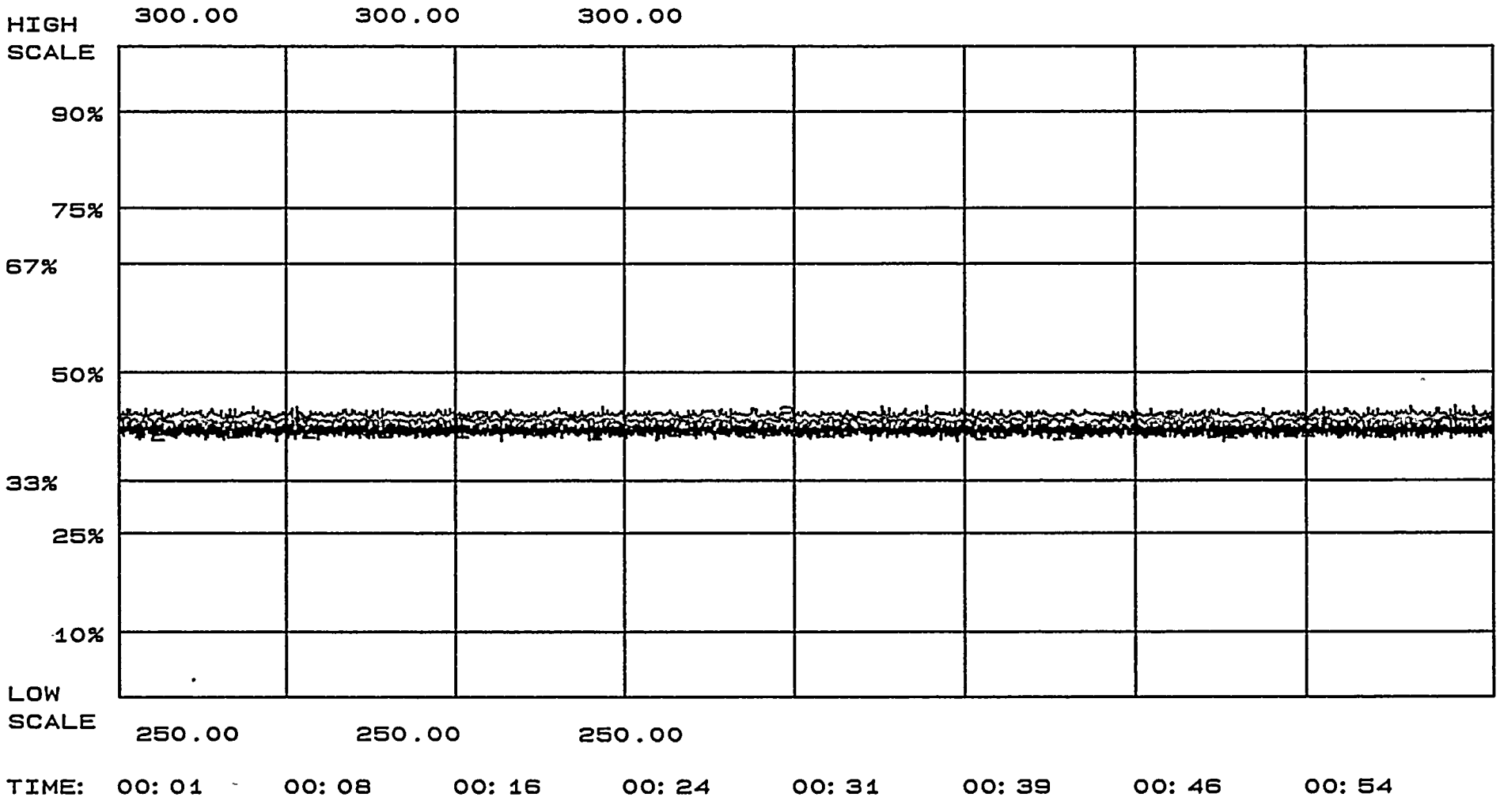
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP.	DEG_F	START 00: 01: 05
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP.	DEG_F	STOP 01: 02: 58
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP.	DEG_F	
5				
6				



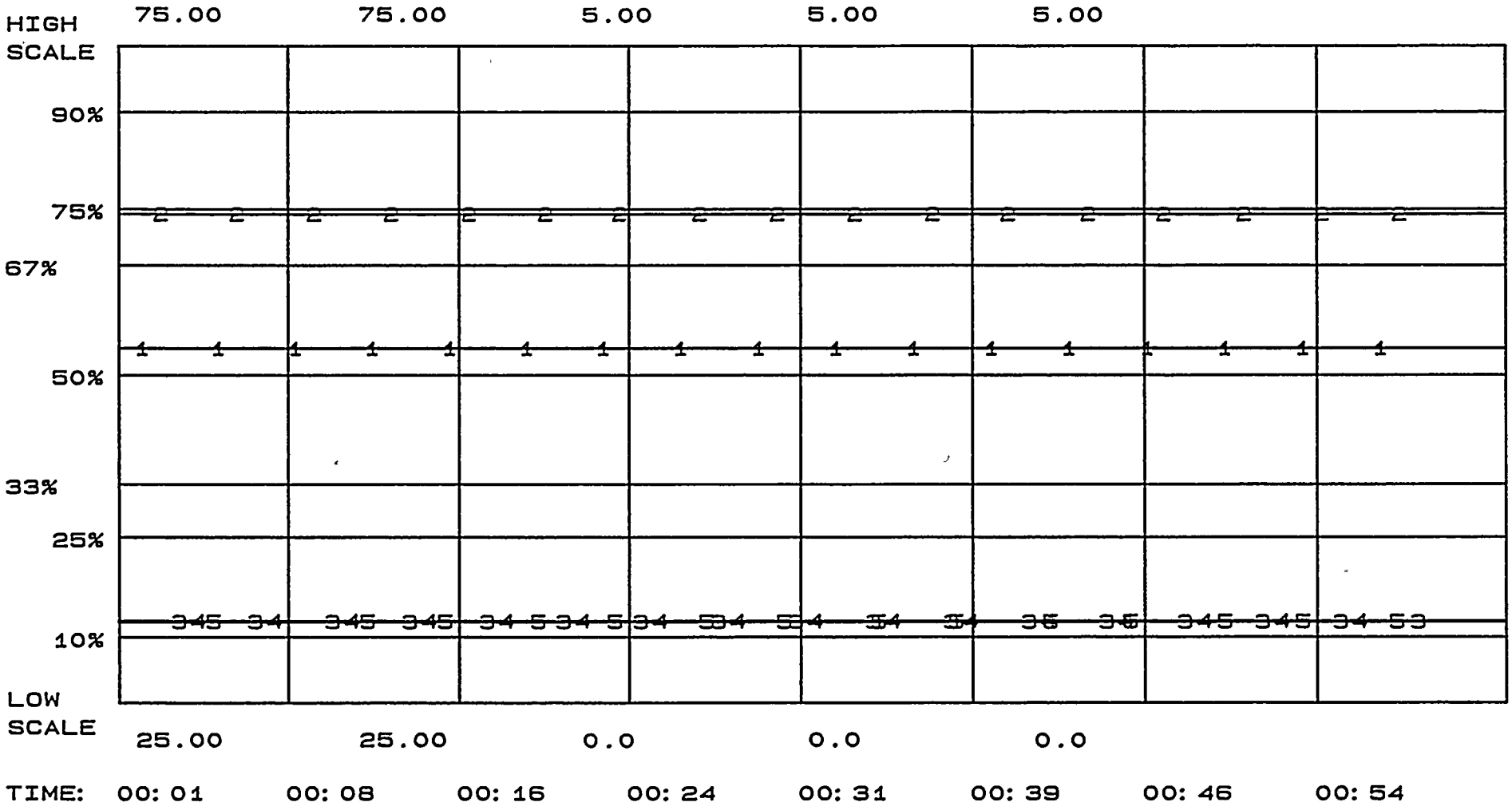
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	MAIN FEEDPUMP SUCTION TEMP.	DEG_F	TIME
2	FWTDEMFP	EAST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	START 00: 01: 05
3	FWTDWMFP	WEST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	STOP 01: 02: 58
4				
5				
6				



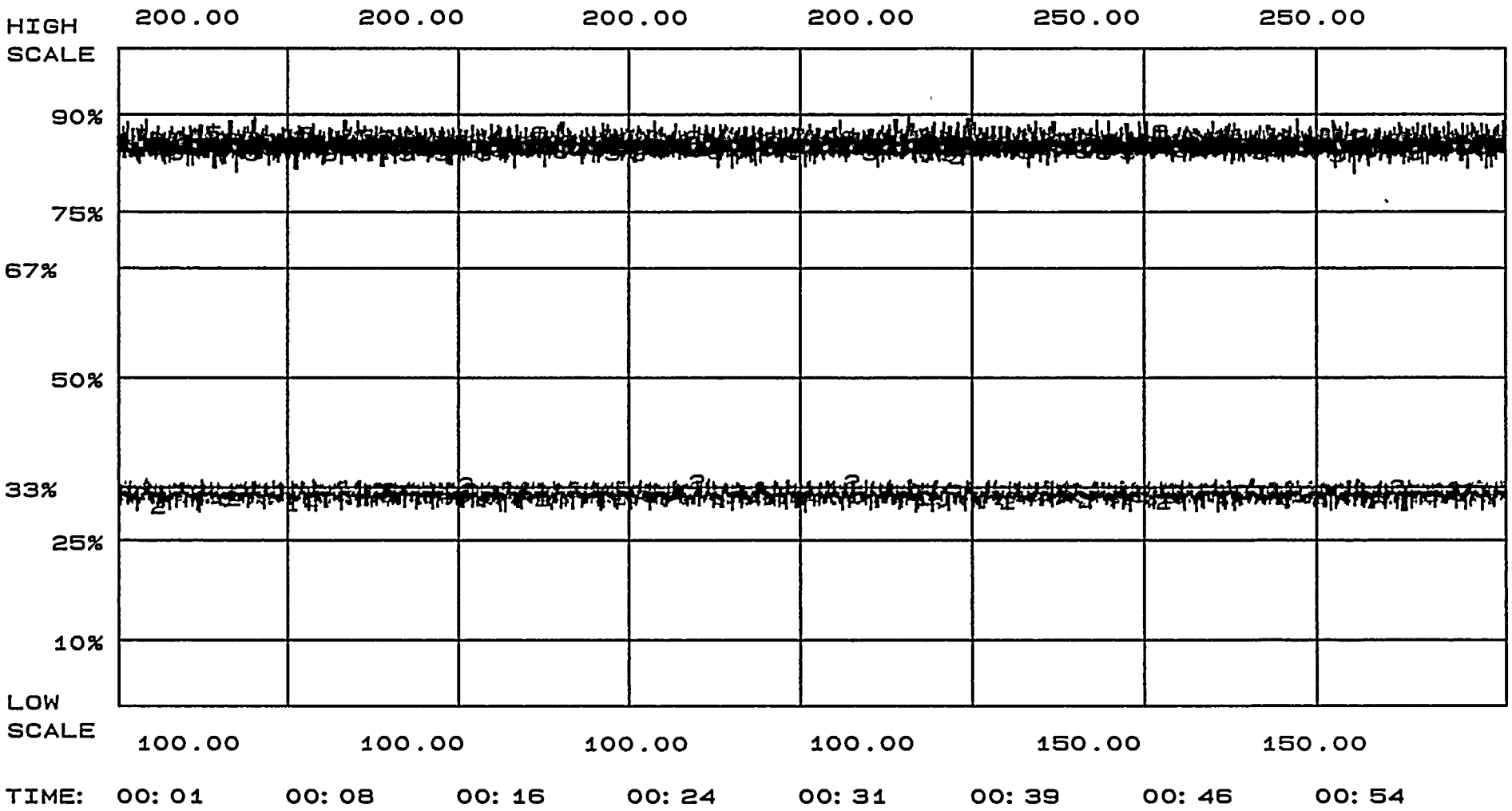
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER AVG. INLET TEMP.	DEG_F	TIME
2	CWTAVGOUT	CONDENSER AVG. OUTLET TEMP.	DEG_F	START 00: 01: 05
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 01: 02: 58
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



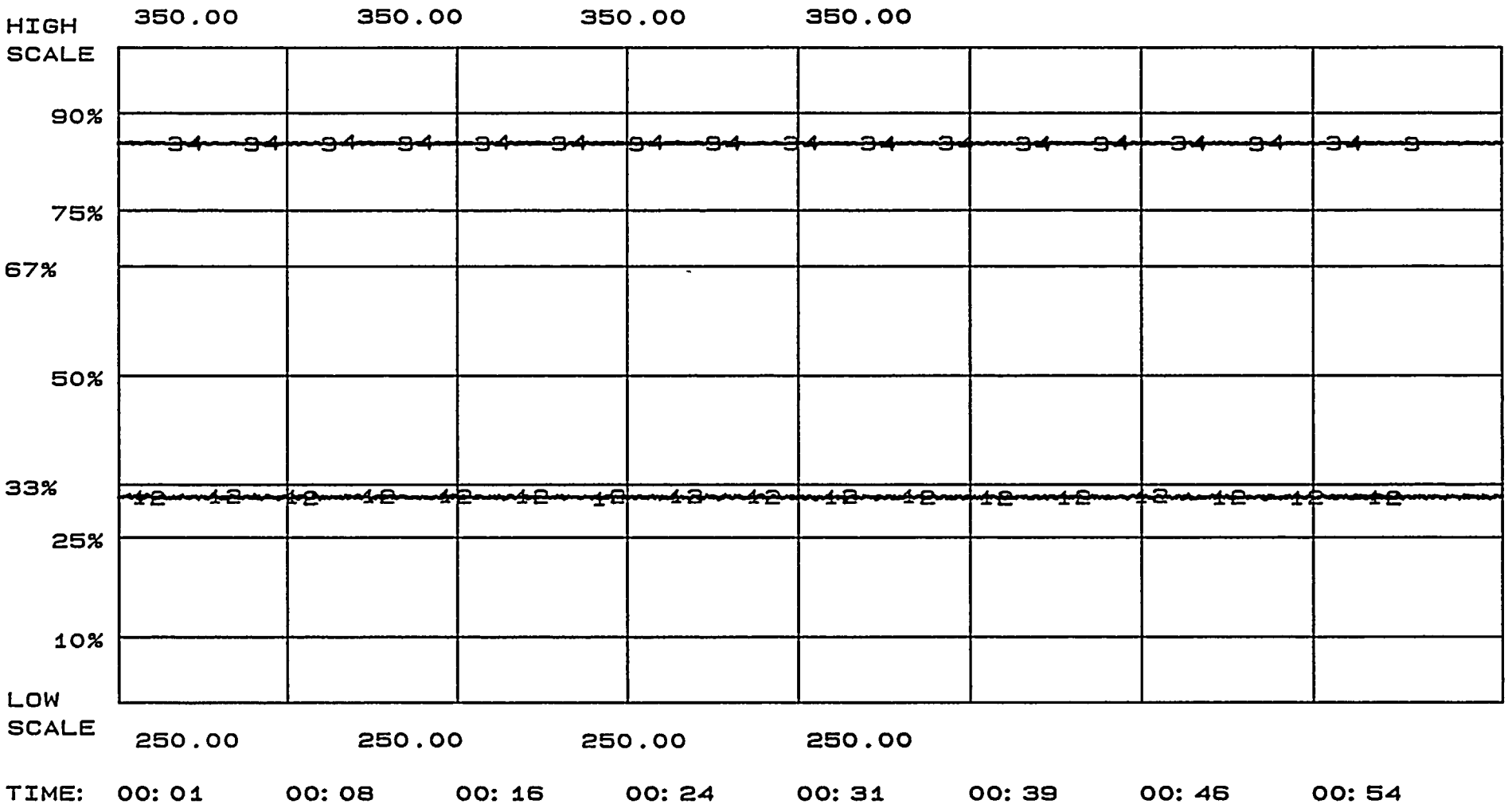
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F	START 00: 01: 05
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F	STOP 01: 02: 58
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F	
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATURE	DEG_F	
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F	



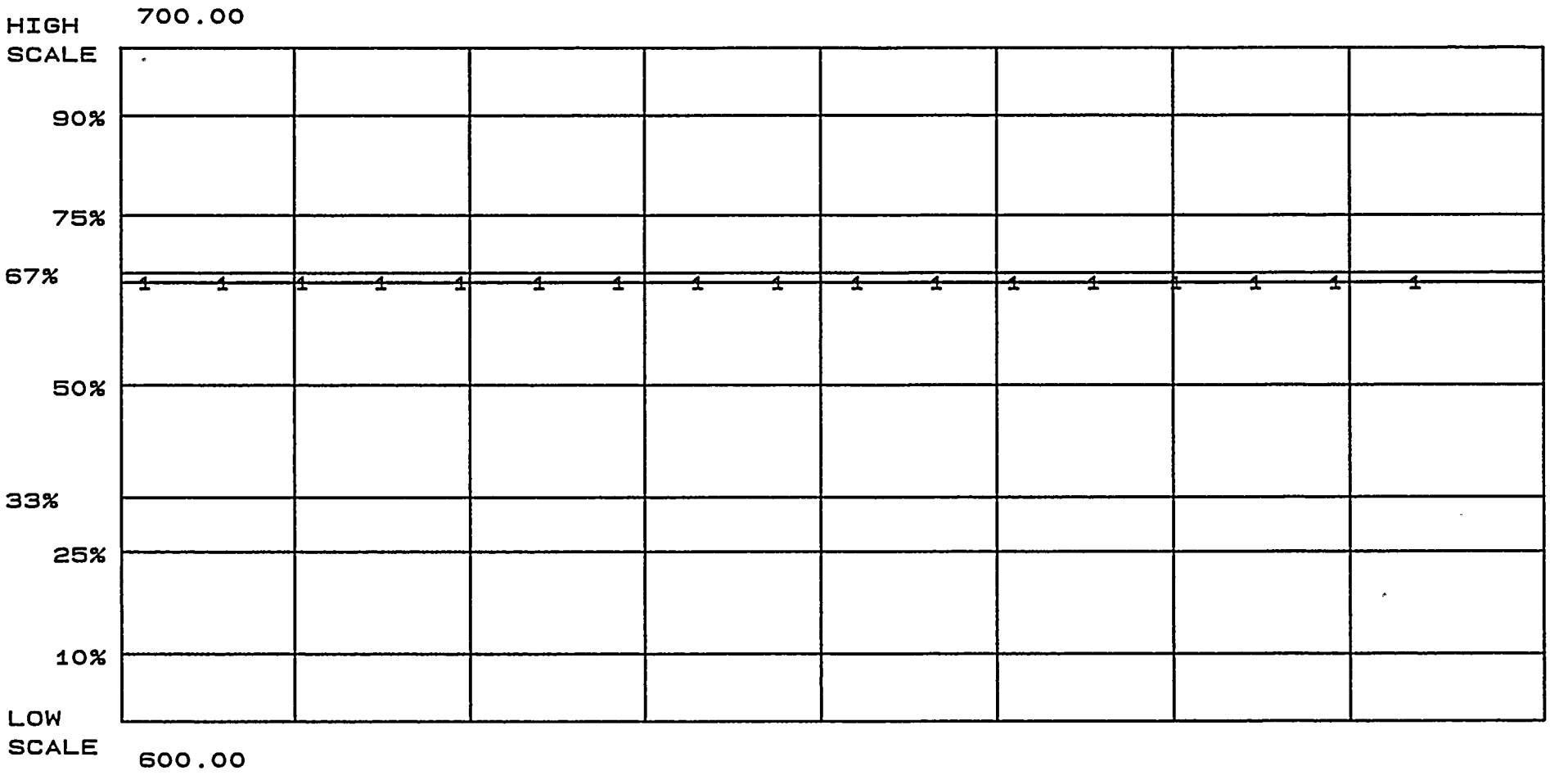
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 00: 01: 05
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 01: 02: 58
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



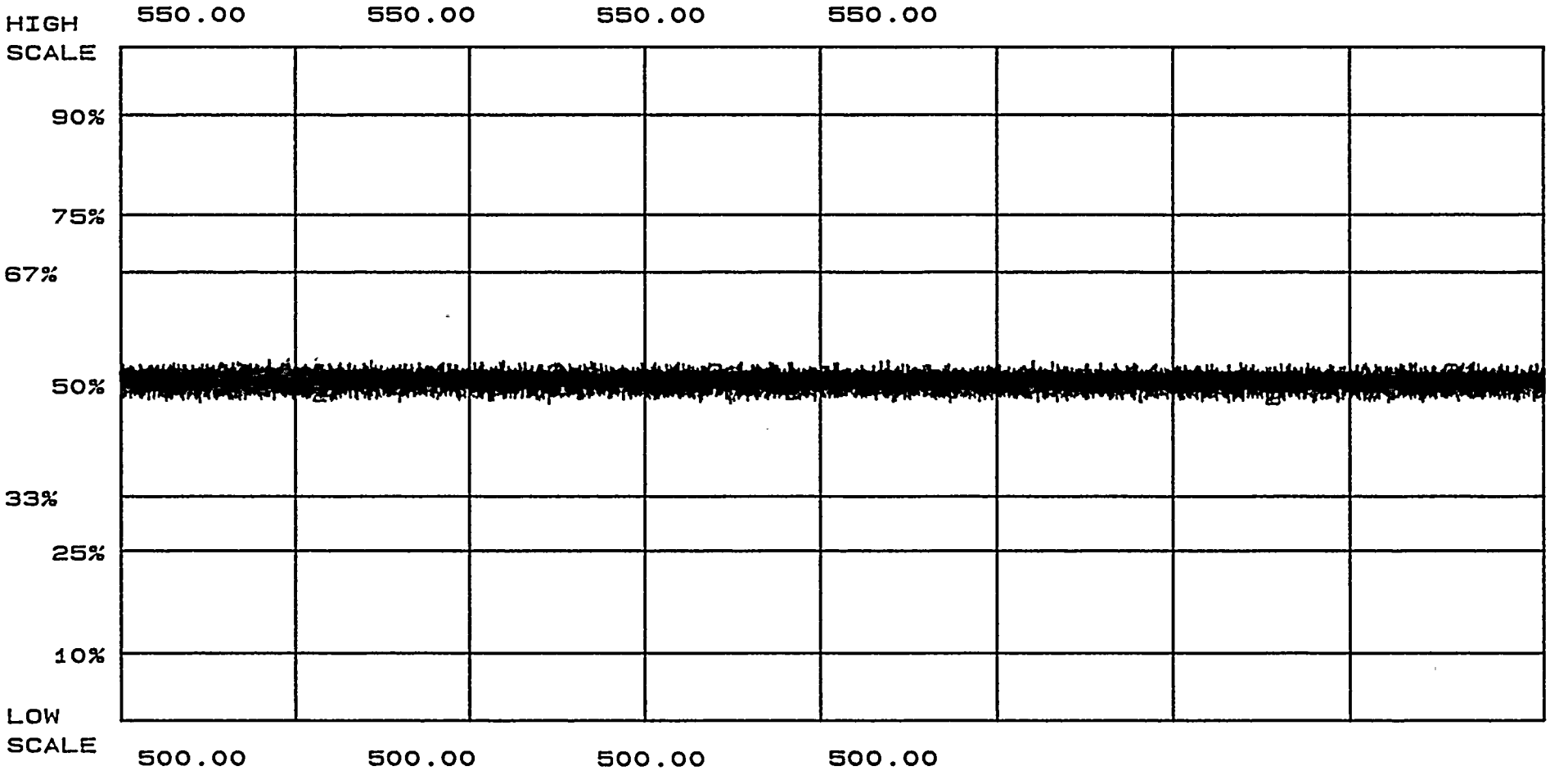
60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCBORON (1)	RCS BORON CONCENTRATION	PPM	TIME
2				START 00: 01: 05
3				STOP 01: 02: 58
4				
5				
6				



60% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCTSGDM(1)	STEAM GENERATOR 1 DOME TEMP.	DEG_F	TIME
2	RCTSGDM(2)	STEAM GENERATOR 2 DOME TEMP.	DEG_F	START 00:01:05
3	RCTSGDM(3)	STEAM GENERATOR 3 DOME TEMP.	DEG_F	STOP 01:02:58
4	RCTSGDM(4)	STEAM GENERATOR 4 DOME TEMP.	DEG_F	
5				
6				



COOK PLANT SIMULATOR

90% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
| CRITICAL PARAMETERS |					
Nuclear Power	PR Avg.	Percent	88	88	0
Thermal Power	Calc.	Percent	88	88	0
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	NOT AVAIL	597.2	ERR *
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	NOT AVAIL	541.4	ERR *
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	NOT AVAIL	597.2	ERR *
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	NOT AVAIL	541.4	ERR *
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	NOT AVAIL	597.2	ERR *
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	NOT AVAIL	541.4	ERR *
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	NOT AVAIL	597.2	ERR *
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	NOT AVAIL	541.4	ERR *
Loop 1 Tavg.	NTI-13	Deg. F	570	569.3	0.1
Loop 2 Tavg.	NTI-23	Deg. F	570	569.3	0.1
Loop 3 Tavg.	NTI-33	Deg. F	570	569.3	0.1
Loop 4 Tavg.	NTI-43	Deg. F	570	569.3	0.1
Pressurizer Pressure	NPP Avg.	PSIG	2238.75	2241.15	-0.1
Pressurizer Level	NLP Avg.	Percent	49.7	49.9	-0.4
Press. Steam Temperature	NTA-252	Deg. F	640	652.6	-2
Press. Liquid Temp.	NTA-251	Deg. F	648	652.8	-0.7
Press. Surge Line Temp.	NTA-253	Deg. F	655	633.8	3.2
Steam Generator #21 Level	BLP Avg.	Percent	43.5	43.96	-1.1
Steam Generator #22 Level	BLP Avg.	Percent	44	43.74	0.6
Steam Generator #23 Level	BLP Avg.	Percent	45	43.74	2.8
Steam Generator #24 Level	BLP Avg.	Percent	45	43.47	3.4
Steam Generator #21 Press	MPP Avg.	PSIG	805	820	-1.9
Steam Generator #22 Press	MPP Avg.	PSIG	800	820	-2.5
Steam Generator #23 Press	MPP Avg.	PSIG	795	820	-3.1
Steam Generator #24 Press	MPP Avg.	PSIG	800	820	-2.5
Total Feedwater Flow		E6 lb/hr	13.25	12.84	3.1
Main Generator Elect Pwr		Megawatts	992	991	0.1

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	990.64	992.28	-.17
RC LOOP DELTA T	1	F	55.78	56.51	-1.29
T AVG TRANSM. TABLE	1	F	569.32	570.57	-.22
T REFERENCE	1	F	569.24	570.57	-.23
SG DOME PRESSURES	1	PSIA	835.66	835.96	-.04
MS LOOP FLOWS	1	#/S	3567.40	3556.39	.31
FW LOOP FLOWS	1	#/S	3566.75	3556.54	.29
HPT INLET STM FLOW	1	#/S	3197.93	3224.83	-.83
LPT INLET STM FLOW	1	#/S	774.06	776.86	-.36
LPT INLET STM FLOW	2	#/S	774.03	776.84	-.36
LPT INLET STM FLOW	3	#/S	774.04	776.83	-.36
HPT EXTR. FLOW TO HTR 6A	1	#/S	98.05	97.84	.21
HPT EXTR. FLOW TO HTR 5A	1	#/S	124.18	121.50	2.21
HPT EXTR. FLOW TO HTR 4A	1	#/S	59.32	58.41	1.55
LPT EXTR. FLOW TO HTR 3A	1	#/S	64.64	64.14	.78
LPT EXTR. FLOW TO HTR 2A	1	#/S	62.35	63.55	-1.89
LPT EXTR. FLOW TO HTR 1A	1	#/S	31.07	27.57	12.69 *
H6A TUBE OUTLET TEMP	1	F	413.90	414.36	-.11
H5A TUBE OUTLET TEMP	1	F	358.70	359.43	-.20
MFP TUBE OUTLET TEMP	1	F	294.65	295.07	-.14
[illegible]A TUBE OUTLET TEMP	1	F	311.07	310.99	.02
[illegible]A TUBE OUTLET TEMP	1	F	247.08	247.41	-.13
H2A TUBE OUTLET TEMP	1	F	192.22	192.75	-.27
H1A TUBE OUTLET TEMP	1	F	136.58	135.86	.53
DCA TUBE OUTLET TEMP	1	F	99.96	102.44	-2.42
HWP SUCTION TEMPERATURE	1	F	94.97	92.54	2.62
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	93.65	92.54	1.20
CND VAC	1	INHGA	28.20	28.45	-.87

DATA VALUE BASED ON 88.00 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.5833	DEGF
T1004	PZR LIQUID TEMP		652.8430	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		633.8186	DEG F
L1091	PRESSURIZER WATER LEVEL		49.9050	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3469	%
P1036	PRESSURIZER PRESSURE		2241.1545	PSIG
T1101	LOOP 1 AVG TEMP		569.3184	DEGF
T1102	LOOP 2 AVG TEMP		569.3347	DEGF
T1103	LOOP 3 AVG TEMP		569.3335	DEGF
T1104	LOOP 4 AVG TEMP		569.3264	DEGF
T1111	LOOP 1 HOT LEG TEMP		597.2070	DEGF
T1112	LOOP 2 HOT LEG TEMP		597.2070	DEGF
T1113	LOOP 3 HOT LEG TEMP		597.2188	DEGF
T1114	LOOP 4 HOT LEG TEMP		597.2070	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.4285	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.4607	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.4473	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.4473	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8872	%
CRQN	03030 NORMALIZED CORE^POWER		.8802	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		820.6643	PSIG
P1025	STM GEN OUTLET PRES LP 2		820.6506	PSIG
P1028	STM GEN OUTLET PRES LP 3		820.7029	PSIG
P1031	STM GEN OUTLET PRES LP 4		820.7012	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.9615	PC
L1207	STM GEN 2 NARROW LEVEL		43.7395	PC
L1210	STM GEN 3 NARROW LEVEL		43.7423	PC
L1213	STM GEN 4 NARROW LEVEL		43.4660	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	520.3162	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	520.4771	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	520.0759	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	519.7085	F
RCBORON	11070 BORON CONC	(001)	592.5615	PPM
RCBORON	11070 BORON CONC	(002)	592.5601	PPM
RCBORON	11070 BORON CONC	(003)	592.5596	PPM

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	93.6304	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	93.5948	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	93.5439	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		94.7682	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		99.8691	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		99.8729	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP		99.8711	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		136.5742	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		136.5647	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		136.5484	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		192.2710	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		192.2275	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		247.1111	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		247.0955	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		311.3240	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		311.0405	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		358.6509	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		358.6602	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		413.8992	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		413.9004	F

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		293.6960	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		294.7561	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		294.7576	F
CWTAVGIN	03050	COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		66.8562	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.8831	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.8823	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.8811	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		146.6147	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		146.3200	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		202.4544	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		202.4878	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		256.1746	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		256.3933	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		304.8052	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		304.8428	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		368.5369	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		368.6389	F
RDPROD	03030	ROD POSITION/ACTUAL	(045)	205	
RDPROD	03030	ROD POSITION/ACTUAL	(053)	204	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	990.50	992.58	-.21
RC LOOP DELTA T	1	F	55.80	56.51	-1.27
T AVG TRANSM. TABLE	1	F	569.35	570.57	-.21
T REFERENCE	1	F	569.24	570.57	-.23
SG DOME PRESSURES	1	PSIA	835.83	835.94	-.01
MS LOOP FLOWS	1	#/S	3568.26	3557.05	.32
FW LOOP FLOWS	1	#/S	3567.78	3557.12	.30
HPT INLET STM FLOW	1	#/S	3198.24	3225.20	-.84
LPT INLET STM FLOW	1	#/S	774.04	777.00	-.38
LPT INLET STM FLOW	2	#/S	774.07	777.00	-.38
LPT INLET STM FLOW	3	#/S	774.09	777.01	-.38
HPT EXTR. FLOW TO HTR 6A	1	#/S	98.09	97.90	.20
HPT EXTR. FLOW TO HTR 5A	1	#/S	124.06	121.54	2.07
HPT EXTR. FLOW TO HTR 4A	1	#/S	59.28	58.43	1.45
LPT EXTR. FLOW TO HTR 3A	1	#/S	64.51	64.15	.56
LPT EXTR. FLOW TO HTR 2A	1	#/S	62.29	63.57	-2.00
LPT EXTR. FLOW TO HTR 1A	1	#/S	31.17	27.58	13.03 *
H6A TUBE OUTLET TEMP	1	F	414.01	414.37	-.09
H5A TUBE OUTLET TEMP	1	F	358.77	359.44	-.19
MFP TUBE OUTLET TEMP	1	F	294.68	295.07	-.13
[illegible]A TUBE OUTLET TEMP	1	F	311.12	311.00	.04
[illegible]A TUBE OUTLET TEMP	1	F	247.14	247.41	-.11
H2A TUBE OUTLET TEMP	1	F	192.31	192.75	-.23
H1A TUBE OUTLET TEMP	1	F	136.67	135.87	.59
DCA TUBE OUTLET TEMP	1	F	100.05	102.45	-2.34
HWP SUCTION TEMPERATURE	1	F	94.97	92.55	2.61
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	93.65	92.55	1.19
CND VAC	1	INHGA	28.20	28.45	-.86

DATA VALUE BASED ON 88.02 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.8298	DEGF
T1004	PZR LIQUID TEMP		653.1167	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		634.4561	DEG F
L1091	PRESSURIZER WATER LEVEL		50.0933	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3478	%
P1036	PRESSURIZER PRESSURE		2245.2014	PSIG
T1101	LOOP 1 AVG TEMP		569.3455	DEGF
T1102	LOOP 2 AVG TEMP		569.3621	DEGF
T1103	LOOP 3 AVG TEMP		569.3630	DEGF
T1104	LOOP 4 AVG TEMP		569.3562	DEGF
T1111	LOOP 1 HOT LEG TEMP		597.2451	DEGF
T1112	LOOP 2 HOT LEG TEMP		597.2446	DEGF
T1113	LOOP 3 HOT LEG TEMP		597.2568	DEGF
T1114	LOOP 4 HOT LEG TEMP		597.2446	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.4465	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.4841	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.4714	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.4683	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8875	%
CRQN	03030 NORMALIZED CORE^POWER		.8803	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		820.7336	PSIG
P1025	STM GEN OUTLET PRES LP 2		820.7729	PSIG
P1028	STM GEN OUTLET PRES LP 3		820.7595	PSIG
P1031	STM GEN OUTLET PRES LP 4		820.7437	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.1347	PC
L1207	STM GEN 2 NARROW LEVEL		43.9735	PC
L1210	STM GEN 3 NARROW LEVEL		44.0928	PC
L1213	STM GEN 4 NARROW LEVEL		43.6116	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	520.2468	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	520.4238	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	519.8948	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	520.4453	F
RCBORON	11070 BORON CONC	(001)	592.5588	PPM
RCBORON	11070 BORON CONC	(002)	592.5601	PPM
RCBORON	11070 BORON CONC	(003)	592.5603	PPM

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	93.6766	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	93.6420	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	93.5913	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		94.8167	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		100.0293	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		99.9883	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP		99.9863	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		136.7919	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		136.7558	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		136.7395	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		192.4250	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		192.4609	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		247.2586	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		247.2697	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		311.3779	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		311.3389	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		358.7869	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		358.7942	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		414.0186	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		414.0249	F

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		293.5574	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		294.7424	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		294.7441	F
CWTAVGIN	03050	COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		66.8616	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.8829	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.8821	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.8809	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		147.0781	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		146.1325	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		202.5529	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		202.5227	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		256.4858	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		256.8372	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		304.9077	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		304.9241	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		368.5510	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		368.5420	F
RDPROD	03030	ROD POSITION,ACTUAL	(045)	205	
RDPROD	03030	ROD POSITION,ACTUAL	(053)	204	

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COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	990.72	992.64	-.19
RC LOOP DELTA T	1	F	55.80	56.52	-1.28
T AVG TRANSM. TABLE	1	F	569.38	570.57	-.21
T REFERENCE	1	F	569.25	570.57	-.23
SG DOME PRESSURES	1	PSIA	836.02	835.95	.01
MS LOOP FLOWS	1	#/S	3568.63	3556.93	.33
FW LOOP FLOWS	1	#/S	3566.92	3556.96	.28
HPT INLET STM FLOW	1	#/S	3198.65	3225.06	-.82
LPT INLET STM FLOW	1	#/S	774.00	776.92	-.38
LPT INLET STM FLOW	2	#/S	774.00	776.92	-.38
LPT INLET STM FLOW	3	#/S	774.00	776.93	-.38
HPT EXTR. FLOW TO HTR 6A	1	#/S	98.10	97.88	.23
HPT EXTR. FLOW TO HTR 5A	1	#/S	124.20	121.53	2.20
HPT EXTR. FLOW TO HTR 4A	1	#/S	59.54	58.43	1.90
LPT EXTR. FLOW TO HTR 3A	1	#/S	64.78	64.16	.97
LPT EXTR. FLOW TO HTR 2A	1	#/S	62.47	63.57	-1.73
LPT EXTR. FLOW TO HTR 1A	1	#/S	31.11	27.58	12.79 *
H6A TUBE OUTLET TEMP	1	F	413.95	414.38	-.11
H5A TUBE OUTLET TEMP	1	F	358.70	359.46	-.21
MFP TUBE OUTLET TEMP	1	F	294.64	295.09	-.15
[illegible]A TUBE OUTLET TEMP	1	F	311.21	311.01	.06
[illegible]A TUBE OUTLET TEMP	1	F	247.19	247.42	-.09
H2A TUBE OUTLET TEMP	1	F	192.39	192.76	-.19
H1A TUBE OUTLET TEMP	1	F	136.71	135.88	.61
DCA TUBE OUTLET TEMP	1	F	99.95	102.46	-2.45
HWP SUCTION TEMPERATURE	1	F	94.96	92.56	2.60
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	93.65	92.56	1.18
CND VAC	1	INHGA	28.20	28.45	-.86

DATA VALUE BASED ON 88.04 % CORE POWER

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		653.0547	DEGF
T1004	PZR LIQUID TEMP		653.3269	DEGF
RCTNTA253	83000. PRZ SURGE LINE TEMP		638.0527	DEG F
L1091	PRESSURIZER WATER LEVEL		50.2761	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3487	%
P1036	PRESSURIZER PRESSURE		2248.3538	PSIG
T1101	LOOP 1 AVG TEMP		569.3755	DEGF
T1102	LOOP 2 AVG TEMP		569.3931	DEGF
T1103	LOOP 3 AVG TEMP		569.3933	DEGF
T1104	LOOP 4 AVG TEMP		569.3848	DEGF
T1111	LOOP 1 HOT LEG TEMP		597.2781	DEGF
T1112	LOOP 2 HOT LEG TEMP		597.2783	DEGF
T1113	LOOP 3 HOT LEG TEMP		597.2927	DEGF
T1114	LOOP 4 HOT LEG TEMP		597.2786	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.4692	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.5068	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.4944	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.4883	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8878	%
CRQN	03030 NORMALIZED CORE^POWER		.8803	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		820.9583	PSIG
P1025	STM GEN OUTLET PRES LP 2		820.9241	PSIG
P1028	STM GEN OUTLET PRES LP 3		820.9565	PSIG
P1031	STM GEN OUTLET PRES LP 4		820.9797	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.5453	PC
L1207	STM GEN 2 NARROW LEVEL		43.4614	PC
L1210	STM GEN 3 NARROW LEVEL		43.8449	PC
L1213	STM GEN 4 NARROW LEVEL		44.1050	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	519.9771	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	520.1267	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	520.7808	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	521.2043	F
RCBORON	11070 BORON CONC	(001)	592.5581	PPM
RCBORON	11070 BORON CONC	(002)	592.5588	PPM
RCBORON	11070 BORON CONC	(003)	592.5576	PPM

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	93.6445	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	93.6102	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	93.5595	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		94.7840	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		99.9724	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		99.9425	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP.		99.9404	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		136.6210	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		136.6575	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		136.6411	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		192.3655	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		192.3352	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		247.1824	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		247.1705	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		311.2959	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		311.3254	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		358.6919	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		358.6833	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		413.9309	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		413.9277	F

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		293.6282	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		294.6887	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		294.7463	F
CWTAVGIN	03050	COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		66.8658	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.8835	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.8827	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.8815	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		146.1526	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		147.2899	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		202.4065	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		202.3759	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		256.4946	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		256.2764	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		304.9131	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		304.9263	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		368.5664	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		368.5981	F
RDPROD	03030	ROD POSITION/ACTUAL	(045)	205	
RDPROD	03030	ROD POSITION/ACTUAL	(053)	204	

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COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	990.80	992.46	-.17
RC LOOP DELTA T	1	F	55.81	56.52	-1.26
T AVG TRANSM. TABLE	1	F	569.40	570.57	-.20
T REFERENCE	1	F	569.25	570.57	-.23
SG DOME PRESSURES	1	PSIA	836.11	835.95	.02
MS LOOP FLOWS	1	#/S	3568.58	3556.74	.33
FW LOOP FLOWS	1	#/S	3568.95	3556.77	.34
HPT INLET STM FLOW	1	#/S	3198.85	3224.87	-.81
LPT INLET STM FLOW	1	#/S	774.28	776.88	-.34
LPT INLET STM FLOW	2	#/S	774.28	776.90	-.34
LPT INLET STM FLOW	3	#/S	774.29	776.90	-.34
HPT EXTR. FLOW TO HTR 6A	1	#/S	98.11	97.87	.24
HPT EXTR. FLOW TO HTR 5A	1	#/S	124.14	121.53	2.15
HPT EXTR. FLOW TO HTR 4A	1	#/S	59.06	58.42	1.10
LPT EXTR. FLOW TO HTR 3A	1	#/S	64.59	64.15	.68
LPT EXTR. FLOW TO HTR 2A	1	#/S	62.35	63.57	-1.91
LPT EXTR. FLOW TO HTR 1A	1	#/S	31.12	27.58	12.84 *
H6A TUBE OUTLET TEMP	1	F	413.98	414.38	-.10
H5A TUBE OUTLET TEMP	1	F	358.72	359.45	-.20
MFP TUBE OUTLET TEMP	1	F	294.69	295.08	-.13
[illegible]A TUBE OUTLET TEMP	1	F	311.44	311.01	.14
[illegible]A TUBE OUTLET TEMP	1	F	247.24	247.42	-.07
H2A TUBE OUTLET TEMP	1	F	192.42	192.76	-.18
H1A TUBE OUTLET TEMP	1	F	136.73	135.87	.63
DCA TUBE OUTLET TEMP	1	F	99.97	102.45	-2.42
HWP SUCTION TEMPERATURE	1	F	94.97	92.55	2.61
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	93.65	92.55	1.19
CND VAC	1	INHGA	28.20	28.45	-.86

DATA VALUE BASED ON 88.04 % CORE POWER

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		653.1677	DEGF
T1004	PZR LIQUID TEMP		653.4507	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		636.4966	DEG F
L1091	PRESSURIZER WATER LEVEL		50.4398	PC
RXLCOLDC	05350 PRZ COLD CALI8		.3495	%
P1036	PRESSURIZER PRESSURE		2250.2737	PSIG
T1101	LOOP 1 AVG TEMP		569.3943	DEGF
T1102	LOOP 2 AVG TEMP		569.4106	DEGF
T1103	LOOP 3 AVG TEMP		569.4126	DEGF
T1104	LOOP 4 AVG TEMP		569.4033	DEGF
T1111	LOOP 1 HOT LEG TEMP		597.2988	DEGF
T1112	LOOP 2 HOT LEG TEMP		597.2998	DEGF
T1113	LOOP 3 HOT LEG TEMP		597.3105	DEGF
T1114	LOOP 4 HOT LEG TEMP		597.3000	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.4873	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.5276	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.5142	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.5073	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8873	%
CRQN	03030 NORMALIZED CORE^POWER		.8802	DMLS

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		821.1084	PSIG
P1025	STM GEN OUTLET PRES LP 2		821.1111	PSIG
P1028	STM GEN OUTLET PRES LP 3		821.1597	PSIG
P1031	STM GEN OUTLET PRES LP 4		821.1194	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.8927	PC
L1207	STM GEN 2 NARROW LEVEL		43.4770	PC
L1210	STM GEN 3 NARROW LEVEL		43.7132	PC
L1213	STM GEN 4 NARROW LEVEL		43.4469	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	520.2832	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	520.0630	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	520.4678	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	519.7480	F
RCBORON	11070 BORON CONC	(001)	592.5527	PPM
RCBORON	11070 BORON CONC	(002)	592.5530	PPM
RCBORON	11070 BORON CONC	(003)	592.5520	PPM

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	93.6749	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	93.6408	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	93.5896	F
FWTDHHWP	11010	HWP DISC HEADER TEMP		94.8153	F
FWTTODCA	19280	DCA TUBE OUTLET TEMP		100.0042	F
FWTTODCB	19300	DCB TUBE OUTLET TEMP		100.0295	F
FWTTODCC	19320	DCC TUBE OUTLET TEMP		100.0275	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		136.7137	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		136.6665	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		136.6502	F
FWTTOH2A	19180	H2A TUBE OUTLET TEMP		192.3227	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		192.2983	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		247.1101	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		247.1152	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		311.1917	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		311.1016	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		358.7317	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		358.7346	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		413.9629	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		413.9495	F

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DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		293.6680	F
FWTDEMFP	11070	E MFP DISCH TEMPERATUR		294.7642	F
FWTDWMFP	11070	W MFP DISCH TEMPERATUR		294.7661	F
CWTAVGIN	03050	COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050	AVERAGE COND OUTLET TE		66.8597	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	.8831	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	.8823	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	.8811	PSIA
FWTDRNH2A	19180	H2A DRAINS TEMPERATURE		146.0231	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		145.5702	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		202.6041	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		202.6319	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		257.7300	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		257.4819	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		304.9907	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		305.0015	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		368.4751	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		368.4011	F
RDPROD	03030	ROD POSITION,ACTUAL	(045)	205	
RDPROD	03030	ROD POSITION,ACTUAL	(053)	204	

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	990.85	992.59	-.18
RC LOOP DELTA T	1	F	55.80	56.53	-1.28
T AVG TRANSM. TABLE	1	F	569.38	570.57	-.21
T REFERENCE	1	F	569.24	570.57	-.23
SG DOME PRESSURES	1	PSIA	836.01	835.94	.01
MS LOOP FLOWS	1	#/S	3568.17	3556.98	.31
FW LOOP FLOWS	1	#/S	3568.14	3556.96	.31
HPT INLET STM FLOW	1	#/S	3198.58	3225.00	-.82
LPT INLET STM FLOW	1	#/S	774.14	776.90	-.36
LPT INLET STM FLOW	2	#/S	774.14	776.89	-.35
LPT INLET STM FLOW	3	#/S	774.10	776.89	-.36
HPT EXTR. FLOW TO HTR 6A	1	#/S	98.06	97.87	.20
HPT EXTR. FLOW TO HTR 5A	1	#/S	124.24	121.53	2.23
HPT EXTR. FLOW TO HTR 4A	1	#/S	59.73	58.43	2.23
LPT EXTR. FLOW TO HTR 3A	1	#/S	64.83	64.16	1.05
LPT EXTR. FLOW TO HTR 2A	1	#/S	62.47	63.57	-1.73
LPT EXTR. FLOW TO HTR 1A	1	#/S	31.17	27.58	12.99 *
H6A TUBE OUTLET TEMP	1	F	413.90	414.38	-.12
H5A TUBE OUTLET TEMP	1	F	358.65	359.46	-.22
MFP TUBE OUTLET TEMP	1	F	294.54	295.09	-.18
[illegible]A TUBE OUTLET TEMP	1	F	311.24	311.01	.07
[illegible]A TUBE OUTLET TEMP	1	F	247.16	247.42	-.10
H2A TUBE OUTLET TEMP	1	F	192.37	192.76	-.20
H1A TUBE OUTLET TEMP	1	F	136.74	135.87	.64
DCA TUBE OUTLET TEMP	1	F	100.00	102.45	-2.39
HWP SUCTION TEMPERATURE	1	F	94.96	92.55	2.61
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	93.64	92.55	1.18
CND VAC	1	INHGA	28.20	28.45	-.86

DATA VALUE BASED ON 88.02 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		653.1001	DEGF
T1004	PZR LIQUID TEMP		653.3687	DEGF
RCTNTA253	83000 PRZ SURGE LINE TEMP		639.6887	DEG F
L1091	PRESSURIZER WATER LEVEL		50.4552	PC
RXLCOLDC	05350 PRZ COLD CALIB		.3496	%
P1036	PRESSURIZER PRESSURE		2248.9583	PSIG
T1101	LOOP 1 AVG TEMP		569.3816	DEGF
T1102	LOOP 2 AVG TEMP		569.3992	DEGF
T1103	LOOP 3 AVG TEMP		569.4011	DEGF
T1104	LOOP 4 AVG TEMP		569.3940	DEGF
T1111	LOOP 1 HOT LEG TEMP		597.2864	DEGF
T1112	LOOP 2 HOT LEG TEMP		597.2864	DEGF
T1113	LOOP 3 HOT LEG TEMP		597.2964	DEGF
T1114	LOOP 4 HOT LEG TEMP		597.2864	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.4773	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.5068	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.5034	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.5002	DEGF
NIQPRAV	02050 AVG POWER RANGE^FLUX		.8873	%
CRQN	03030 NORMALIZED CORE^POWER		.8803	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		821.0149	PSIG
P1025	STM GEN OUTLET PRES LP 2		821.0508	PSIG
P1028	STM GEN OUTLET PRES LP 3		821.0227	PSIG
P1031	STM GEN OUTLET PRES LP 4		821.0300	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.6209	PC
L1207	STM GEN 2 NARROW LEVEL		44.0418	PC
L1210	STM GEN 3 NARROW LEVEL		44.1673	PC
L1213	STM GEN 4 NARROW LEVEL		44.0914	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	520.1689	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	520.4314	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	520.5486	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	520.4084	F
RCBORON	11070 BORON CONC	(001)	592.5452	PPM
RCBORON	11070 BORON CONC	(002)	592.5432	PPM
RCBORON	11070 BORON CONC	(003)	592.5417	PPM

ISD>

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	93.6391	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	93.6052	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	93.5544	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		94.7793	F
FWTTODCA	19280 DCA TUBE OUTLET TEMP		99.9574	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		100.0268	F
FWTTODCC	19320 DCC TUBE OUTLET TEMP		100.0246	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		136.8203	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		136.7845	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		136.8003	F
FWTTOH2A	19180 H2A TUBE OUTLET TEMP		192.4576	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		192.4654	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		247.2953	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		247.2944	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		311.4253	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		311.6030	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		358.7063	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		358.6777	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		413.9138	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		413.8918	F

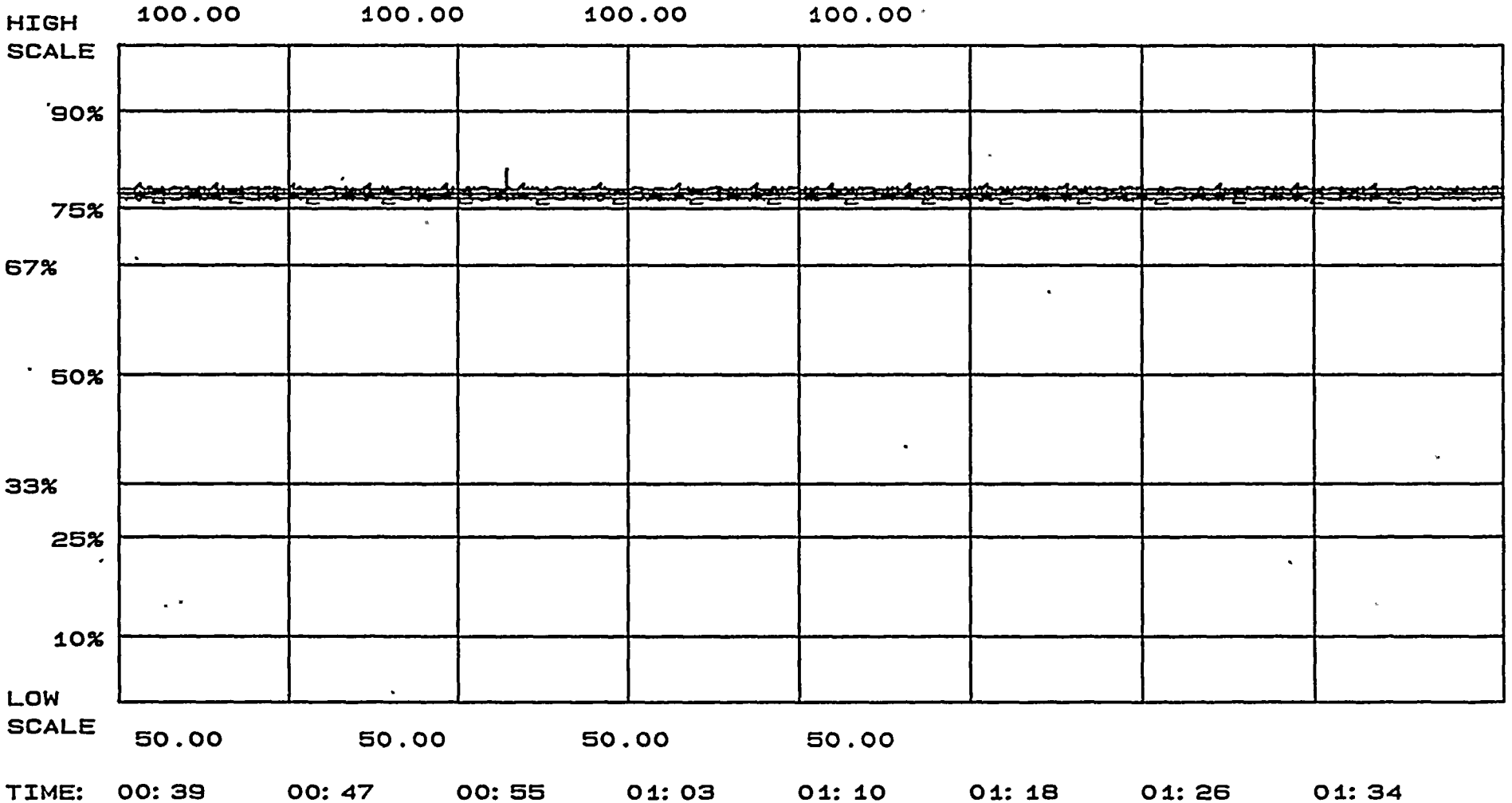
ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		293.7004	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		294.7612	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		294.7625	F
CWTAVGIN	03050 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		66.8643	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	.8834	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	.8826	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	.8814	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		145.3897	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		146.9884	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		202.4388	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		202.4594	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		256.8391	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		256.5730	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		304.9441	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		304.9233	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		368.5894	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		368.5935	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	205	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	204	

ISD>

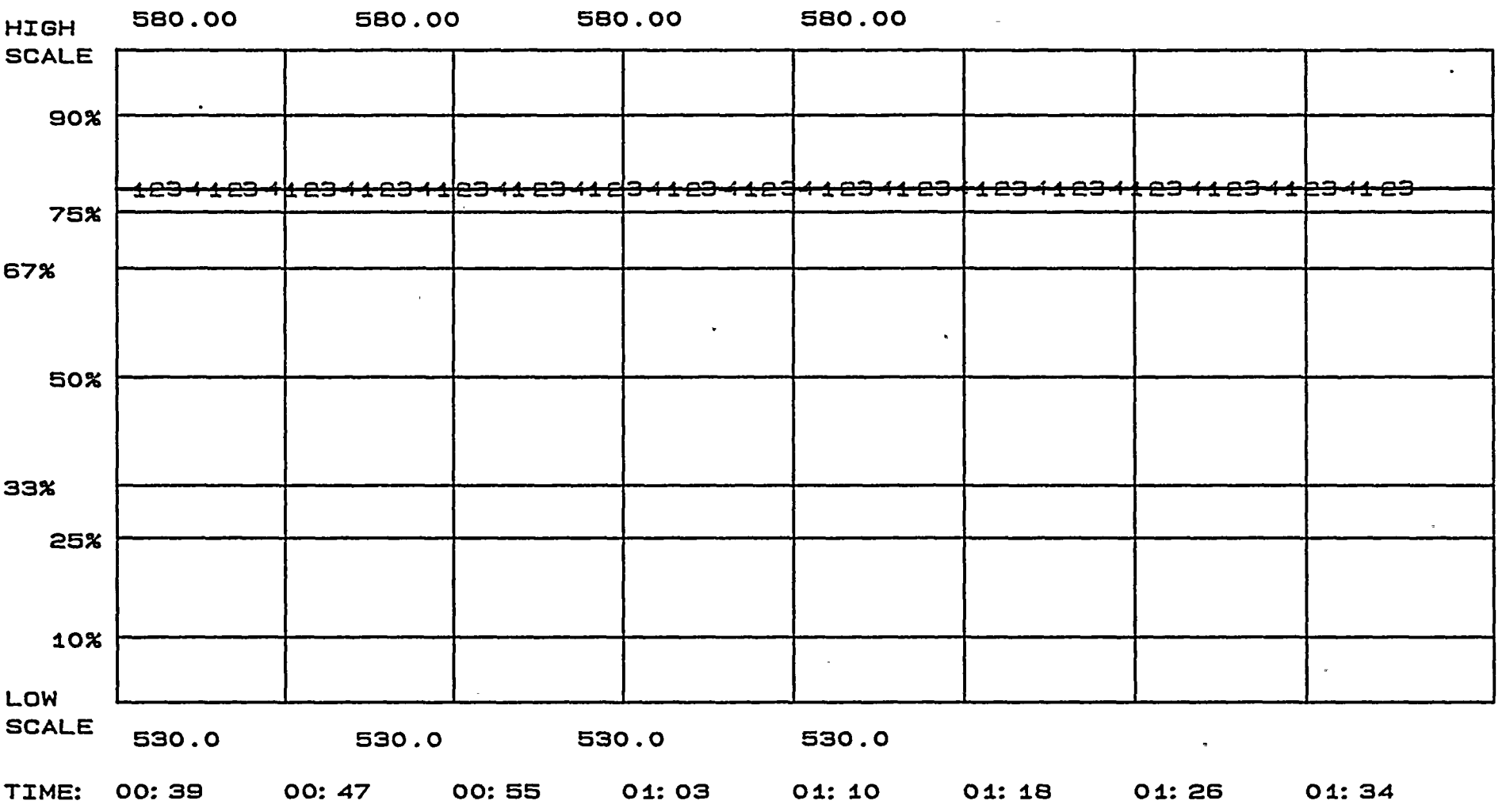
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. N-41	PC	TIME
2	N1013	POWER RANGE N.I. N-42	PC	START 00: 39: 27
3	N1014	POWER RANGE N.I. N-43	PC	STOP 01: 43: 09
4	N1015	POWER RANGE N.I. N-44	PC	
5				
6				



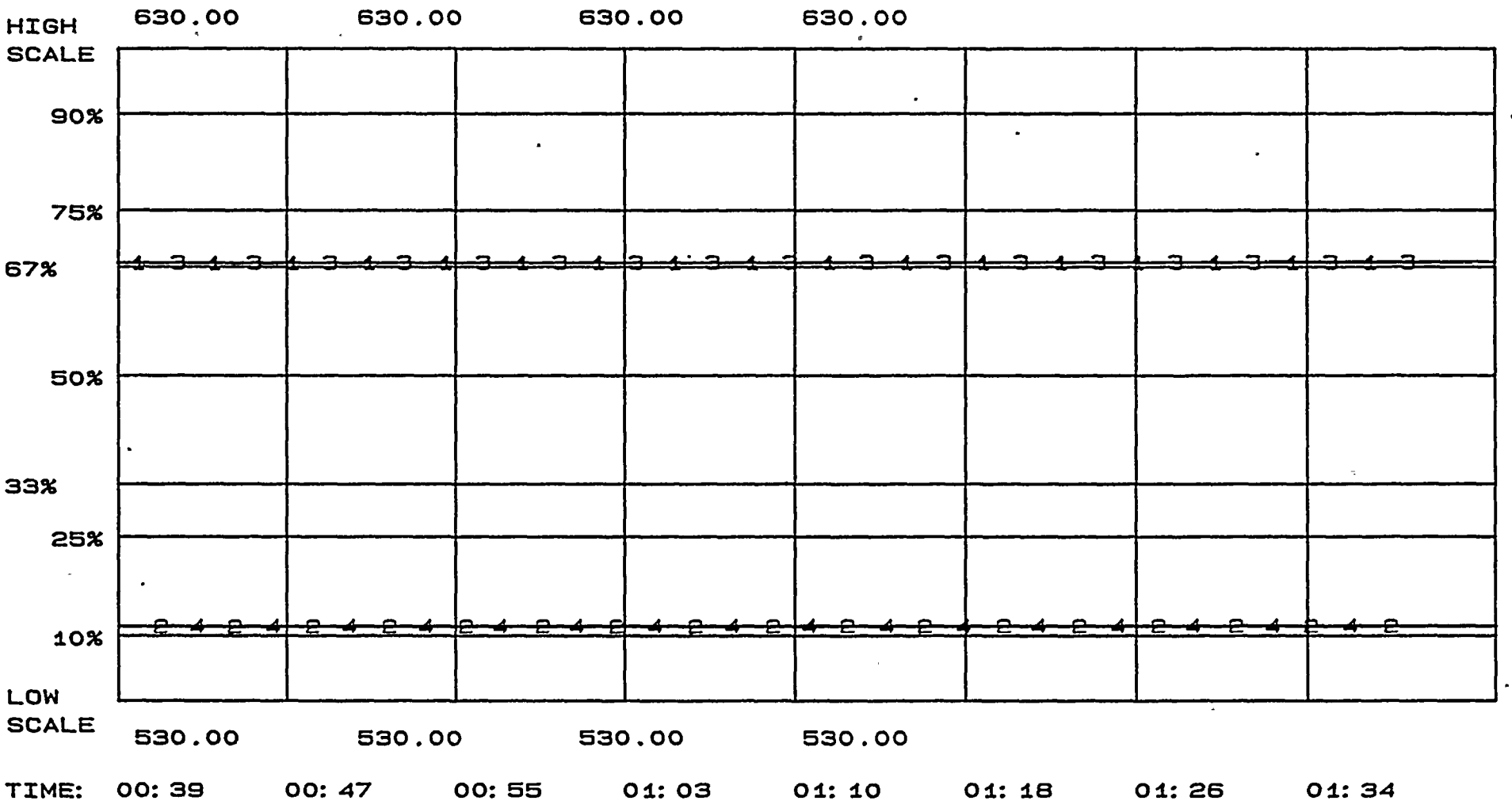
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	TAVG LOOP 1	DEG_F	TIME
2	T1102	TAVG LOOP 2	DEG_F	START 00: 39: 27
3	T1103	TAVG LOOP 3	DEG_F	STOP 01: 43: 09
4	T1104	TAVG LOOP 4	DEG_F	
5				
6				



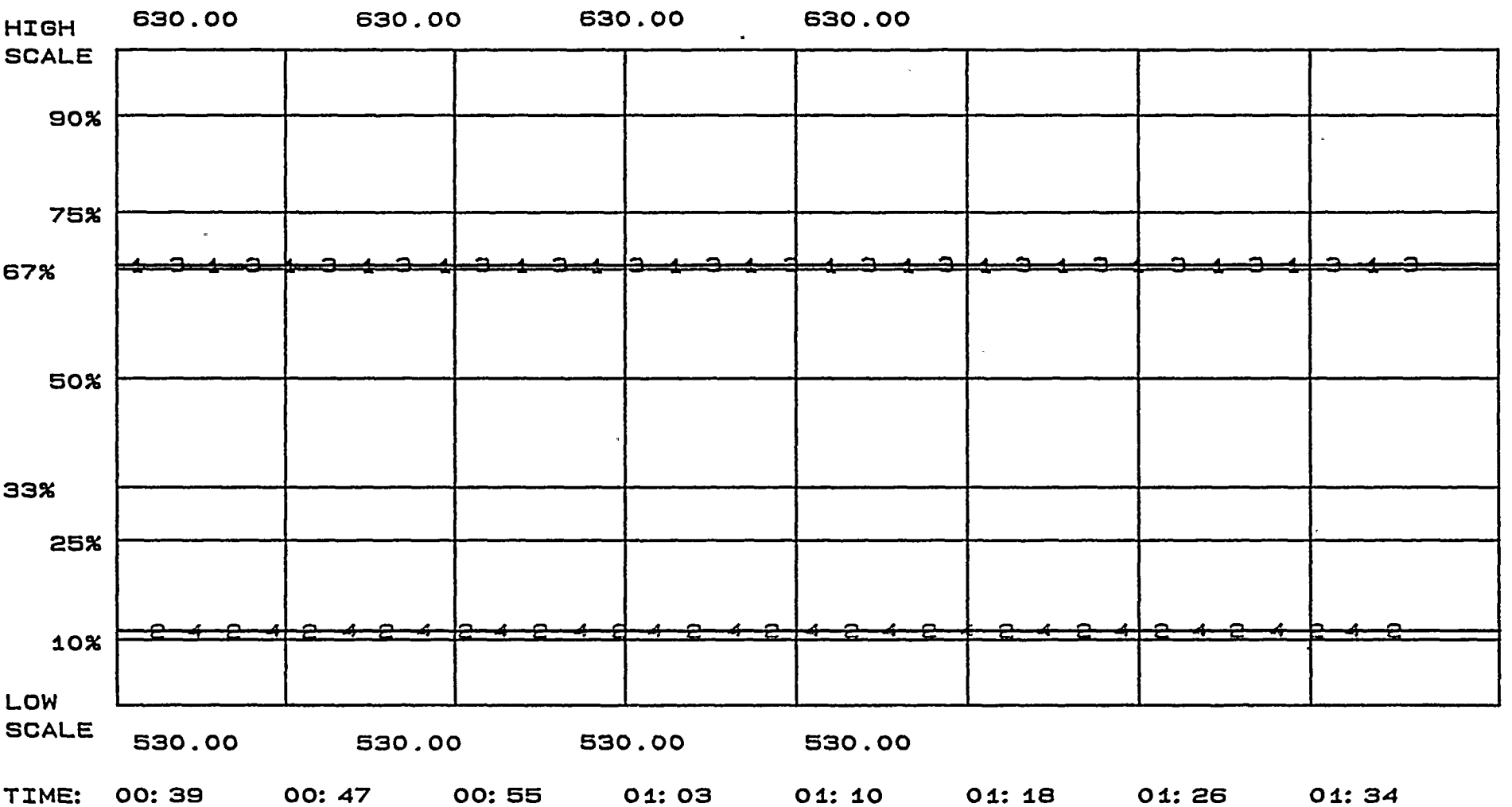
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	THOT LOOP 1	DEG_F	TIME
2	T1115	TCOLD LOOP 1	DEG_F	START 00: 39: 27
3	T1112	THOT LOOP 2	DEG_F	STOP 01: 43: 09
4	T1116	TCOLD LOOP 2	DEG_F	
5				
6				



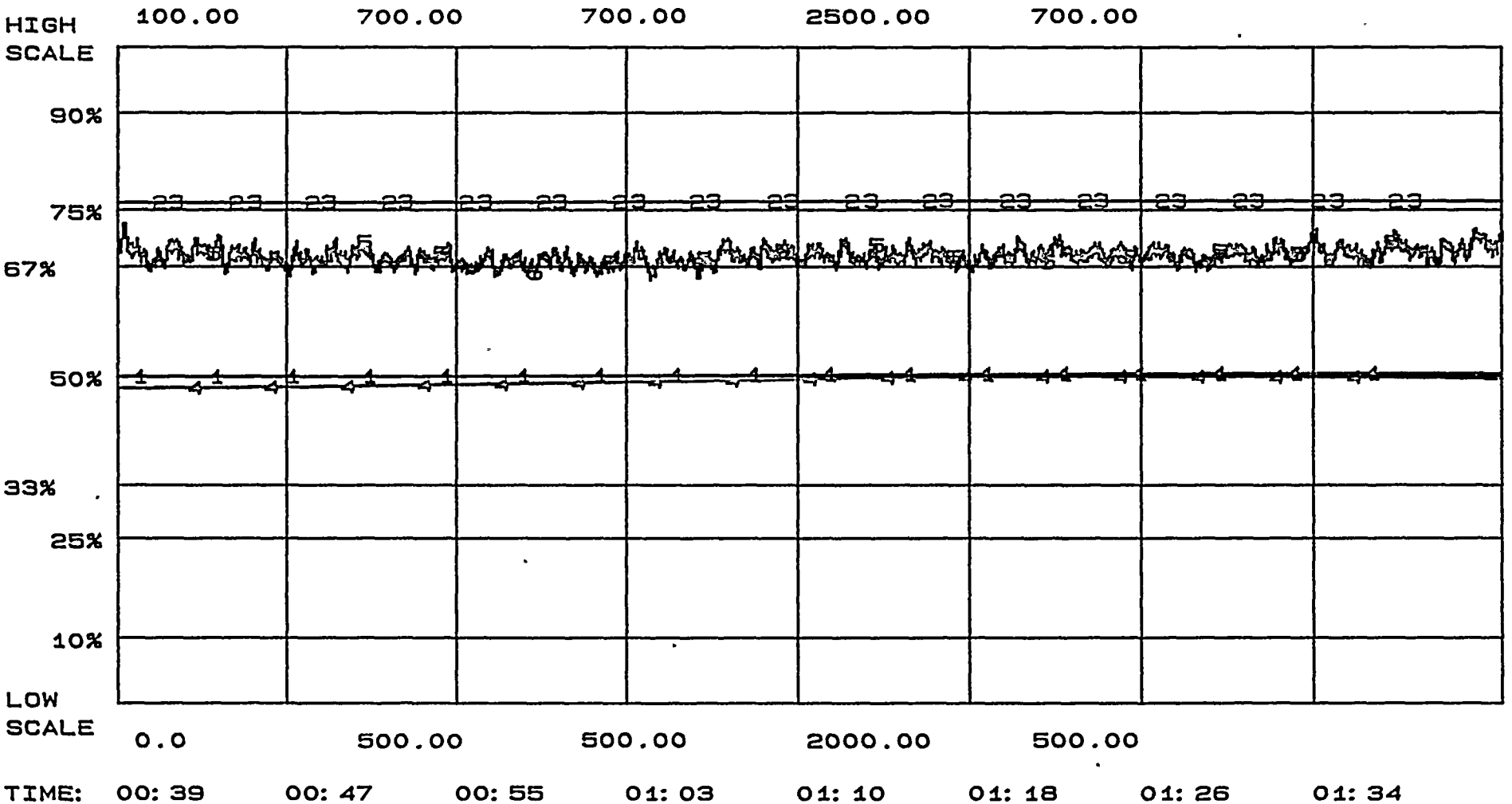
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	THOT LOOP 3	DEG_F	TIME
2	T1117	TCOLD LOOP 3	DEG_F	START 00: 39: 27
3	T1114	THOT LOOP 4	DEG_F	STOP 01: 43: 09
4	T1118	TCOLD LOOP 4	DEG_F	
5				
6				



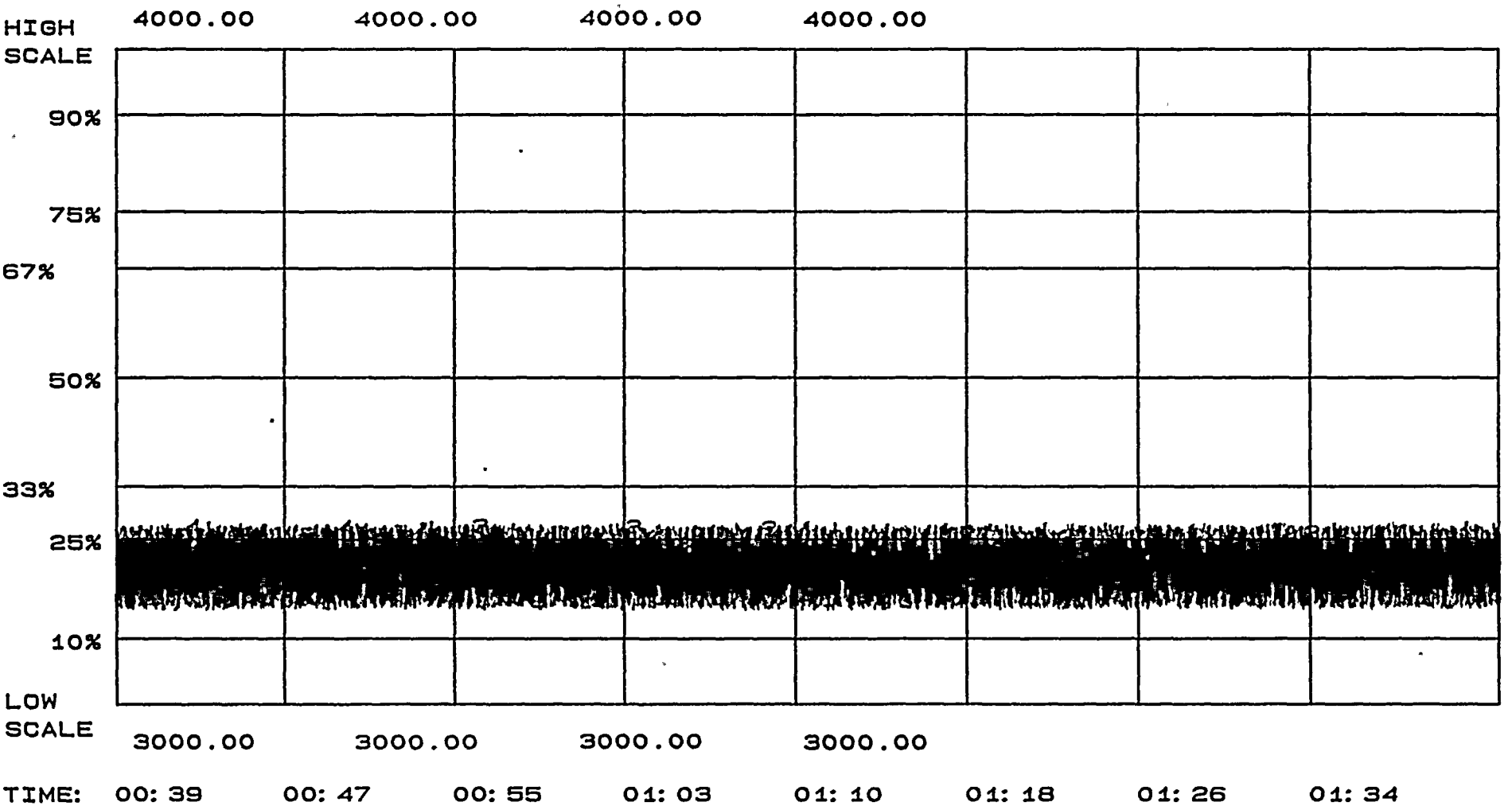
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMP.	DEG_F	START 00: 39: 27
3	T1005	PRESSURIZER STEAM TEMP.	DEG_F	STOP 01: 43: 09
4	P1036	PRESSURIZER PRESSURE	PSIG	
5	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	
6				



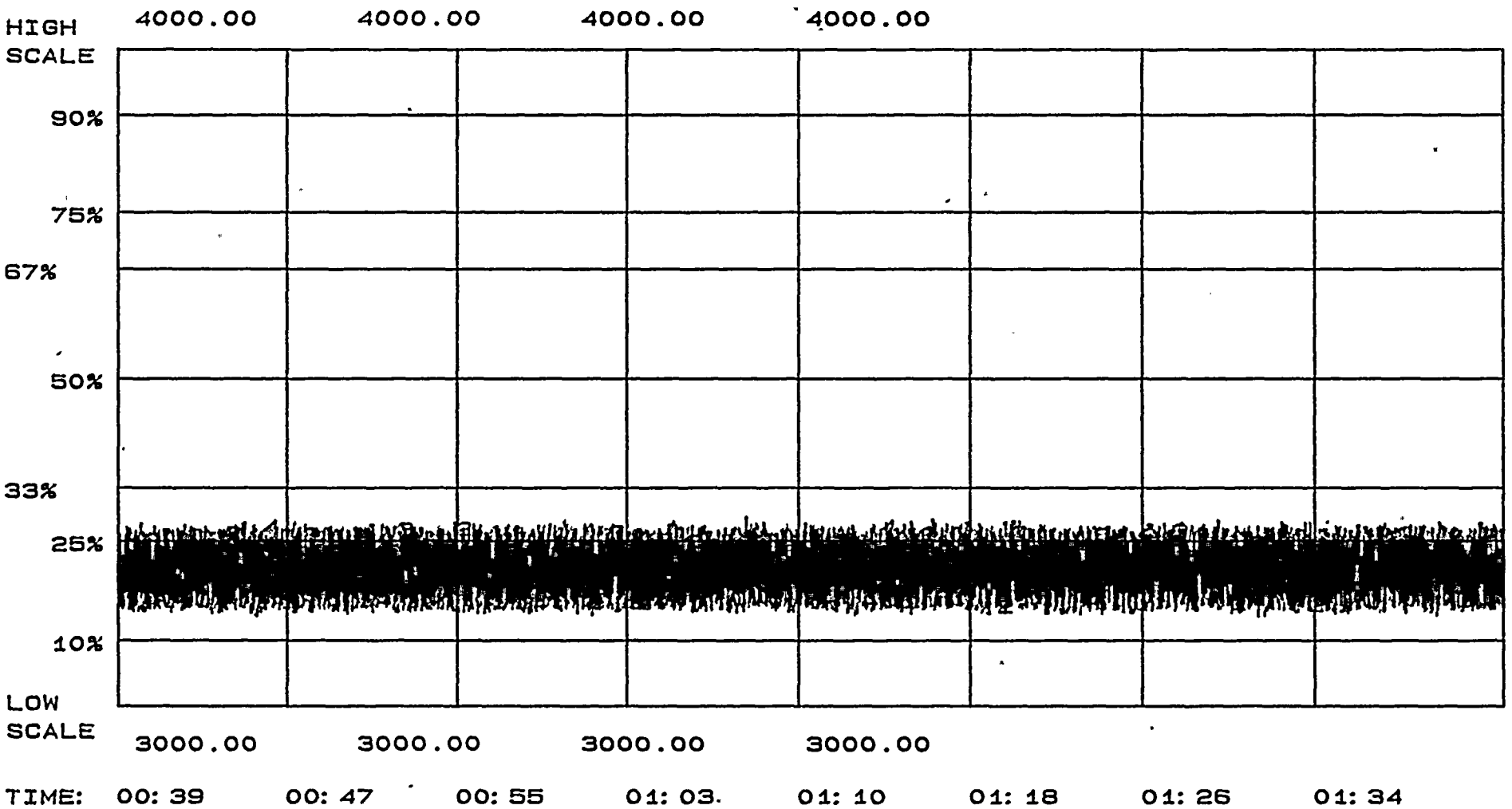
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 39: 27
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 01: 43: 09
4	F1054	STEAM FLOW LOOP 4	KBH	
5				
6				



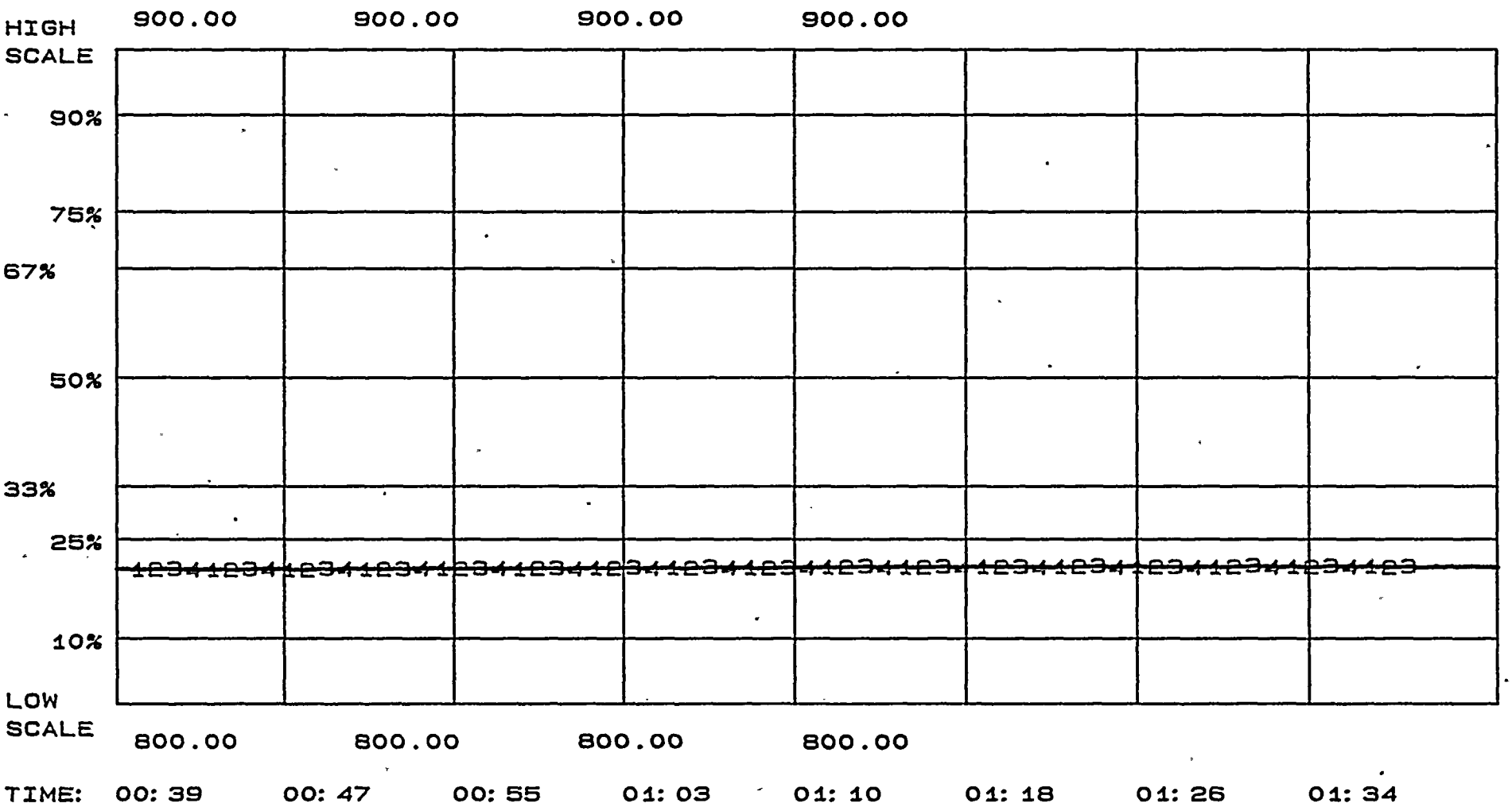
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 39: 27
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 01: 43: 09
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5				
6				



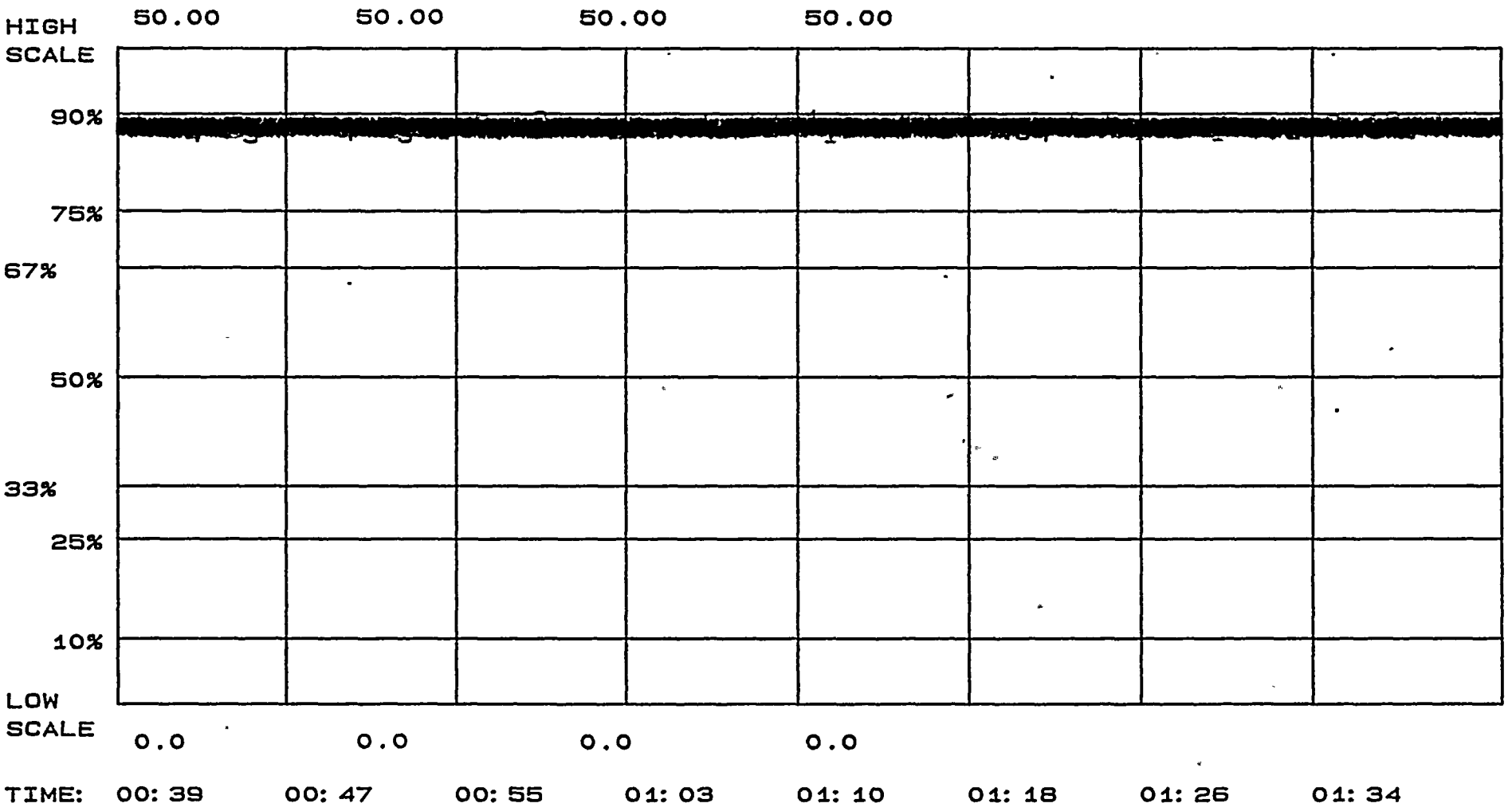
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 39: 27
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 01: 43: 09
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



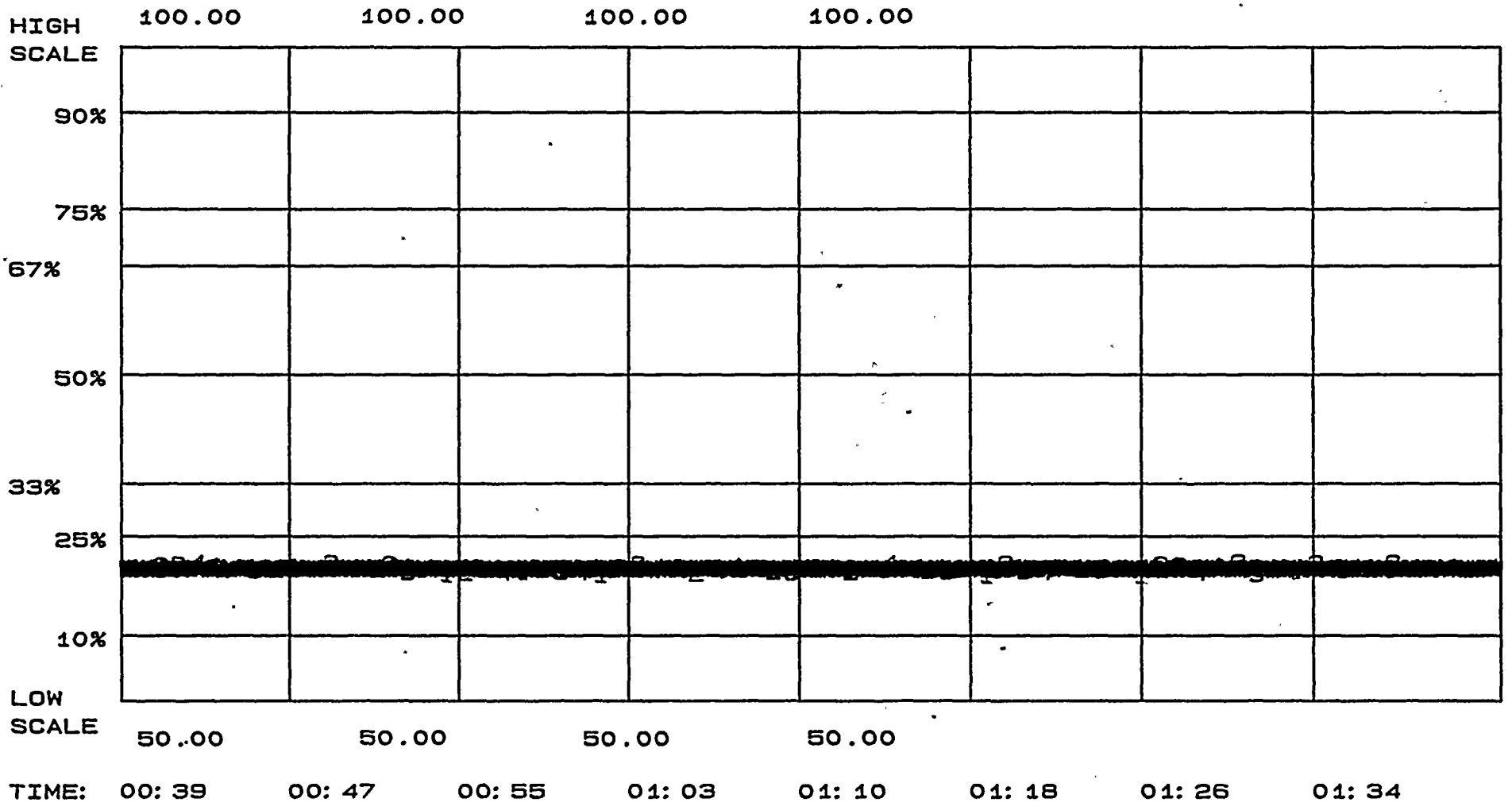
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR #1 N/R LEVEL	PC	TIME
2	L1207	STEAM GENERATOR #2 N/R LEVEL	PC	START 00: 39: 27
3	L1210	STEAM GENERATOR #3 N/R LEVEL	PC	STOP 01: 43: 09
4	L1213	STEAM GENERATOR #4 N/R LEVEL	PC	
5				
6				



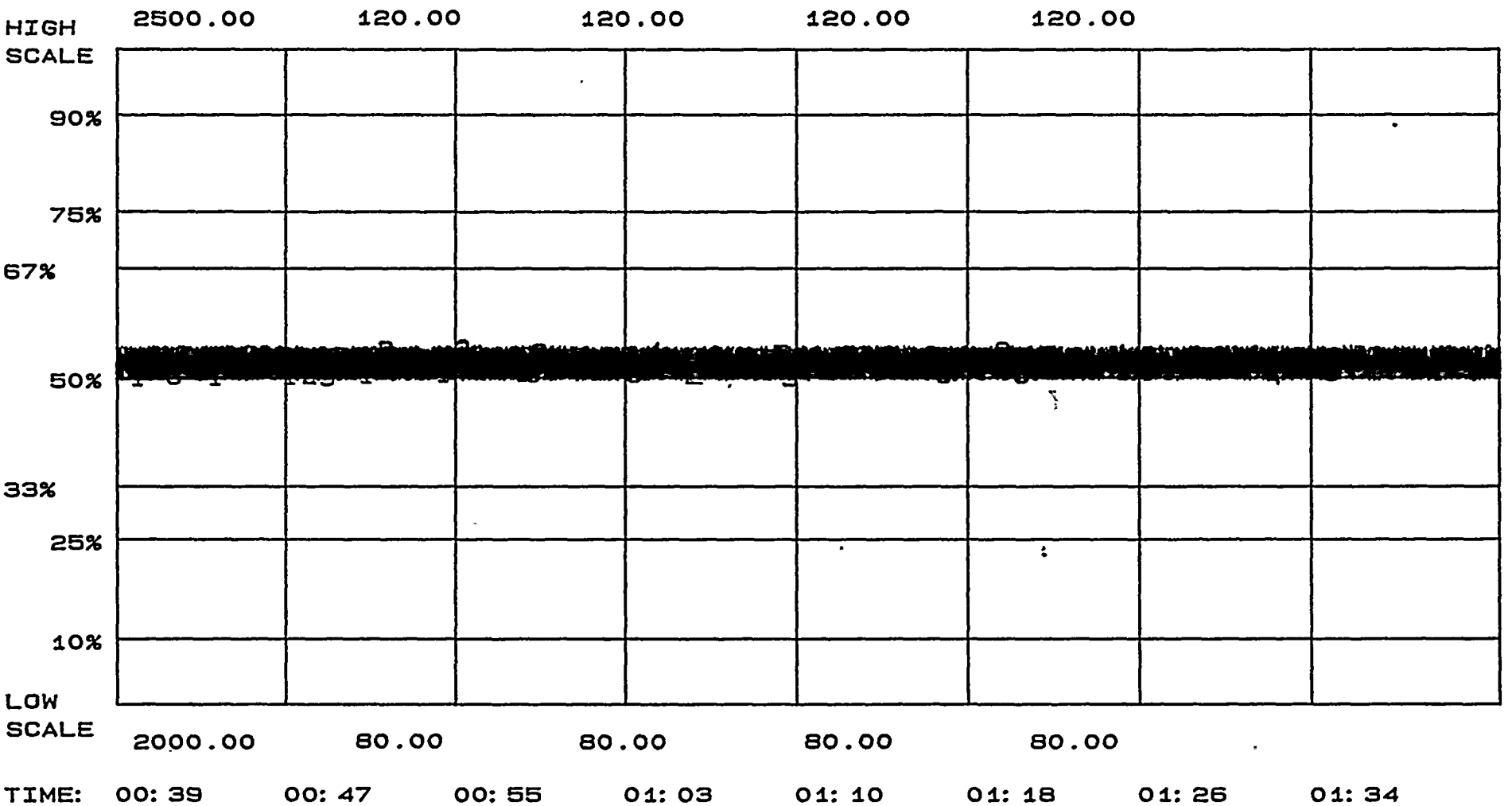
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR #1 W/R LEVEL	PC	TIME
2	L1201	STEAM GENERATOR #2 W/R LEVEL	PC	START 00: 39: 27
3	L1202	STEAM GENERATOR #3 W/R LEVEL	PC	STOP 01: 43: 09
4	L1203	STEAM GENERATOR #4 W/R LEVEL	PC	
5				
6				



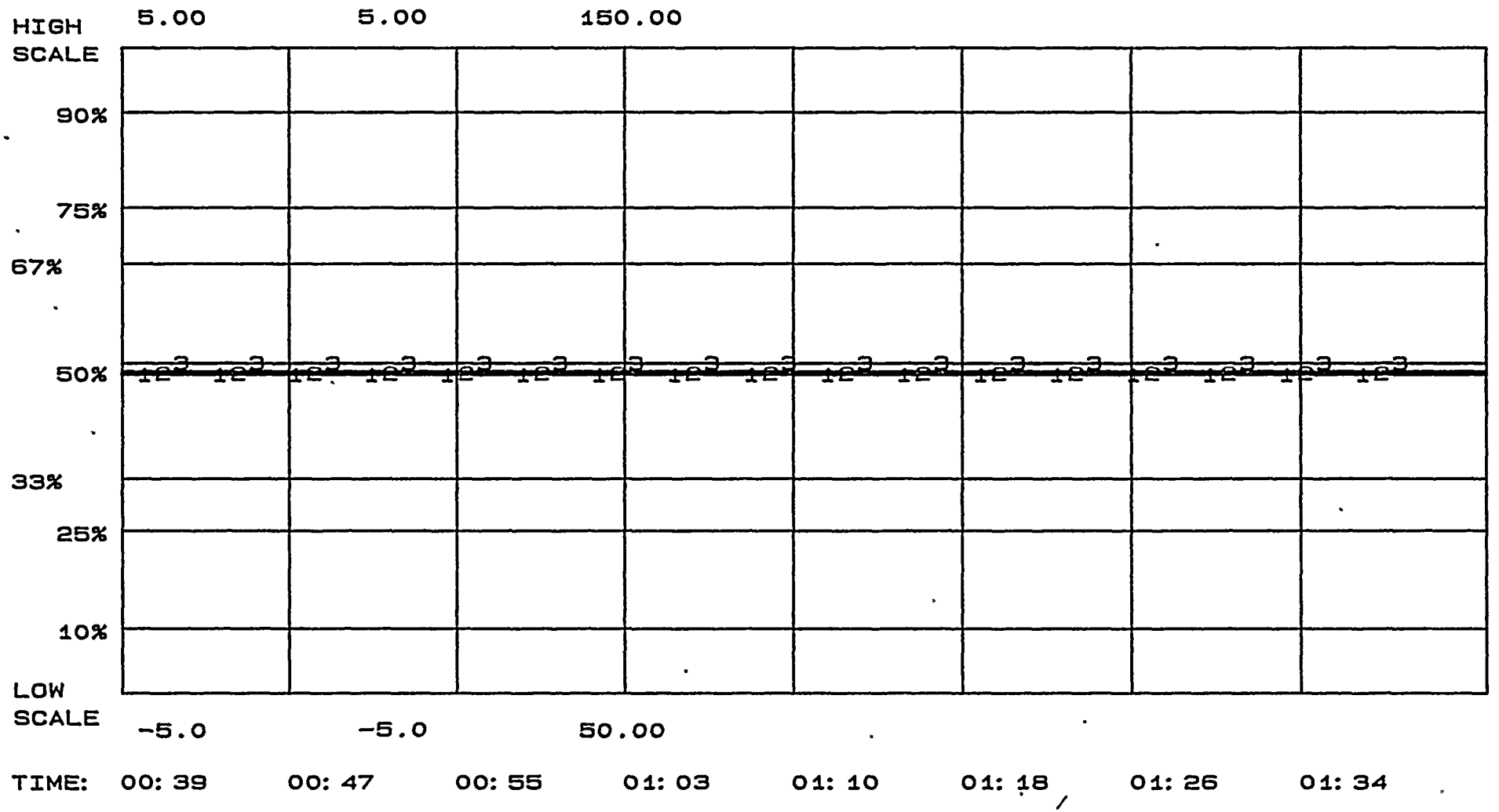
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	F1089	RCS FLOW LOOP 1	PC	START 00: 39: 27
3	F1092	RCS FLOW LOOP 2	PC	STOP 01: 43: 09
4	F1095	RCS FLOW LOOP 3	PC	
5	F1098	RCS FLOW LOOP 4	PC	
6				



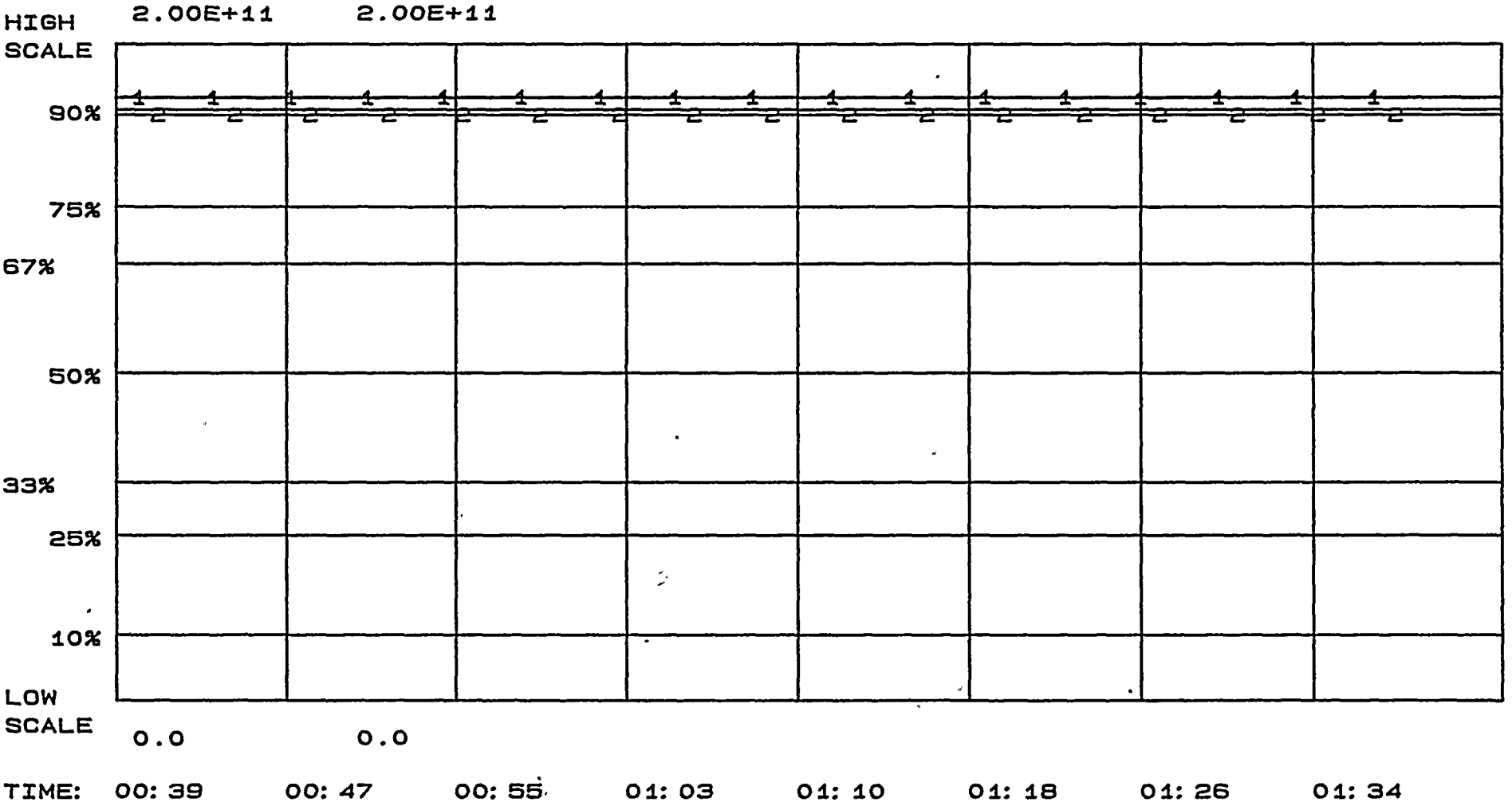
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 39: 27
3	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	STOP 01: 43: 09
4				
5				
6				



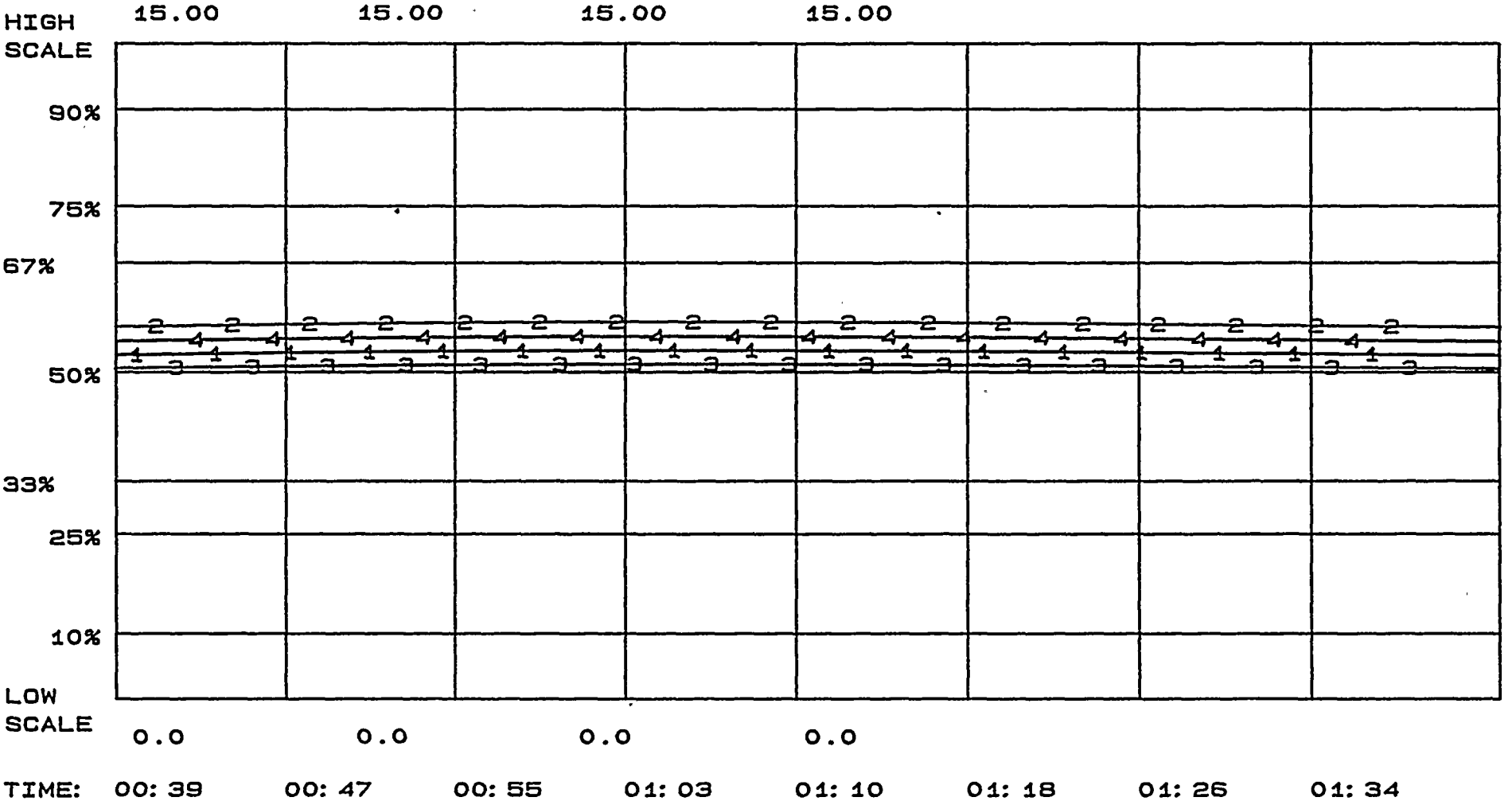
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU (1)	SOURCE RANGE N-31	CPS	TIME
2	NILDTOU (2)	SOURCE RANGE N-32	CPS	START 00: 39: 27
3				STOP 01: 43: 09
4				
5				
6				



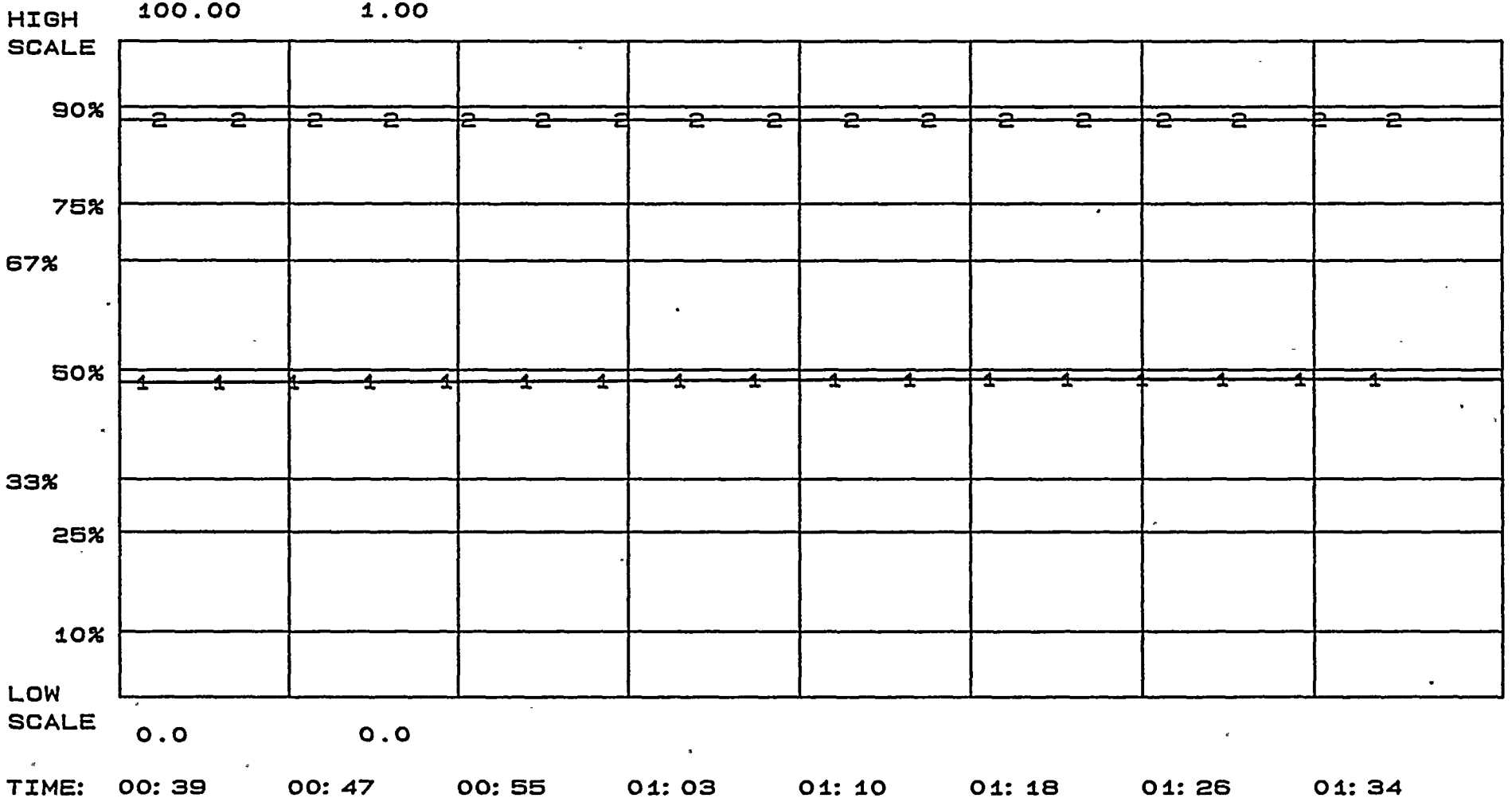
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	RCP SEAL FLOW LOOP 1	GPM	TIME
2	F1001	RCP SEAL FLOW LOOP 2	GPM	START 00: 39: 27
3	F1002	RCP SEAL FLOW LOOP 3	GPM	STOP 01: 43: 09
4	F1003	RCP SEAL FLOW LOOP 4	GPM	
5				
6				



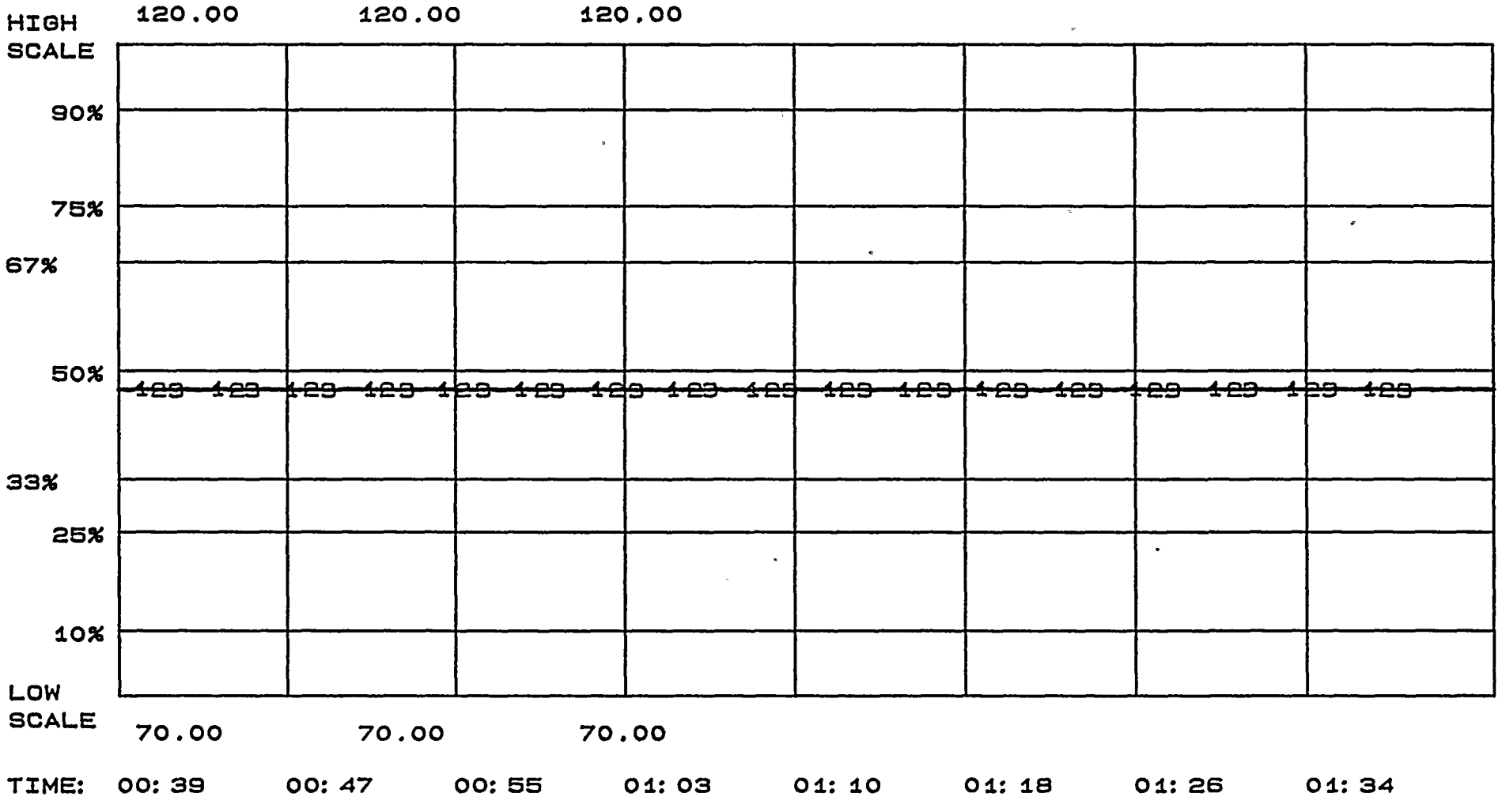
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RXTSC	SATURATION MARGIN	DEG_F	TIME
2	CRQN	CORE HEAT FLUX	PC	START 00: 39: 27
3				STOP 01: 43: 09
4				
5				
6				



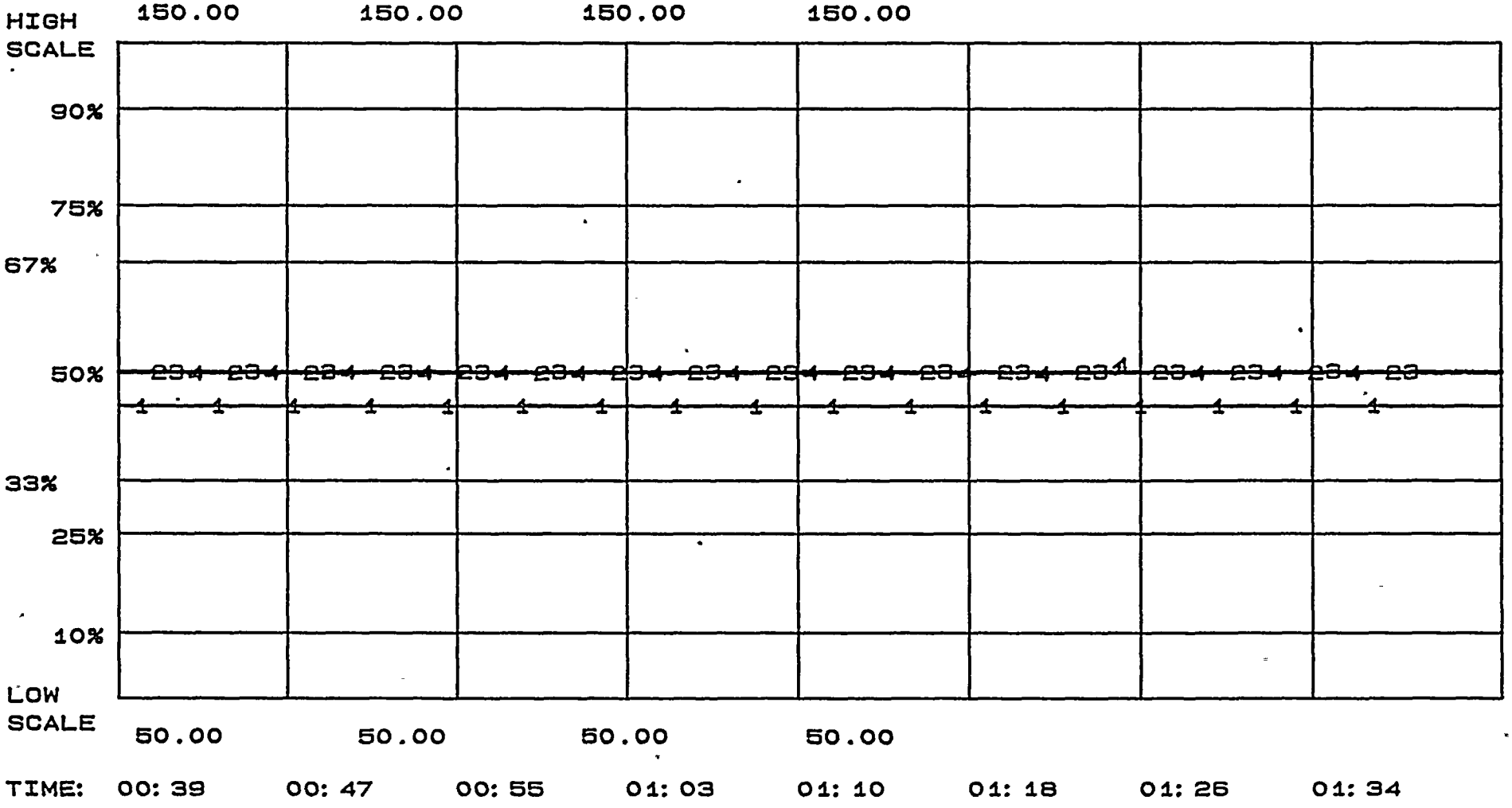
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN (1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN (2)	CONDENSER B TEMPERATURE	DEG_F	START 00: 39: 27
3	FWTCN (3)	CONDENSER C TEMPERATURE	DEG_F	STOP 01: 43: 09
4				
5				
6				



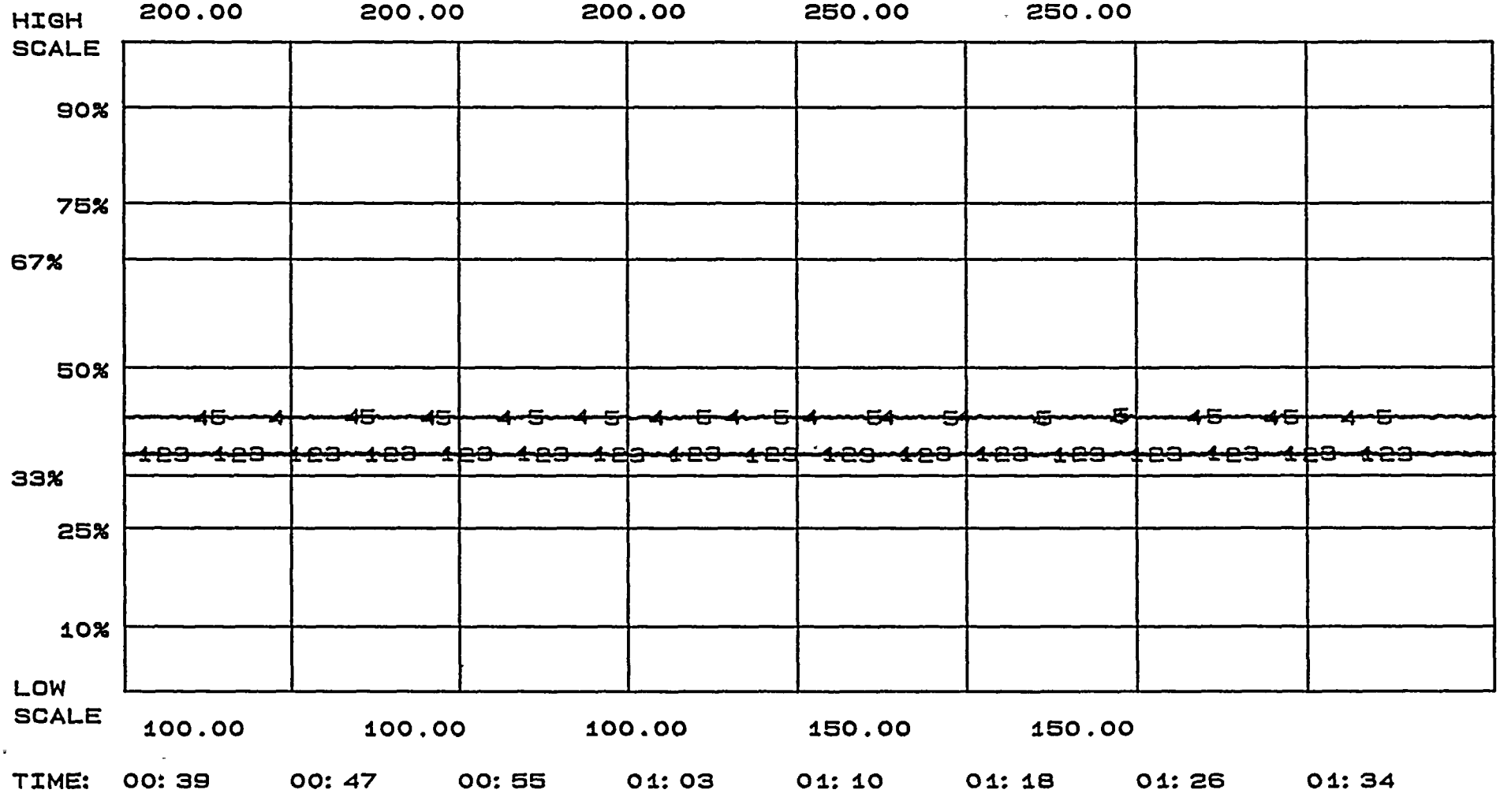
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP HDR. TEMP.	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 00: 39: 27
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 01: 43: 09
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



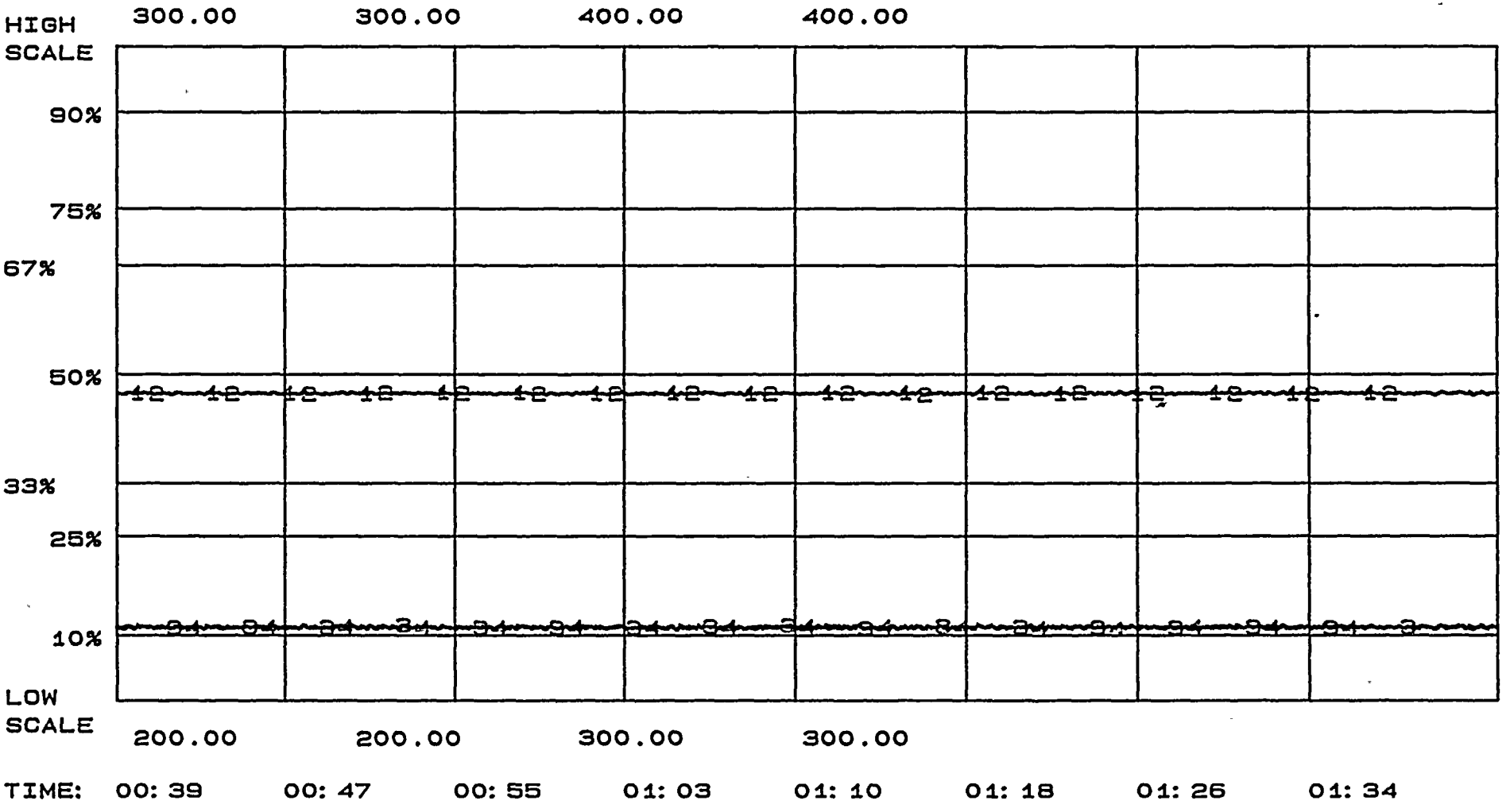
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH1A	HEATER 1A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH1B	HEATER 1B TUBE OUTLET TEMP.	DEG_F	START 00: 39: 27
3	FWTTOH1C	HEATER 1C TUBE OUTLET TEMP.	DEG_F	STOP 01: 43: 09
4	FWTTOH2A	HEATER 2A TUBE OUTLET TEMP.	DEG_F	
5	FWTTOH2B	HEATER 2B TUBE OUTLET TEMP.	DEG_F	
6				



90% POWER STEADY-STATE TEST

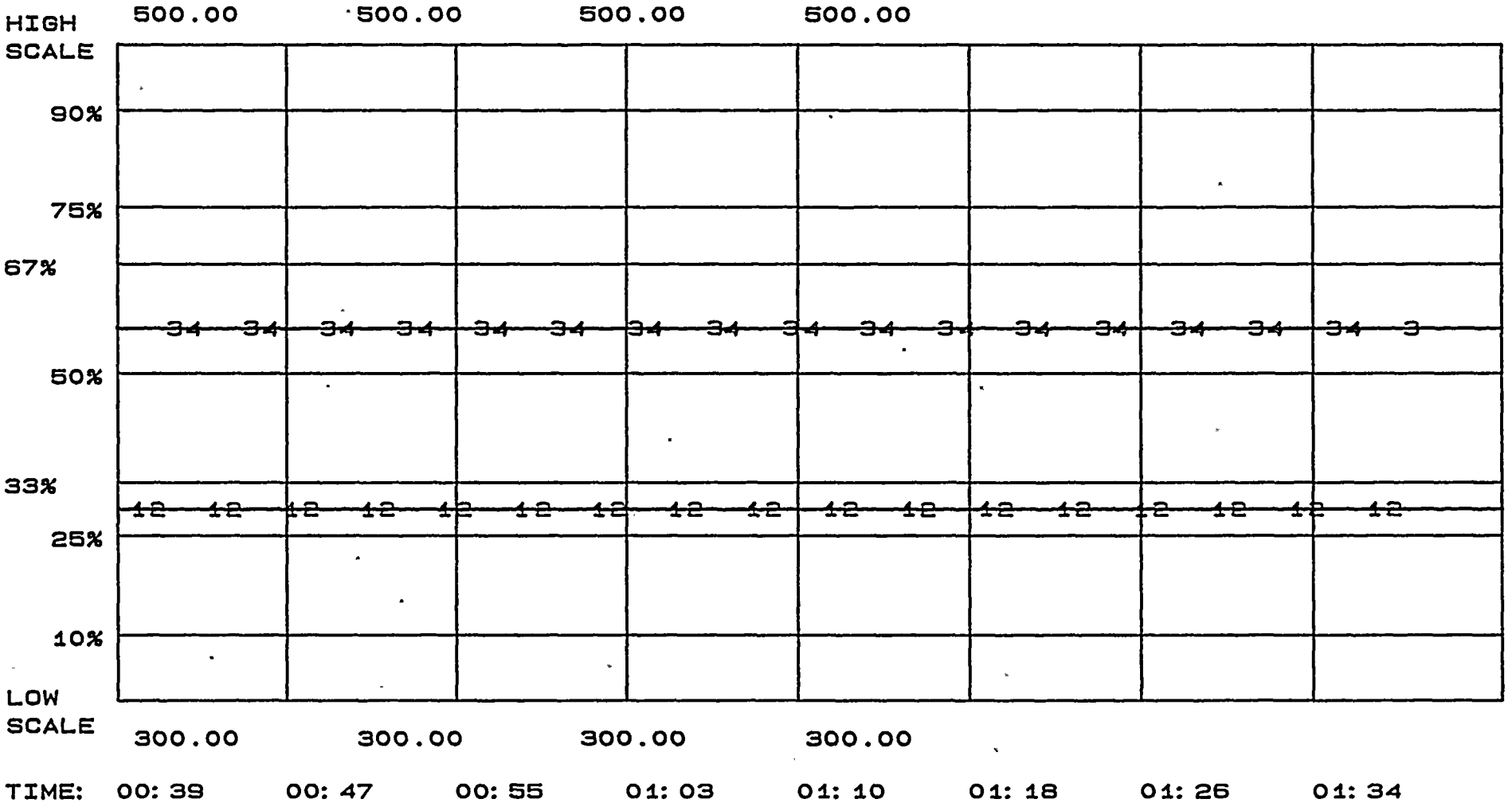
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP.	DEG_F	START 00: 39: 27
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP.	DEG_F	STOP 01: 43: 09
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP.	DEG_F	
5				
6				



90% POWER STEADY-STATE TEST

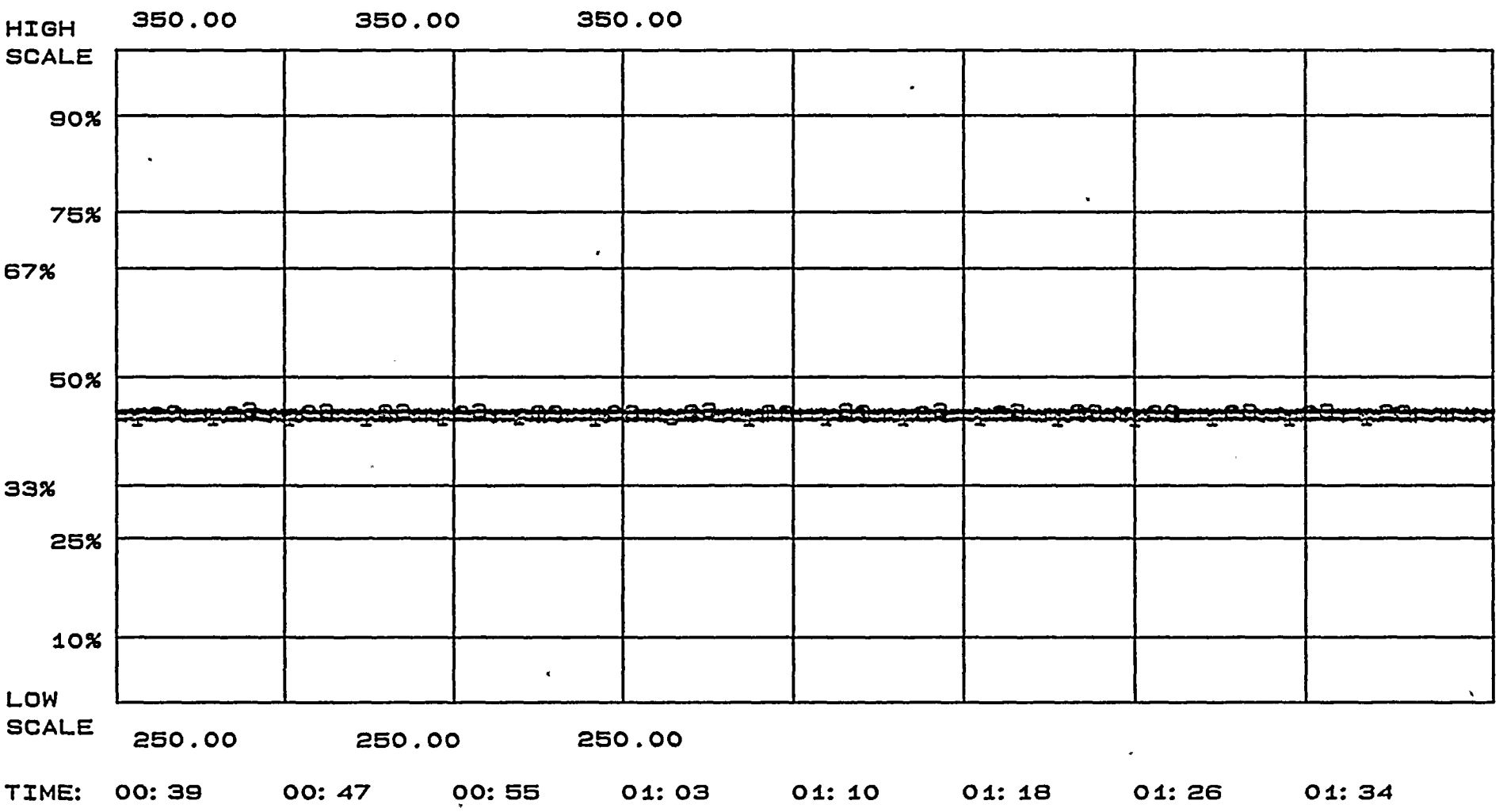
#	POINT ID	DESCRIPTION	UNITS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP.	DEG_F
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP.	DEG_F
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP.	DEG_F
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP.	DEG_F
5			
6			

EDIT CONTROLS	
	TIME
START	00: 39: 27
STOP	01: 43: 09



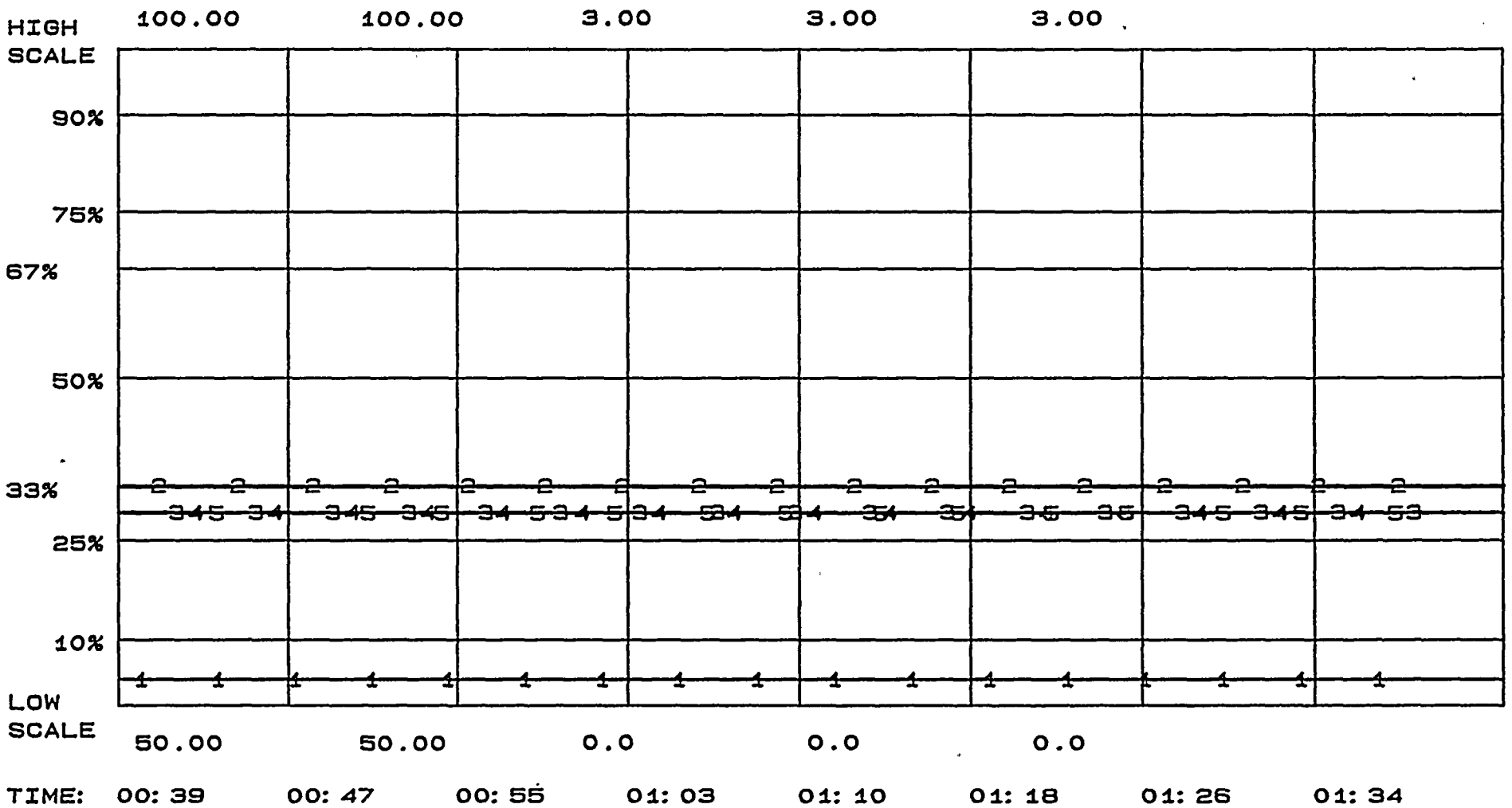
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	MAIN FEEDPUMP SUCTION TEMP.	DEG_F	TIME
2	FWTDEMFP	EAST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	START 00: 39: 27
3	FWTDWMFP	WEST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	STOP 01: 43: 09
4				
5				
6				



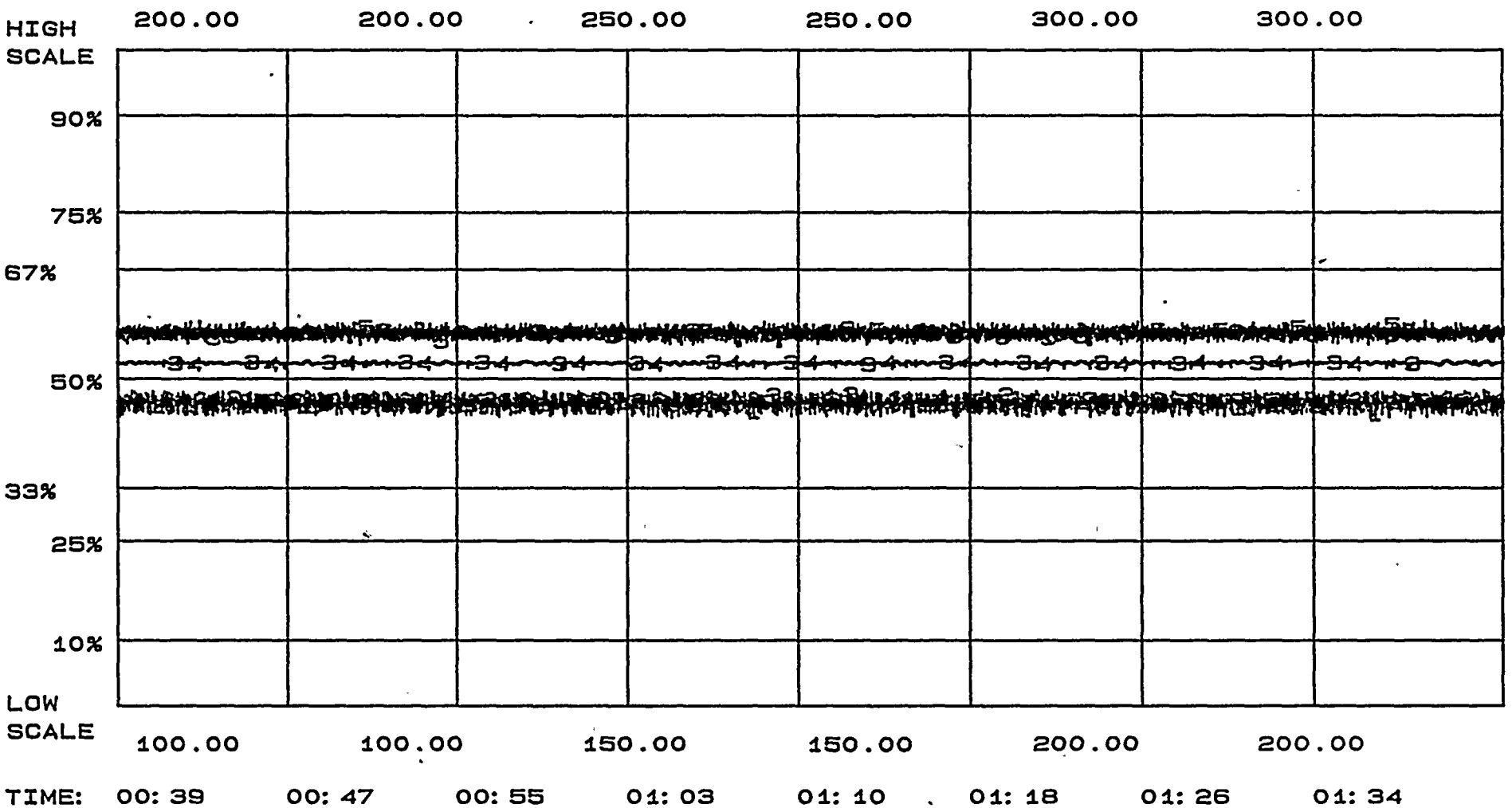
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER AVG. INLET TEMP.	DEG_F	TIME
2	CWTAVGOUT	CONDENSER AVG. OUTLET TEMP.	DEG_F	START 00: 39: 27
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 01: 43: 09
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



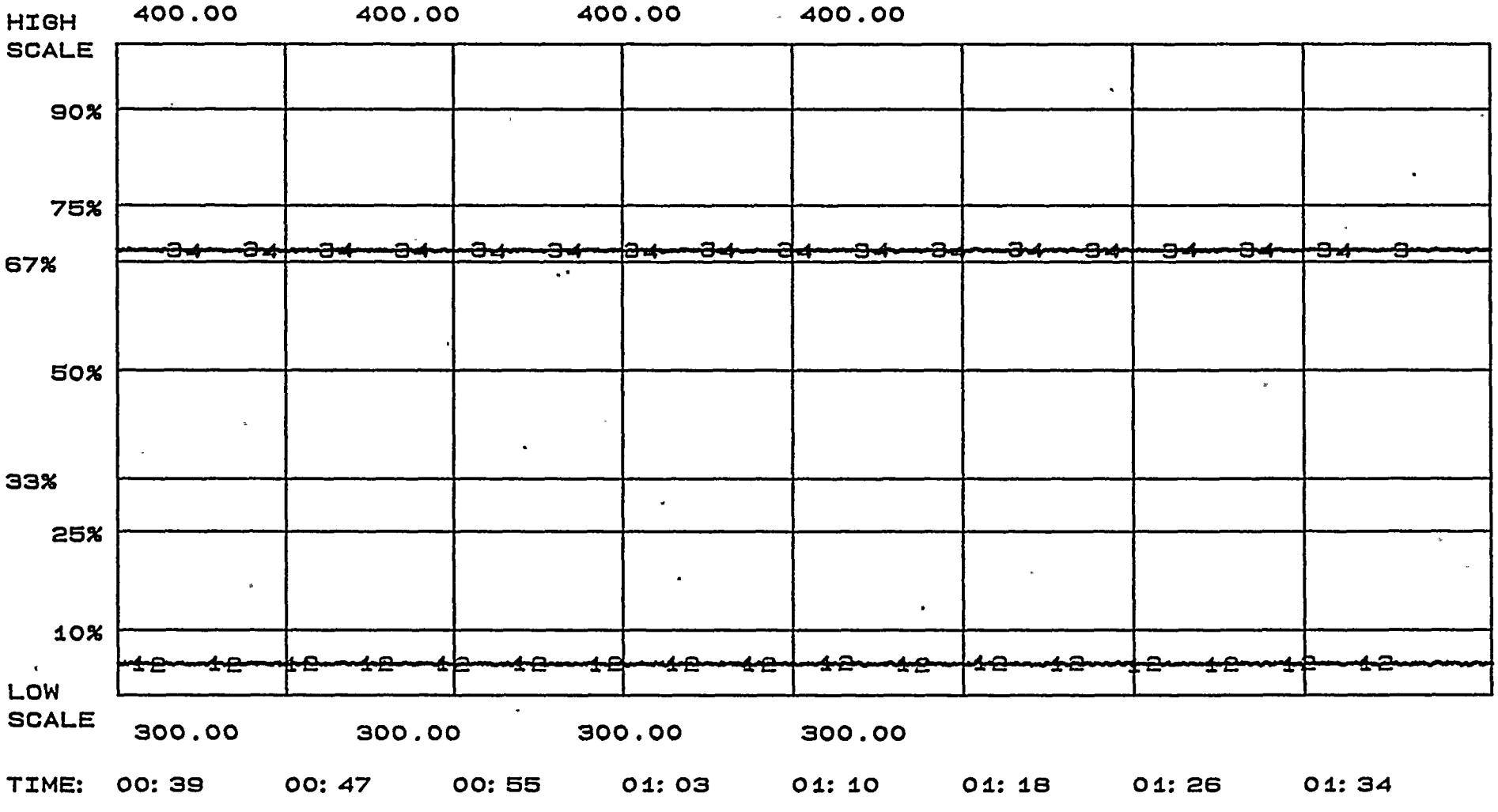
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F	START 00: 39: 27
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F	STOP 01: 43: 09
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F	
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATURE	DEG_F	
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F	



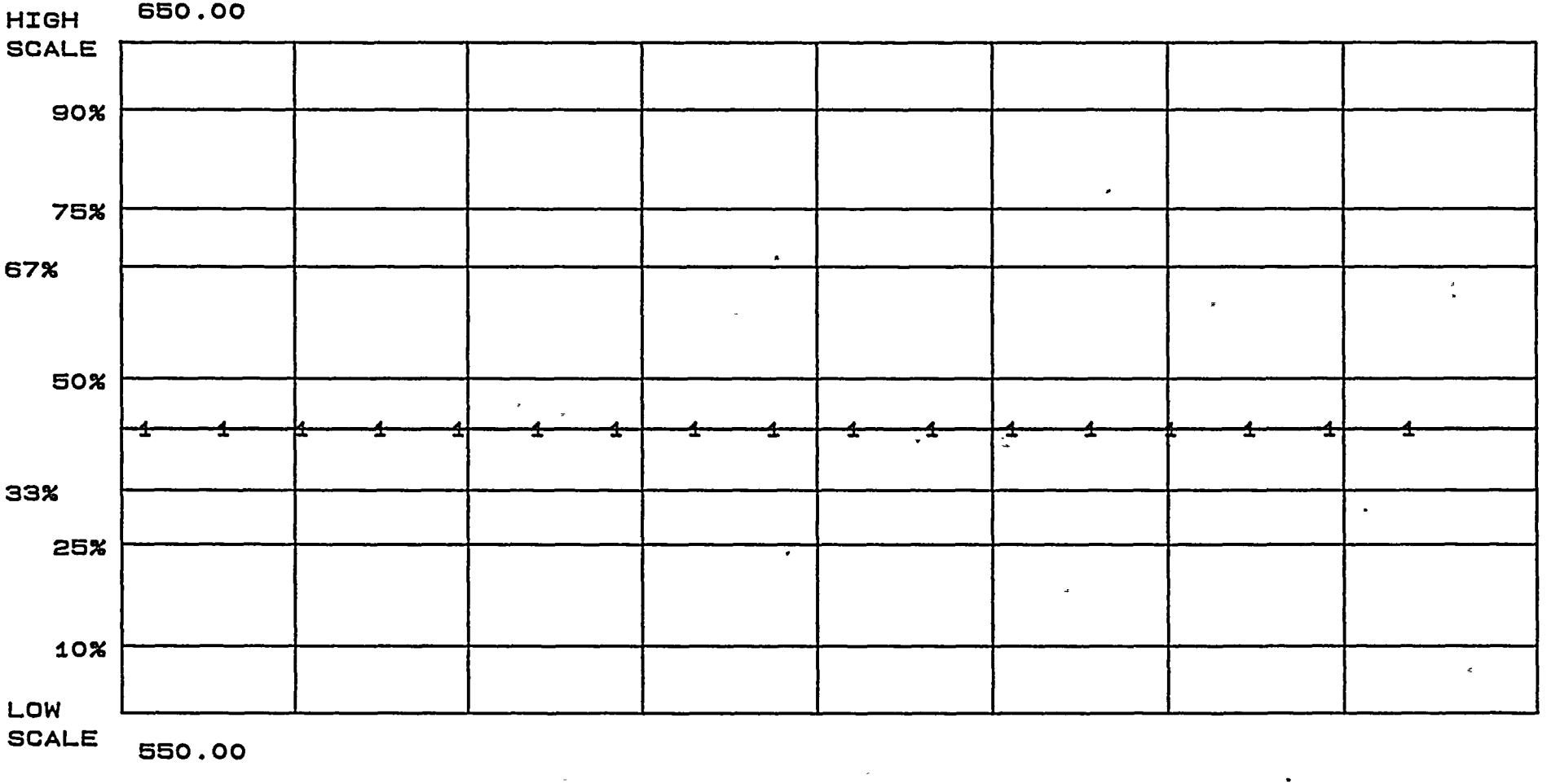
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 00: 39: 27
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 01: 43: 09
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



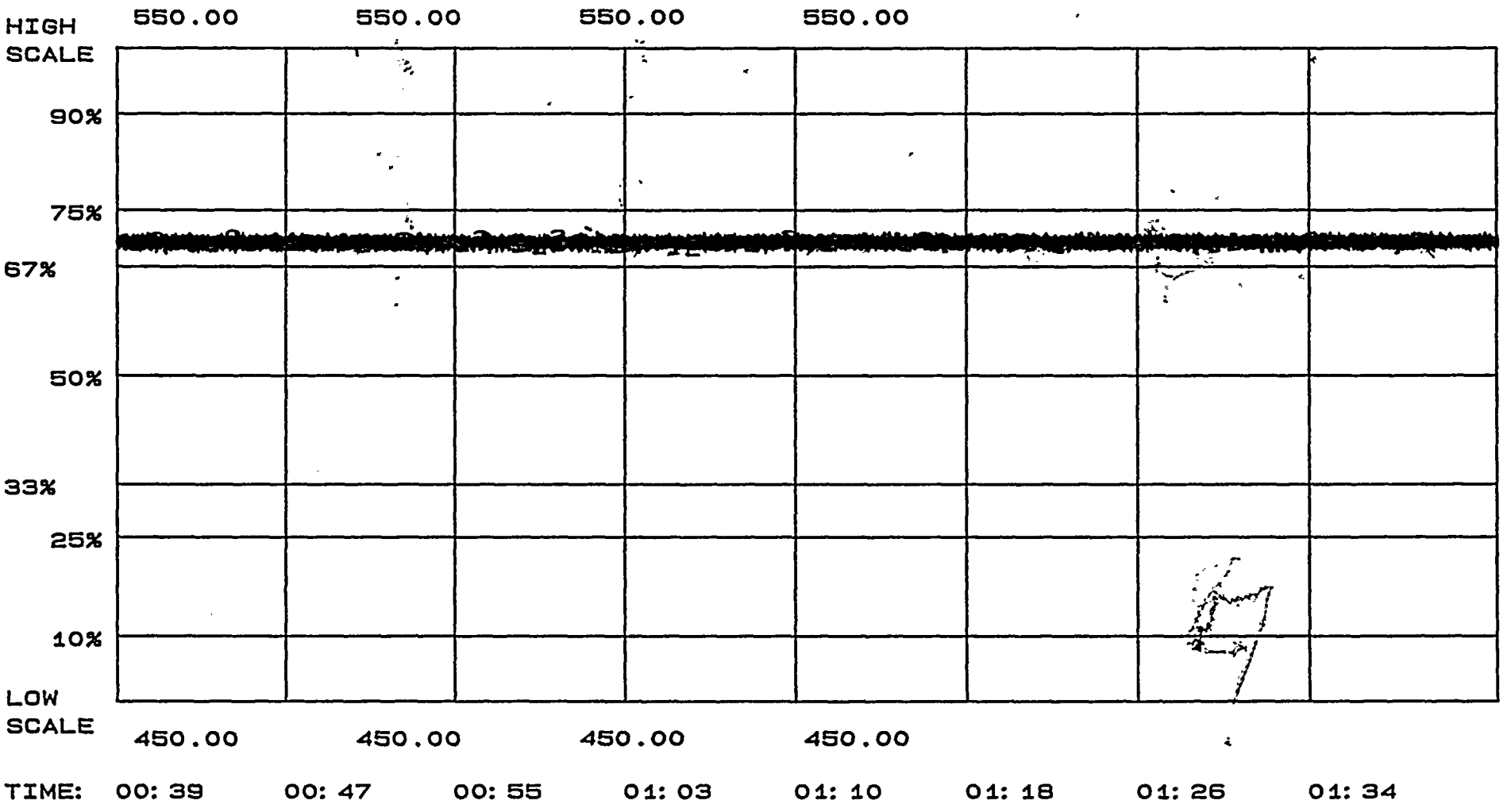
90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCBORON (1)	RCS BORON CONCENTRATION	PPM	TIME
2				START 00: 39: 27
3				STOP 01: 43: 09
4				
5				
6				



90% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCTSGDM(1)	STEAM GENERATOR #1 DOME TEMP.	DEG_F	TIME
2	RCTSGDM(2)	STEAM GENERATOR #2 DOME TEMP.	DEG_F	START 00:39:27
3	RCTSGDM(3)	STEAM GENERATOR #3 DOME TEMP.	DEG_F	STOP 01:43:09
4	RCTSGDM(4)	STEAM GENERATOR #4 DOME TEMP.	DEG_F	
5				
6				



COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
| CRITICAL PARAMETERS |					
Nuclear Power	PR Avg.	Percent	99.93	100	-0.1
Thermal Power	Calc.	Percent	100	100	0
Loop 1 Hot Leg Temp.	NTR-110	Deg. F	612	604.58	1.2
Loop 1 Cold Leg Temp.	NTR-210	Deg. F	547	541.9	0.9
Loop 2 Hot Leg Temp.	NTR-120	Deg. F	603	604.5	-0.2
Loop 2 Cold Leg Temp.	NTR-220	Deg. F	550	541.9	1.5
Loop 3 Hot Leg Temp.	NTR-130	Deg. F	617	604.5	2
Loop 3 Cold Leg Temp.	NTR-230	Deg. F	537	541.9	-0.9
Loop 4 Hot Leg Temp.	NTR-140	Deg. F	611	604.5	1.1
Loop 4 Cold Leg Temp.	NTR-240	Deg. F	546	541.9	0.8
Loop 1 Tavg.	NTI-13	Deg. F	573.5	573.2	0.1
Loop 2 Tavg.	NTI-23	Deg. F	573.5	573.2	0.1
Loop 3 Tavg.	NTI-33	Deg. F	573.5	573.2	0.1
Loop 4 Tavg.	NTI-43	Deg. F	574	573.2	0.1
Pressurizer Pressure	NPP Avg.	PSIG	2238.75	2221.42	0.8
Pressurizer Level	NLP Avg.	Percent	53.57	54.92	-2.5
Press. Level Cold Cal.	NLI-151	Percent	39.5	37.3	5.6 *
Press. Steam Temperature	NTA-252	Deg. F	648	651.3	-0.5
Press. Liquid Temp.	NTA-251	Deg. F	646	651.6	-0.9
Press. Surge Line Temp.	NTA-253	Deg. F	653	642.6	1.6
Steam Generator #21 Level	BLP Avg.	Percent	43.5	43.2	0.7
Steam Generator #22 Level	BLP Avg.	Percent	44	44.6	-1.4
Steam Generator #23 Level	BLP Avg.	Percent	45	43.5	3.3
Steam Generator #24 Level	BLP Avg.	Percent	45.5	44.3	2.6
Steam Generator #21 Press	MPP Avg.	PSIG	800	808	-1
Steam Generator #22 Press	MPP Avg.	PSIG	790	808	-2.3
Steam Generator #23 Press	MPP Avg.	PSIG	786.7	808	-2.7
Steam Generator #24 Press	MPP Avg.	PSIG	793.3	808	-1.9
East Fp. Suction Flow	CFC-201	E6 lb/hr	7.35	7.5	-2
West Fp. Suction Flow	CFC-202	E6 lb/hr	7.2	7.4	-2.8
Main Generator Elect Pwr		Megawatts	1119.7	1137.5	-1.6

COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
NON CRITICAL PARAMETERS					
Steam Gen. #21 Shell Temp	BTI-110	Deg. F	496	498	-0.4
Steam Gen. #22 Shell Temp	BTI-120	Deg. F	501	498	0.6
Steam Gen. #23 Shell Temp	BTI-130	Deg. F	498	498	0
Steam Gen. #24 Shell Temp	BTI-140	Deg. F	500	498	0.4
Turbine 1st Stage Press.	MPC Avg.	Percent	99	99	0
HP Turbine 1st Stage Press.	MPR-253	Press.	688	660	4.1
Main Steam Header Press	MPI-230	Press.	780	772	1
LP Turbine Inlet Press.	MPR-412	Press.	66.5	78.5	-18 *
	SPI-300U	Inch. Vac	27.7	27	2.5
Main Turbine Control Valve A Position	CV-A	Percent	51	50	2
Main Turbine Control Valve B Position	CV-B	Percent	55	49	10.9 *
Main Turbine Control Valve C Position	CV-C	Percent	49	48	2
Main Turbine Control Valve D Position	CV-D	Percent	47	49	-4.3
Main Turbine Load Limiter Position		Percent	86	83	3.5
Main Turbine Operating Device Position		Percent	79	80	-1.3
East Fpt. Stm Supply Press	API-11	PSIG	67	67	0
East Fpt. Condenser Vac.	SPI-351	Inch. Vac	27	28.6	-5.9
East Fp. Suction Press.	CPI-201	PSIG	273	327	-19.8 *
East Fp. Discharge Press	FPI-260	PSIG	995	1080	-8.5
East Fpt. Speed		RPM	4764	4689	1.6
West Fpt. Stm Supply Press	API-12	PSIG	63	67	-6.3
West Fpt. Condenser Vac.	SPI-352	Inch. Vac	27.6	28.5	-3.3
West Fp. Suction Press	CPI-202	PSIG	275	339	-23.3 *
West Fp. Discharge Press	FPI-261	PSIG	1005	1080	-7.5
West Fpt. Speed		RPM	4740	4691	1
Fp. Discharge Header Press	FPC-250	PSIG	960	950	1
Condensate Booster Pump Discharge Header Press.	CPI-203	PSIG	345	355	-2.9
Hotwell Pp.Discharge Press	CPI-101	PSIG	116	131	-12.9 *

COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
Drain Cooler A Shell Press	HPI-111	Inch. Vac	14.9	13.4	10.1 *
Drain Cooler B Shell Press	HPI-112	Inch.. Vac	19.6	13.7	30.1 *
Drain Cooler C Shell Press	HPI-113	Inch. Vac	17.8	13.6	23.6 *
Heater 1A Shell Press.	HPI-101	Inch. Vac	23	23.3	-1.3
Heater 1B Shell Press.	HPI-102	Inch. Vac	23	23.2	-0.9
Heater 1C Shell Press.	HPI-103	Inch. Vac	23.1	23.2	-0.4
Heater 2A Shell Press.	HPI-201	Inch/PSIG	4.8	20	-316.7 *
Heater 2B Shell Press.	HPI-202	Inch/PSIG	4.6	20	-334.8 *
Heater 3A Shell Press.	HPI-301	PSIG	20	20.5	-2.5
Heater 3B Shell Press.	HPI-302	PSIG	17	20.4	-20 *
Heater 4A Shell Press.	HPI-401	PSIG	73	82	-12.3 *
Heater 4B Shell Press.	HPI-402	PSIG	74	82	-10.8 *
Heater 5A Shell Press.	HPI-501	PSIG	155	183	-18.1 *
Heater 5B Shell Press.	HPI-502	PSIG	151	170	-12.6 *
Heater 6A Shell Press.	HPI-601	PSIG	315	341	-8.3
Heater 6B Shell Press.	HPI-602	PSIG	318	345	-8.5
North Htr. Drain pump Discharge Pressure	CPI-252	PSIG	320	418	-30.6 *
Middle Htr. Drain pump Discharge Pressure	CPI-253	PSIG	65	61	6.2
South Htr. Drain Pump Discharge Pressure	CPI-251	PSIG	355	421	-18.6 *
(Left)	MPC-422	PSIG	790	748	5.3
(Right)	MPC-421	PSIG	800	750	6.3
FP Discharge Heater Temp.	FTR-258	Deg. F	296	298	-0.7
Heater 5A Tube Outlet Temp	FTR-250	Deg. F	363	365	-0.6
Heater 5B Tube Outlet Temp	FTR-251	Deg. F	363	366	-0.8
Heater 6A Tube Outlet Temp	FTR-252	Deg. F	423	423	0
Heater 6B Tube Outlet Temp	FTR-253	Deg. F	423	423	0
Heater 6A & 6B Outlet Temp	FTR-259	Deg. F	423	423	0
Fp Suction Header Temp.	CTR-224	Deg. F	280	314	-12.1 *
Main Stm to Cont. Valve A	MTR-240	Deg. F	510	520	-2
Main Stm to Cont. Valve B	MTR-230	Deg. F	515	520	-1
Main Stm to Cont. Valve C	MTR-220	Deg. F	515	520	-1
Main Stm to Cont. Valve D	MTR-210	Deg. F	515	520	-1
Reheat Steam after Valve A Left	MTR-416	Deg. F Deg. F	460	481	-4.6
Reheat Steam after Valve A Right	MTR-426	Deg. F Deg. F	470	481	-2.3
Reheat Steam after Valve B Left	MTR-417	Deg. F Deg. F	470	481	-2.3

COOK PLANT SIMULATOR

100% STEADY STATE TEST

TITLE	INST #	UNITS	PLANT VALUE	SIMULATOR VALUE	% ERROR
Reheat Steam after		Deg. F			
Valve B Right	MTR-427	Deg. F	470	481	-2.3
Reheat Steam after		Deg. F			
Valve C Left	MTR-418	Deg. F	470	481	-2.3
Reheat Steam after		Deg. F			
Valve C Right	MTR-428	Deg. F	465	481	-3.4
East FPT Inlet Steam	ATR-121	Deg. F	470	302	35.7 *
West FPT Inlet Steam	ATR-122	Deg. F	470	302	35.7 *
Exhaust Hood A - Gen. End	TTR-410	Deg. F	100	107	-7
Exhaust Hood B - Gen. End	TTR-420	Deg. F	100	107	-7
Exhaust Hood C - Gen. End	TTR-430	Deg. F	100	107	-7
HP Turbine Exhaust	MTR-251	Deg. F	320	330	-3.1
HP Turbine Shell Metal	TTR-260	Deg. F	495	483	2.4
Steam to Steam Seals	STR-10	Deg. F	215	215	0
Condenser Inlet Avg.	SG-21 P1	Deg. F	OOS	58.8	
Condenser Outlet Avg.	SG-21 P2	Deg. F	72.5	75.4	-4
Condenser Delta T	SG-21 P3	Deg. F	14.2	16.8	-18.3 *
CW Pump #21 Discharge	WTR-21	Deg. F	58	58.8	-1.4
CW Pump #22 Discharge	WTR-22	Deg. F	58	58.8	-1.4
CW Pump #23 Discharge	WTR-23	Deg. F	58	58.8	-1.4
CW Pump #24 Discharge	WTR-24	Deg. F	58	58.8	-1.4
Condenser A Outlet NW	WTR-113	Deg. F	73	75.5	-3.4
Condenser A Outlet SW	WTR-117	Deg. F	73	75.5	-3.4
Condenser B Outlet NW	WTR-213	Deg. F	73.5	75.6	-2.9
Condenser B Outlet SW	WTR-217	Deg. F	73.5	75.5	-2.7
Condenser C Outlet NW	WTR-313	Deg. F	73.5	75.5	-2.7
Condenser C Outlet SW	WTR-317	Deg. F	73.5	75.5	-2.7
Bank D Rod Position		Steps	220.5	224	-1.6

COOK PLANT SIMULATOR -HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION			VALUE	DATA	% ERROR
MG OUTPUT [illegible]	1	[illegible]	1[illegible]	1177.41	-1.59
AC LOOP DELTA T	[illegible]		[illegible].1	[illegible].00	-2.01
T AVG TRANSM. TABLE	1	F	[illegible]73.19	573.90	-.11
T REFERENCE	1	F	[illegible]73.15	573.80	-.08
SG DOME PRESSURES	1	PSIA	822.54	818.01	.55
MS LOOP FLOWS	1	M/S	4129.10	4105.92	.49
FW LOOP FLOWS	1	M/S	4131.87	4105.85	.63
HPT INLET STM FLOW	1	M/S	3779.37	3753.44	.46
LPT INLET STM FLOW	1	M/S	838.49	837.15	.53
LPT INLET STM FLOW	2	M/S	838.52	837.15	.52
LPT INLET STM FLOW	3	M/S	838.53	837.13	.52
HPT EXTR. FLOW TO HTR 6A	1	M/S	130.34	127.09	2.56
HPT EXTR. FLOW TO HTR 5A	1	M/S	154.25	148.88	3.63
HPT EXTR. FLOW TO HTR 4A	1	M/S	58.13	58.30	-.25
LPT EXTR. FLOW TO HTR 3A	1	M/S	75.70	75.14	.74
LPT EXTR. FLOW TO HTR 2A	1	M/S	72.32	74.52	-2.29
LPT EXTR. FLOW TO HTR 1A	1	M/S	35.68	31.93	11.74 *
H6A TUBE OUTLET TEMP	1	F	428.47	428.50	-.01
H5A TUBE OUTLET TEMP	1	F	370.56	371.30	-.20
H4A TUBE OUTLET TEMP	1	F	302.80	303.40	-.20
H3A TUBE OUTLET TEMP	1	F	320.25	320.40	-.05
H3A TUBE OUTLET TEMP	1	F	254.34	254.90	-.22
H2A TUBE OUTLET TEMP.	1	F	199.51	199.40	-.44
H1A TUBE OUTLET TEMP	1	F	141.72	141.20	.37
DCA TUBE OUTLET TEMP	1	F	104.93	107.60	-2.43
HWP SUCTION TEMPERATURE	1	F	100.31	97.40	2.99
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	99.92	97.40	1.56
CND VAC	1	INHGA	27.93	28.21	-1.01

DATA VALUE BASED ON 99.99 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	98.8827	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	98.8466	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	98.7940	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		100.0946	F
FWTTODCA	19200 DCA TUBE OUTLET TEMP		105.0587	F
FWTTODCB	19300 DCB TUBE OUTLET TEMP		105.0168	F
FWTTODCC	19360 DCC TUBE OUTLET TEMP		105.0150	F
FWTTOH1A	19220 H1A TUBE OUTLET TEMP		141.6946	F
FWTTOH1B	19240 H1B TUBE OUTLET TEMP		141.6670	F
FWTTOH1C	19260 H1C TUBE OUTLET TEMP		141.6527	F
FWTTOH2A	19120 H2A TUBE OUTLET TEMP		198.5525	F
FWTTOH2B	19200 H2B TUBE OUTLET TEMP		199.5457	F
FWTTOH3A	19140 H3A TUBE OUTLET TEMP		254.3881	F
FWTTOH3B	19160 H3B TUBE OUTLET TEMP		254.3873	F
FWTTOH4A	19100 H4A TUBE OUTLET TEMP		320.3213	F
FWTTOH4B	19120 H4B TUBE OUTLET TEMP		320.3352	F
FWTTOH5A	17060 H5A TUBE OUTLET TEMP		370.5149	F
FWTTOH5B	17080 H5B TUBE OUTLET TEMP		370.5376	F
FWTTOH6A	17020 H6A TUBE OUTLET TEMP		428.4248	F
FWTTOH6B	17040 H6B TUBE OUTLET TEMP		428.4268	F

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		301.3325	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		302.8394	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		302.3291	F
CWTAVGIN	03060 COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	03070 AVERAGE COND OUTLET TE		68.7335	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	1.0191	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	1.0131	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	1.0165	PSIA
FWTDRNH2A	19120 H2A DRAINS TEMPERATURE		150.4595	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		151.8007	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		208.7050	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		208.7410	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		264.5476	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		264.6069	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		313.1155	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		313.1487	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		330.4536	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		390.3455	F
RDPROD	03050 ROD POSITION/ACTUAL	(045)	224	
RDPROD	03050 ROD POSITION/ACTUAL	(053)	224	

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ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1003	PZR VAPOR TEMP		652.9232	DEGF
T1004	PZR LIQUID TEMP		653.1272	DEGF
RCTNTA25	[illegible] PZR SURGE LINE TEMP		672.7165	DEG F
L1091	PRESSURIZER WATER LEVEL		56.1999	PC
RXLCOLDC	05030 PRZ COLD CALIB		.7794	%
P1036	PRESSURIZER PRESSURE		[illegible]	PSIG
T1101	LOOP 1 AVG TEMP		577.1333	DEGF
T1102	LOOP 2 AVG TEMP		573.2053	DEGF
T1103	LOOP 3 AVG TEMP		573.2090	DEGF
T1104	LOOP 4 AVG TEMP		573.2017	DEGF
T1111	LOOP 1 HOT LEG TEMP		604.5465	DEGF
T1112	LOOP 2 HOT LEG TEMP		604.5479	DEGF
T1113	LOOP 3 HOT LEG TEMP		604.5488	DEGF
T1114	LOOP 4 HOT LEG TEMP		604.5491	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.8342	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.8662	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.8640	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.8630	DEGF
NIQPRAV	02057 AVG POWER RANGE FLUX		1.0021	%
CRQN	05050 NORMALIZED CORE POWER		1.0000	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1024	STM GEN OUTLET PRES LP 1		807.5083	PSIG
P1025	STM GEN OUTLET PRES LP 2		807.4629	PSIG
P1026	STM GEN OUTLET PRES LP 3		807.5349	PSIG
P1031	STM GEN OUTLET PRES LP 4		807.5239	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.3786	PC
L1207	STM GEN 2 NARROW LEVEL		43.3093	PC
L1210	STM GEN 3 NARROW LEVEL		43.9919	PC
L1213	STM GEN 4 NARROW LEVEL		43.2336	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	518.6743	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	517.6531	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	513.3447	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	519.1953	F
RCBORON	11070 BORON CONC	(001)	577.4995	PPM
RCBORON	11070 BORON CONC	(002)	577.4998	PPM
RCBORON	11070 BORON CONC	(003)	577.5015	PPM

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	1119.65	1137.16	-1.61
RC LOOP DELTA T	1	F	62.72	63.99	-2.00
T AVG TRANSM. TABLE	1	F	573.19	573.30	-.11
T REFERENCE	1	F	573.33	573.00	-.08
SG DOME PRESSURES	1	PSIA	822.51	818.00	.55
MS LOOP FLOWS	1	M/S	4126.35	4106.07	.49
FW LOOP FLOWS	1	M/S	4134.46	4106.07	.69
HPT INLET STM FLOW	1	M/S	3770.91	3753.69	.46
LPT INLET STM FLOW	1	M/S	882.07	887.19	-.58
LPT INLET STM FLOW	2	M/S	882.10	887.15	-.57
LPT INLET STM FLOW	3	M/S	882.10	887.18	-.57
HPT EXTR. FLOW TO HTR 6A	1	M/S	130.43	127.11	2.61
HPT EXTR. FLOW TO HTR 5A	1	M/S	154.51	148.91	3.76
HPT EXTR. FLOW TO HTR 4A	1	M/S	68.46	68.31	.22
LPT EXTR. FLOW TO HTR 3A	1	M/S	75.87	75.15	.96
LPT EXTR. FLOW TO HTR 2A	1	M/S	72.89	74.53	-2.19
LPT EXTR. FLOW TO HTR 1A	1	M/S	35.57	31.93	11.40 *
H6A TUBE OUTLET TEMP	1	F	423.41	428.50	-.02
H5A TUBE OUTLET TEMP	1	F	370.52	371.30	-.21
H4A TUBE OUTLET TEMP	1	F	302.93	303.40	-.19
H3A TUBE OUTLET TEMP	1	F	320.35	320.40	-.01
H3A TUBE OUTLET TEMP	1	F	254.42	254.90	-.19
H2A TUBE OUTLET TEMP	1	F	199.59	199.40	-.40
H1A TUBE OUTLET TEMP	1	F	141.72	141.20	.37
DCA TUBE OUTLET TEMP	1	F	105.04	107.90	-2.38
HWP SUCTION TEMPERATURE	1	F	100.27	97.40	2.95
FOREBAY TEMPERATURE	1	F	82.00	82.00	.00
CONDENSER TEMPERATURE	1	F	98.59	97.40	1.53
CND VAC	1	INHGA	27.93	28.21	-1.00

DATA VALUE BASED ON 100.00 % CORE POWER

06/25/90 22:33:34 TASK = 0C000100 COOK2 GOULD C.S.D. MPX-32

ISD>

DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130	CONDENSER TEMPERATURE	(001)	98.9231	F
FWTCN	15130	CONDENSER TEMPERATURE	(002)	98.9268	F
FWTCN	15130	CONDENSER TEMPERATURE	(003)	98.8380	F
FWTDMHWP	11010	HWP DISC HEADER TEMP		100.1378	F
FWTTODCA	19230	DCA TUBE OUTLET TEMP		105.0909	F
FWTTODCB	19250	DCB TUBE OUTLET TEMP		105.0676	F
FWTTODCC	19270	DCC TUBE OUTLET TEMP		105.0659	F
FWTTOH1A	19220	H1A TUBE OUTLET TEMP		141.7651	F
FWTTOH1B	19240	H1B TUBE OUTLET TEMP		141.7364	F
FWTTOH1C	19260	H1C TUBE OUTLET TEMP		141.7222	F
FWTTOH2A	19110	H2A TUBE OUTLET TEMP		198.6472	F
FWTTOH2B	19200	H2B TUBE OUTLET TEMP		198.6642	F
FWTTOH3A	19140	H3A TUBE OUTLET TEMP		254.4738	F
FWTTOH3B	19160	H3B TUBE OUTLET TEMP		254.4743	F
FWTTOH4A	19100	H4A TUBE OUTLET TEMP		320.4250	F
FWTTOH4B	19120	H4B TUBE OUTLET TEMP		320.4165	F
FWTTOH5A	17060	H5A TUBE OUTLET TEMP		370.6243	F
FWTTOH5B	17080	H5B TUBE OUTLET TEMP		370.6545	F
FWTTOH6A	17020	H6A TUBE OUTLET TEMP		428.5022	F
FWTTOH6B	17040	H6B TUBE OUTLET TEMP		428.5208	F

ISD>

DATA ITEM		DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060	MFP SUCTION TEMPERATUR		301.9028	F
FWTDBMFP	11070	B MFP DISCH TEMPERATUR		302.9094	F
FWTDAMFP	11072	A MFP DISCH TEMPERATUR		302.7878	F
CWTAVGIN	00350	COND AVERAGE INLET TE		52.0008	F
CWTAVGOUT	00351	AVERAGE COND OUTLET TE		69.7440	F
FWPCN	15140	CND TOTAL PRESSURE	(001)	1.0195	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(002)	1.0185	PSIA
FWPCN	15140	CND TOTAL PRESSURE	(003)	1.0170	PSIA
FWTDRNH2A	19150	H2A DRAINS TEMPERATURE		150.5399	F
FWTDRNH2B	19200	H2B DRAINS TEMPERATURE		150.2578	F
FWTDRNH3A	19140	H3A DRAINS TEMPERATURE		208.7319	F
FWTDRNH3B	19160	H3B DRAINS TEMPERATURE		208.6763	F
FWTDRNH4A	19100	H4A DRAINS TEMPERATURE		264.5757	F
FWTDRNH4B	19120	H4B DRAINS TEMPERATURE		264.7969	F
FWTDRNH5A	17060	H5A DRAINS TEMPERATURE		313.1077	F
FWTDRNH5B	17080	H5B DRAINS TEMPERATURE		313.1133	F
FWTDRNH6A	17020	H6A DRAINS TEMPERATURE		380.4368	F
FWTDRNH6B	17040	H6B DRAINS TEMPERATURE		380.4446	F
RDPR00	00350	ROD POSITION/ACTUAL	(045)	224	
RDPR00	00350	ROD POSITION/ACTUAL	(053)	224	

ISD>

06/25/90 22:21:19 TASK = 0C000100 COOK2 GOULD C.S.D. MPX-3

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.7888	DEGF
T1004	PZR LIQUID TEMP		653.1013	DEGF
RCTNTA255	05000 PRZ SURGE LINE TEMP		639.9666	DEG F
L1091	PRESSURIZER WATER LEVEL		56.5796	PC
RXLCOLDC	05550 PRZ COLD CALIB		.3903	%
P1036	PRESSURIZER PRESSURE		2244.2269	PSIG
T1101	LOOP 1 AVG TEMP		573.1377	DEGF
T1102	LOOP 2 AVG TEMP		573.2065	DEGF
T1103	LOOP 3 AVG TEMP		573.2009	DEGF
T1104	LOOP 4 AVG TEMP		573.1990	DEGF
T1111	LOOP 1 HOT LEG TEMP		604.5461	DEGF
T1112	LOOP 2 HOT LEG TEMP		604.5459	DEGF
T1113	LOOP 3 HOT LEG TEMP		604.5579	DEGF
T1114	LOOP 4 HOT LEG TEMP		604.5461	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.8311	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.8684	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.8459	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.8481	DEGF
NIQPRAV	02000 AVG POWER RANGE^FLUX		1.0014	%
CRQN	03000 NORMALIZED CORE^POWER		.9999	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		807.5178	PSIG
P1025	STM GEN OUTLET PRES LP 2		807.4595	PSIG
P1022	STM GEN OUTLET PRES LP 3		807.5103	PSIG
P1031	STM GEN OUTLET PRES LP 4		807.4771	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.1940	PC
L1207	STM GEN 2 NARROW LEVEL		44.5653	PC
L1210	STM GEN 3 NARROW LEVEL		43.5098	PC
L1213	STM GEN 4 NARROW LEVEL		44.6392	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	517.9277	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	518.2314	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	518.9082	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	518.3364	F
RC3ORON	11070 BORON CONC	(001)	577.4968	PPM
RC3ORON	11070 BORON CONC	(002)	577.4946	PPM
RC3ORON	11070 BORON CONC	(003)	577.4944	PPM

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	1119.08	1137.24	-1.60
RC LOOP DELTA T	1	F	63.71	65.00	-2.00
T AVG TRANSM. TABLE	1	F	573.10	573.80	-.11
T REFERENCE	1	F	573.33	573.30	-.08
SG DOME PRESSURES	1	PSIA	822.53	818.03	.55
MS LOOP FLOWS	1	#/S	4126.40	4105.29	.51
FW LOOP FLOWS	1	#/S	4130.39	4105.27	.62
HPT INLET STM FLOW	1	#/S	3770.91	3750.80	.48
LPT INLET STM FLOW	1	#/S	[illegible]	887.04	-.57
LPT INLET STM FLOW		#/S	[illegible]	887.04	-.52
LPT INLET STM FLOW	3	#/S	882.43	887.04	-.52
HPT EXTR. FLOW TO HTR 5A	1	#/S	130.30	127.06	2.55
HPT EXTR. FLOW TO HTR 5A	1	#/S	154.37	148.87	3.70
HPT EXTR. FLOW TO HTR 4A	1	#/S	68.32	68.29	.04
LPT EXTR. FLOW TO HTR 3A	1	#/S	75.76	75.13	.84
LPT EXTR. FLOW TO HTR 2A	1	#/S	72.84	74.51	-2.24
LPT EXTR. FLOW TO HTR 1A	1	#/S	[illegible]	31.97	11.26 *
H6A TUBE OUTLET TEMP	1	F	428.45	428.47	0.00
H5A TUBE OUTLET TEMP	1	F	570.56	571.23	-.19
H4A TUBE OUTLET TEMP	1	F	301.53	303.39	-.19
H3A TUBE OUTLET TEMP	1	F	320.25	320.32	-.01
H3A TUBE OUTLET TEMP	1	F	254.38	254.89	-.19
H2A TUBE OUTLET TEMP	1	F	198.58	199.39	-.41
H1A TUBE OUTLET TEMP	1	F	141.68	141.19	.35
DCA TUBE OUTLET TEMP	1	F	105.07	107.59	-2.35
MWP SUCTION TEMPERATURE	1	F	100.31	97.40	2.99
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	98.93	97.40	1.57
CND VAC	1	INHGA	27.93	28.21	-1.01

DATA VALUE BASED ON 100.00 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	98.8654	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	98.8250	F
FWTCN	15170 CONDENSER TEMPERATURE	(003)	98.7756	F
FWTDHHWP	11010 [illegible]		100.0250	F
FWTTQDCA	17[illegible] DCA TUBE OUTLET TEMP		104.0250	F
FWTTQDCB	17[illegible] DCB TUBE OUTLET TEMP		105.0161	F
FWTTQDCC	17[illegible] DCC TUBE OUTLET TEMP		104.9182	F
FWTTQH1A	19[illegible] H1A TUBE OUTLET TEMP		141.5972	F
FWTTQH1B	19[illegible] H1B TUBE OUTLET TEMP		141.6031	F
FWTTQH1C	19[illegible] H1C TUBE OUTLET TEMP		141.6091	F
FWTTQH2A	19120 H2A TUBE OUTLET TEMP		198.5046	F
FWTTQH2B	19[illegible] H2B TUBE OUTLET TEMP		198.5160	F
FWTTQH3A	19140 H3A TUBE OUTLET TEMP		254.3750	F
FWTTQH3B	19[illegible] H3B TUBE OUTLET TEMP		254.3756	F
FWTTQH4A	19160 H4A TUBE OUTLET TEMP		320.3501	F
FWTTQH4B	19[illegible] H4B TUBE OUTLET TEMP		320.3660	F
FWTTQH5A	17[illegible] H5A TUBE OUTLET TEMP		370.4500	F
FWTTQH5B	17[illegible] H5B TUBE OUTLET TEMP		370.4321	F
FWTTQH6A	17[illegible] H6A TUBE OUTLET TEMP		428.3496	F
FWTTQH6B	17040 H6B TUBE OUTLET TEMP		428.3523	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		301.7429	F
FWTDQMFP	11070 [illegible] MFP DISCH TEMPERATUR		302.7495	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		302.7512	F
CWTAVGIN	03030 COND AVERAGE INLET TE		92.0005	F
CWTAVGOUT	03050 AVERAGE COND OUTLET TE		48.7239	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	1.0189	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	1.0173	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	1.0163	PSIA
FWTDRNH2A	19[illegible] H2A DRAINS TEMPERATURE		170.5763	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		151.6313	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		203.7331	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		208.7156	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		264.4275	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		264.3918	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		313.0434	F
FWTDRNH5B	17030 H5B DRAINS TEMPERATURE		313.0540	F
FWTDRNH6A	17[illegible] H6A DRAINS TEMPERATURE		380.4302	F
FWTDRNH6B	17[illegible] H6B DRAINS TEMPERATURE		380.4067	F
RDPROD	03[illegible] ROD POSITION,ACTUAL	(045)	224	
RDPROD	03030 ROD POSITION,ACTUAL	(053)	224	

ISD>

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.7556	DEGF
T1004	PZR LIQUID TEMP		653.0627	DEGF
RCTNTA253	03000 PRT SURGT LINE TEMP		639.2271	DEG F
L1091	PRESSURIZER WATER LEVEL		56.3236	PC
RXLCOLDC	05500 PRZ COLD CALC		.3815	%
P1036	PRESSURIZER PRESSURE		2243.7080	PSIG
T1101	LOOP 1 AVG TEMP		573.1902	DEGF
T1102	LOOP 2 AVG TEMP		573.2036	DEGF
T1103	LOOP 3 AVG TEMP		573.2007	DEGF
T1104	LOOP 4 AVG TEMP		573.2031	DEGF
T1111	LOOP 1 HOT LEG TEMP		604.5435	DEGF
T1112	LOOP 2 HOT LEG TEMP		604.5432	DEGF
T1113	LOOP 3 HOT LEG TEMP		604.5505	DEGF
T1114	LOOP 4 HOT LEG TEMP		604.5435	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.8374	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.8643	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.8534	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.8699	DEGF
NIQPRAV	02050 AVG POWER RANGE FLUX		1.0016	%
CRQN	03030 NORMALIZED CORE POWER		.9999	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		807.5342	PSIG
P1025	STM GEN OUTLET PRES LP 2		807.5115	PSIG
P1028	STM GEN OUTLET PRES LP 3		807.5237	PSIG
P1031	STM GEN OUTLET PRES LP 4		807.5974	PSIG
L1204	STM GEN 1 NARROW LEVEL		43.3240	PC
L1207	STM GEN 2 NARROW LEVEL		43.8165	PC
L1210	STM GEN 3 NARROW LEVEL		43.6750	PC
L1213	STM GEN 4 NARROW LEVEL		44.6253	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	518.1936	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	517.8909	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	518.5972	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	518.0569	F
RCBORON	11070 BORON CONC	(001)	577.4875	PPM
RCBORON	11070 BORON CONC	(002)	577.4875	PPM
RCBORON	11070 BORON CONC	(003)	577.4875	PPM

ISD>

COOK PLANT [illegible] PLANT PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	1119.1	1127.21	-1.57
RC LOOP DELTA T	1	F	62.71	63.99	-2.00
T AVG TRANSM. TABLE	1	F	573.20	573.80	-.10
T REFERENCE	1	F	573.73	573.80	-.03
SG DOME PRESSURES	1	PSIA	822.59	819.02	.56
MS LOOP FLOWS	1	#/S	4107.93	4105.39	.53
FW LOOP FLOWS	1	#/S	4129.99	4105.39	.60
HPT INLET STM FLOW	1	#/S	3771.17	3752.85	.49
LPT INLET STM FLOW	1	#/S	892.35	887.01	-.53
LPT INLET STM FLOW	2	#/S	892.32	887.00	-.53
LPT INLET STM FLOW	3	#/S	892.31	887.00	-.53
HPT EXTR. FLOW TO HTR 6A	1	#/S	130.31	127.05	2.56
HPT EXTR. FLOW TO HTR 5A	1	#/S	154.36	148.87	3.69
HPT EXTR. FLOW TO HTR 4A	1	#/S	68.67	68.30	.55
LPT EXTR. FLOW TO HTR 3A	1	#/S	75.95	75.13	1.09
LPT EXTR. FLOW TO HTR 2A	1	#/S	72.95	74.51	-2.10
LPT EXTR. FLOW TO HTR 1A	1	#/S	35.66	31.92	11.72 *
H6A TUBE OUTLET TEMP	1	F	428.39	428.48	-.02
H5A TUBE OUTLET TEMP	1	F	370.45	371.29	-.23
H4A TUBE OUTLET TEMP	1	F	302.79	303.39	-.20
H3A TUBE OUTLET TEMP	1	F	320.29	320.39	-.03
H3A TUBE OUTLET TEMP	1	F	254.31	254.89	-.23
H2A TUBE OUTLET TEMP	1	F	198.45	199.39	-.47
H1A TUBE OUTLET TEMP	1	F	141.64	141.19	.31
DCA TUBE OUTLET TEMP	1	F	105.06	107.60	-2.35
HWP SUCTION TEMPERATURE	1	F	100.31	97.40	2.99
FORESAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	96.92	97.40	1.57
CND VAC	1	INHGA	27.93	28.21	-1.01

DATA VALUE BASED ON +9.99 % CORE POWER

ISO>
DATA ITEM NOT IN MDD
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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15133 CONDENSER TEMPERATURE	(001)	98.8958	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	98.3602	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	99.3075	F
FWTDHMWP	11910 MWP SUCTION HEADER TEMP		120.1054	F
FWTTDDCA	19280 DCA TUBE OUTLET TEMP		104.9927	F
FWTTDDCB	19300 DCB TUBE OUTLET TEMP		105.0483	F
FWTTDDCC	19320 DCC TUBE OUTLET TEMP		105.0445	F
FWTTDH1A	19220 H1A TUBE OUTLET TEMP		141.6359	F
FWTTDH1B	19240 H1B TUBE OUTLET TEMP		141.6152	F
FWTTDH1C	19260 H1C TUBE OUTLET TEMP		141.6009	F
FWTTDH2A	19180 H2A TUBE OUTLET TEMP		198.5058	F
FWTTDH2B	19200 H2B TUBE OUTLET TEMP		198.4448	F
FWTTDH3A	19140 H3A TUBE OUTLET TEMP		254.2978	F
FWTTDH3B	19160 H3B TUBE OUTLET TEMP		254.2914	F
FWTTDH4A	19100 H4A TUBE OUTLET TEMP		320.1956	F
FWTTDH4B	19120 H4B TUBE OUTLET TEMP		320.2300	F
FWTTDH5A	19060 H5A TUBE OUTLET TEMP		370.5007	F
FWTTDH5B	19080 H5B TUBE OUTLET TEMP		370.4946	F
FWTTDH6A	19020 H6A TUBE OUTLET TEMP		422.4053	F
FWTTDH6B	19040 H6B TUBE OUTLET TEMP		422.4031	F

ISO>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11040 MFP SUCTION TEMPERATURE		301.3630	F
FWTDMFP	11070 A MFP DISCH TEMPERATURE		302.3701	F
FWTDWMFP	11080 W MFP DISCH TEMPERATURE		302.3491	F
CWTAVGIN	00000 AVERAGE CW INLET TE		80.0008	F
CWTAVGOUT	00000 AVERAGE CW OUTLET TE		99.7320	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	1.0194	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	1.0183	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	1.0162	PSIA
FWTDRNH2A	19180 H2A DRAINS TEMPERATURE		150.3493	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		151.1450	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		208.8139	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		208.9412	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		264.6672	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		264.7080	F
FWTDRNH5A	19060 H5A DRAINS TEMPERATURE		313.1038	F
FWTDRNH5B	19080 H5B DRAINS TEMPERATURE		313.0950	F
FWTDRNH6A	19020 H6A DRAINS TEMPERATURE		380.4722	F
FWTDRNH6B	19040 H6B DRAINS TEMPERATURE		380.5034	F
RDPROD	05050 ROD POSITION/ACTUAL	(045)	224	
RDPROD	05050 ROD POSITION/ACTUAL	(053)	224	

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DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.7644	DEGF
T1004	PZR LIQUID TEMP		653.0728	DEGF
RCTNTA2D3	.0000 PCT SQRT LINE TEMP		637.5925	DEG F
L1091	PRESSURIZER WTR LEV L		56.8716	PC
RXLCOLDC	CORE COL COLD		.7919	%
P1036	PRESSURIZER PRESSUR		2243.9699	PSIG
T1101	LOOP 1 AVG TEMP		573.1943	DEGF
T1102	LOOP 2 AVG TEMP		573.2092	DEGF
T1103	LOOP 3 AVG TEMP		573.2151	DEGF
T1104	LOOP 4 AVG TEMP		573.2043	DEGF
T1111	LOOP 1 HOT LEG TEMP		604.5542	DEGF
T1112	LOOP 2 HOT LEG TEMP		604.5542	DEGF
T1113	LOOP 3 HOT LEG TEMP		604.5570	DEGF
T1114	LOOP 4 HOT LEG TEMP		604.5547	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.9406	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.9465	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.9638	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.9589	DEGF
NIQPRAV	CORE AVG POWER RANGE FLUX		1.0012	%
CRWN	CORE NORMALIZED COREPOWER		.9999	DMLS

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1024	STM GEN OUTLET PRES LP 1		807.4783	PSIG
P1025	STM GEN OUTLET PRES LP 2		807.4636	PSIG
P1026	STM GEN OUTLET PRES LP 3		807.4934	PSIG
P1031	STM GEN OUTLET PRES LP 4		807.5073	PSIG
L1204	STM GEN 1 NARROW LEVEL		44.4683	PC
L1207	STM GEN 2 NARROW LEVEL		44.7900	PC
L1210	STM GEN 3 NARROW LEVEL		44.0109	PC
L1213	STM GEN 4 NARROW LEVEL		43.9155	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	518.3193	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	517.9014	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	517.7212	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	518.3474	F
RCBORON	11070 BORON CONC	(001)	577.4734	PPM
RCBORON	11070 BORON CONC	(002)	577.4739	PPM
RCBORON	11070 BORON CONC	(003)	577.4734	PPM

ISD>

COOK PLANT SIMULATOR HEAT BALANCE PERFORMANCE

SHORT DESCRIPTION		UNIT	VALUE	DATA	% ERROR
MG OUTPUT REAL POWER	1	MW	1119.50	1137.40	-1.57
RC LOOP DELTA T	1	F	62.70	64.00	-2.02
T AVG TRANSM. TABLE	1	F	573.22	573.30	-.10
T REFERENCE	1	F	573.33	573.80	-.08
SG DOME PRESSURES	1	PSIA	822.69	818.01	.57
MS LOOP FLOWS	1	#/S	4126.72	4105.82	.51
FW LOOP FLOWS	1	#/S	4128.79	4105.82	.56
HPT INLET STM FLOW	1	#/S	3771.29	3753.43	.48
LPT INLET STM FLOW	1	#/S	882.62	887.14	-.51
LPT INLET STM FLOW	2	#/S	882.60	887.13	-.51
LPT INLET STM FLOW	3	#/S	882.59	887.03	-.51
HPT EXTR. FLOW TO HTR 6A	1	#/S	130.26	127.07	2.51
HPT EXTR. FLOW TO HTR 5A	1	#/S	154.30	148.87	3.65
HPT EXTR. FLOW TO HTR 4A	1	#/S	68.44	68.29	.22
LPT EXTR. FLOW TO HTR 3A	1	#/S	75.84	75.13	.94
LPT EXTR. FLOW TO HTR 2A	1	#/S	72.93	74.51	-2.12
LPT EXTR. FLOW TO HTR 1A	1	#/S	35.73	31.92	11.93 *
H6A TUBE OUTLET TEMP	1	F	428.45	428.47	-.01
H5A TUBE OUTLET TEMP	1	F	370.52	371.27	-.20
H4A TUBE OUTLET TEMP	1	F	302.35	303.38	-.17
H3A TUBE OUTLET TEMP	1	F	320.27	320.38	-.03
H3A TUBE OUTLET TEMP	1	F	254.30	254.88	-.23
H2A TUBE OUTLET TEMP	1	F	198.47	199.38	-.46
H1A TUBE OUTLET TEMP	1	F	141.66	141.19	.34
DCA TUBE OUTLET TEMP	1	F	105.03	107.59	-2.38
MWP SUCTION TEMPERATURE	1	F	100.32	97.39	3.00
FOREBAY TEMPERATURE	1	F	52.00	52.00	.00
CONDENSER TEMPERATURE	1	F	98.93	97.39	1.58
CND VAC	1	INHGA	27.93	28.21	-1.01

DATA VALUE BASED ON 100.00 % CORE POWER

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTCN	15130 CONDENSER TEMPERATURE	(001)	98.9168	F
FWTCN	15130 CONDENSER TEMPERATURE	(002)	98.8811	F
FWTCN	15130 CONDENSER TEMPERATURE	(003)	98.8295	F
FWTDHHWP	11010 HWP DISC HEADER TEMP		100.1314	F
FWTTDDCA	19230 DCA TUBE OUTLET TEMP		105.0223	F
FWTTDDCB	19500 DCB TUBE OUTLET TEMP		105.0744	F
FWTTDDCC	19320 DCC TUBE OUTLET TEMP		105.0726	F
FWTTDH1A	19220 H1A TUBE OUTLET TEMP		141.6848	F
FWTTDH1B	19240 H1B TUBE OUTLET TEMP		141.6455	F
FWTTDH1C	19260 H1C TUBE OUTLET TEMP		141.6312	F
FWTTDH2A	19130 H2A TUBE OUTLET TEMP		198.4881	F
FWTTDH2B	19200 H2B TUBE OUTLET TEMP		198.5219	F
FWTTDH3A	19140 H3A TUBE OUTLET TEMP		254.3179	F
FWTTDH3B	19160 H3B TUBE OUTLET TEMP		254.3238	F
FWTTDH4A	19100 H4A TUBE OUTLET TEMP		320.2991	F
FWTTDH4B	19120 H4B TUBE OUTLET TEMP		320.2458	F
FWTTDH5A	17060 H5A TUBE OUTLET TEMP		370.4683	F
FWTTDH5B	17080 H5B TUBE OUTLET TEMP		370.4741	F
FWTTDH6A	17020 H6A TUBE OUTLET TEMP		428.3382	F
FWTTDH6B	17040 H6B TUBE OUTLET TEMP		428.3936	F

ISD>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
FWTSMFP	11060 MFP SUCTION TEMPERATUR		301.9181	F
FWTDEMFP	11070 E MFP DISCH TEMPERATUR		302.3083	F
FWTDWMFP	11070 W MFP DISCH TEMPERATUR		302.2094	F
CWTAVGIN	03000 COND AVERAGE INLET TE		82.0008	F
CWTAVGOUT	03010 AVERAGE COND OUTLET TE		93.7352	F
FWPCN	15140 CND TOTAL PRESSURE	(001)	1.0193	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(002)	1.0182	PSIA
FWPCN	15140 CND TOTAL PRESSURE	(003)	1.0167	PSIA
FWTDRNH2A	19130 H2A DRAINS TEMPERATURE		151.1439	F
FWTDRNH2B	19200 H2B DRAINS TEMPERATURE		150.3391	F
FWTDRNH3A	19140 H3A DRAINS TEMPERATURE		199.4506	F
FWTDRNH3B	19160 H3B DRAINS TEMPERATURE		201.4540	F
FWTDRNH4A	19100 H4A DRAINS TEMPERATURE		265.0991	F
FWTDRNH4B	19120 H4B DRAINS TEMPERATURE		264.4944	F
FWTDRNH5A	17060 H5A DRAINS TEMPERATURE		313.0601	F
FWTDRNH5B	17080 H5B DRAINS TEMPERATURE		313.0436	F
FWTDRNH6A	17020 H6A DRAINS TEMPERATURE		330.3923	F
FWTDRNH6B	17040 H6B DRAINS TEMPERATURE		390.4263	F
RDPROD	03030 ROD POSITION/ACTUAL	(045)	224	
RDPROD	03030 ROD POSITION/ACTUAL	(053)	224	

ISD>

06/25/90 23:05:1[illegible] TASK # 0700011C COOK2 GOULD C.S.D. MPX-32

ISO>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
T1005	PZR VAPOR TEMP		652.7432	DEGF
T1004	PZR LIQUID TEMP		653.0693	DEGF
RCTNTA203	[illegible] PRZ SURGE LINE TEMP		642.1511	DEG F
L1091	PRESSURIZER WATER LEVEL		56.4659	PC
RXLCOLOG	[illegible] RCT COLD CALIB		.3797	%
P1030	PRESSURIZER PRESSURE		2243.7683	PSIG
T1101	LOOP 1 AVG TEMP		573.2126	DEGF
T1102	LOOP 2 AVG TEMP		573.2231	DEGF
T1103	LOOP 3 AVG TEMP		573.2271	DEGF
T1104	LOOP 4 AVG TEMP		573.2241	DEGF
T1111	LOOP 1 HOT LEG TEMP		604.5679	DEGF
T1112	LOOP 2 HOT LEG TEMP		604.5676	DEGF
T1113	LOOP 3 HOT LEG TEMP		604.5781	DEGF
T1114	LOOP 4 HOT LEG TEMP		604.5664	DEGF
T1115	LOOP 1 COLD LEG TEMP		541.8572	DEGF
T1116	LOOP 2 COLD LEG TEMP		541.8792	DEGF
T1117	LOOP 3 COLD LEG TEMP		541.8777	DEGF
T1118	LOOP 4 COLD LEG TEMP		541.8767	DEGF
NIQPRAV	[illegible] AVG POWER RANGE^FLUX		1.0013	%
CRQN	[illegible] NORMALIZED CORE^POWER		1.0001	DMLS

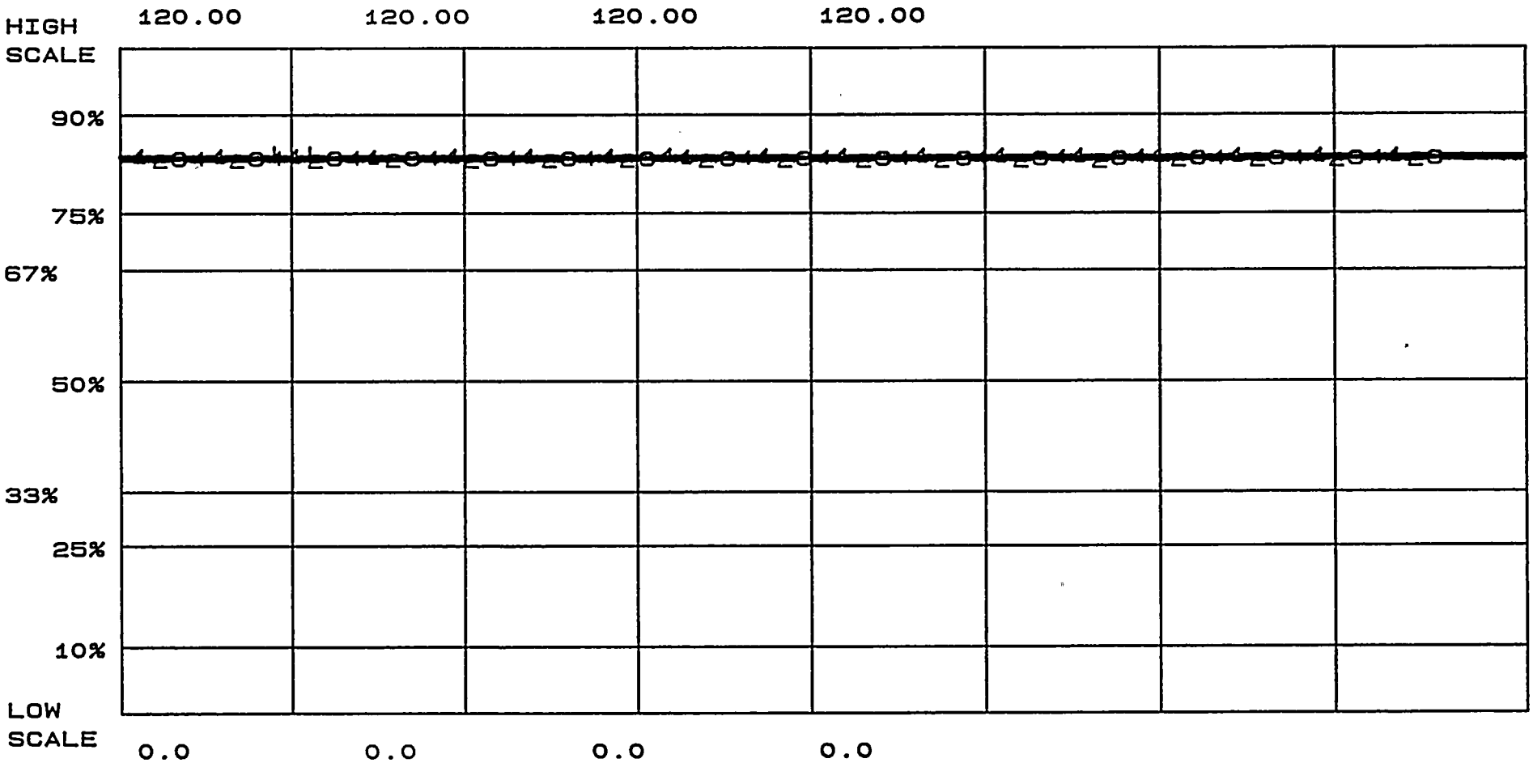
ISO>

DATA ITEM	DESCRIPTION	INDEX	VALUE	UNITS
P1022	STM GEN OUTLET PRES LP 1		807.5623	PSIG
P1025	[illegible]		807.5481	PSIG
P1026	[illegible]		807.5696	PSIG
P1031	[illegible]		807.6375	PSIG
L1204	[illegible]		44.2177	PC
L1207	[illegible]		44.1217	PC
L1210	[illegible] NAR OW LEVEL		44.7067	PC
L1213	STM GEN 4 NARROW LEVEL		44.3472	PC
RCTSGDM	61190 SG DOME STEAM TEMP	(001)	518.4524	F
RCTSGDM	61190 SG DOME STEAM TEMP	(002)	519.1956	F
RCTSGDM	61190 SG DOME STEAM TEMP	(003)	518.1536	F
RCTSGDM	61190 SG DOME STEAM TEMP	(004)	518.1694	F
RCBORON	11070 BORON CONC	(001)	577.4397	PPM
RCBORON	11070 BORON CONC	(002)	577.4395	PPM
RCBORON	11070 BORON CONC	(003)	577.4402	PPM

ISO>

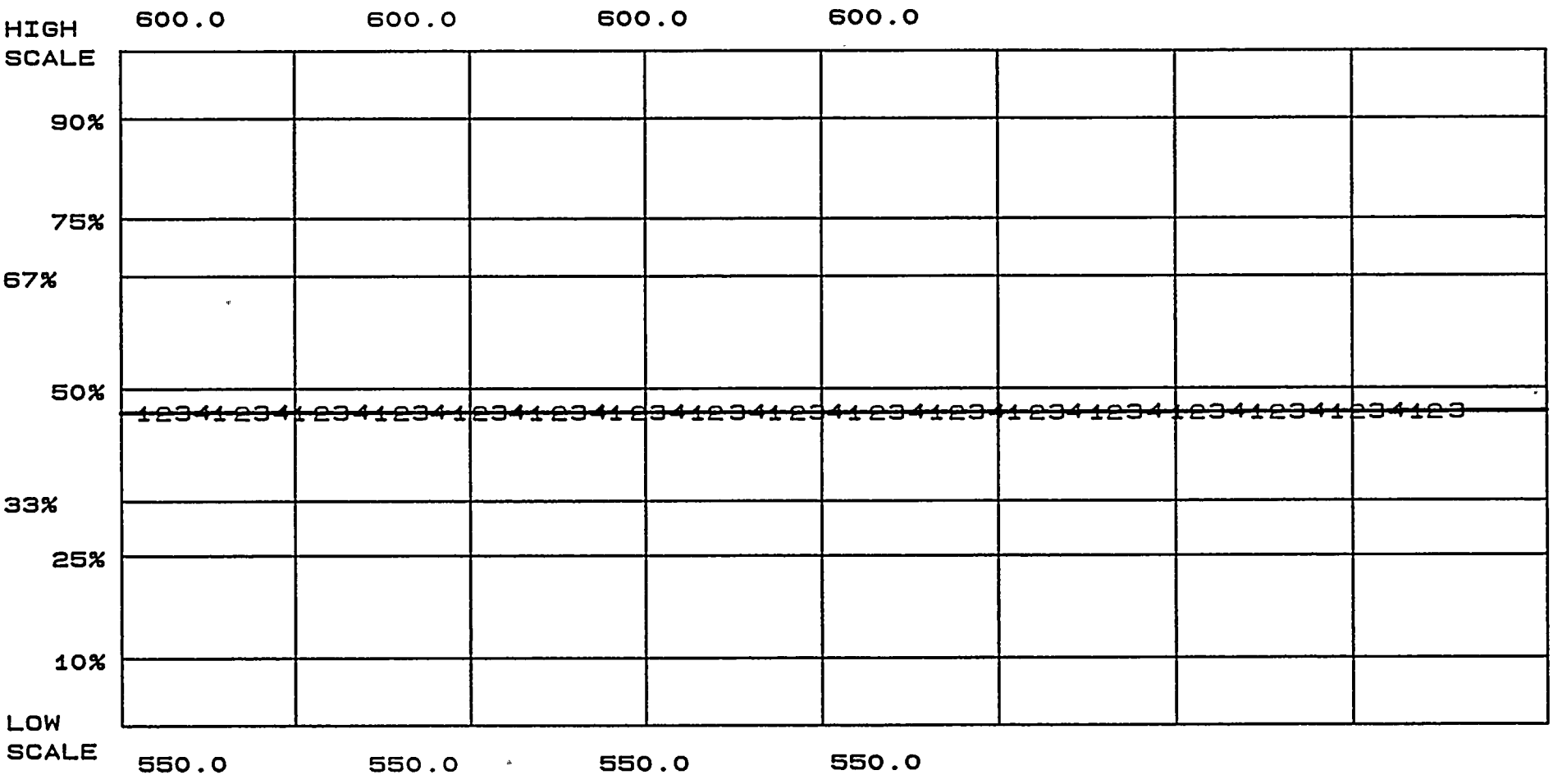
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N-41	PC	TIME
2	N1013	POWER RANGE N-42	PC	START 02: 49: 27
3	N1014	POWER RANGE N-43	PC	STOP 03: 53: 35
4	N1015	POWER RANGE N-44	PC	
5				
6				



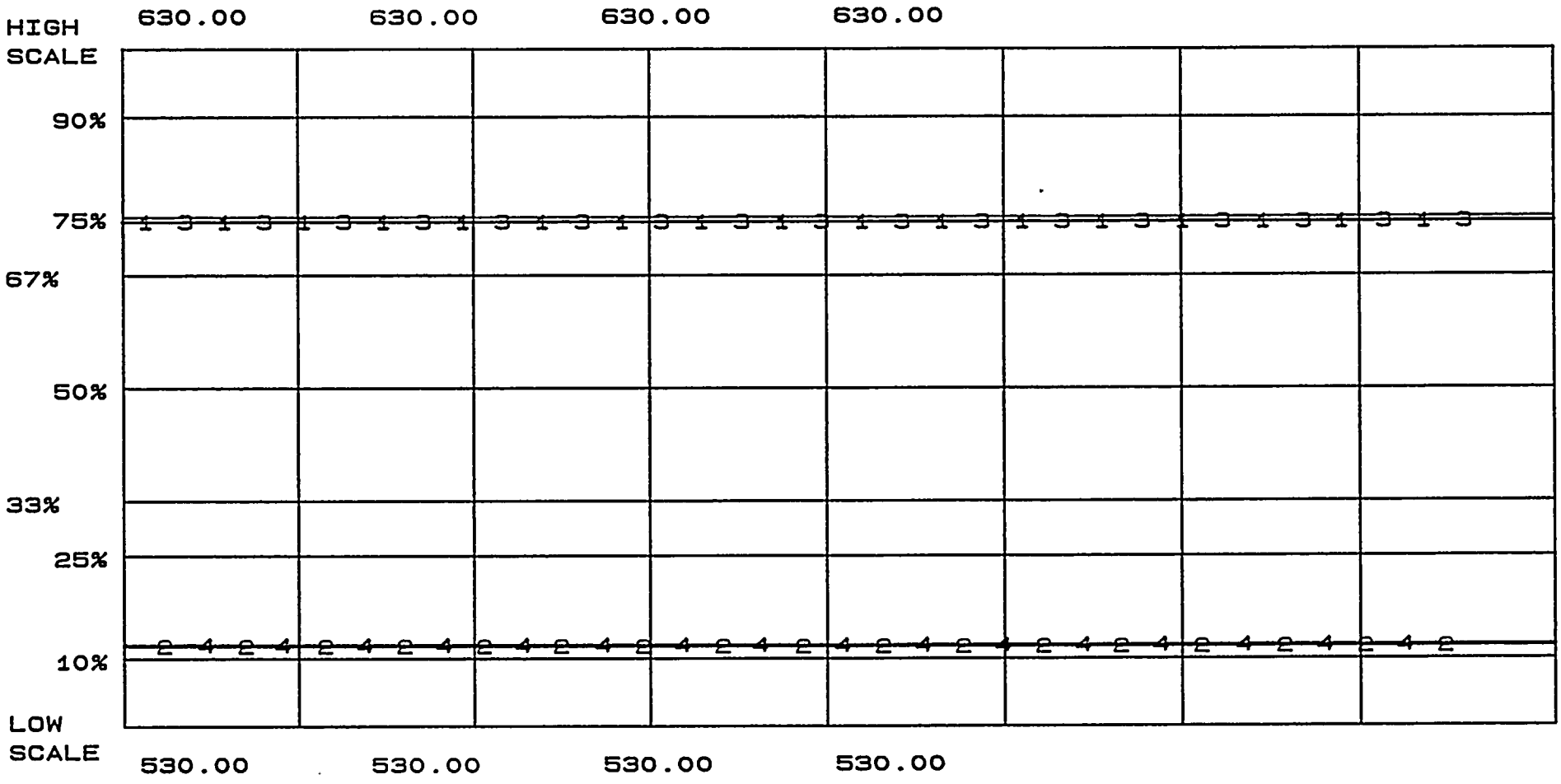
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	TAVG LOOP 1	DEG_F	TIME
2	T1102	TAVG LOOP 2	DEG_F	START 02: 49: 27
3	T1103	TAVG LOOP 3	DEG_F	STOP 03: 53: 35
4	T1104	TAVG LOOP 4	DEG_F	
5				
6				



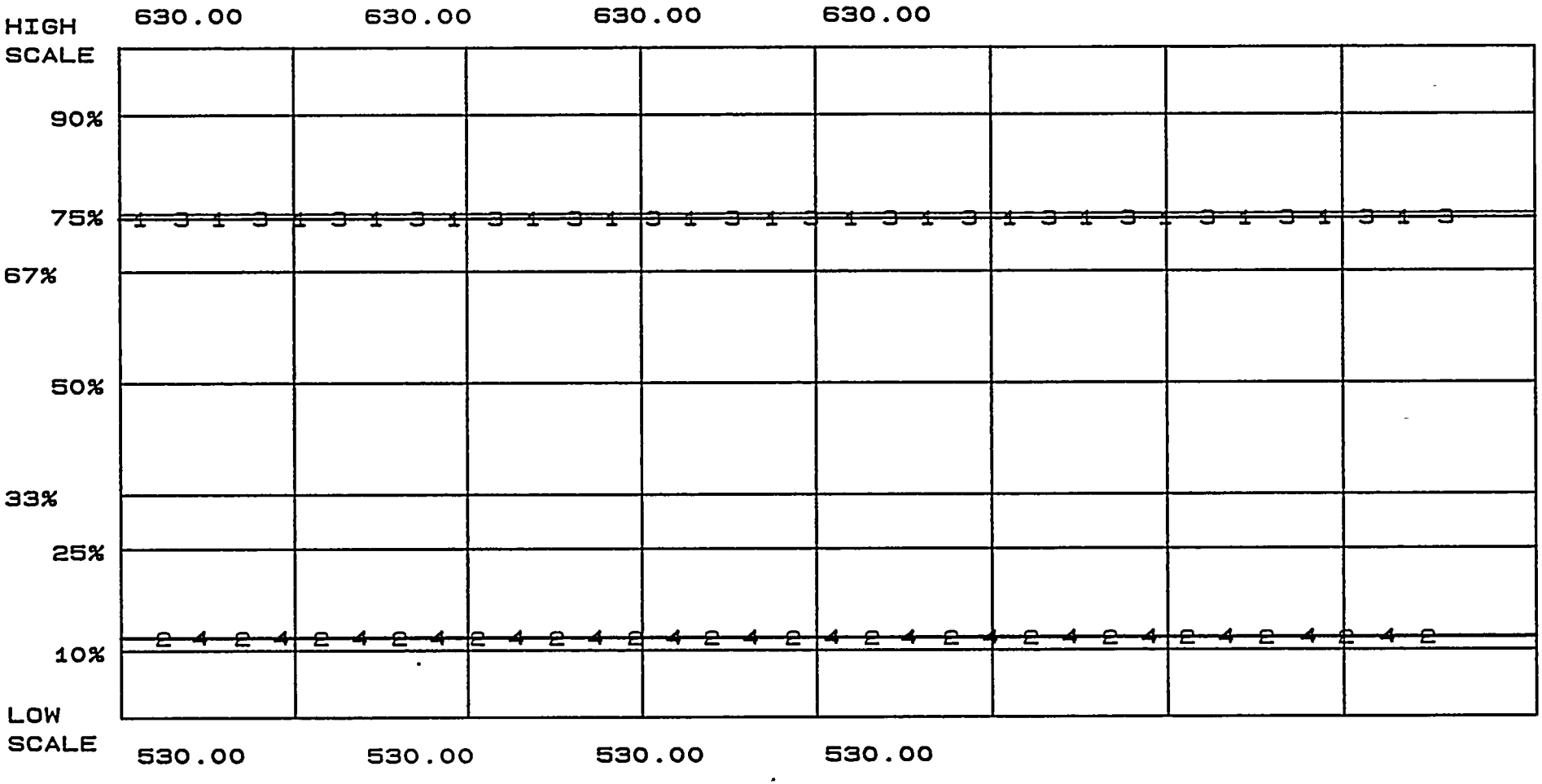
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	THOT LOOP 1	DEG_F	TIME
2	T1115	TCOLD LOOP 1	DEG_F	START 02: 49: 27
3	T1112	THOT LOOP 2	DEG_F	STOP 03: 53: 35
4	T1116	TCOLD LOOP 2	DEG_F	
5				
6				



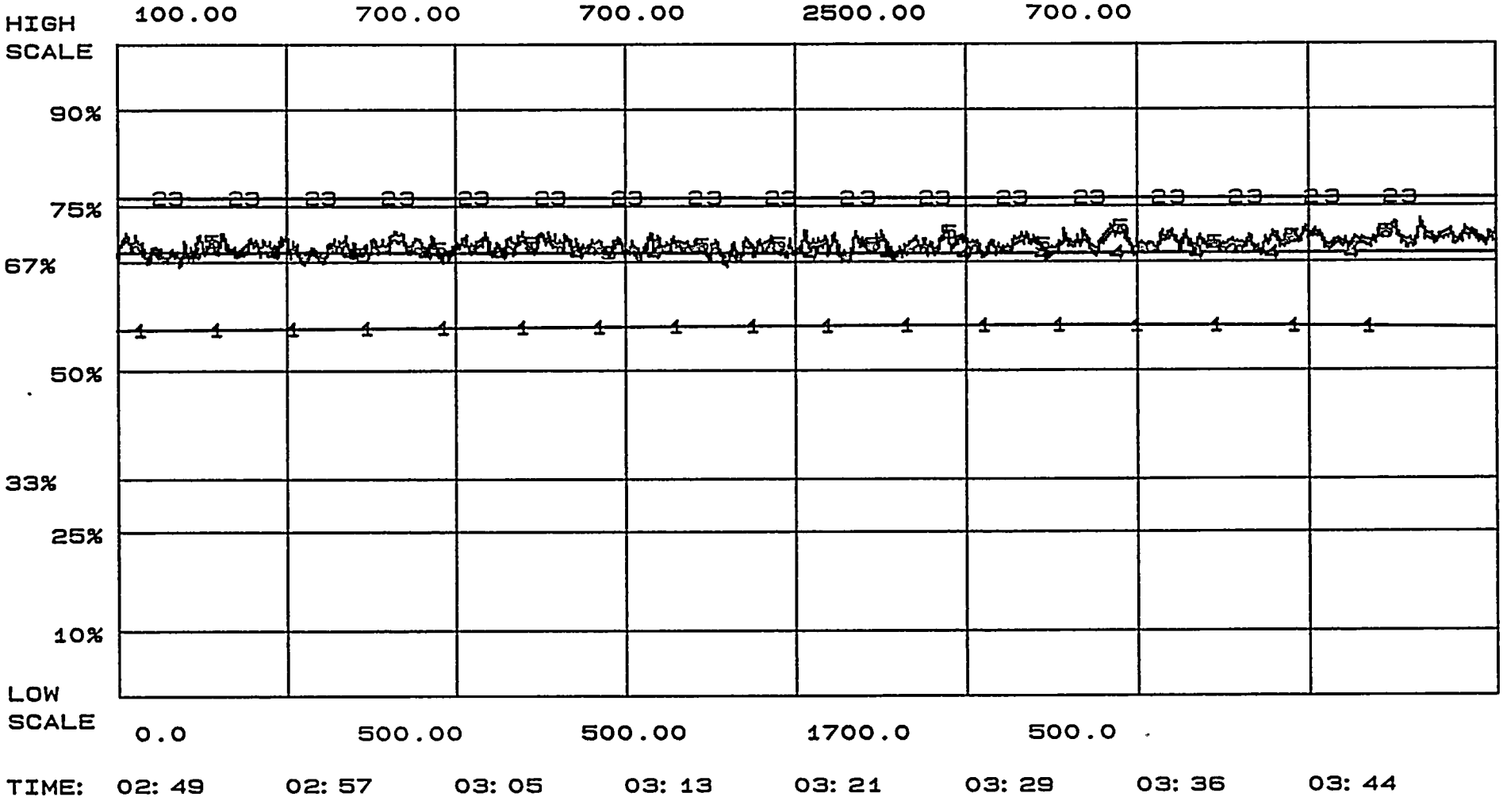
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	THOT LOOP 3	DEG_F	TIME
2	T1117	TCOLD LOOP 3	DEG_F	START 02: 49: 27
3	T1114	THOT LOOP 4	DEG_F	STOP 03: 53: 35
4	T1118	TCOLD LOOP 4	DEG_F	
5				
6				



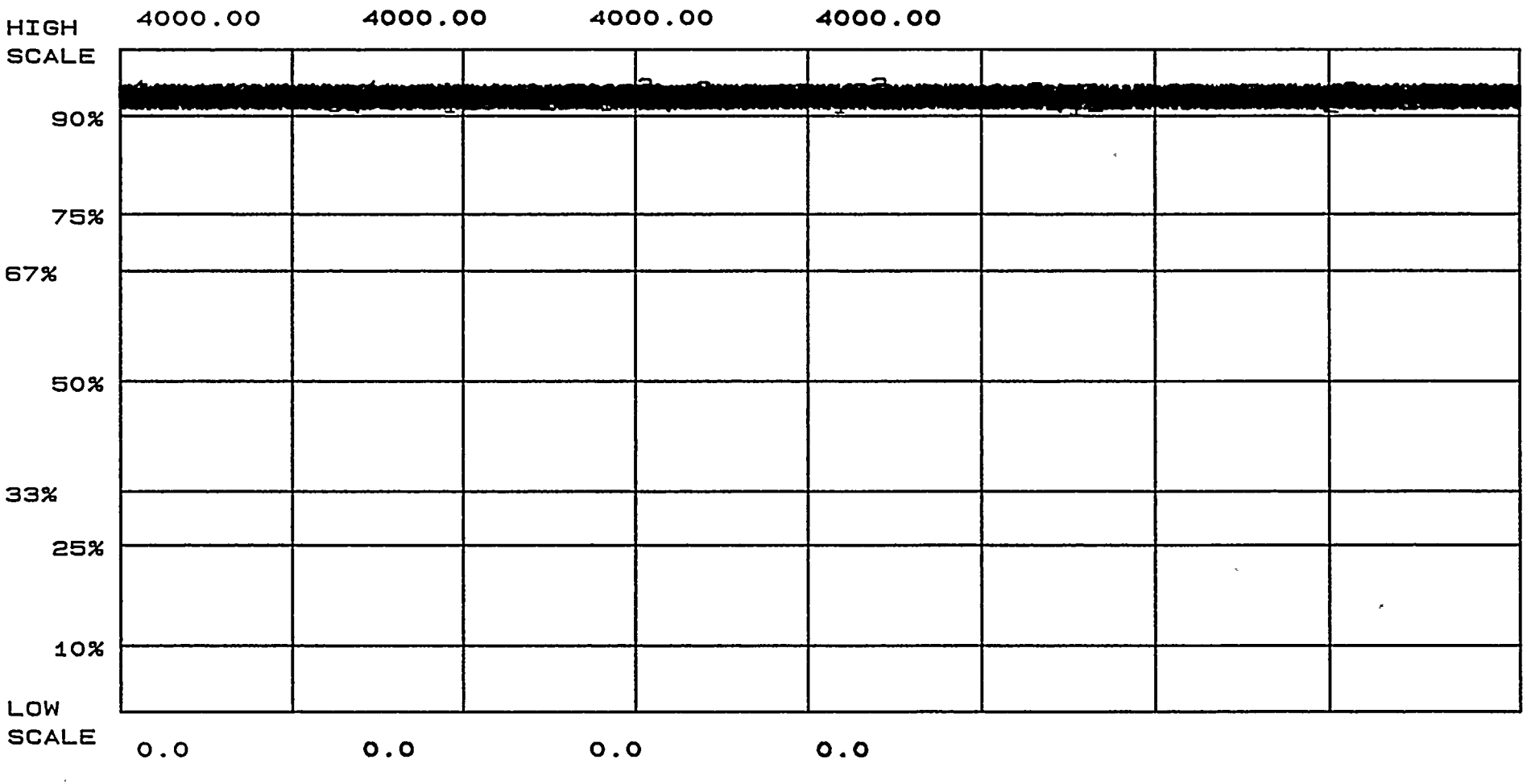
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	T1004	PRESSURIZER LIQUID TEMP.	DEG_F	START 02: 49: 27
3	T1005	PRESSURIZER STEAM TEMP.	DEG_F	STOP 03: 53: 35
4	P1036	PRESSURIZER PRESSURE	PSIG	
5	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	
6				



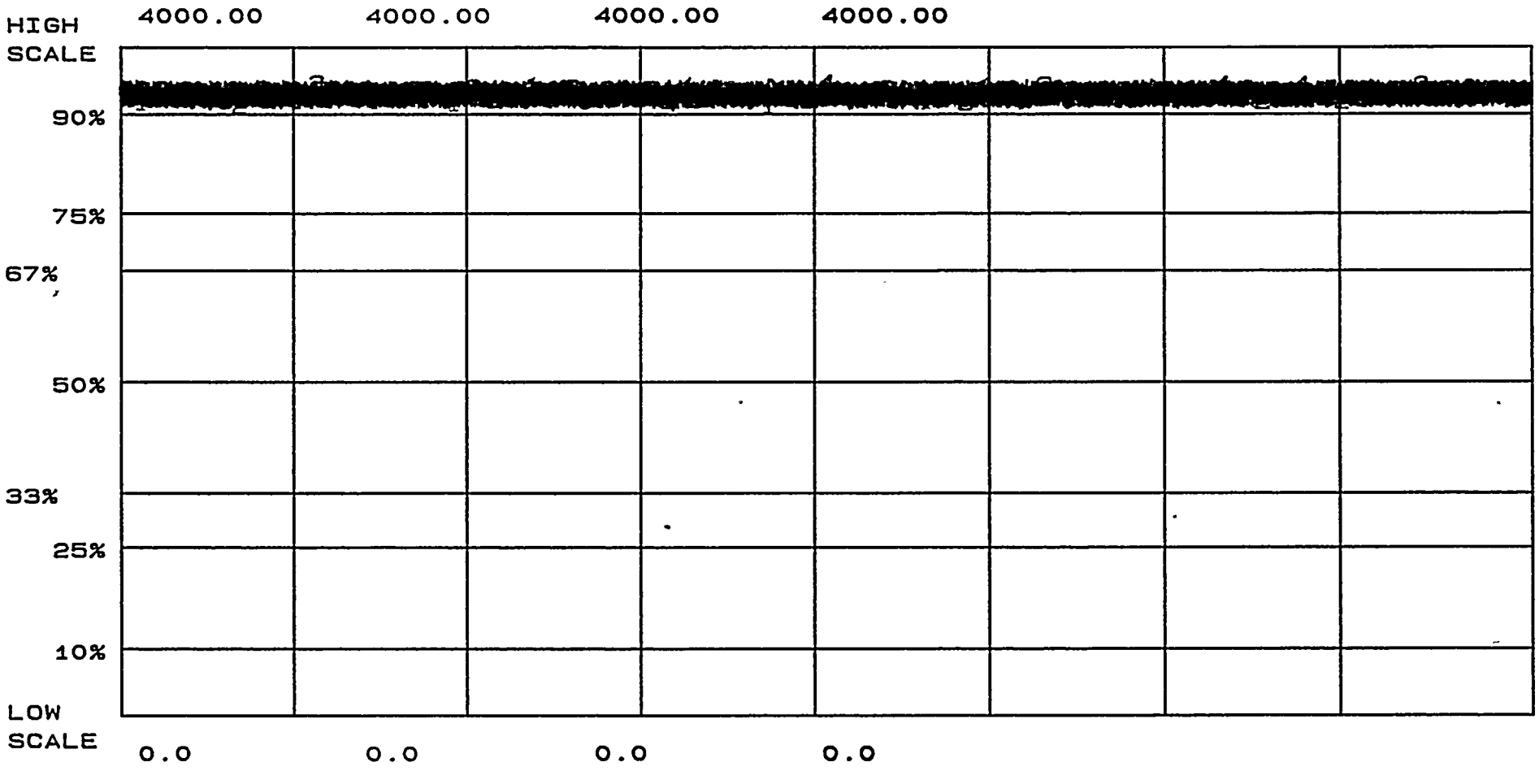
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 02: 49: 27
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 03: 53: 35
4	F1054	STEAM FLOW LOOP 4	KBH	
5				
6				



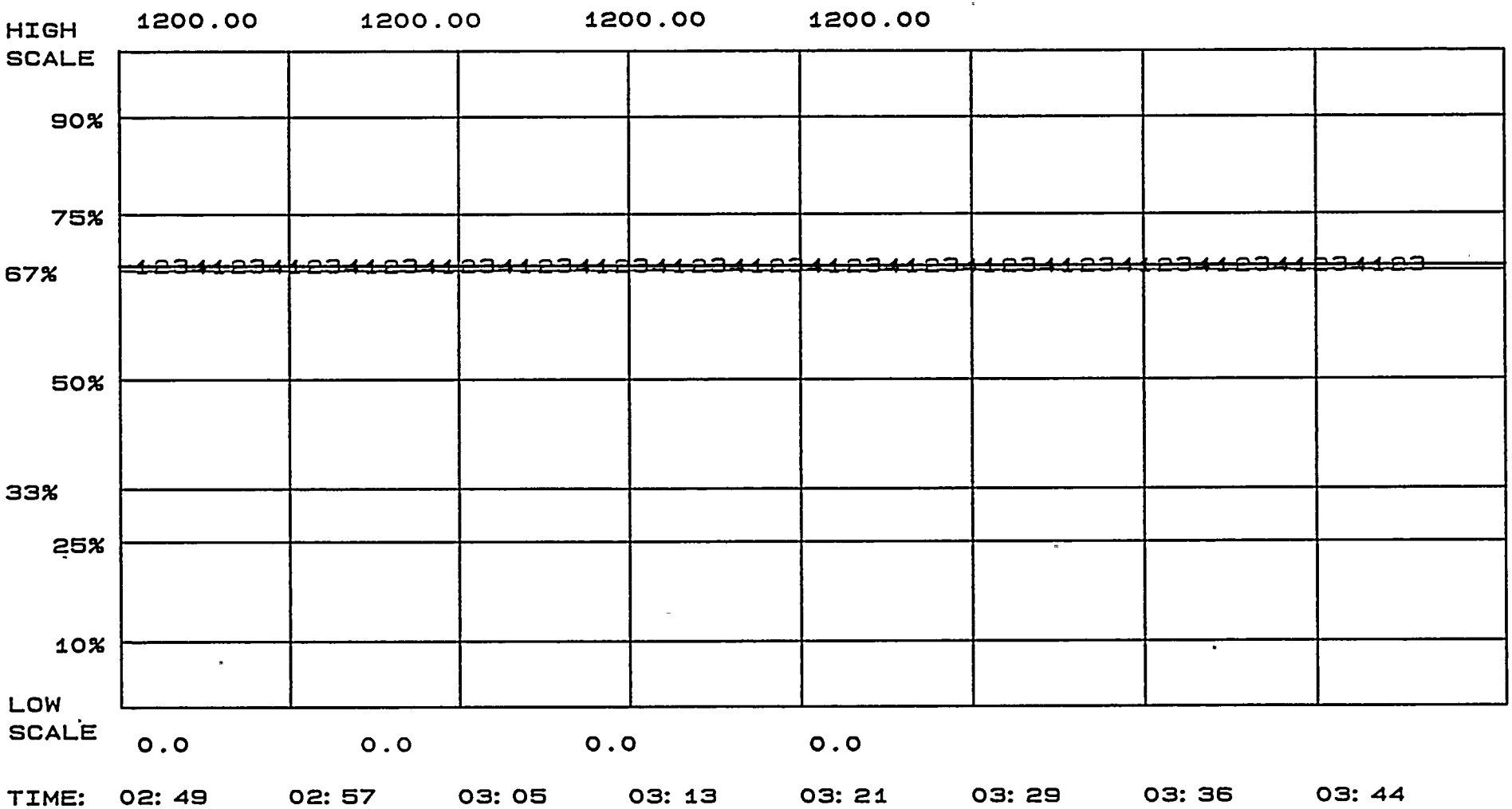
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 02: 49: 27
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 03: 53: 35
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5				
6				



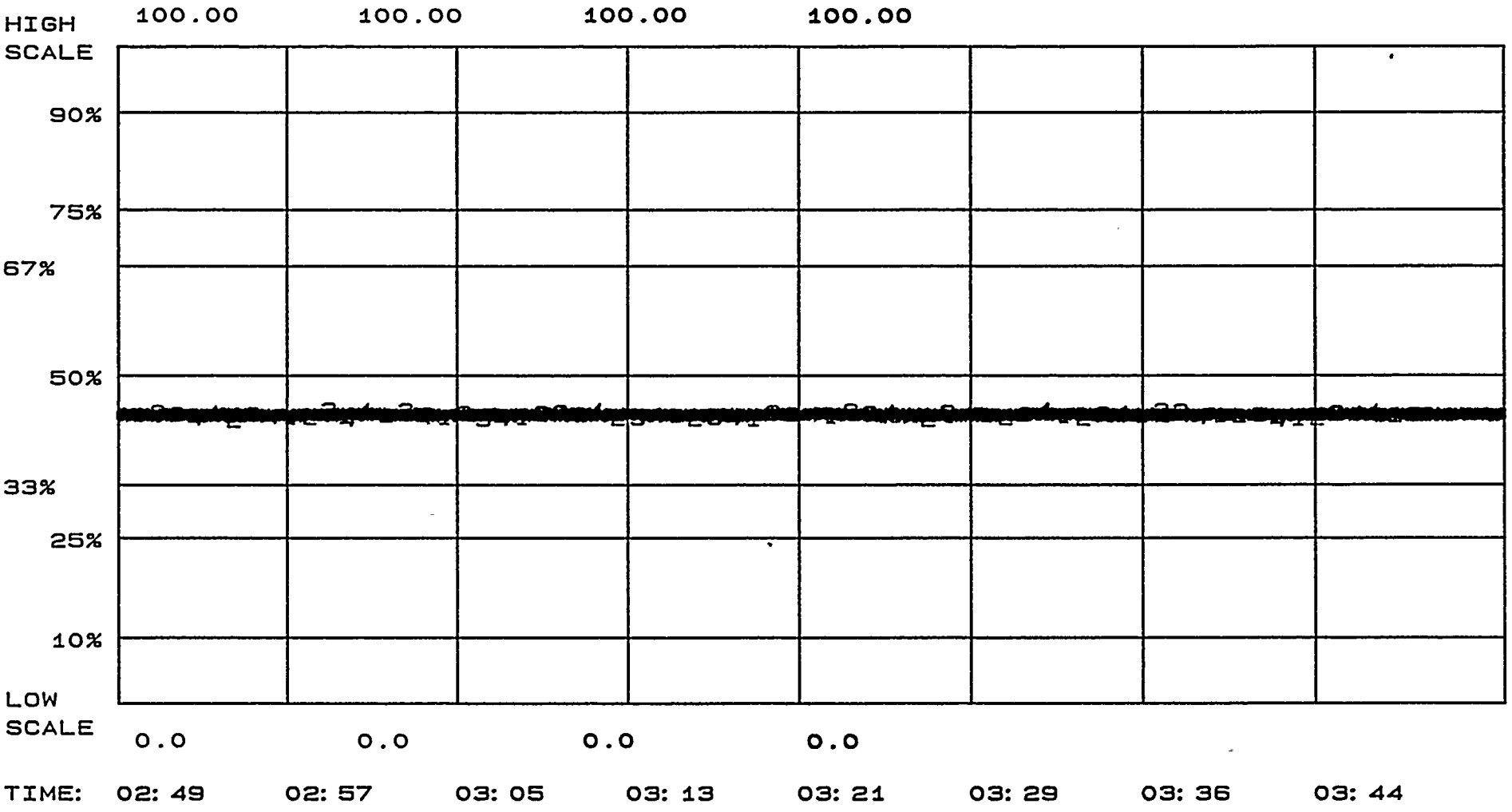
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 02: 49: 27
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 03: 53: 35
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



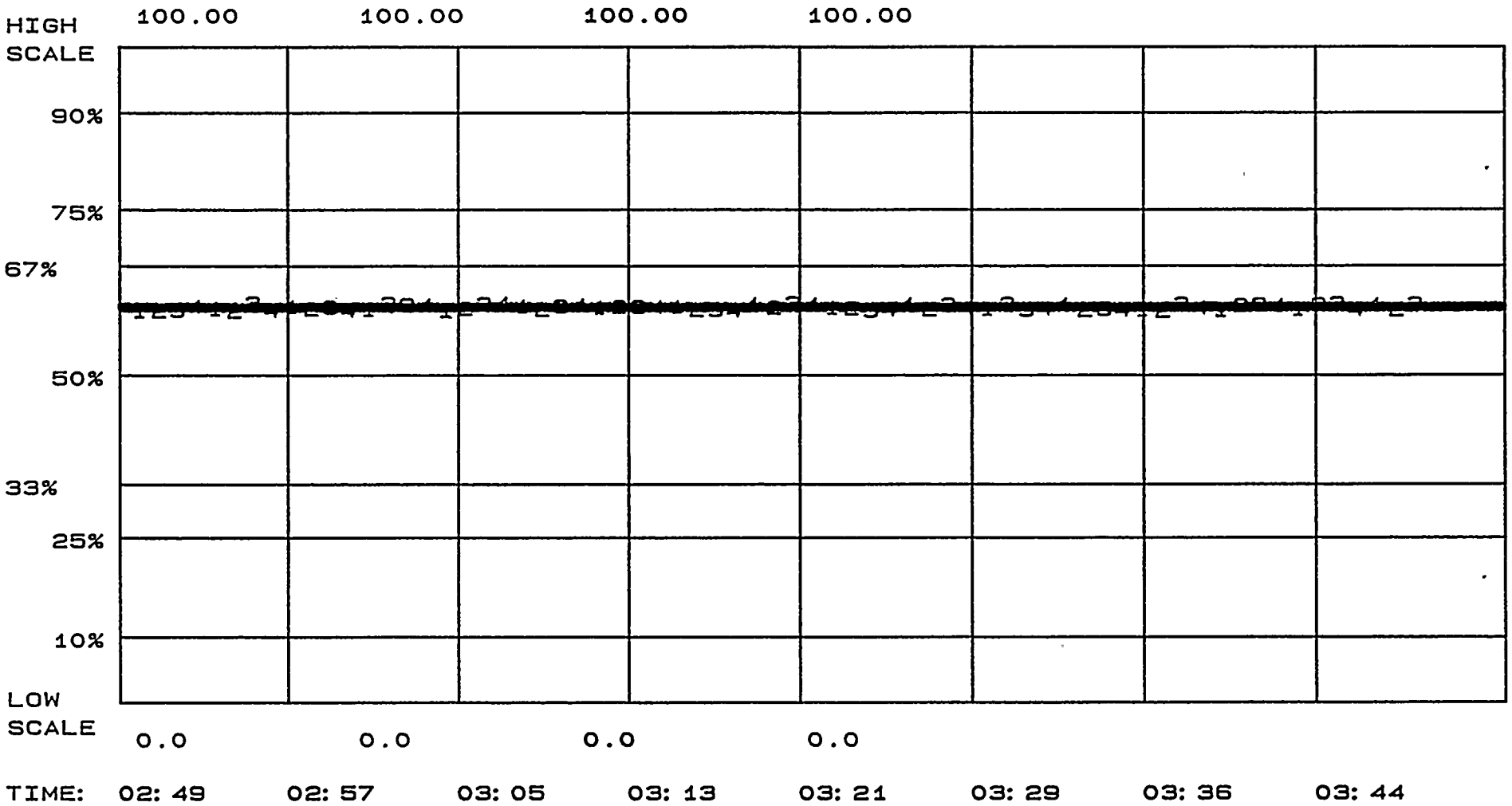
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GEN. #1 LEVEL N/R	PC	TIME
2	L1207	STEAM GEN. #2 LEVEL N/R	PC	START 02: 49: 27
3	L1210	STEAM GEN. #3 LEVEL N/R	PC	STOP 03: 53: 35
4	L1213	STEAM GEN. #4 LEVEL N/R	PC	
5				
6				



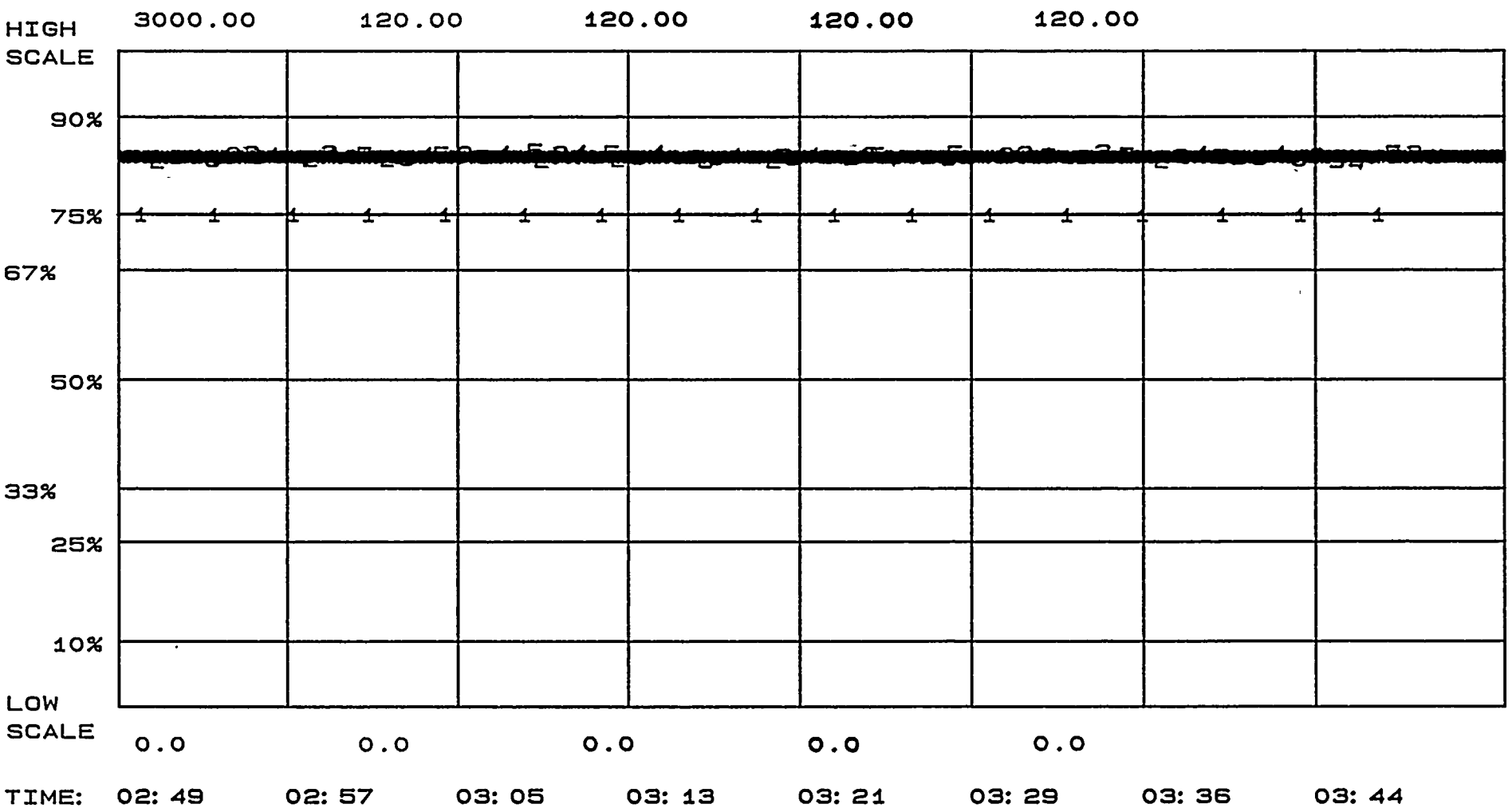
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GEN. #1 LEVEL W/R	PC	TIME
2	L1201	STEAM GEN. #2 LEVEL W/R	PC	START 02: 49: 27
3	L1202	STEAM GEN. #3 LEVEL W/R	PC	STOP 03: 53: 35
4	L1203	STEAM GEN. #4 LEVEL W/R	PC	
5				
6				



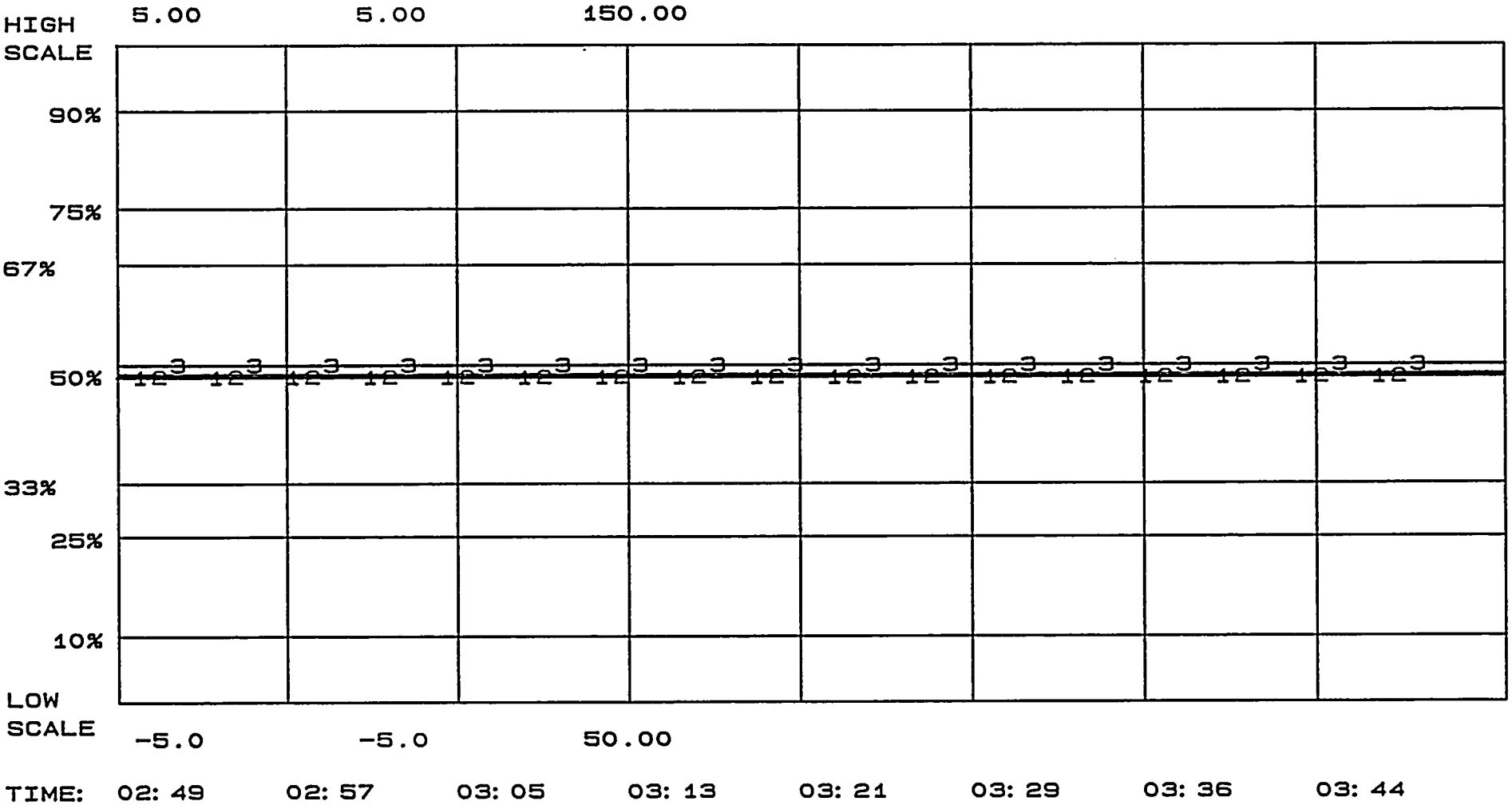
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	F1089	RCS FLOW LOOP 1	PC	START 02: 49: 27
3	F1092	RCS FLOW LOOP 2	PC	STOP 03: 53: 35
4	F1095	RCS FLOW LOOP 3	PC	
5	F1098	RCS FLOW LOOP 4	PC	
6				



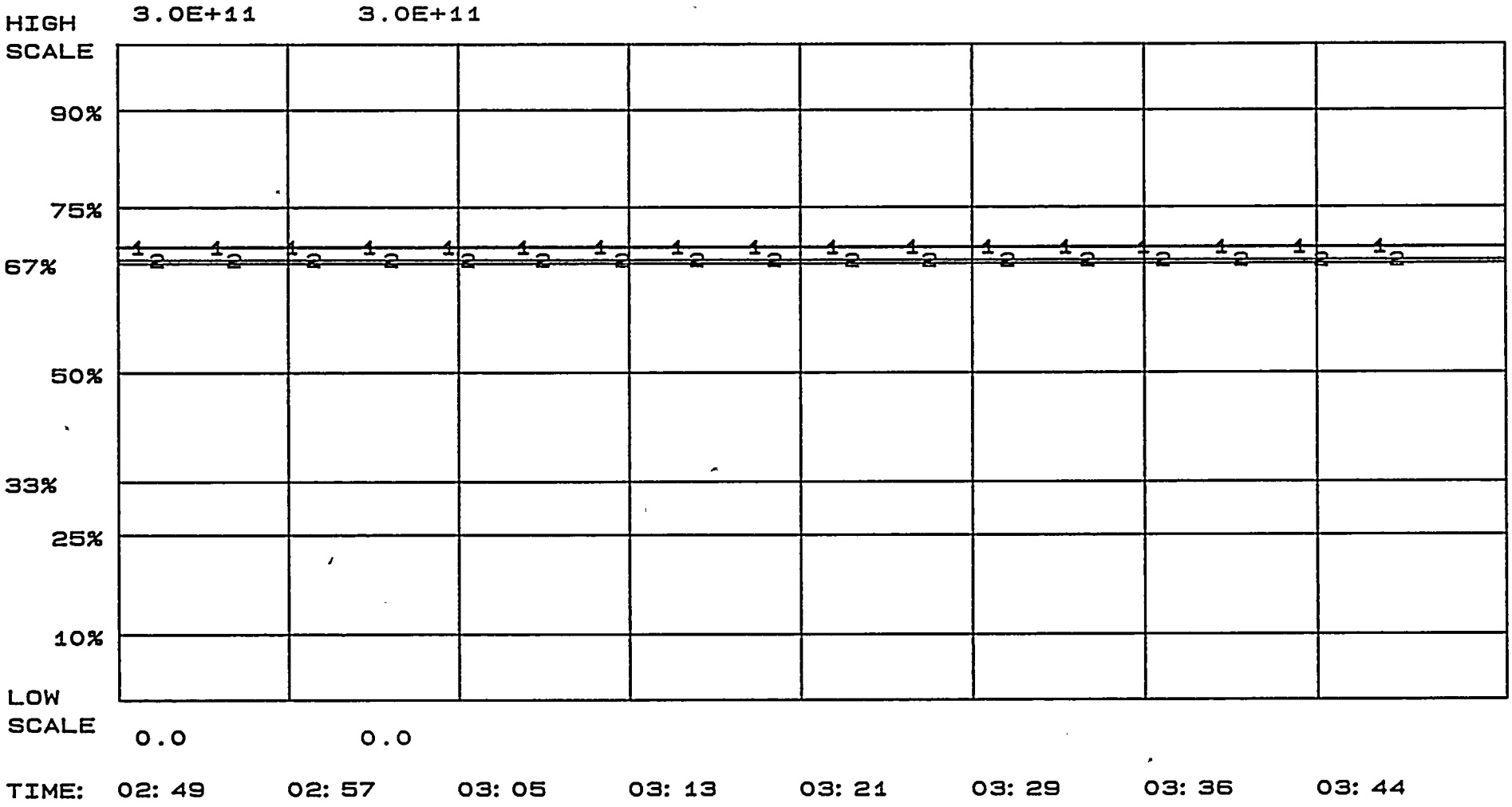
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 02: 49: 27
3	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	STOP 03: 53: 35
4				
5				
6				



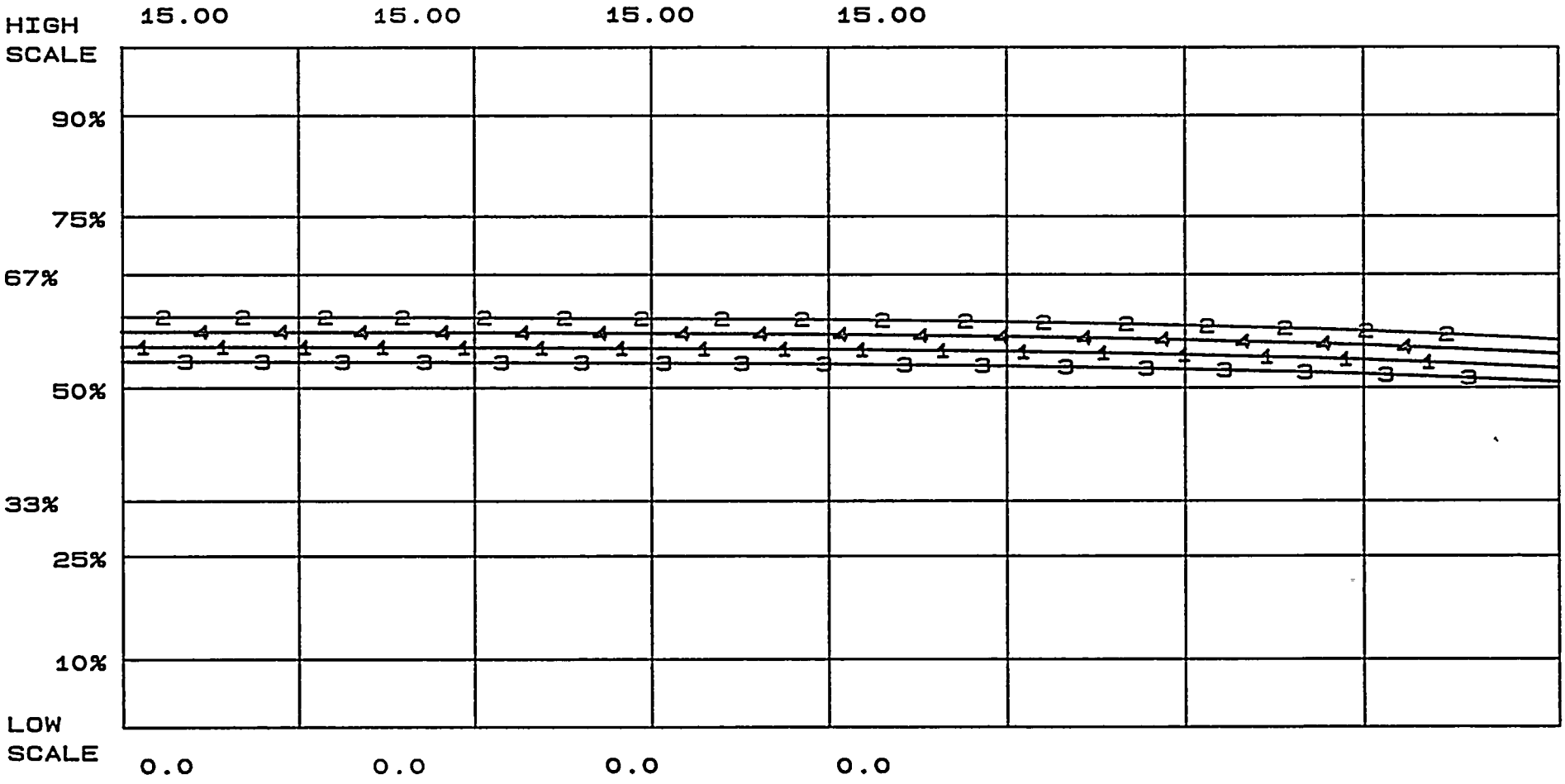
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU (1)	SOURCE RANGE N-31	CPS	TIME
2	NILDTOU (2)	SOURCE RANGE N-32	CPS	START 02: 49: 27
3				STOP 03: 53: 35
4				
5				
6				



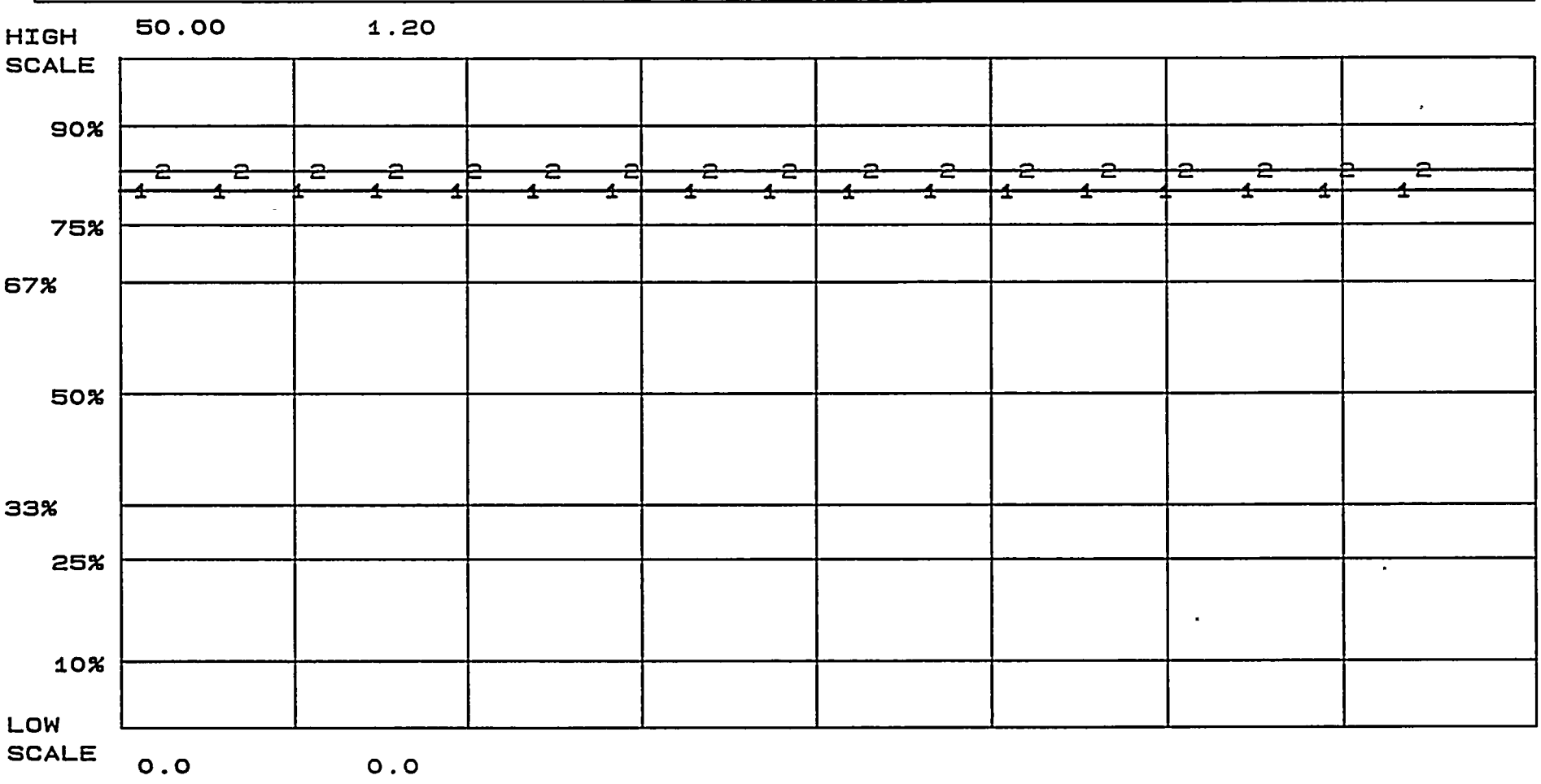
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1000	RCP SEAL FLOW LOOP 1	GPM	TIME
2	F1001	RCP SEAL FLOW LOOP 2	GPM	START 02: 49: 27
3	F1002	RCP SEAL FLOW LOOP 3	GPM	STOP 03: 53: 35
4	F1003	RCP SEAL FLOW LOOP 4	GPM	
5				
6				



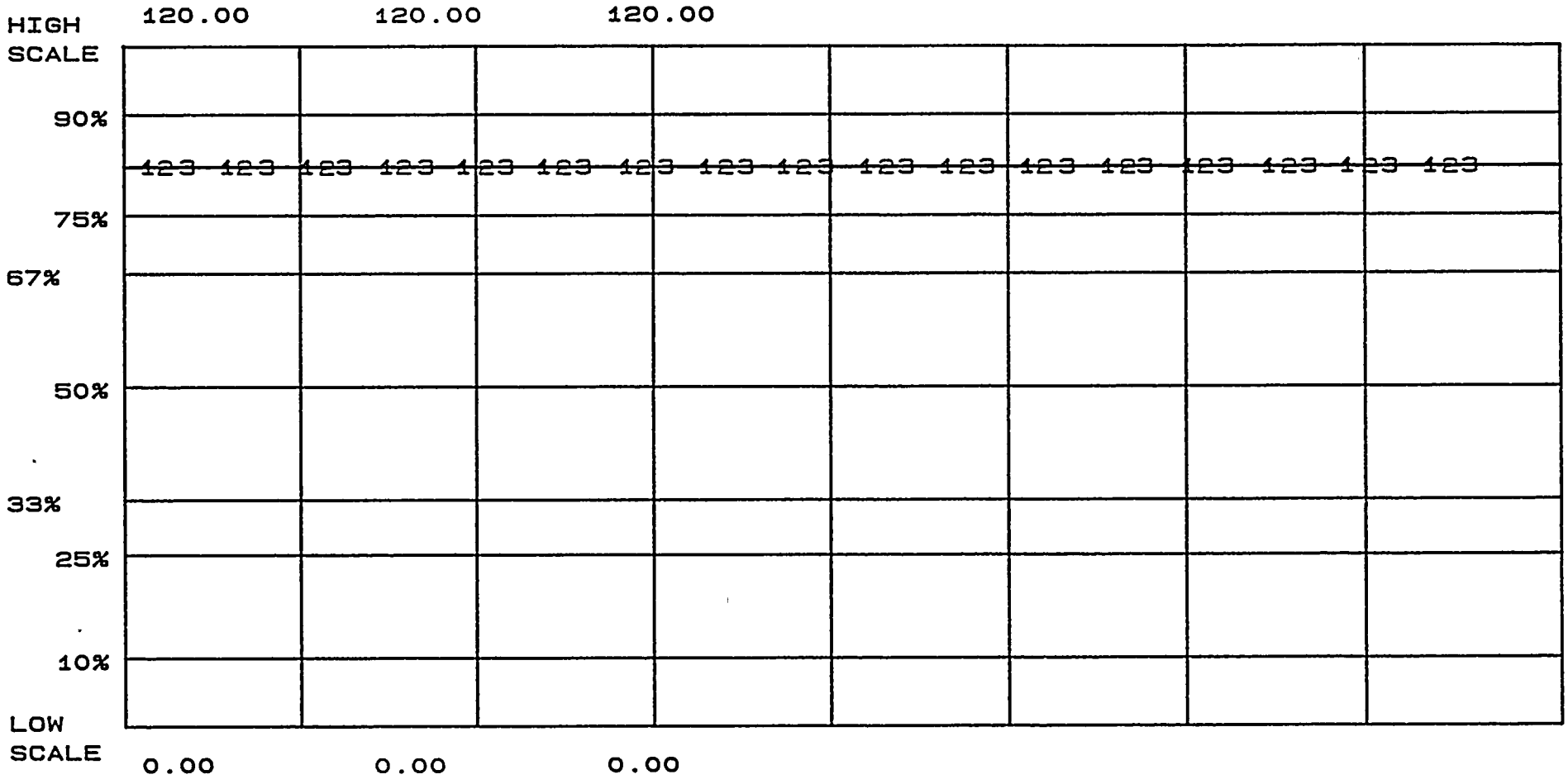
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RXTSC	SATURATION MARGIN	DEG_F	TIME
2	CRQN	CORE HEAT FLUX	PC	START 02: 49: 27
3				STOP 03: 53: 35
4				
5				
6				



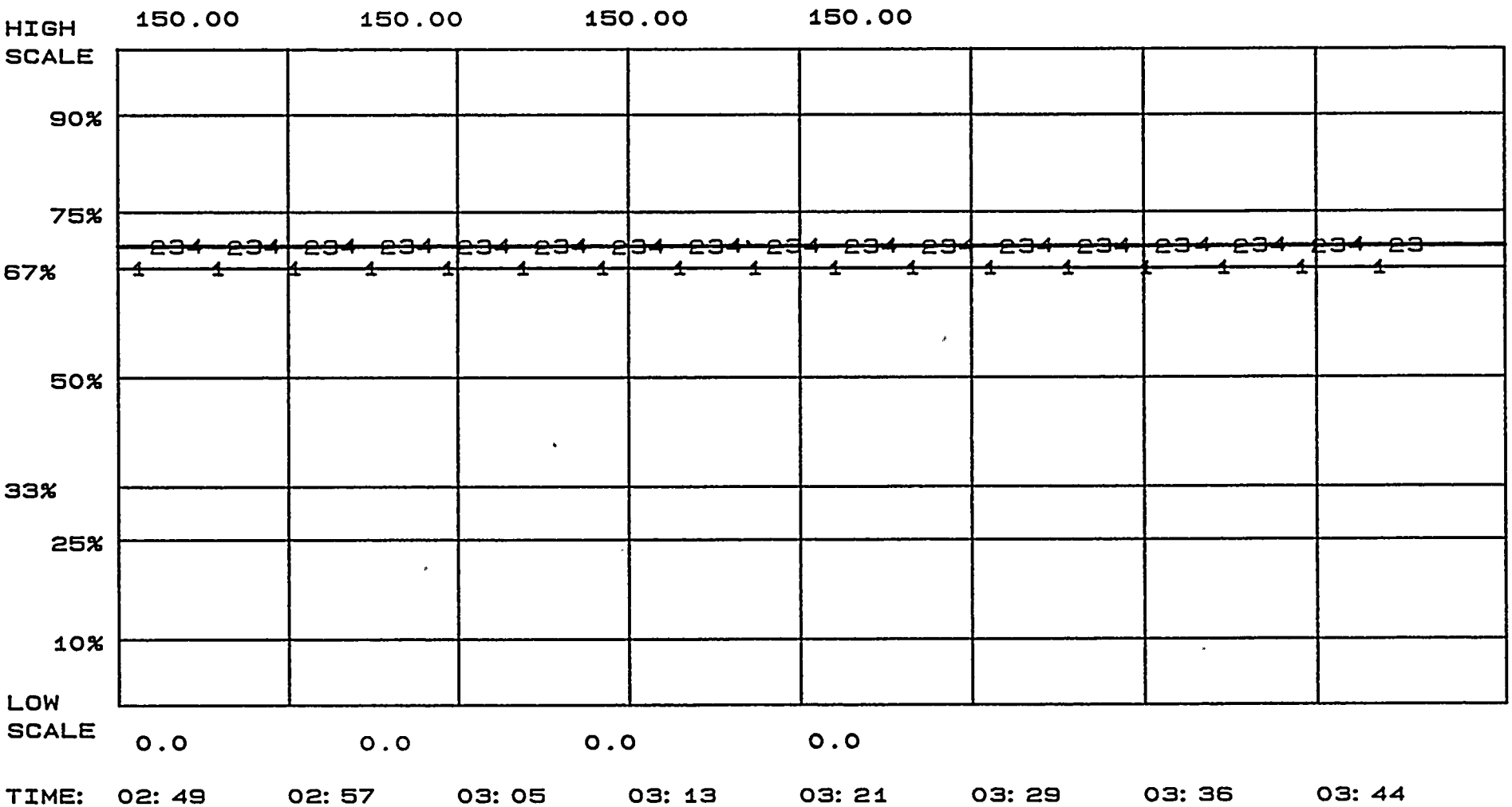
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTCN (1)	CONDENSER A TEMPERATURE	DEG_F	TIME
2	FWTCN (2)	CONDENSER B TEMPERATURE	DEG_F	START 02: 49: 27
3	FWTCN (3)	CONDENSER C TEMPERATURE	DEG_F	STOP 03: 53: 35
4				
5				
6				



100% POWER STEADY-STATE TEST

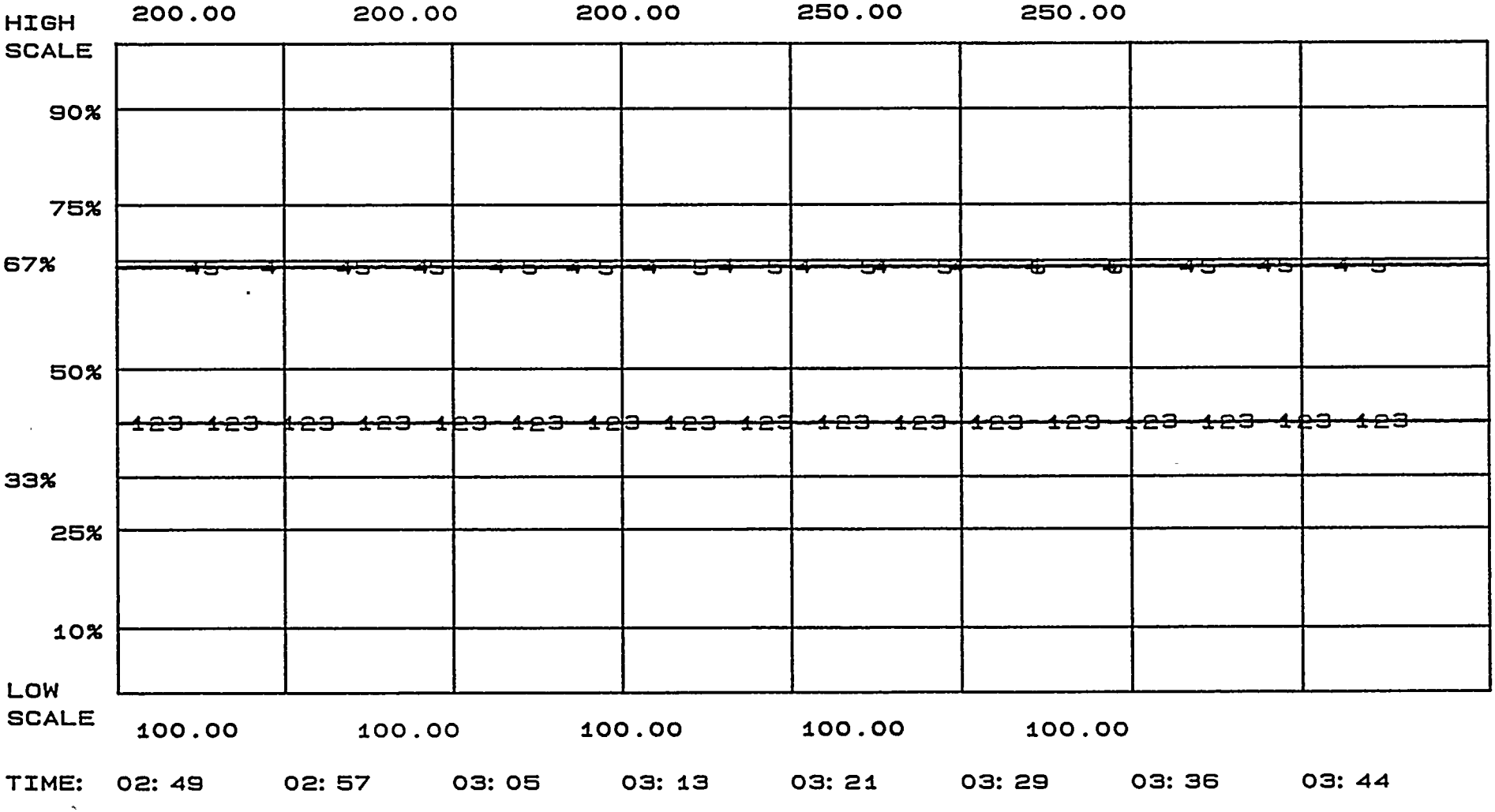
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDHHWP	HOTWELL PUMP DISC. HDR. TEMP.	DEG_F	TIME
2	FWTTODCA	CONDENSER A TUBE OUTLET TEMP.	DEG_F	START 02: 49: 27
3	FWTTODCB	CONDENSER B TUBE OUTLET TEMP.	DEG_F	STOP 03: 53: 35
4	FWTTODCC	CONDENSER C TUBE OUTLET TEMP.	DEG_F	
5				
6				



100% POWER STEADY-STATE TEST

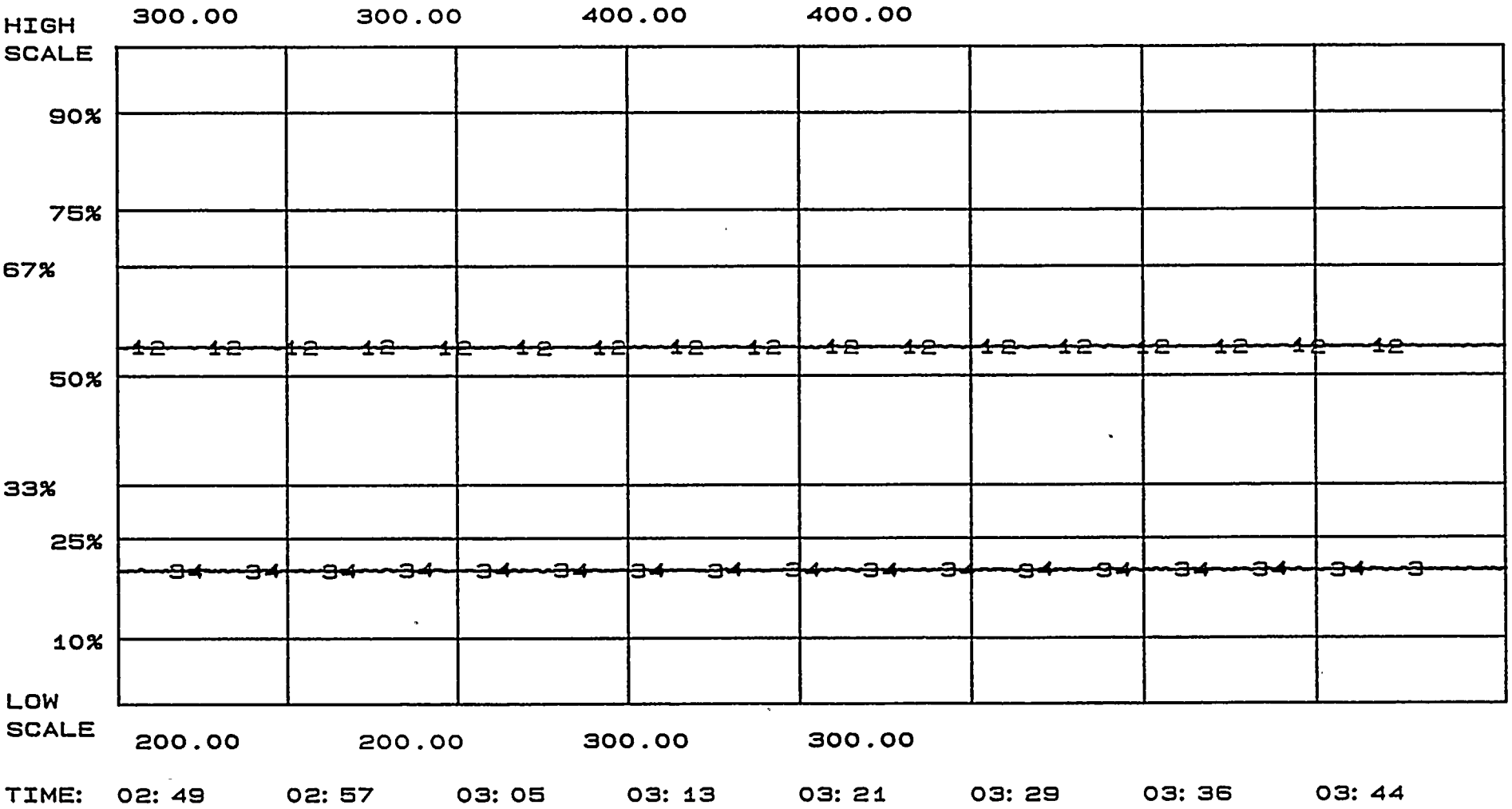
#	POINT ID	DESCRIPTION	UNITS
1	FWTTOH1A	HEATER 1A TUBE OUTLET TEMP.	DEG_F
2	FWTTOH1B	HEATER 1B TUBE OUTLET TEMP.	DEG_F
3	FWTTOH1C	HEATER 1C TUBE OUTLET TEMP.	DEG_F
4	FWTTOH2A	HEATER 2A TUBE OUTLET TEMP.	DEG_F
5	FWTTOH2B	HEATER 2B TUBE OUTLET TEMP.	DEG_F
6			

EDIT CONTROLS	
TIME	
START	02: 49: 27
STOP	03: 53: 35



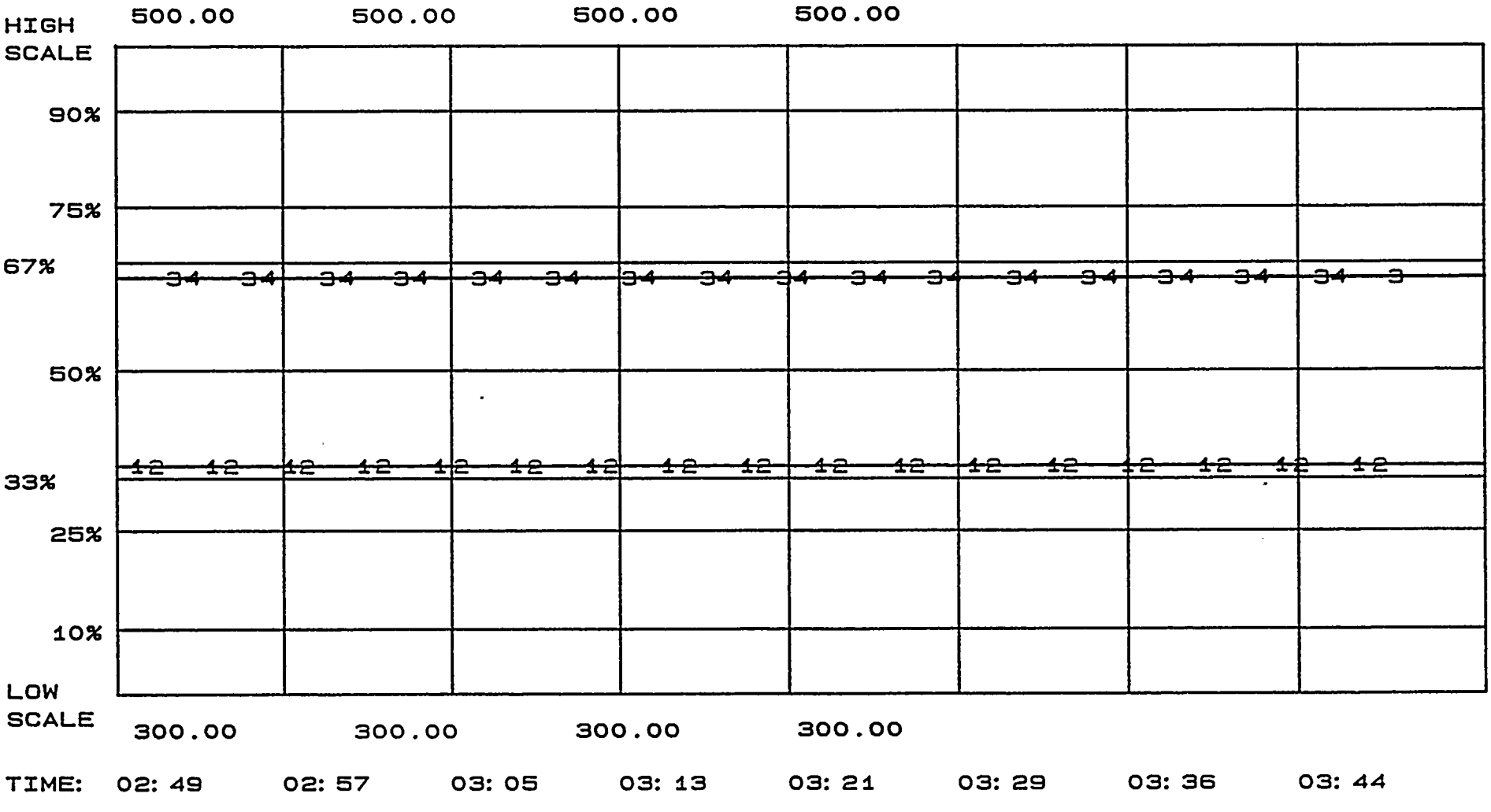
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH3A	HEATER 3A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH3B	HEATER 3B TUBE OUTLET TEMP.	DEG_F	START 02: 49: 27
3	FWTTOH4A	HEATER 4A TUBE OUTLET TEMP.	DEG_F	STOP 03: 53: 35
4	FWTTOH4B	HEATER 4B TUBE OUTLET TEMP.	DEG_F	
5				
6				



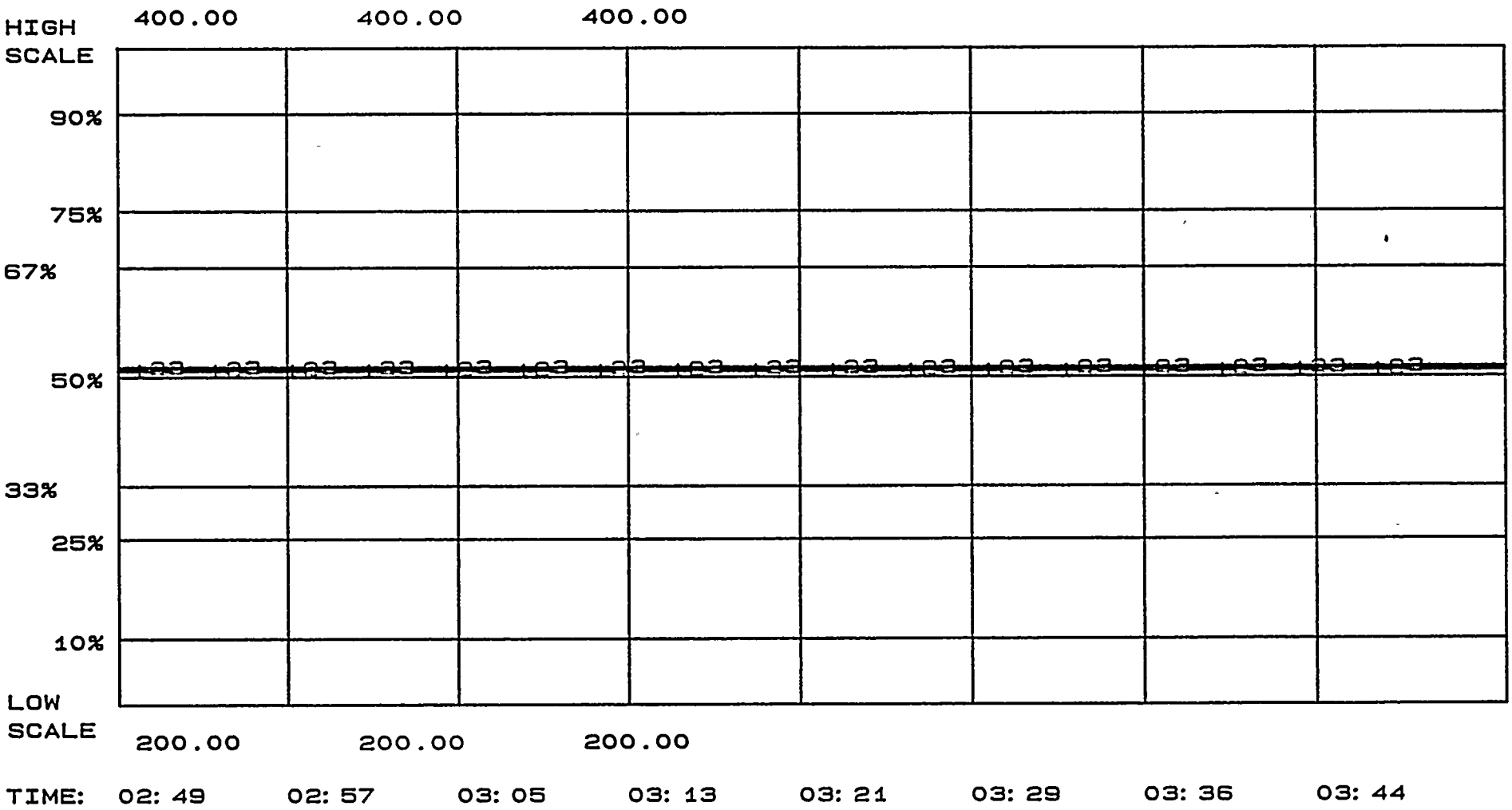
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTTOH5A	HEATER 5A TUBE OUTLET TEMP.	DEG_F	TIME
2	FWTTOH5B	HEATER 5B TUBE OUTLET TEMP.	DEG_F	START 02: 49: 27
3	FWTTOH6A	HEATER 6A TUBE OUTLET TEMP.	DEG_F	STOP 03: 53: 35
4	FWTTOH6B	HEATER 6B TUBE OUTLET TEMP.	DEG_F	
5				
6				



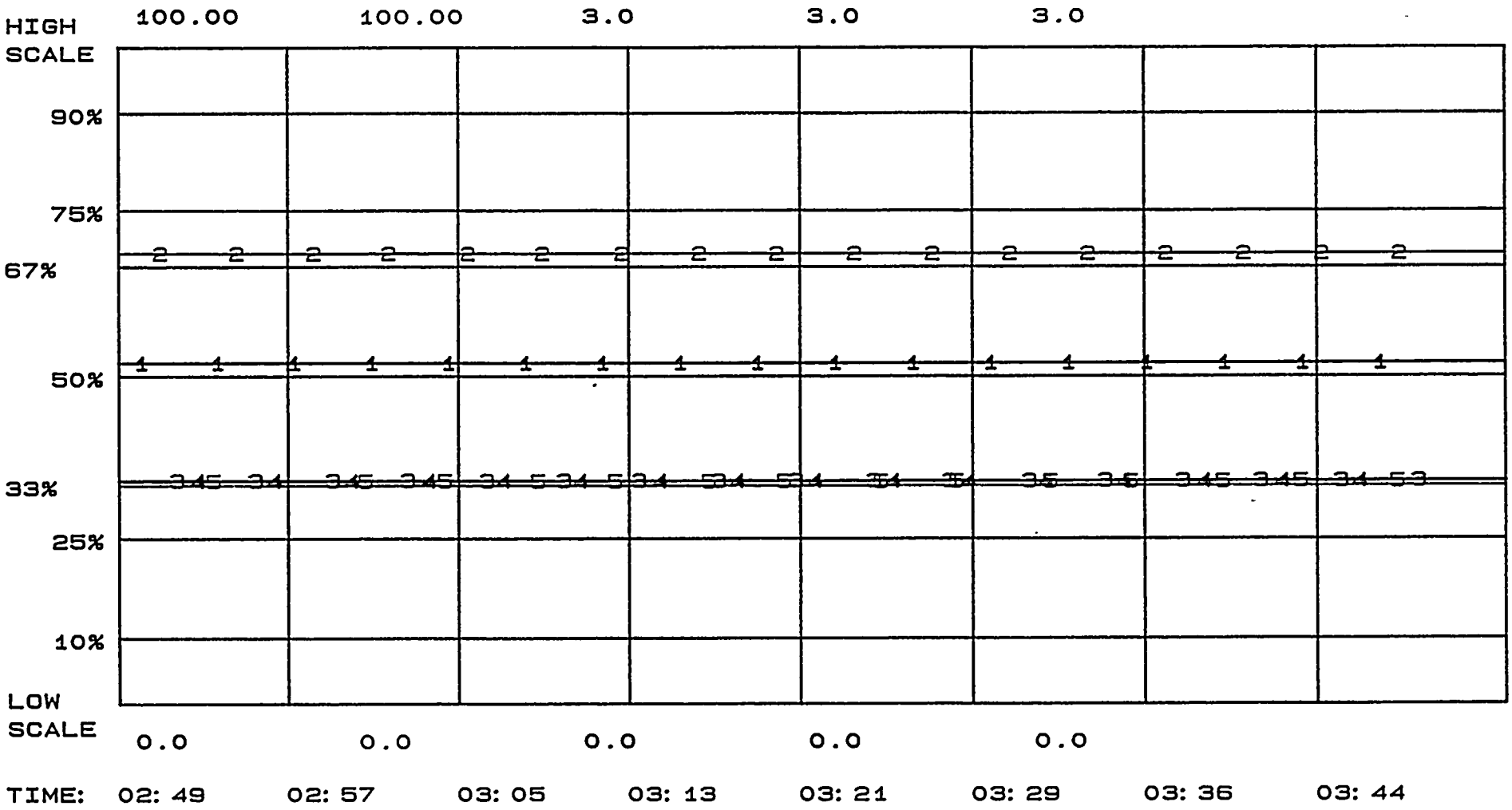
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTSMFP	MAIN FEEDPUMP SUCTION TEMP.	DEG_F	TIME
2	FWTDEMFP	EAST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	START 02: 49: 27
3	FWTDWMFP	WEST MAIN FEEDPUMP DISCH. TEMP.	DEG_F	STOP 03: 53: 35
4				
5				
6				



100% POWER STEADY-STATE TEST

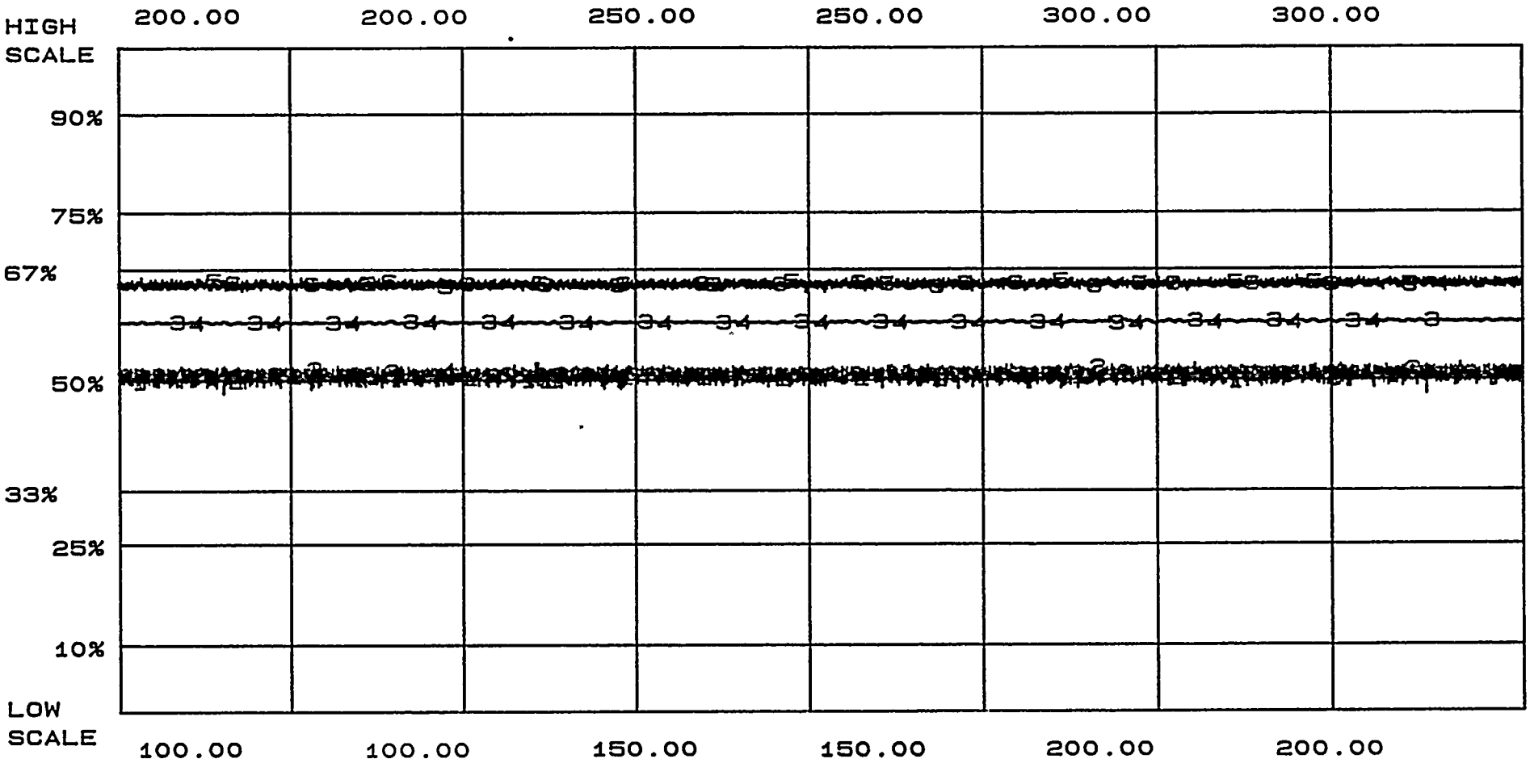
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	CWTAVGIN	CONDENSER AVG. INLET TEMP.	DEG_F	TIME
2	CWTAVGOUT	CONDENSER AVG. OUTLET TEMP.	DEG_F	START 02: 49: 27
3	FWPCN (1)	CONDENSER A PRESSURE	PSIA	STOP 03: 53: 35
4	FWPCN (2)	CONDENSER B PRESSURE	PSIA	
5	FWPCN (3)	CONDENSER C PRESSURE	PSIA	
6				



100% POWER STEADY-STATE TEST

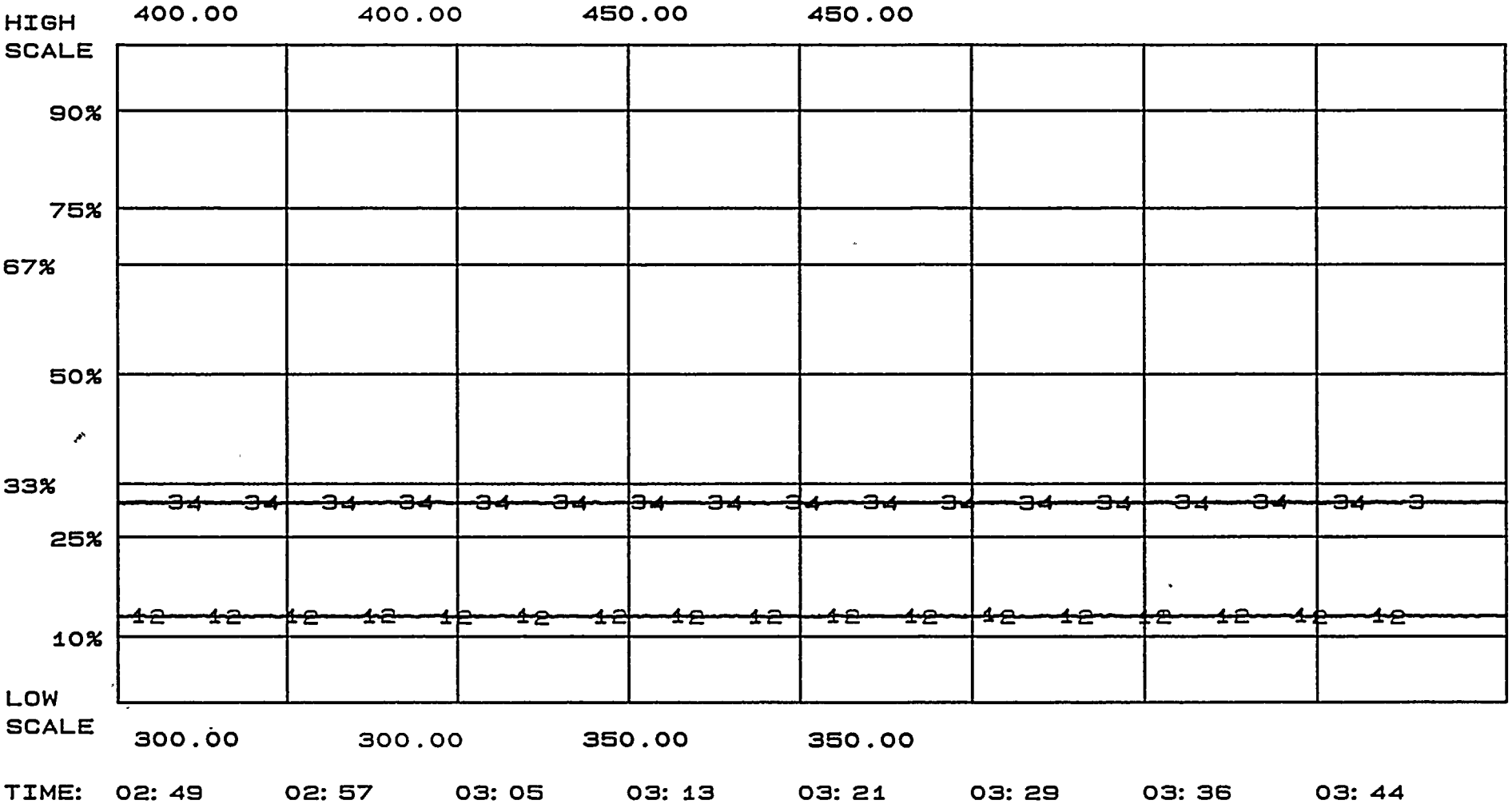
#	POINT ID	DESCRIPTION	UNITS
1	FWTDRNH2A	HEATER 2A DRAIN TEMPERATURE	DEG_F
2	FWTDRNH2B	HEATER 2B DRAIN TEMPERATURE	DEG_F
3	FWTDRNH3A	HEATER 3A DRAIN TEMPERATURE	DEG_F
4	FWTDRNH3B	HEATER 3B DRAIN TEMPERATURE	DEG_F
5	FWTDRNH4A	HEATER 4A DRAIN TEMPERATURE	DEG_F
6	FWTDRNH4B	HEATER 4B DRAIN TEMPERATURE	DEG_F

EDIT CONTROLS	
TIME	
START	02: 49: 27
STOP	03: 53: 35



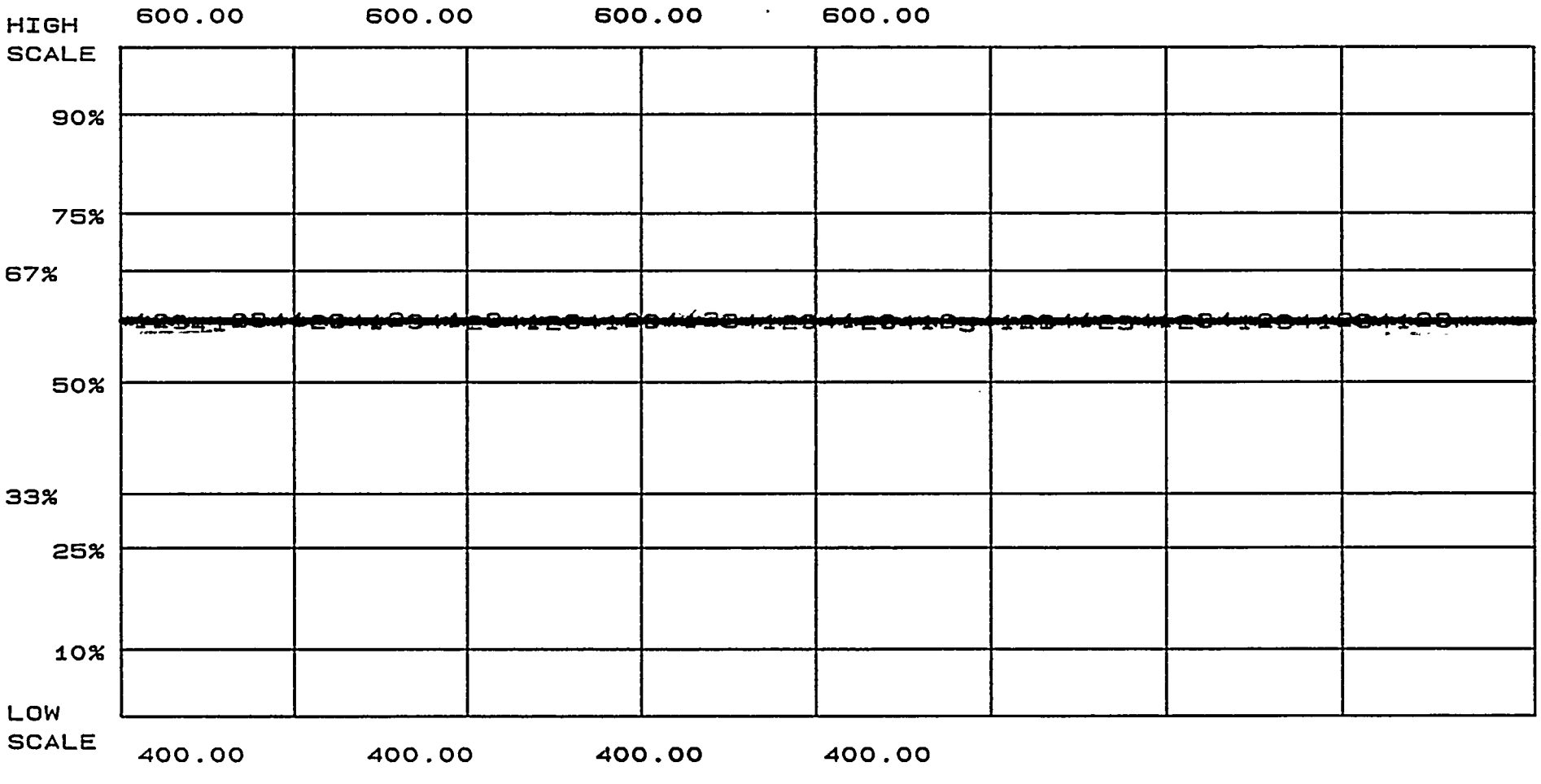
100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWTDRNH5A	HEATER 5A DRAIN TEMPERATURE	DEG_F	TIME
2	FWTDRNH5B	HEATER 5B DRAIN TEMPERATURE	DEG_F	START 02: 49: 27
3	FWTDRNH6A	HEATER 6A DRAIN TEMPERATURE	DEG_F	STOP 03: 53: 35
4	FWTDRNH6B	HEATER 6B DRAIN TEMPERATURE	DEG_F	
5				
6				



100% POWER STEADY-STATE TEST

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCTSGDM (1)	STEAM GENERATOR #1 DOME TEMP.	DEG_F	TIME
2	RCTSGDM (2)	STEAM GENERATOR #2 DOME TEMP.	DEG_F	START 02: 49: 27
3	RCTSGDM (3)	STEAM GENERATOR #3 DOME TEMP.	DEG_F	STOP 03: 53: 35
4	RCTSGDM (4)	STEAM GENERATOR #4 DOME TEMP.	DEG_F	
5				
6				



COOK PLANT SIMULATOR

TRANSIENT TEST ABSTRACT

I. Introduction (ANS 3.5 - 4)

Section 4 of the standard addresses simulator tests to ensure that simulator response:

1) Is the same as plant startup test data

2) Observable change in the parameters correspond in direction to those expected from best estimate of the simulated transient and do not violate the physical laws of nature

3) Does not fail to cause an alarm or automatic action if the reference plant would not cause an alarm or automatic action.

II. Transient Operation (ANS 3.5 - 4.2.1)

All transient tests in accordance with Appendix B section B.2.2 were conducted on the simulator and compared to data where existing data was available. In all other cases, the tests were reviewed by a team of subject matter experts (attachment 1) to ensure that the criteria of the standard were met.

All data was collected at a minimum resolution of every one half second.

All discrepancies identified from the test results will be corrected by the end of 1991.

COMPOSITION OF SUBJECT MATTER EXPERT PANEL

LAST NAME	FIRST NAME	RO DATE	SRO DATE	PRESENT POSITION
Anderson	Roger	11/22/78	12/11/82	Requal Program Admin.
Bennett	Robert	06/20/86		Reactor Operator
Dolby	David	09/30/87	07/24/90	Reactor Operator
Fish	Michael	08/09/89		Reactor Operator
Garrison	Timothy			Certified Instructor
Hehl	Scott	09/30/87		Instructor
Hnanicek	Clarence	09/30/87		Reactor Operator
Johnson	Frank	06/20/86	02/12/90	Reactor Operator
McCullough	George	02/11/82	05/31/83	Test Supervisor
O'Neil	James	01/20/84	04/07/86	Unit Supervisor
Russell	Mark	01/20/84	04/07/86	Unit Supervisor
Strasser	Richard	05/05/81	06/03/82	Unit Supervisor
Tatrault	Elizabeth	01/12/83	03/15/85	Instructor

COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MANUAL REACTOR TRIP

I. Introduction (ANS 3.5 - B.2.2(1))

The purpose of this test is to:

1) Test the simulator response to a manual reactor trip per ANS 3.5 - B.2.2(1).

2) Ensure that the simulator functions properly to a manual reactor trip and all parameters respond in a timely manner.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer level
4) Pressurizer pressure
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Pressurizer safety valves shall not lift.

2) The observable change in parameters correspond in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

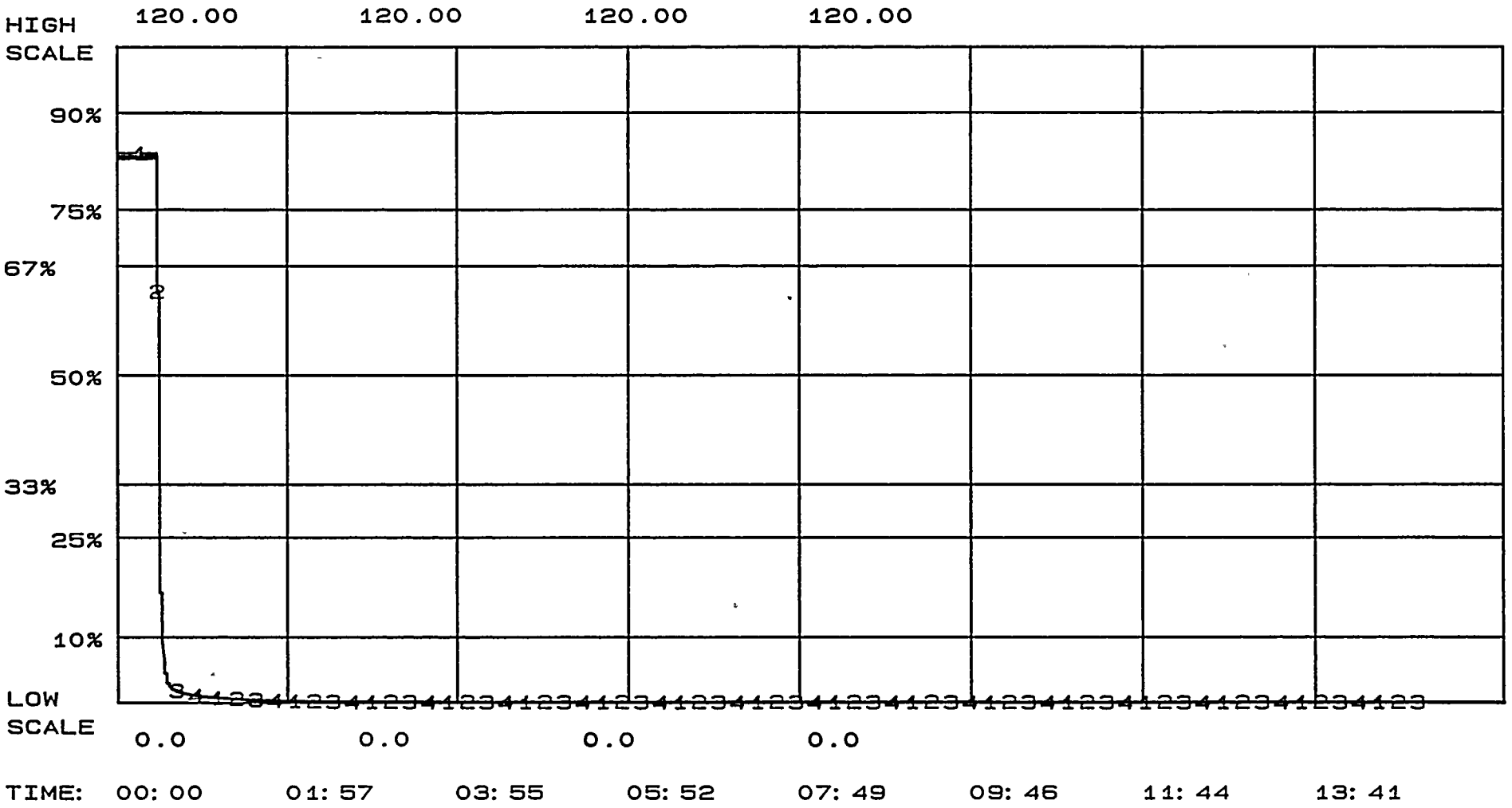
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

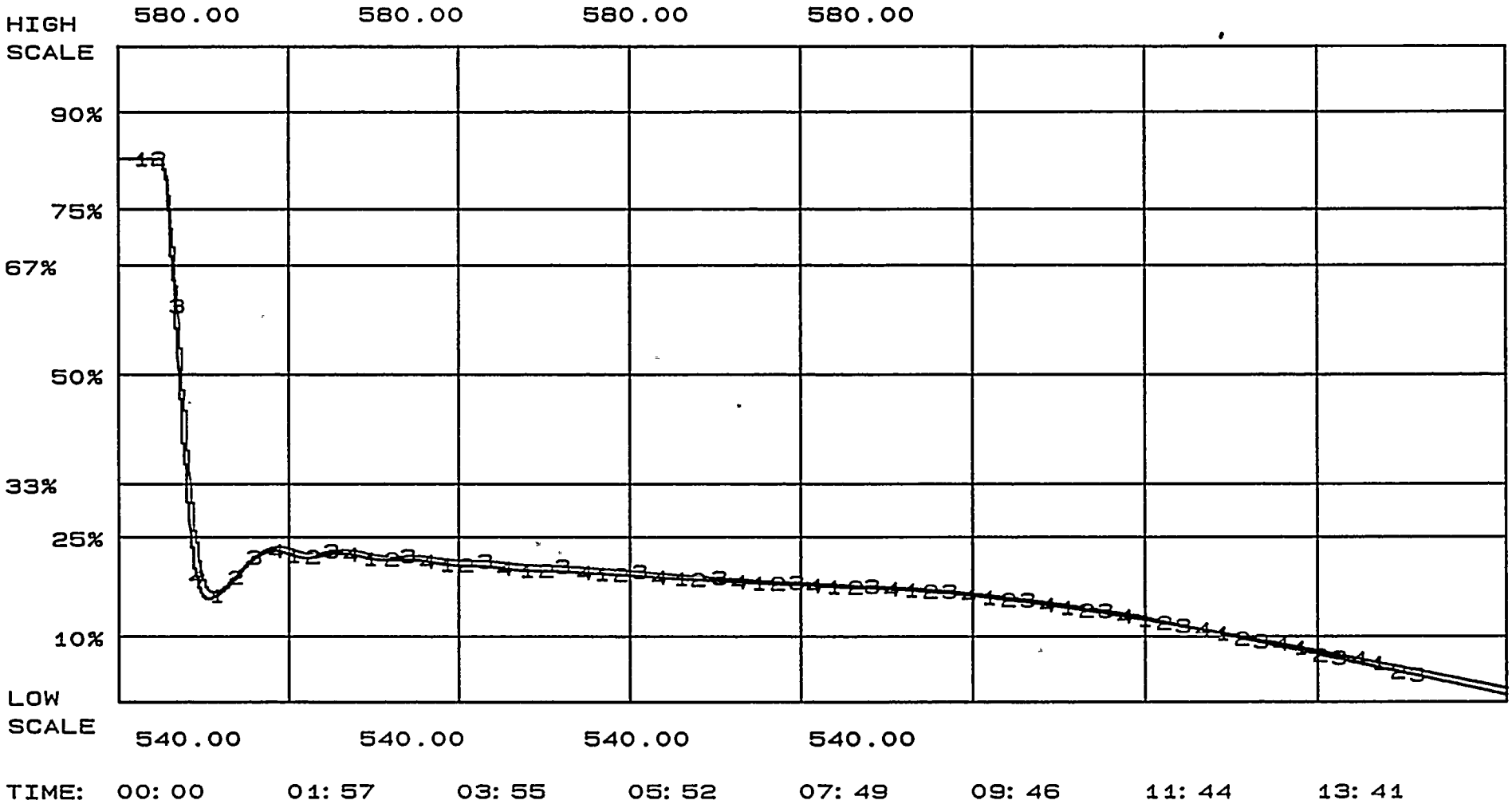
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	PWR RNG CH1 AVERAGE	PC	TIME
2	N1013	PWR RNG CH2 AVERAGE	PC	START 00: 00: 00
3	N1014	PWR RNG CH3 AVERAGE	PC	STOP 00: 15: 50
4	N1015	PWR RNG CH4 AVERAGE	PC	
5				
6				



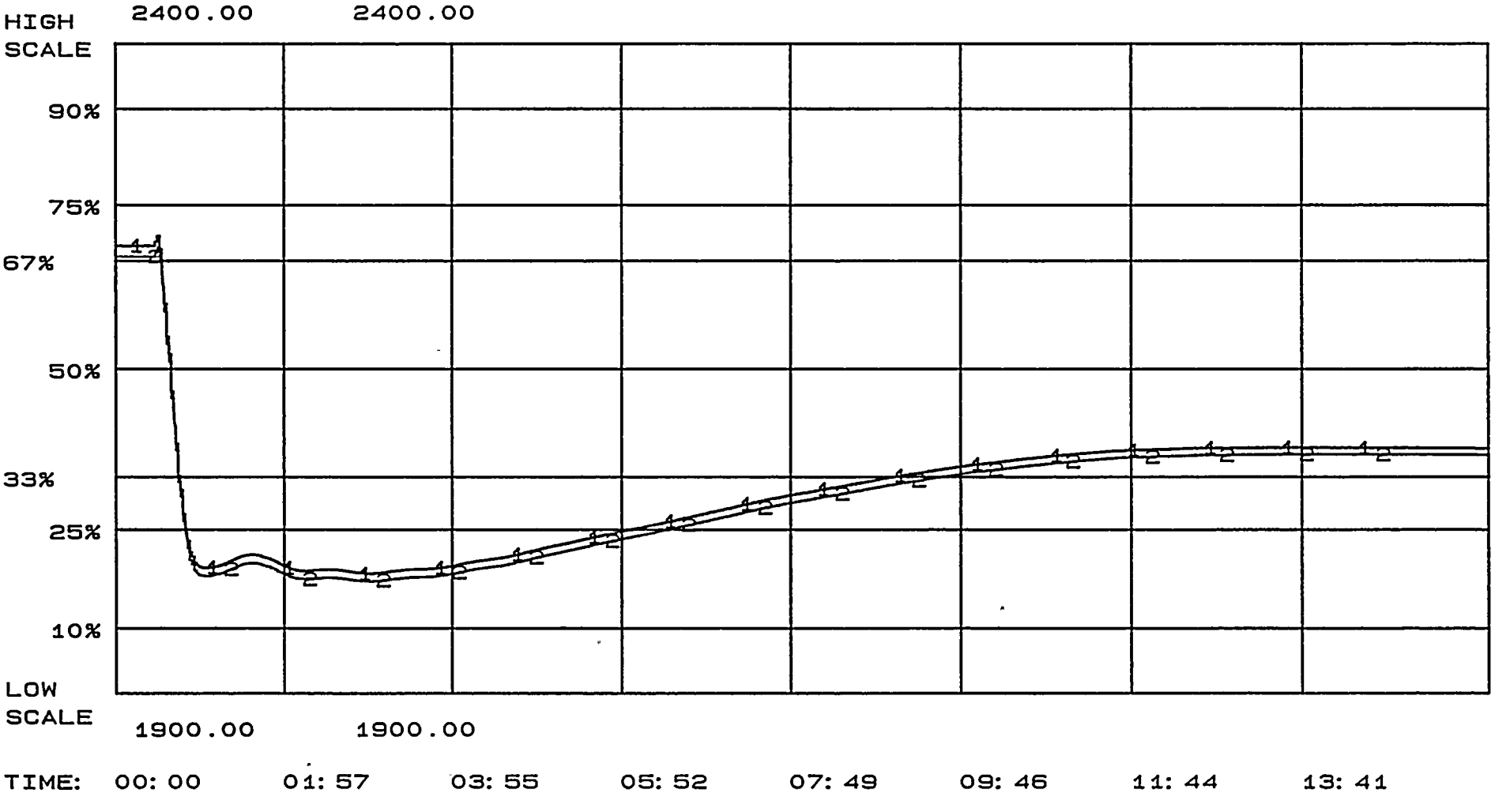
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVG TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVG TEMP	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVG TEMP	DEG_F	STOP 00: 15: 50
4	T1104	LOOP 4 AVG TEMP	DEG_F	
5				
6				



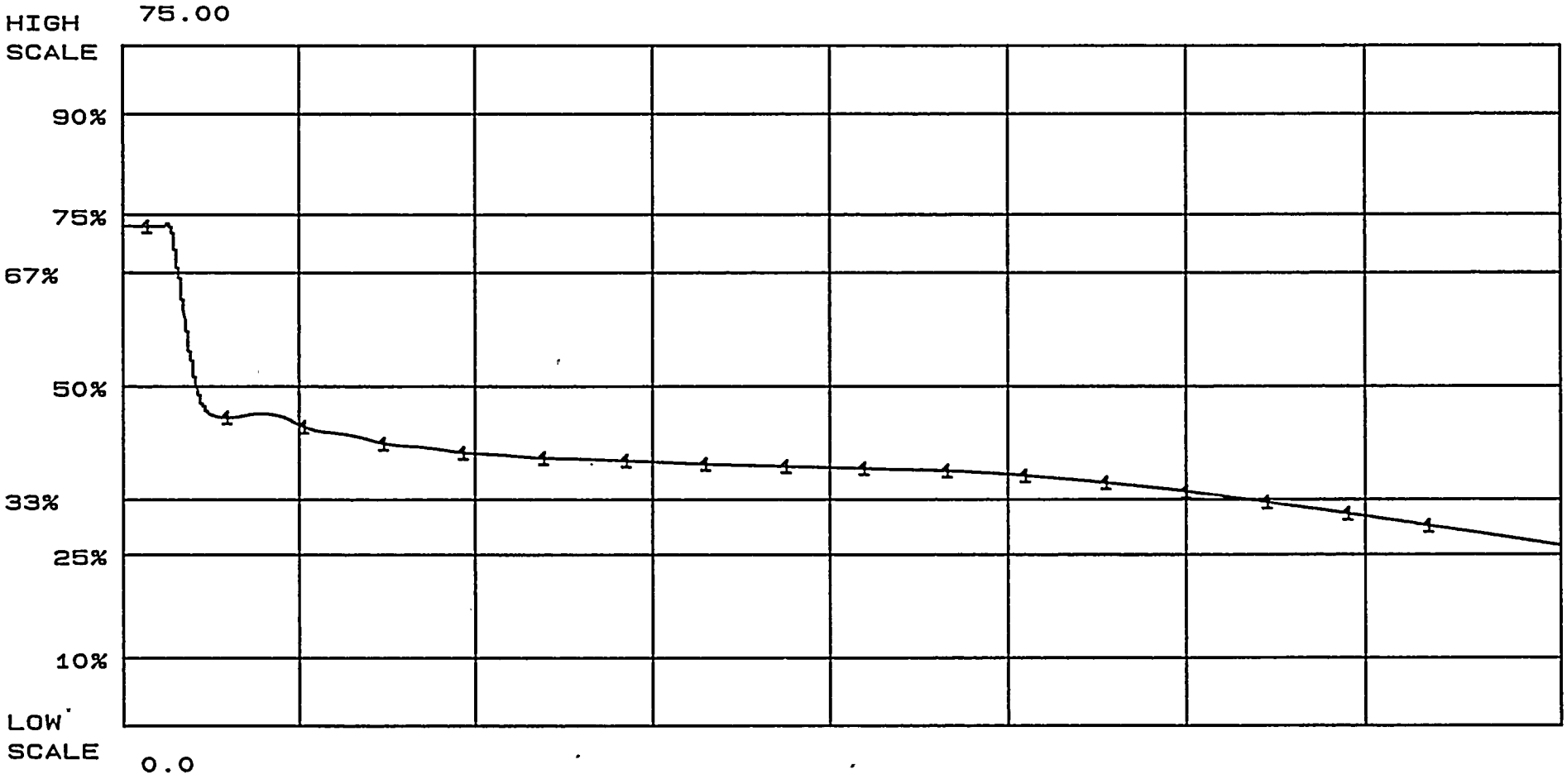
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RC WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 15: 50
4				
5				
6				



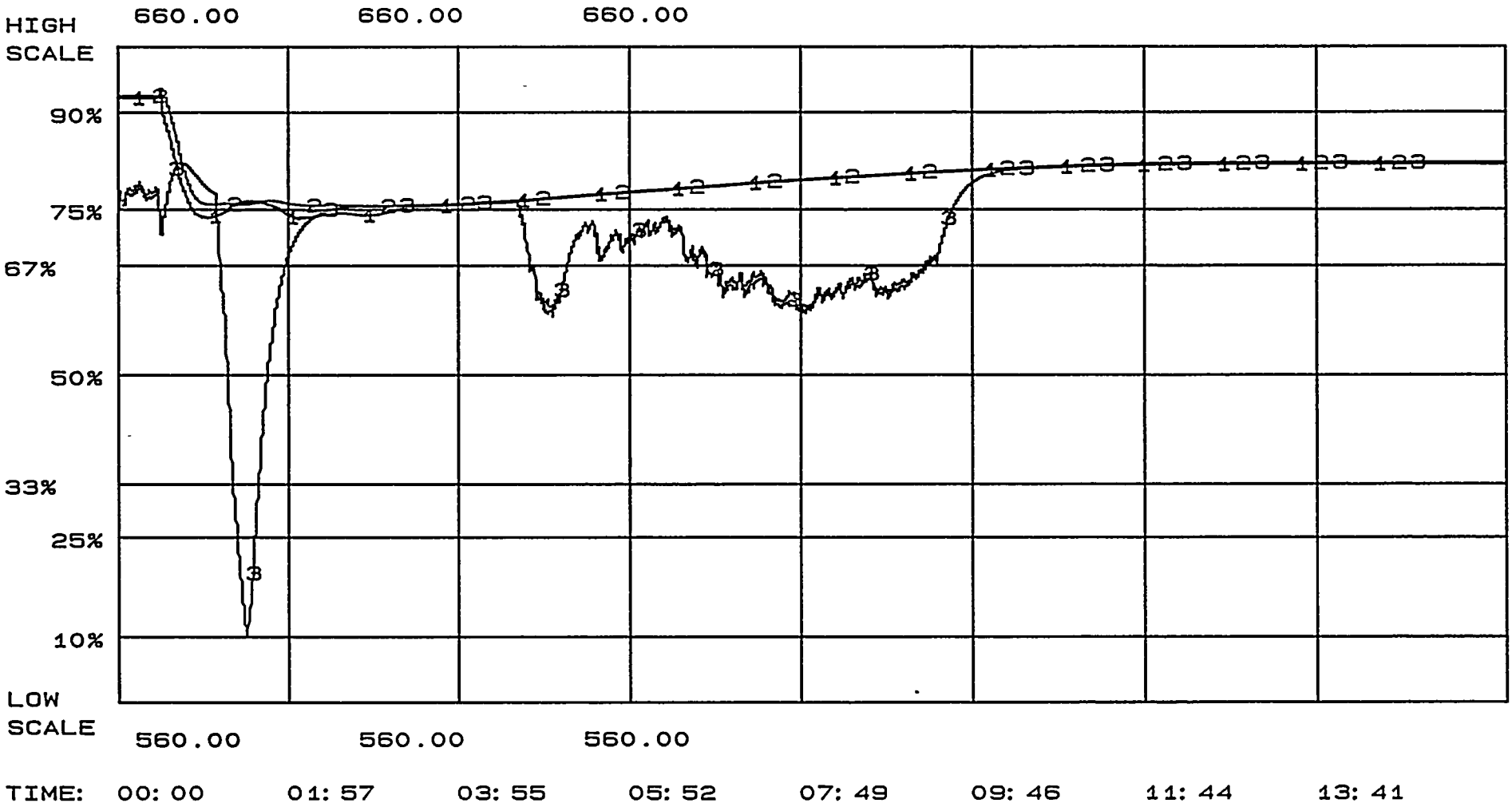
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER WATER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 15: 50
4				
5				
6				



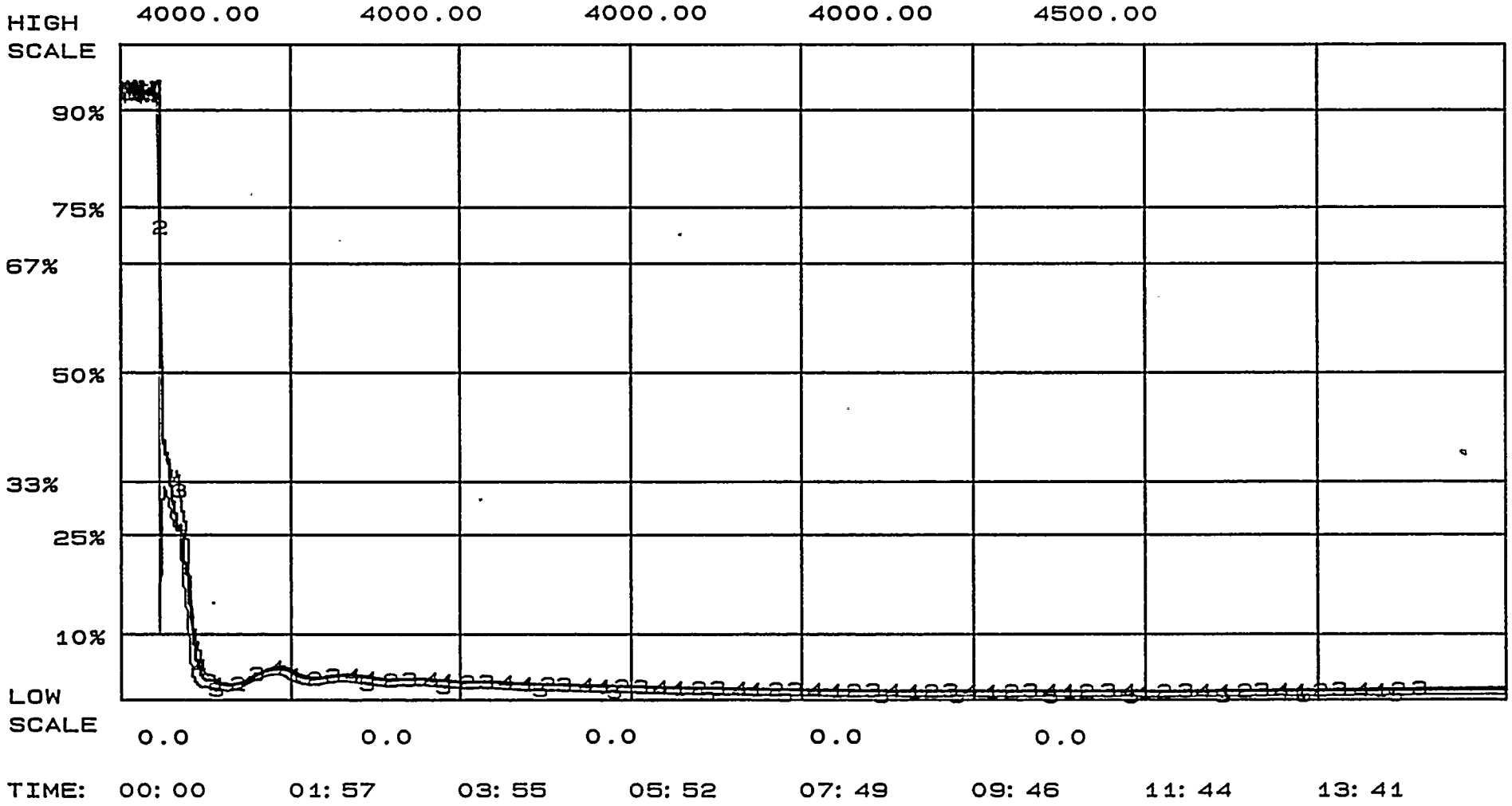
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PZR VAPOR TEMP	DEG_F	TIME
2	T1004	PZR LIQUID TEMP	DEG_F	START 00: 00: 00
3	RCTNTA253	PZR SURGE LINE TEMP	DEG_F	STOP 00: 15: 50
4				
5				
6				



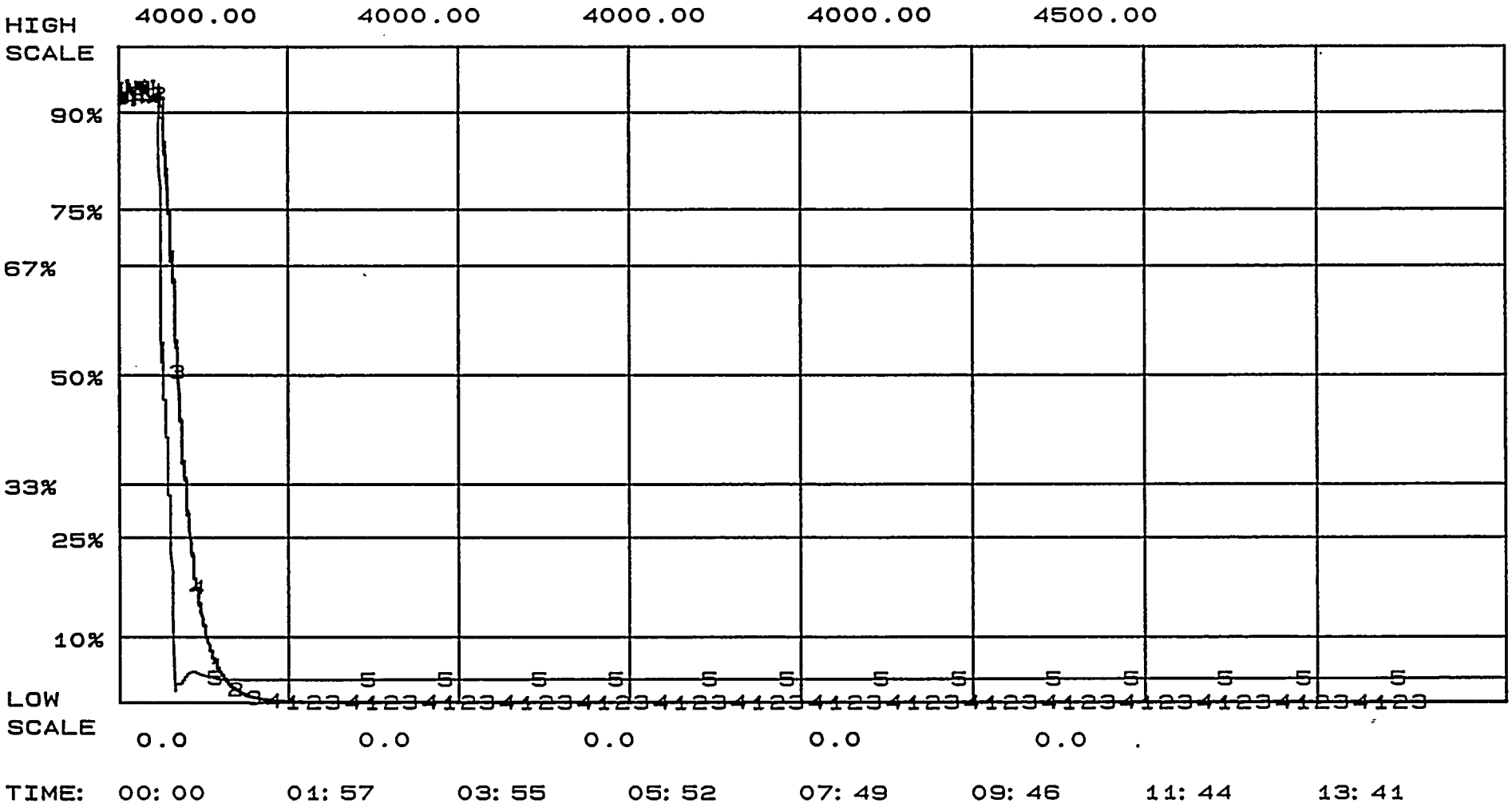
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 00: 15: 50
4	F1054	STEAM FLOW LOOP 4	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



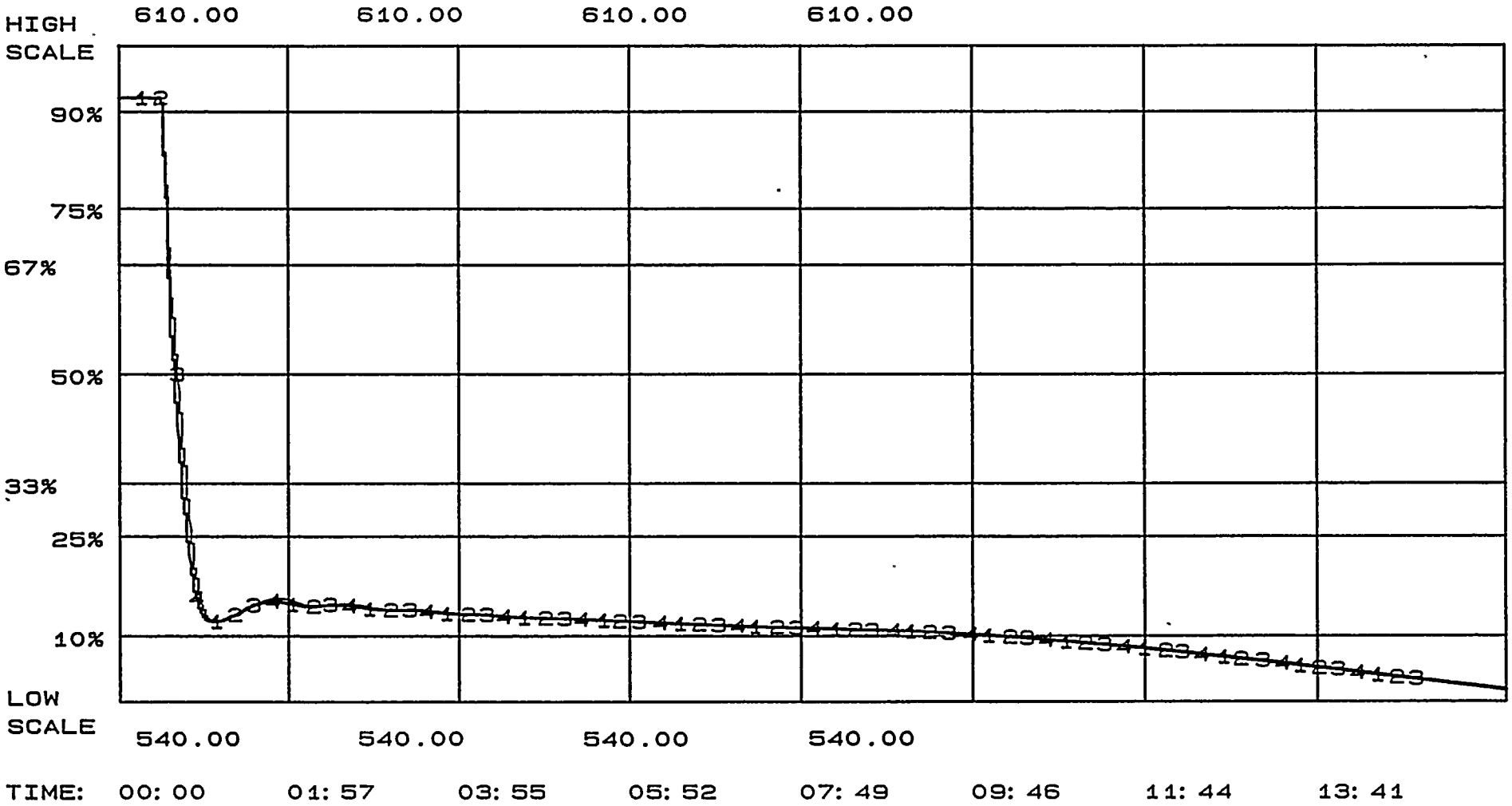
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	FEEDWATER FLOW LOOP 1	KBH	TIME
2	F1201	FEEDWATER FLOW LOOP 2	KBH	START 00: 00: 00
3	F1202	FEEDWATER FLOW LOOP 3	KBH	STOP 00: 15: 50
4	F1203	FEEDWATER FLOW LOOP 4	KBH	
5	FWFTOTAL	TOTAL FEED WATER FLOW (INC AFW)	LBS_S	
6				



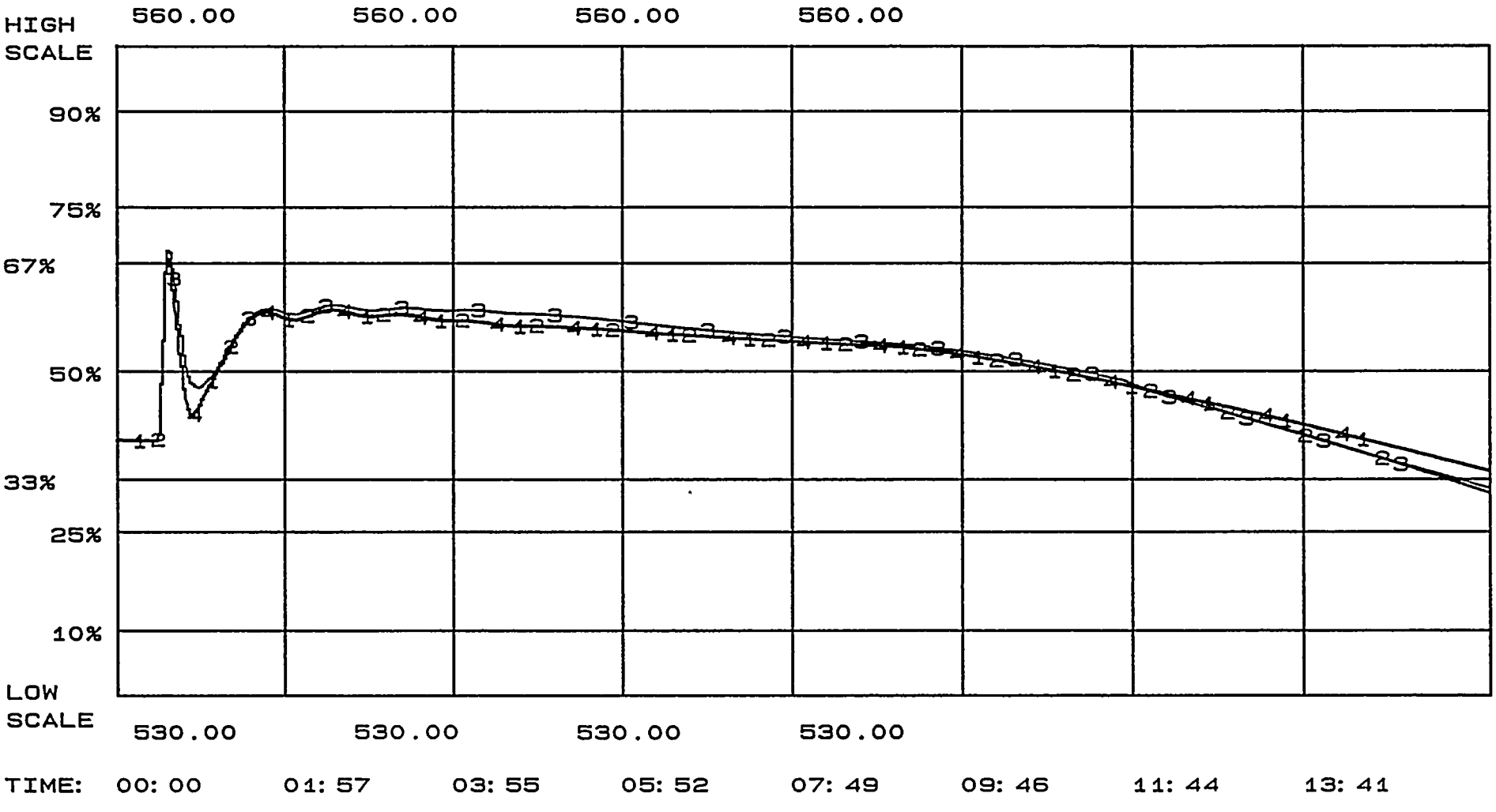
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F	TIME
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F	STOP 00: 15: 50
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F	
5				
6				



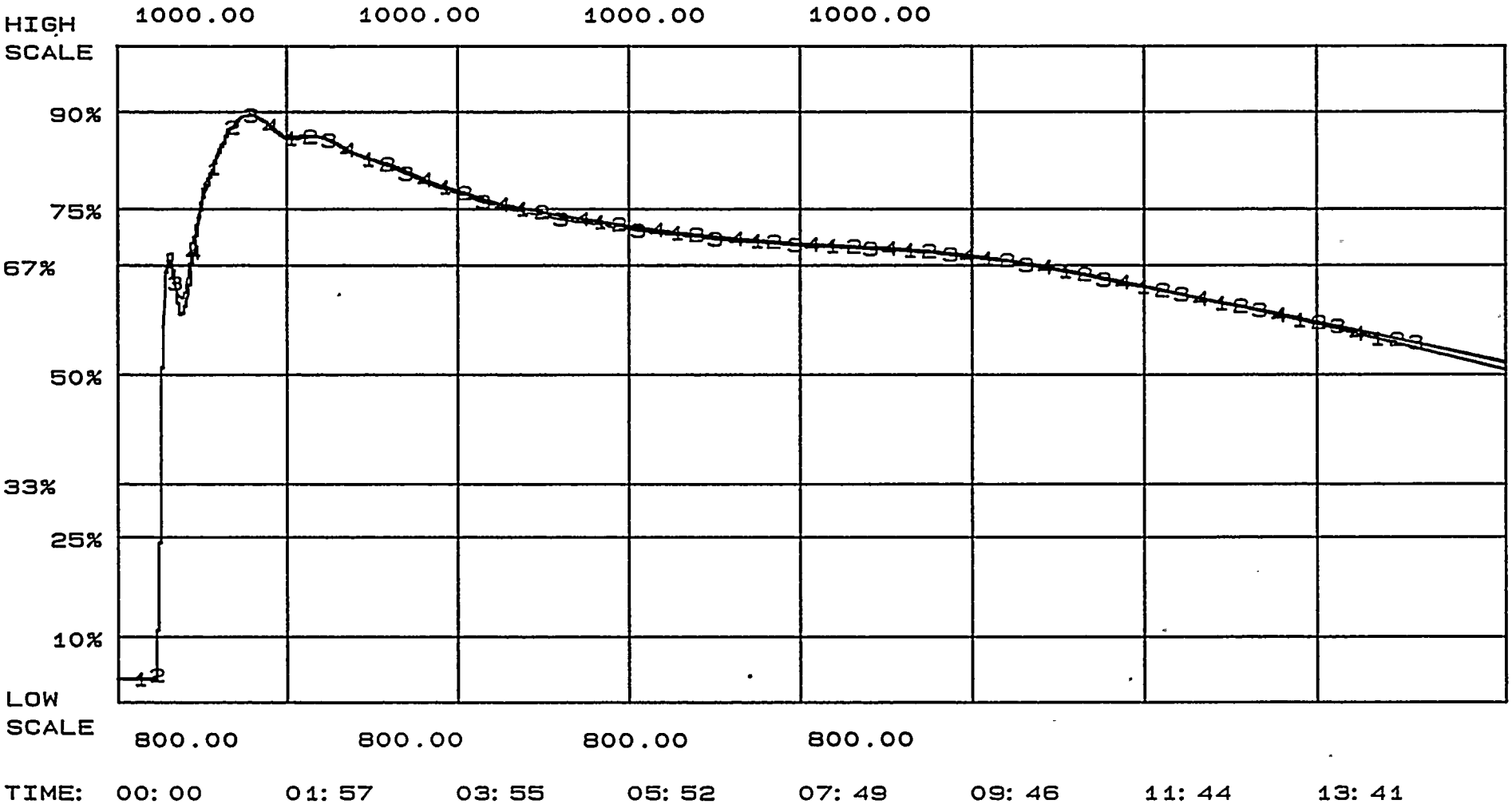
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 COLD LEG TEMP	DEG_F	TIME
2	T1116	LOOP 2 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 COLD LEG TEMP	DEG_F	STOP 00: 15: 50
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



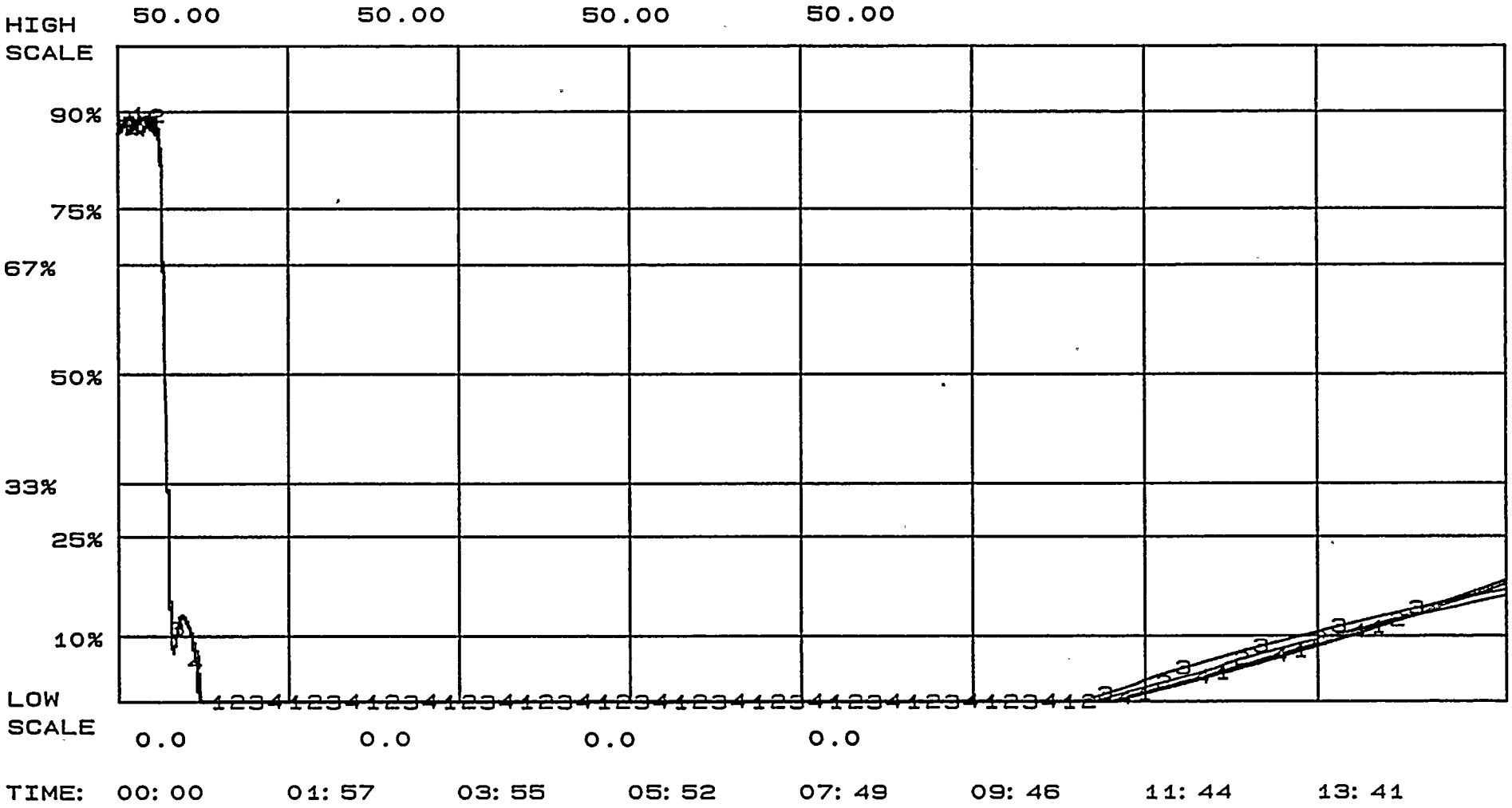
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STM GEN OUTLET PRES LP 1	PSIG	TIME
2	P1025	STM GEN OUTLET PRES LP 2	PSIG	START 00: 00: 00
3	P1028	STM GEN OUTLET PRES LP 3	PSIG	STOP 00: 15: 50
4	P1031	STM GEN OUTLET PRES LP 4	PSIG	
5				
6				



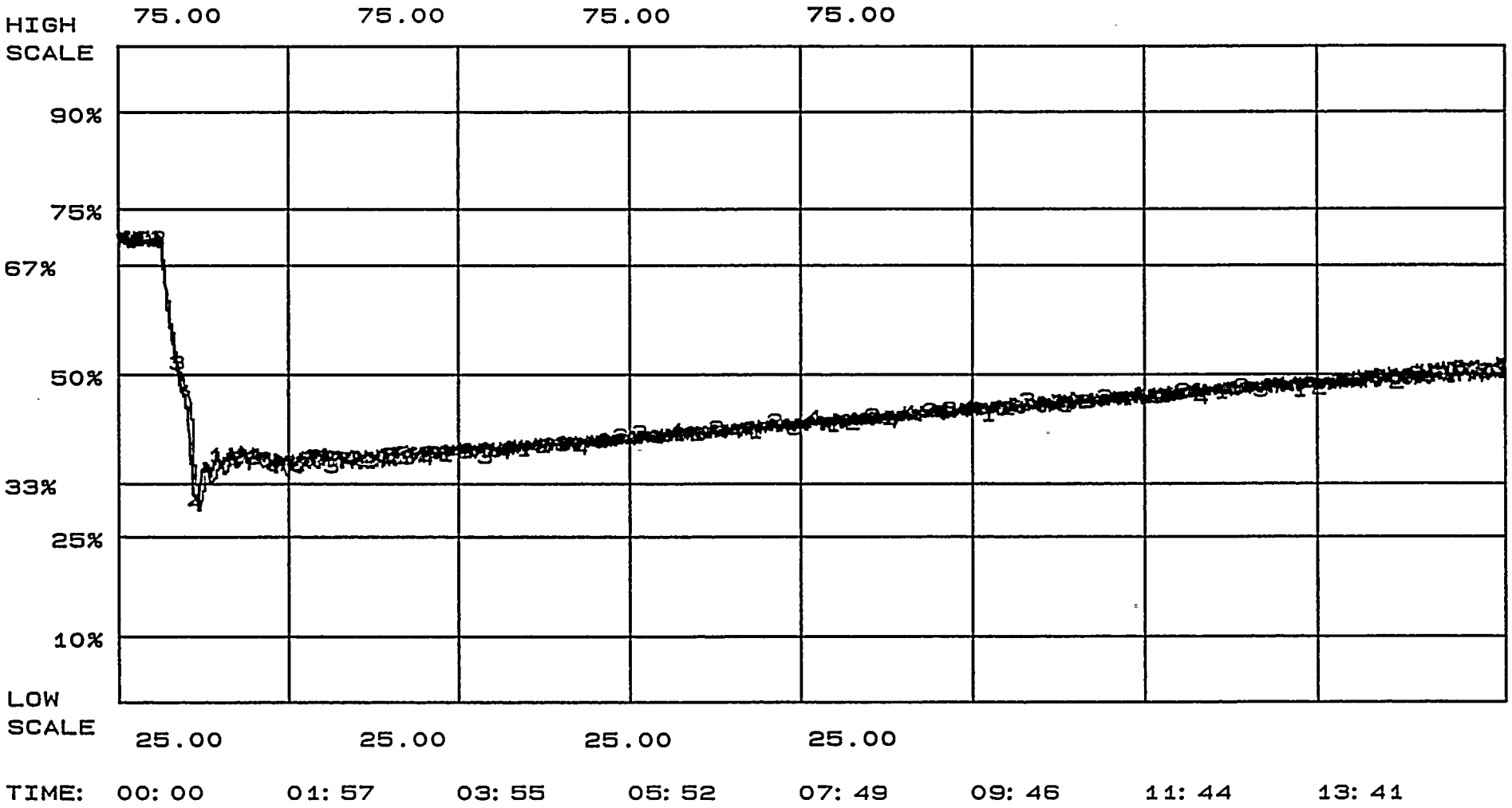
MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STM GEN 1 NARROW LEVEL	PC	TIME
2	L1207	STM GEN 2 NARROW LEVEL	PC	START 00: 00: 00
3	L1210	STM GEN 3 NARROW LEVEL	PC	STOP 00: 15: 50
4	L1213	STM GEN 4 NARROW LEVEL	PC	
5				
6				



MANUAL REACTOR TRIP FROM 100% POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STM GEN 1 WIDE LEVEL	PC	TIME
2	L1201	STM GEN 2 WIDE LEVEL	PC	START 00: 00: 00
3	L1202	STM GEN 3 WIDE LEVEL	PC	STOP 00: 15: 50
4	L1203	STM GEN 4 WIDE LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SIMULATANEOUS TRIP OF ALL MAIN FEEDWATER PUMPS

I. Introduction (ANS 3.5 - B2.2(2))

The purpose of this test is to:

1) Test the simulator response to a simultaneous trip of all main feedwater pumps per ANS 3.5 - B2.2(2).

2) Ensure that the simulator's auxiliary feedwater system functions properly to restore steam generator level in a timely manner following the reactor trip.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer level
4) Pressurizer pressure
5) Pressurizer temperature
6) Feedwater flow
7) Steam flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Pressurizer safety valves shall not lift.

2) The observable change in parameters correspond in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

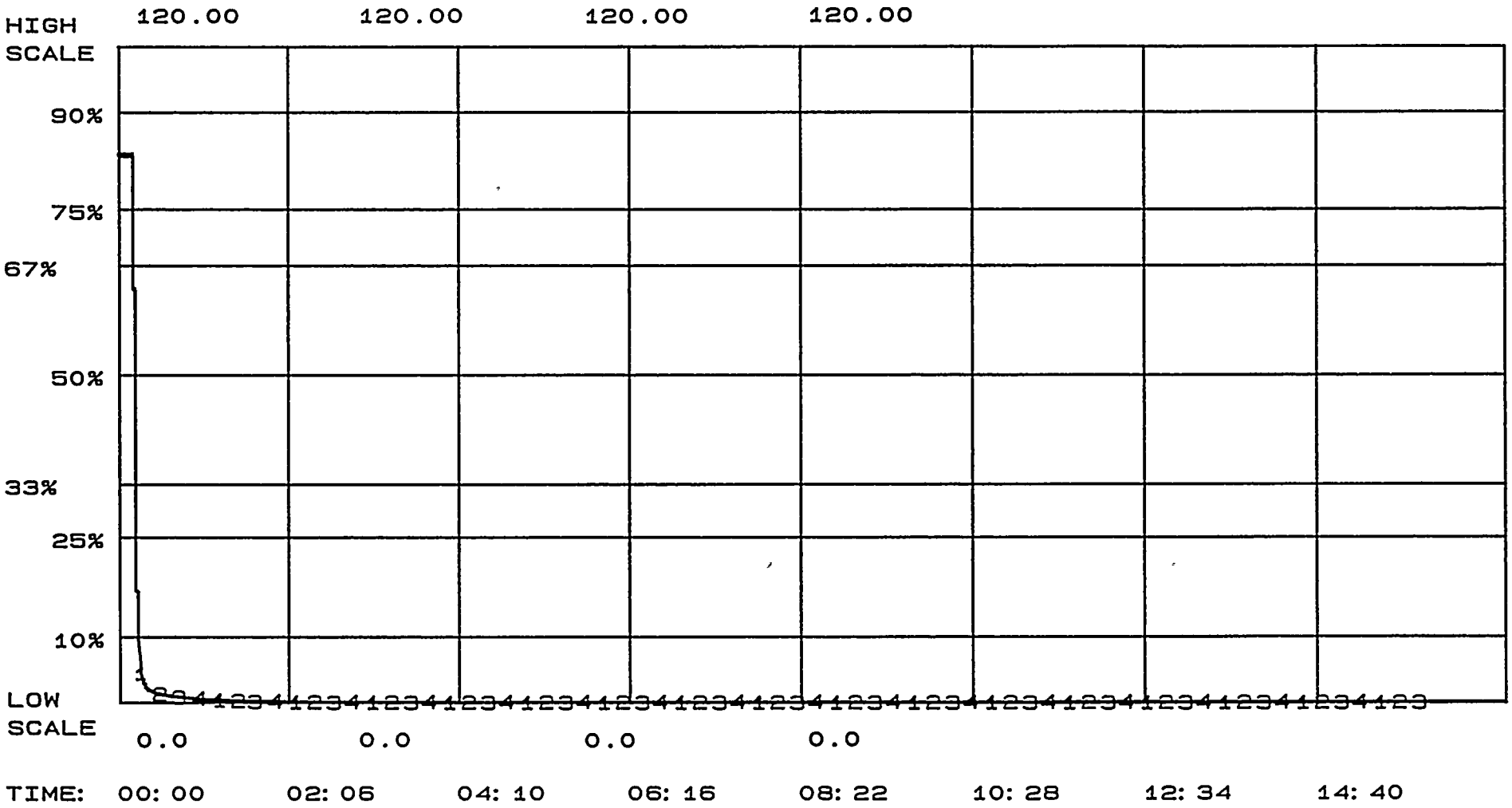
This transient was analyzed as a best estimate of expected actions.

VI: Discrepancies

No discrepancies were noted by the team of subject matter experts.

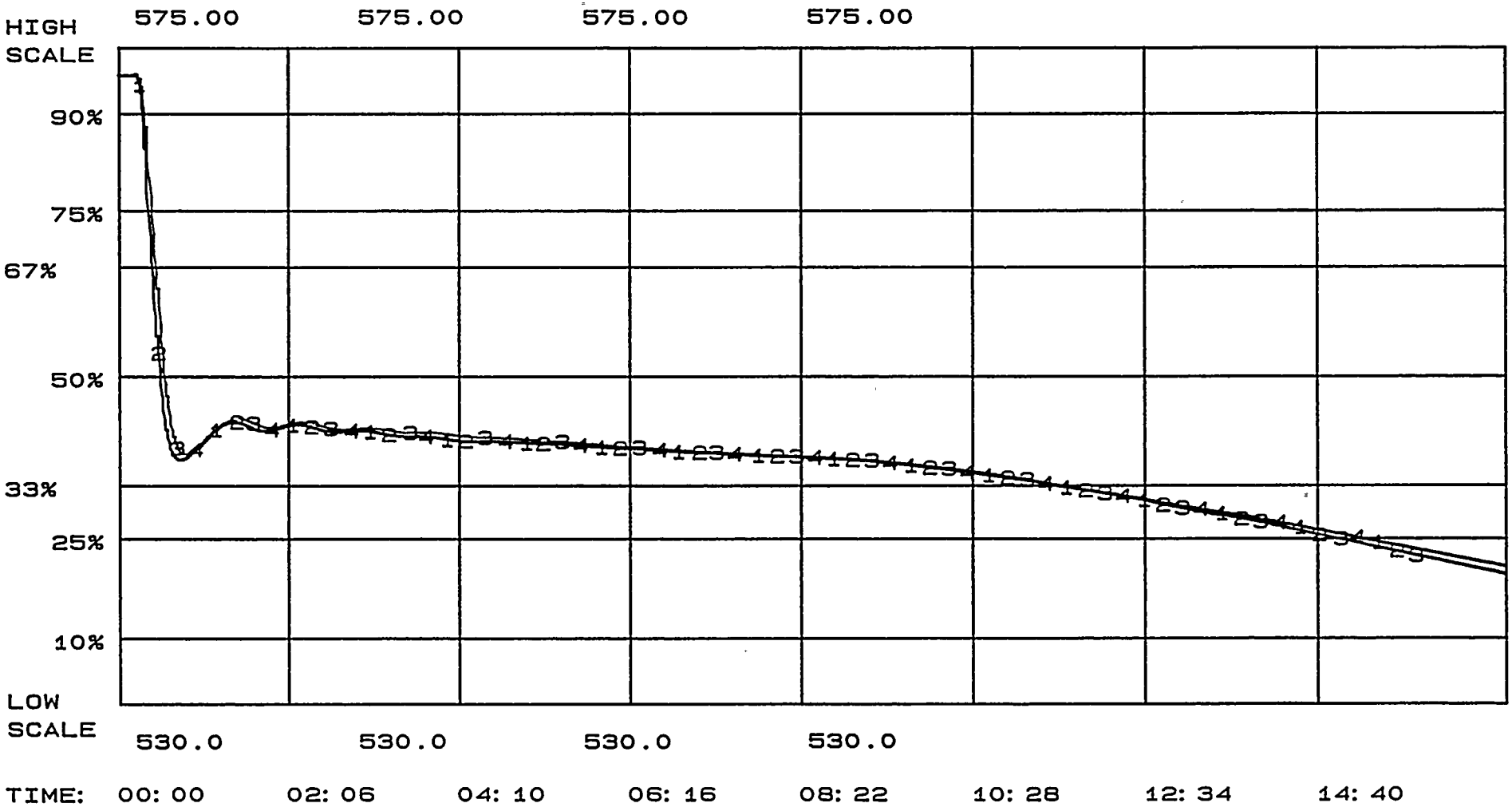
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE CHANNEL N41	PC	TIME
2	N1013	POWER RANGE CHANNEL N42	PC	START 00: 00: 00
3	N1014	POWER RANGE CHANNEL N43	PC	STOP 00: 17: 00
4	N1015	POWER RANGE CHANNEL N44	PC	
5				
6				



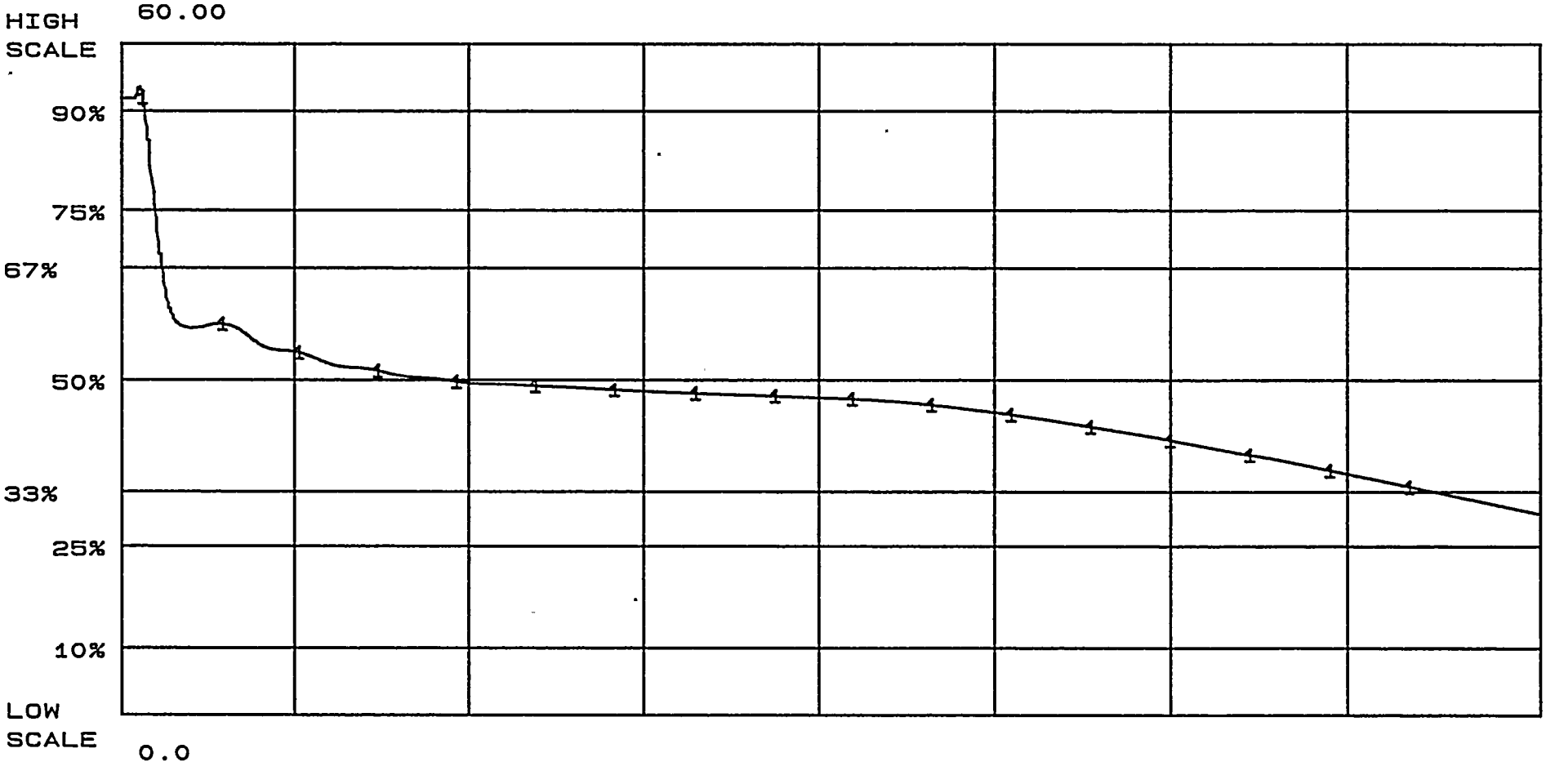
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 TAVE	DEG_F	TIME
2	T1102	LOOP 2 TAVE	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 TAVE	DEG_F	STOP 00: 17: 00
4	T1104	LOOP 4 TAVE	DEG_F	
5				
6				



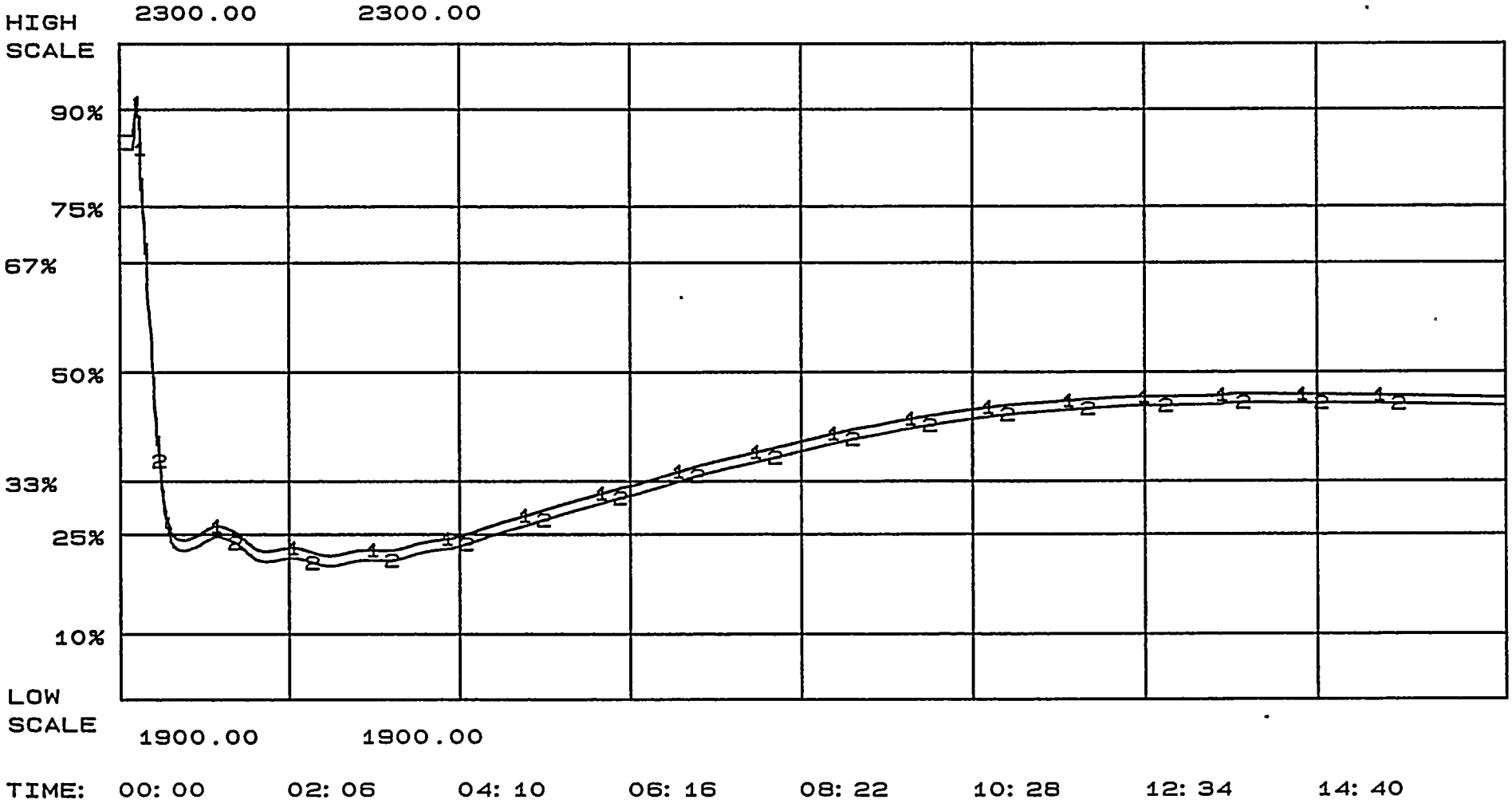
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 17: 00
4				
5				
6				



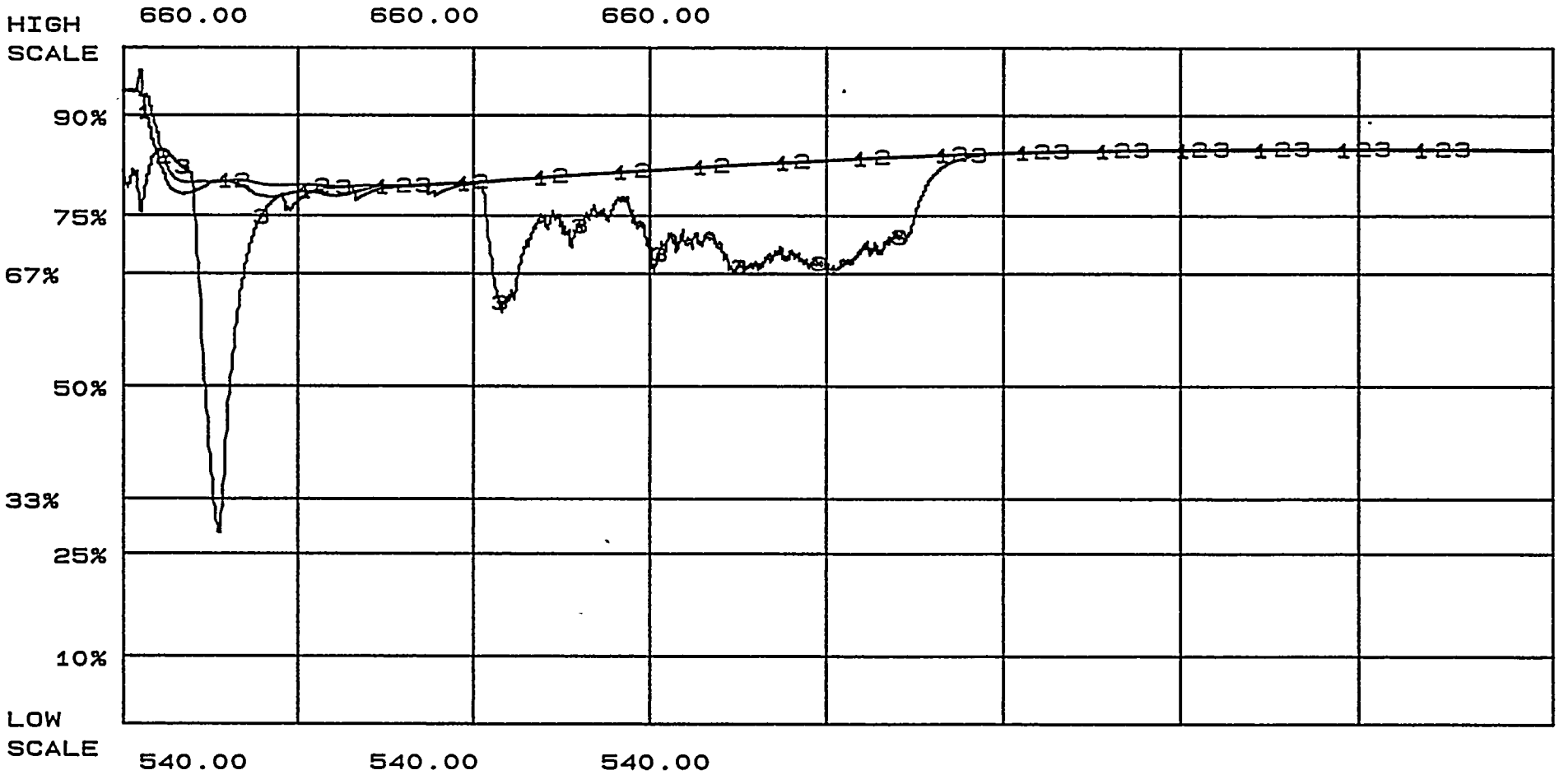
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 17: 00
4				
5				
6				



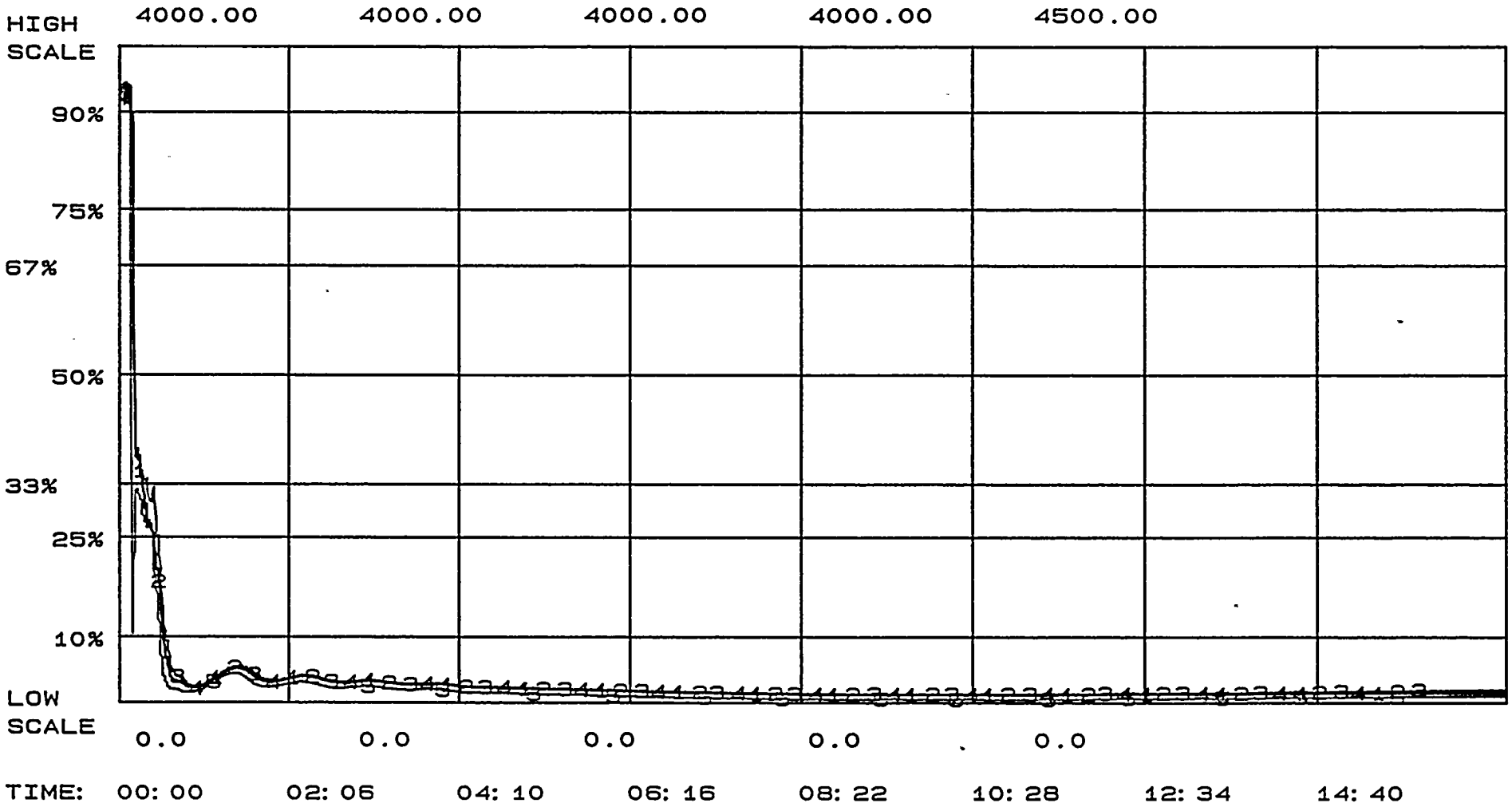
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	TIME
2	T1004	PRESSURIZER LIQUID TEMP	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 17: 00
4				
5				
6				



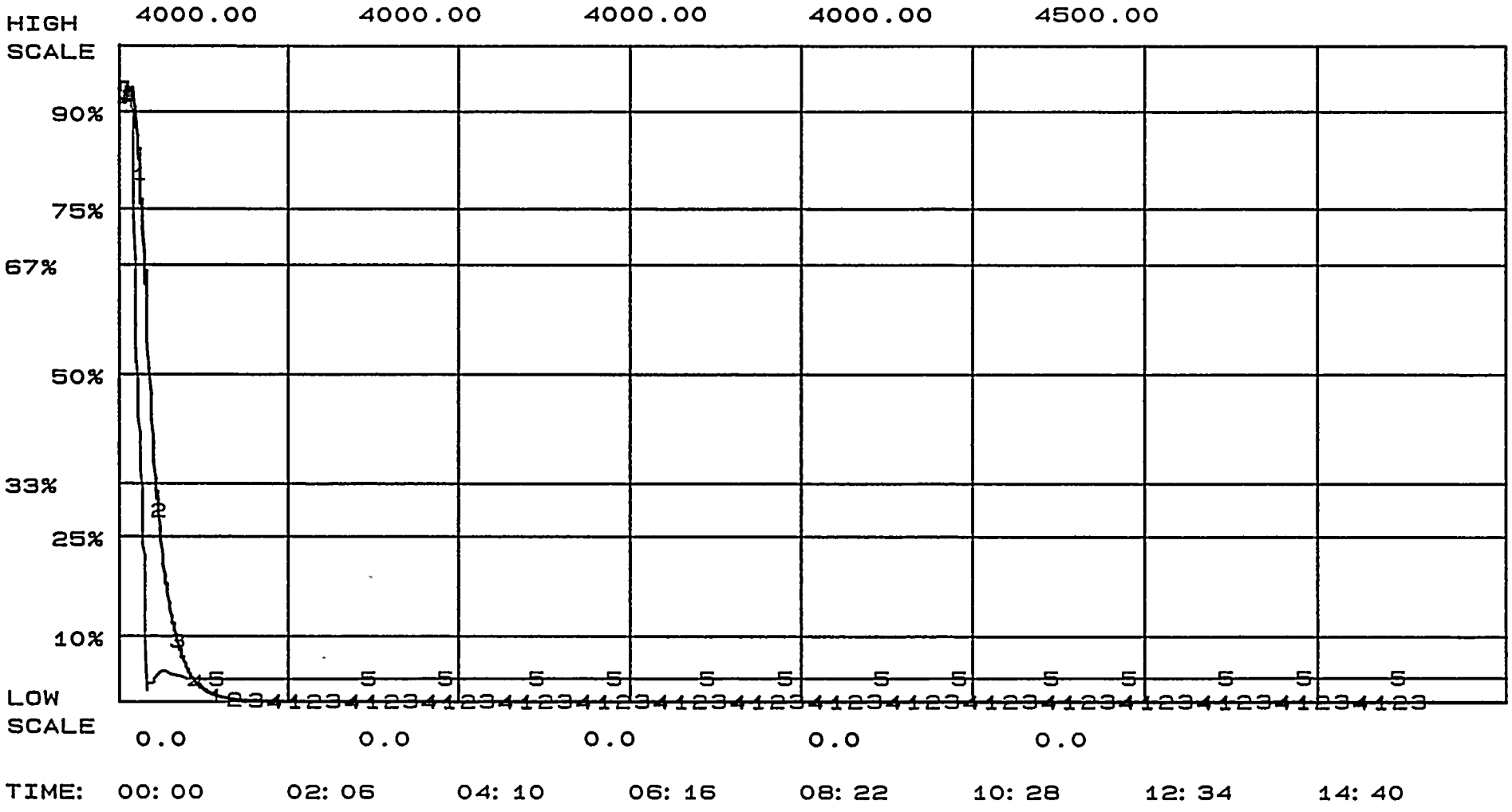
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR 1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR 2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	STEAM GENERATOR 3 STEAM FLOW	KBH	STOP 00: 17: 00
4	F1054	STEAM GENERATOR 4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



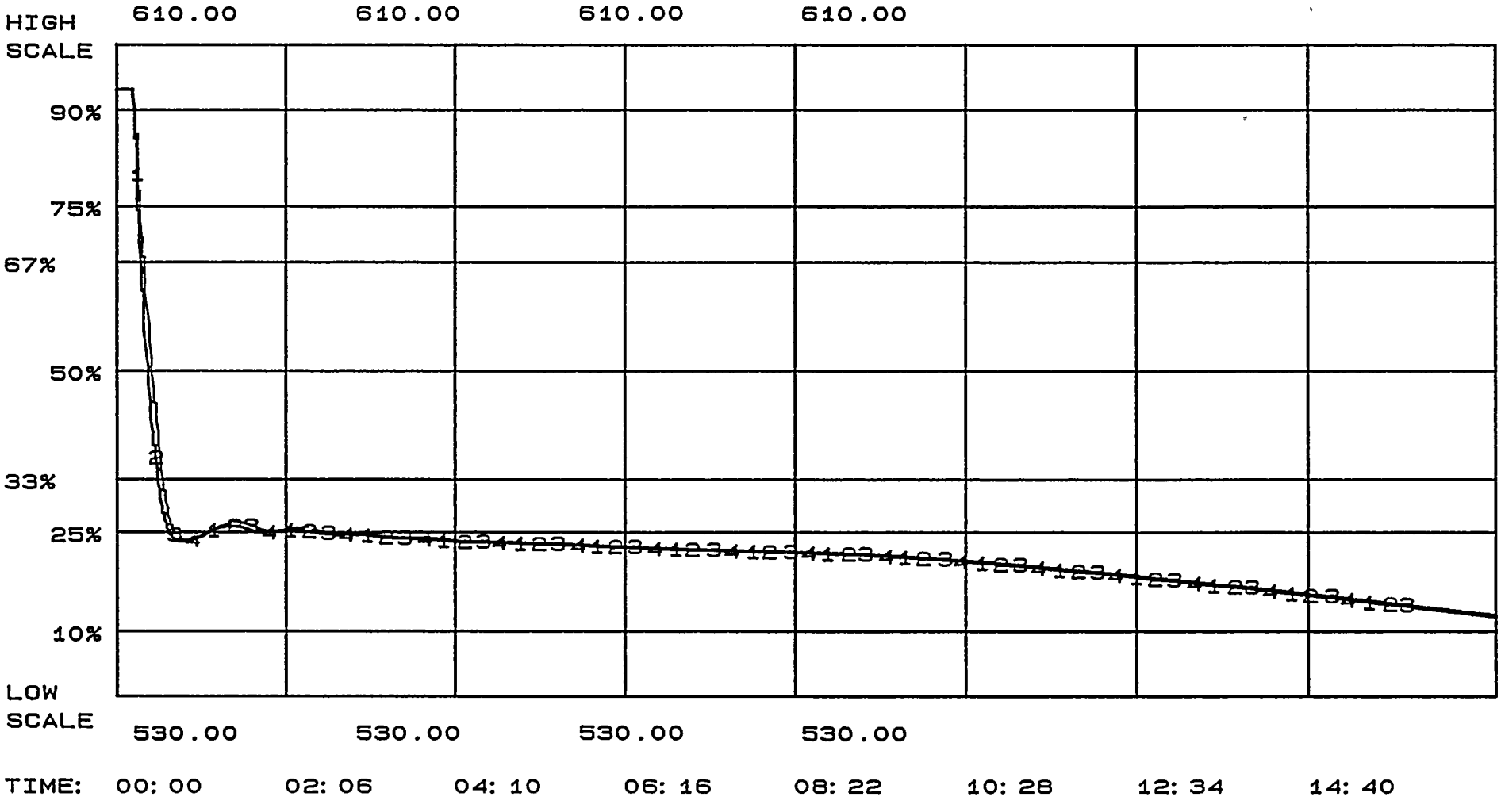
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR 1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR 2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR 3 FEED FLOW	KBH	STOP 00: 17: 00
4	F1203	STEAM GENERATOR 4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AFW INC)	LBS_S	
6				



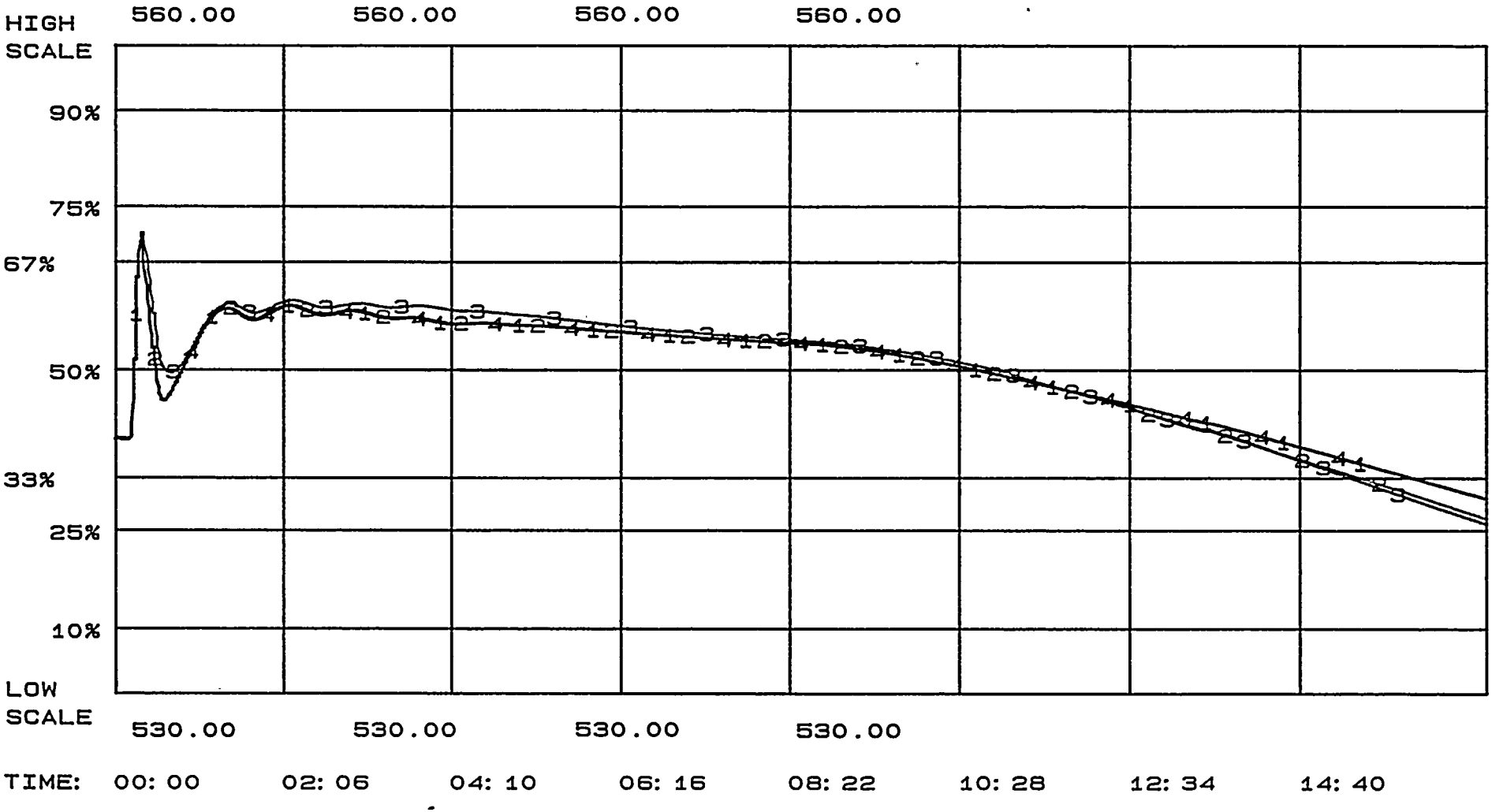
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 HOT LEG TEMPERATURE	DEG_F	TIME
2	T1112	LOOP 2 HOT LEG TEMPERATURE	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 HOT LEG TEMPERATURE	DEG_F	STOP 00: 17: 00
4	T1114	LOOP 4 HOT LEG TEMPERATURE	DEG_F	
5				
6				



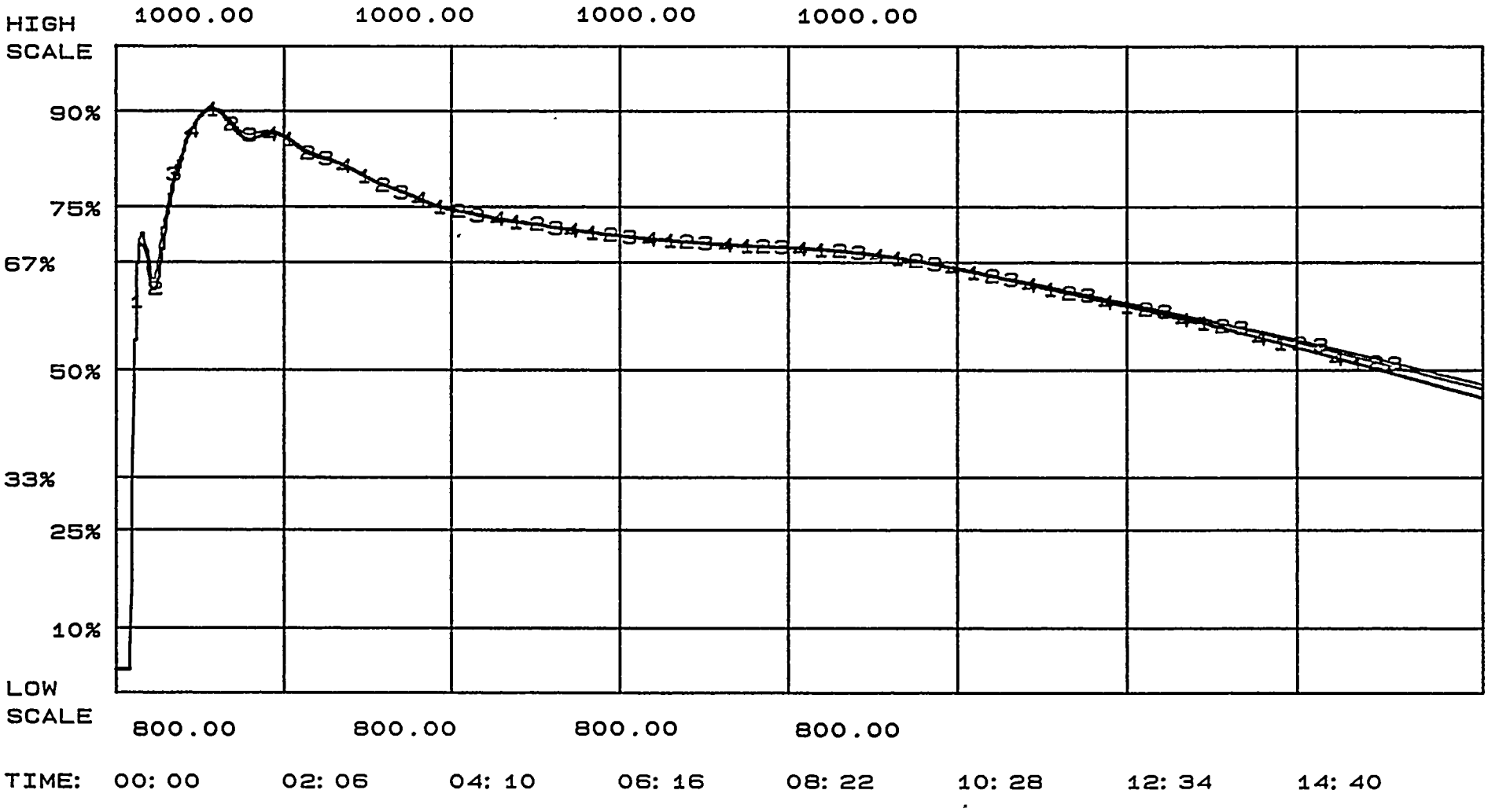
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 TCOLD	DEG_F	TIME
2	T1116	LOOP 2 TCOLD	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 TCOLD	DEG_F	STOP 00: 17: 00
4	T1118	LOOP 4 TCOLD	DEG_F	
5				
6				



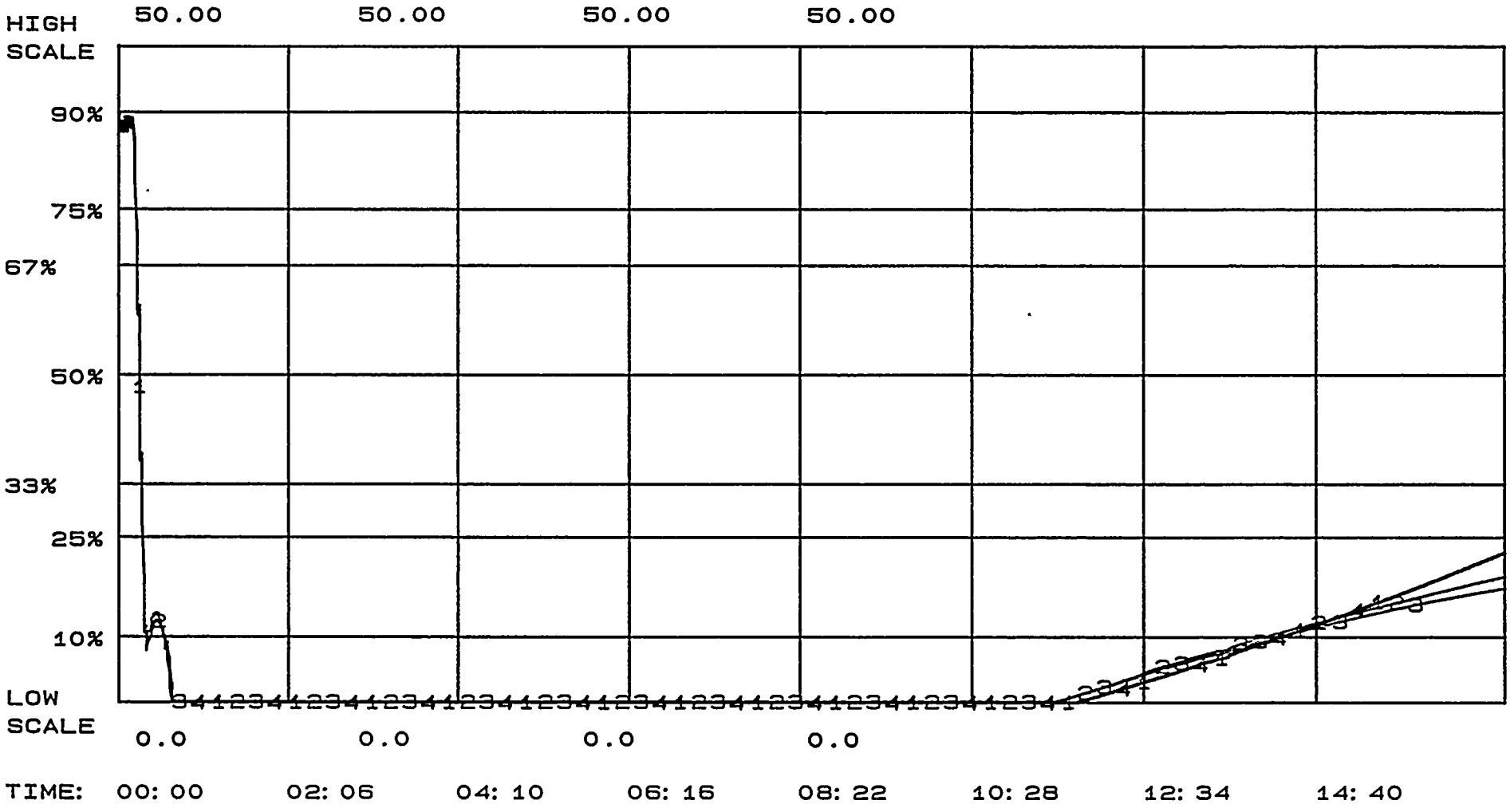
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR 1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR 2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR 3 PRESSURE	PSIG	STOP 00: 17: 00
4	P1031	STEAM GENERATOR 4 PRESSURE	PSIG	
5				
6				



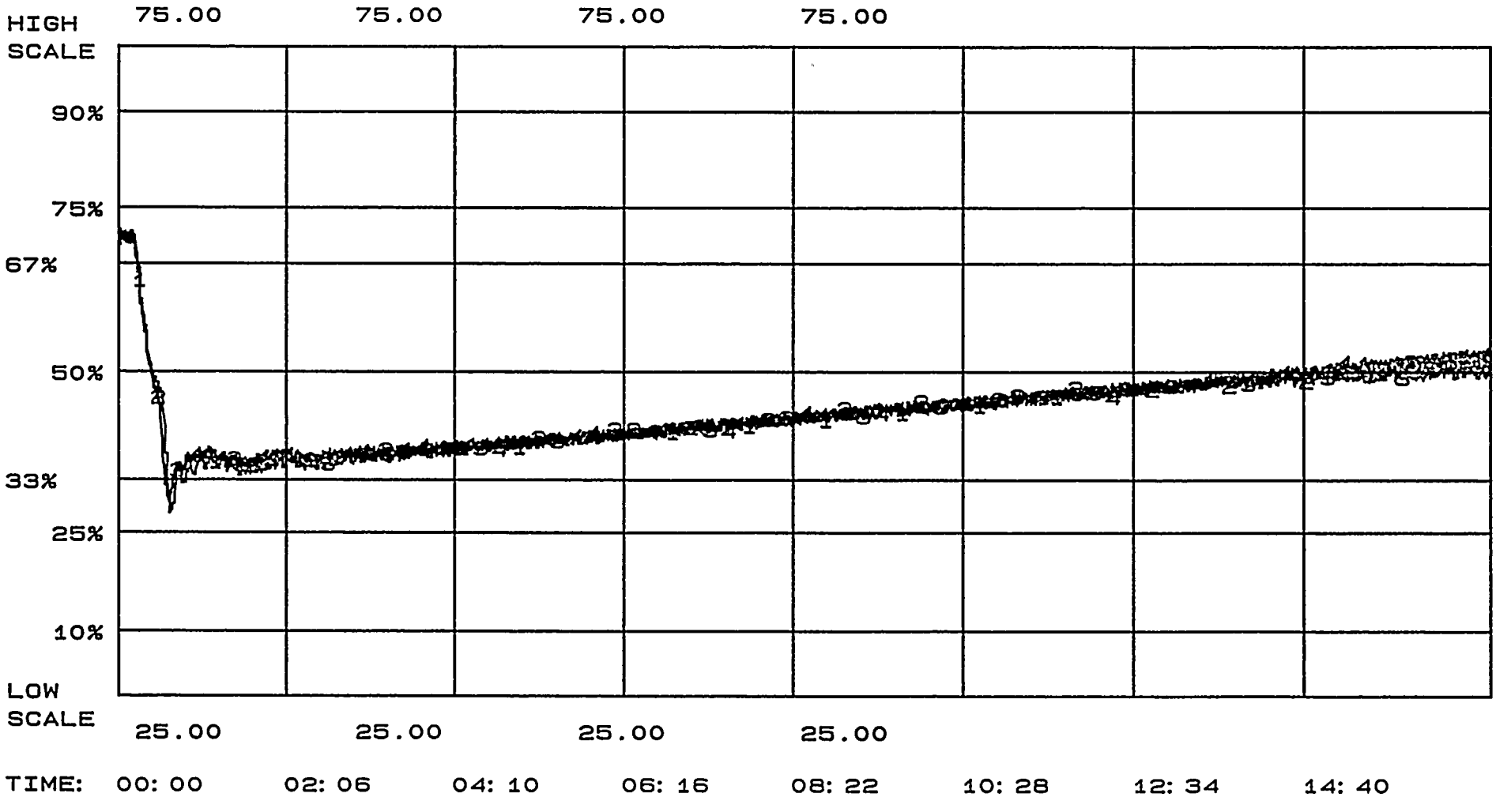
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR 1 NR LEVEL	PC	TIME
2	L1207	STEAM GENERATOR 2 NR LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GENERATOR 3 NR LEVEL	PC	STOP 00: 17: 00
4	L1213	STEAM GENERATOR 4 NR LEVEL	PC	
5				
6				



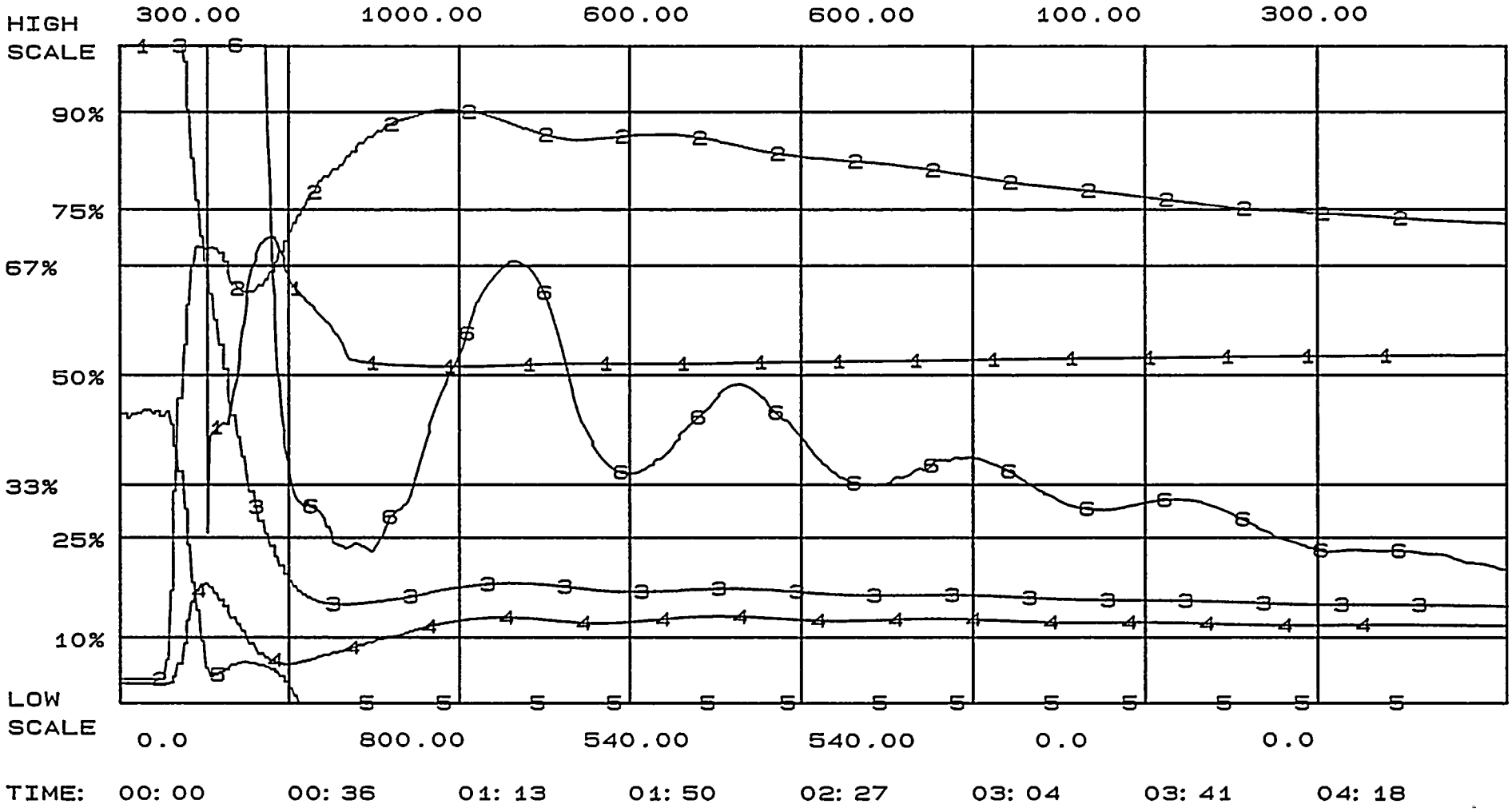
SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR 1 WR LEVEL	PC	TIME
2	L1201	STEAM GENERATOR 2 WR LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GENERATOR 3 WR LEVEL	PC	STOP 00: 17: 00
4	L1203	STEAM GENERATOR 4 WR LEVEL	PC	
5				
6				



SIMULTANEOUS TRIP OF ALL FEED PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	FWFTOTAL	TOTAL FEED WATER FLOW (AFW INC)	LBS_S	TIME
2	P1022	#1 S/G PRESSURE	PSIG	START 00: 00: 00
3	T1111	RCS LOOP 1 THOT	DEG_F	STOP 00: 04: 59
4	T1115	RCS LOOP 1 TCOLD	DEG_F	
5	L1204	#1 S/G N.R. LEVEL	PC	
6	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a simultaneous closure of all main steam isolation valves per ANSI 3.5 - B2.2.

2) Ensure that the simulator's steam generator safety and power operated relief valves (PORV) function properly to limit steam generator pressure and that steam generator PORVs in conjunction with the auxiliary feedwater system control RCS average temperature.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Steam generator safeties and PORVs limit steam generator pressure.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

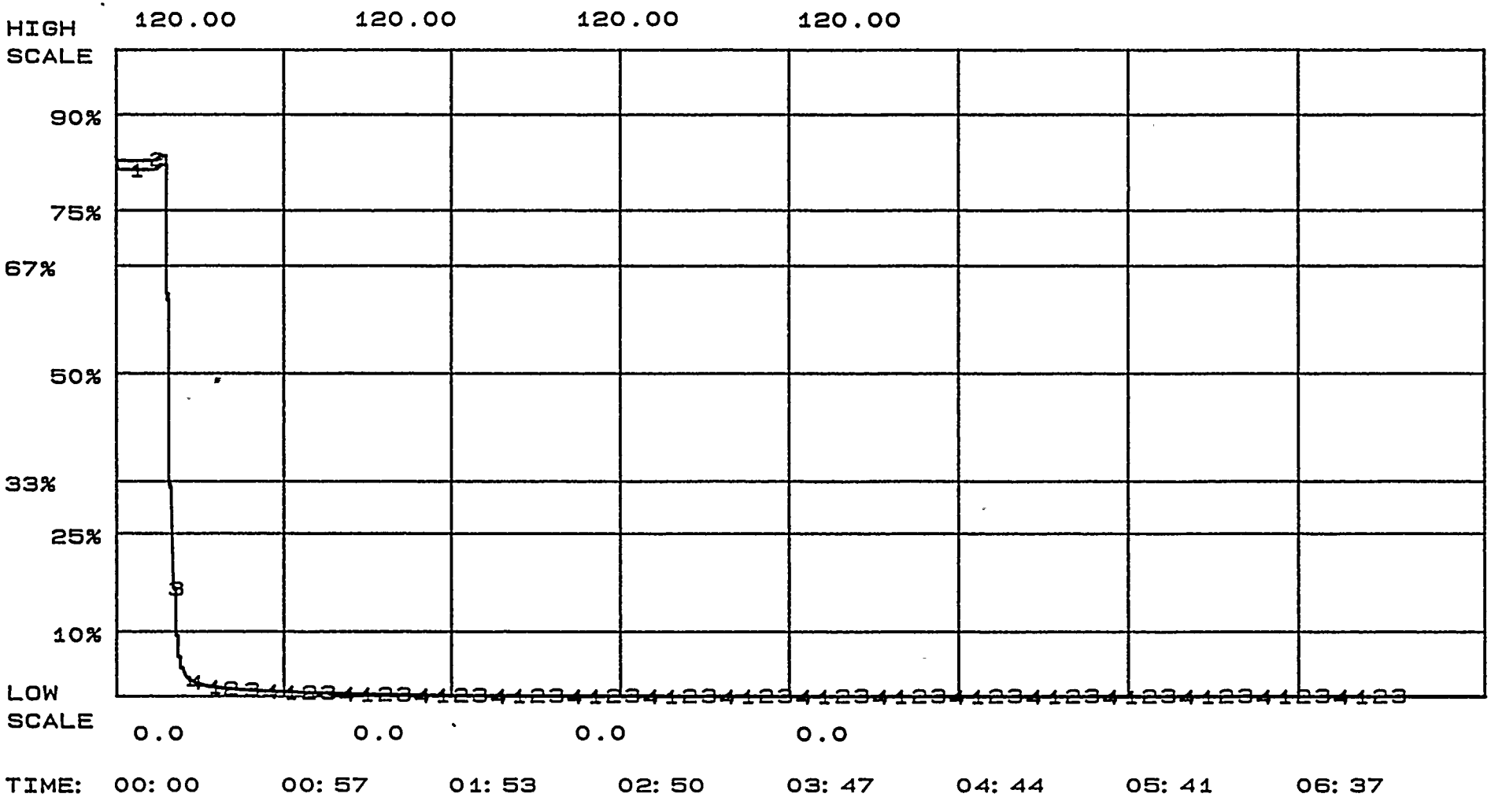
VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

The team did note that Steam Generator #24 PORV (2-MRV-243) did not appear to have operated. The team ran the test on the simulator and determined that the lack of response of 2-MRV-243 was attributable to the setpoint dial (operator controlled) being slightly out of position. The team concluded that the response was correct for the condition.

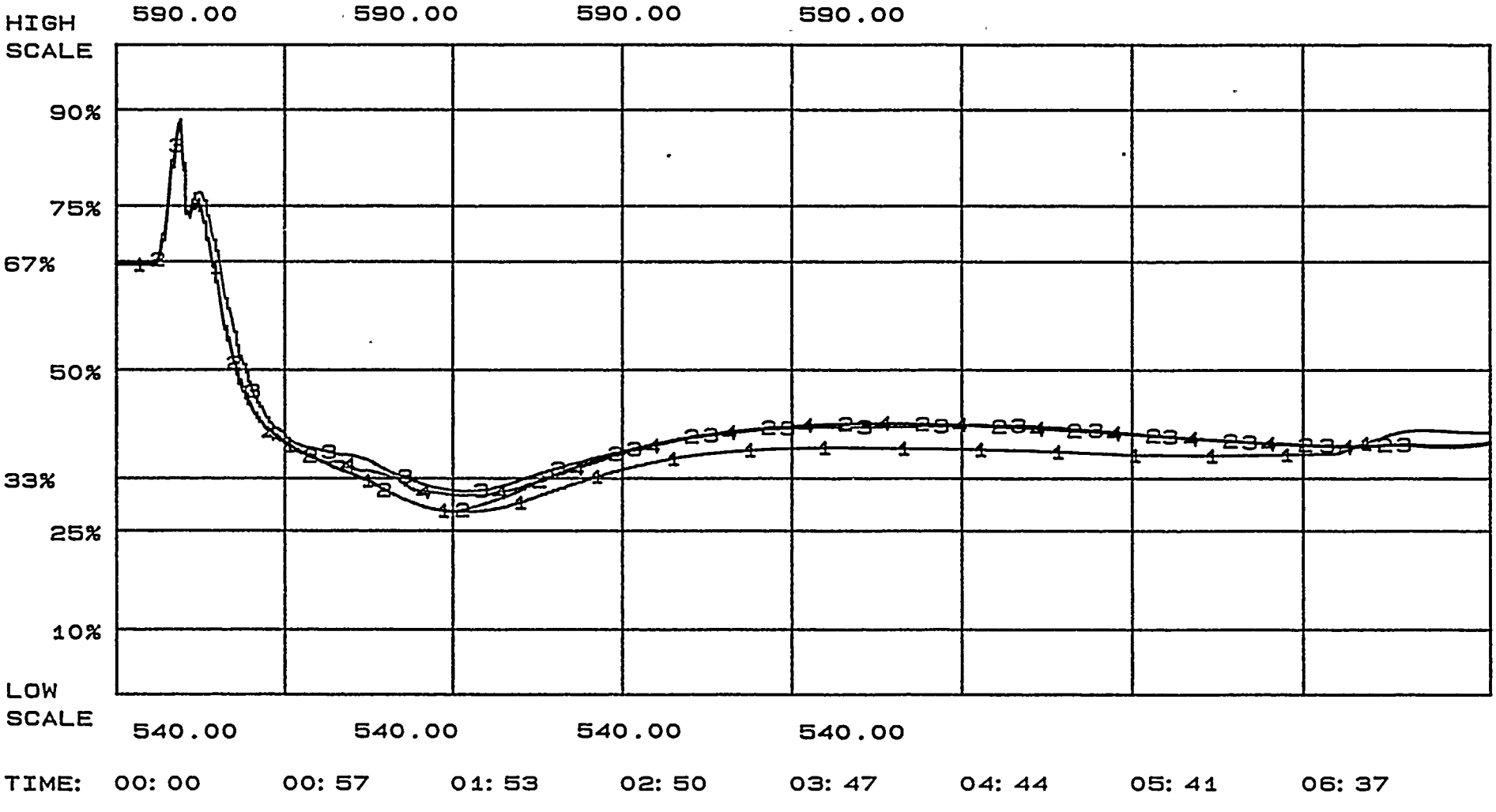
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	N41 REACTOR POWER	PC	TIME
2	N1013	N42 REACTOR POWER	PC	START 00: 00: 00
3	N1014	N43 REACTOR POWER	PC	STOP 00: 07: 40
4	N1015	N44 REACTOR POWER	PC	
5				
6				



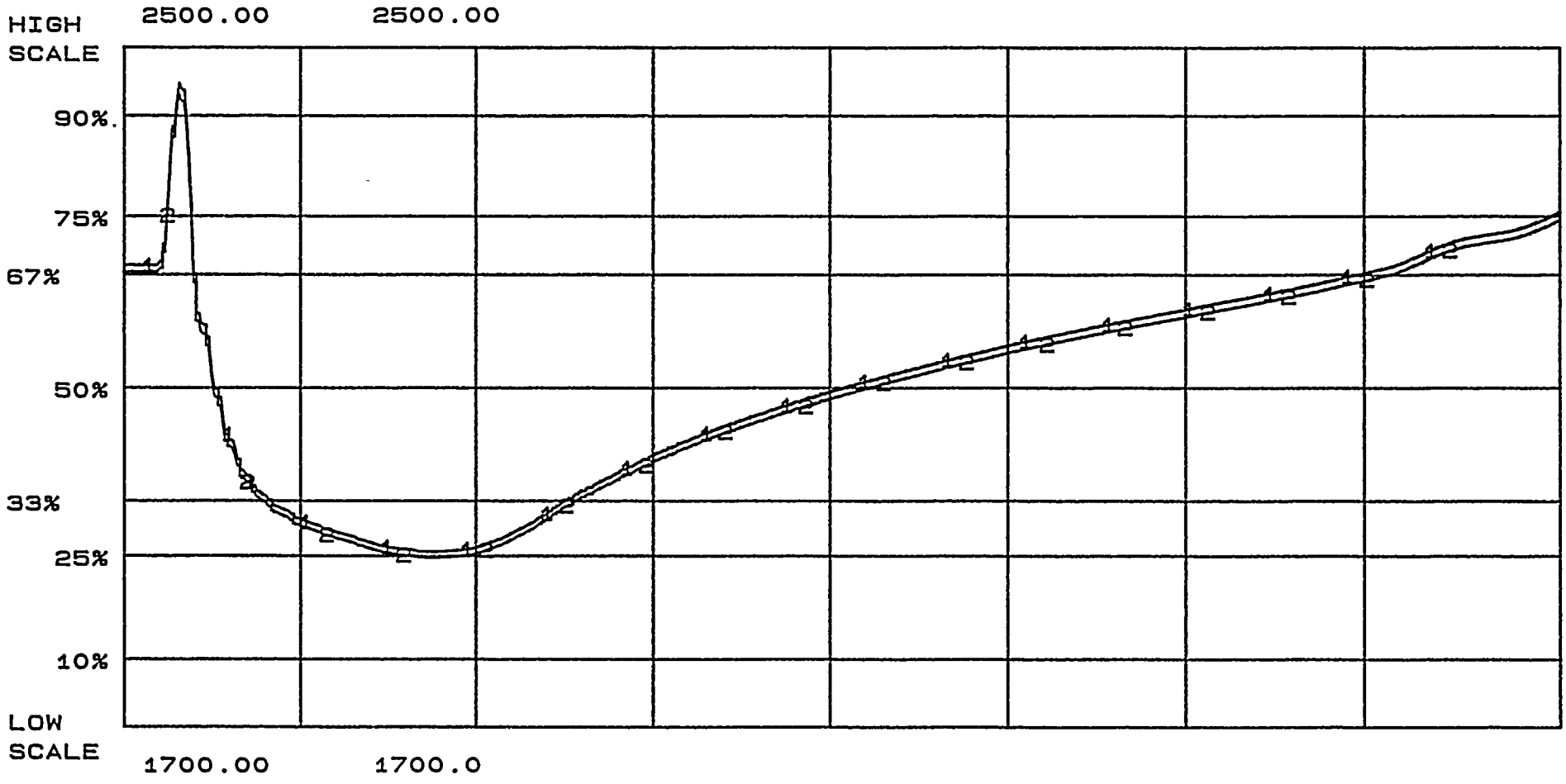
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 RCS TAVE	DEG_F	TIME
2	T1102	LOOP 2 RCS TAVE	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 RCS TAVE	DEG_F	STOP 00: 07: 40
4	T1104	LOOP 4 RCS TAVE	DEG_F	
5				
6				



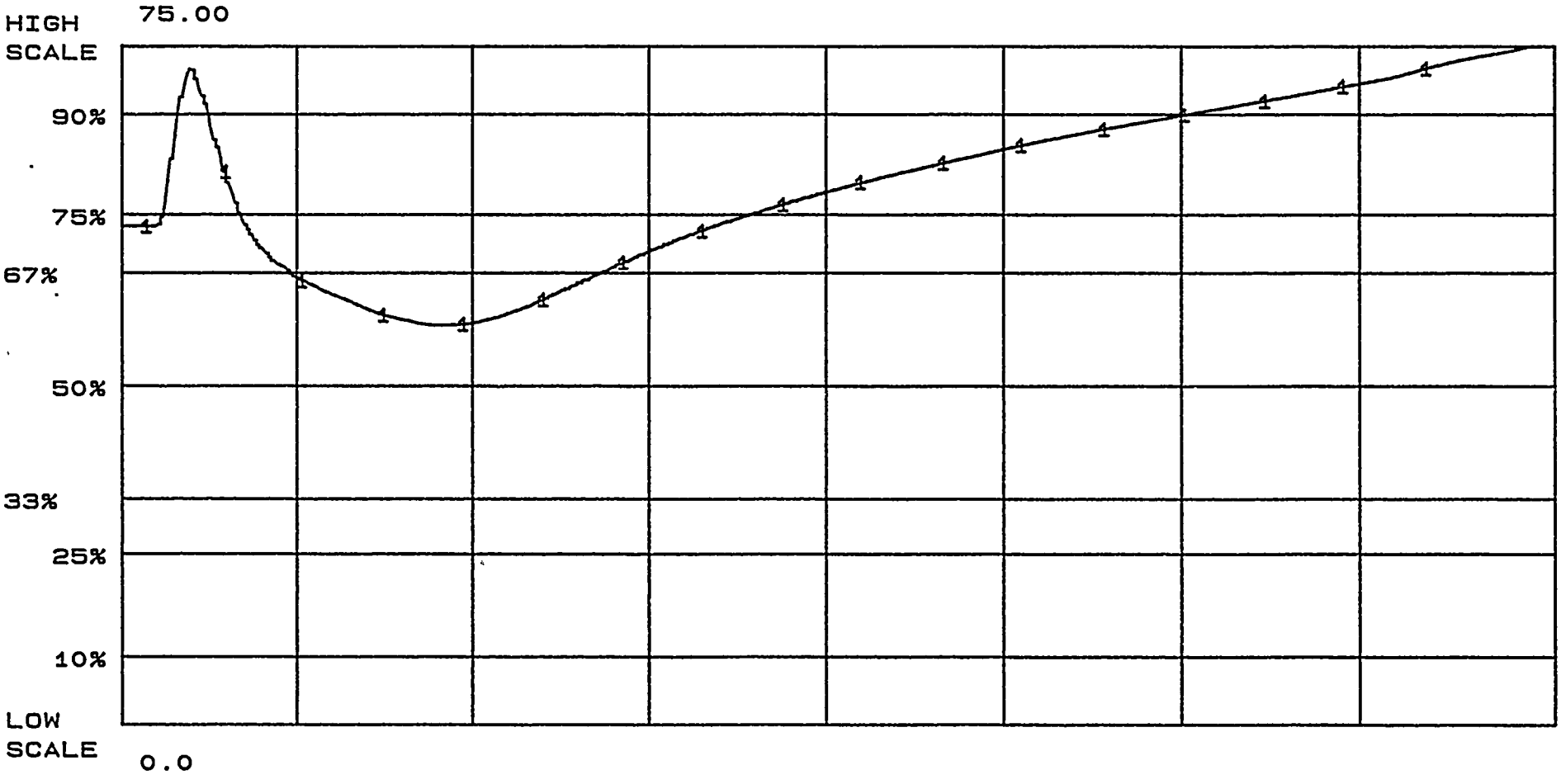
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 07: 40
4				
5				
6				



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

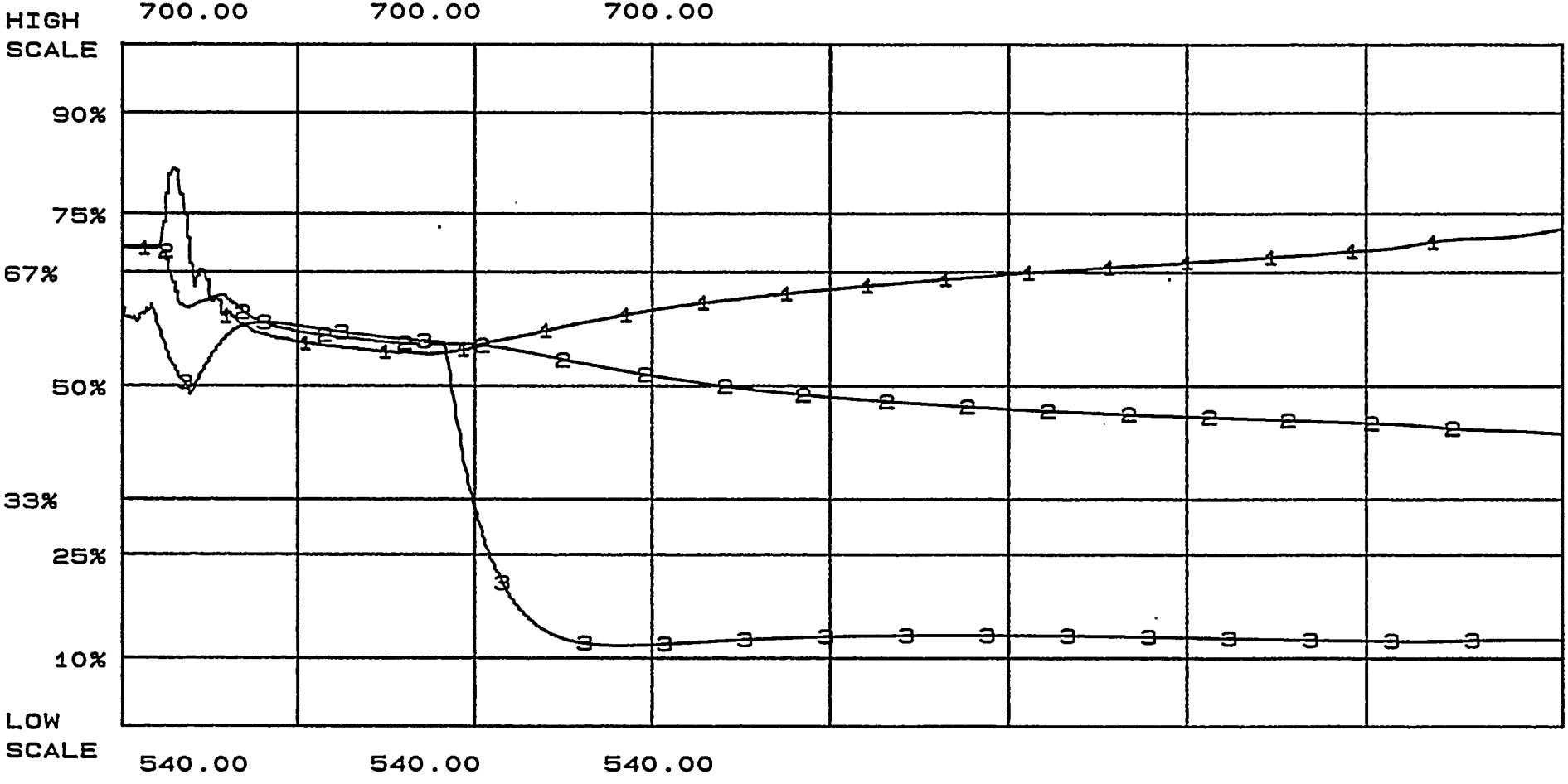
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 07: 40
4				
5				
6				



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

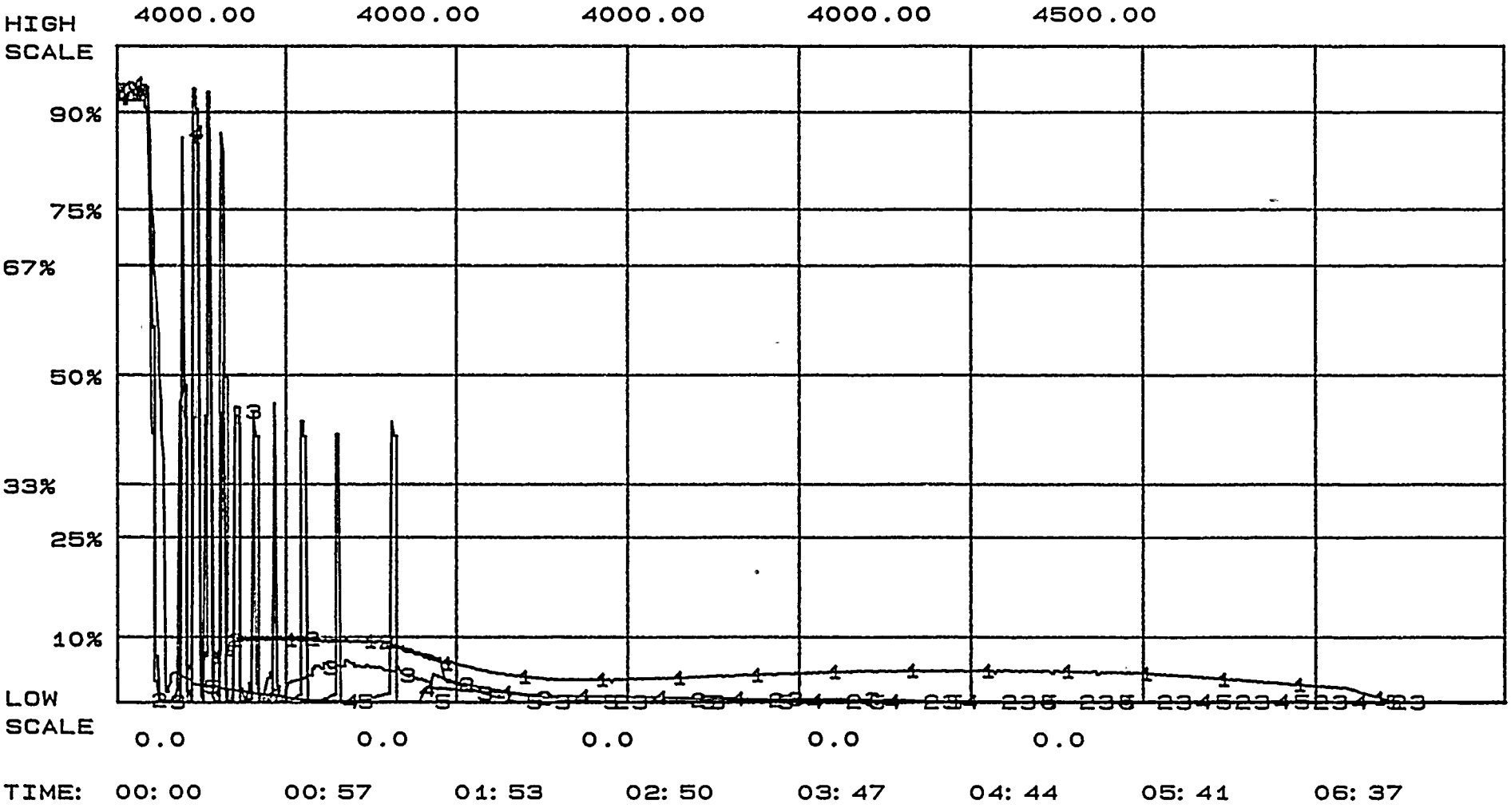
#	POINT ID	DESCRIPTION	UNITS
1	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F
2	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F
4			
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 07: 40



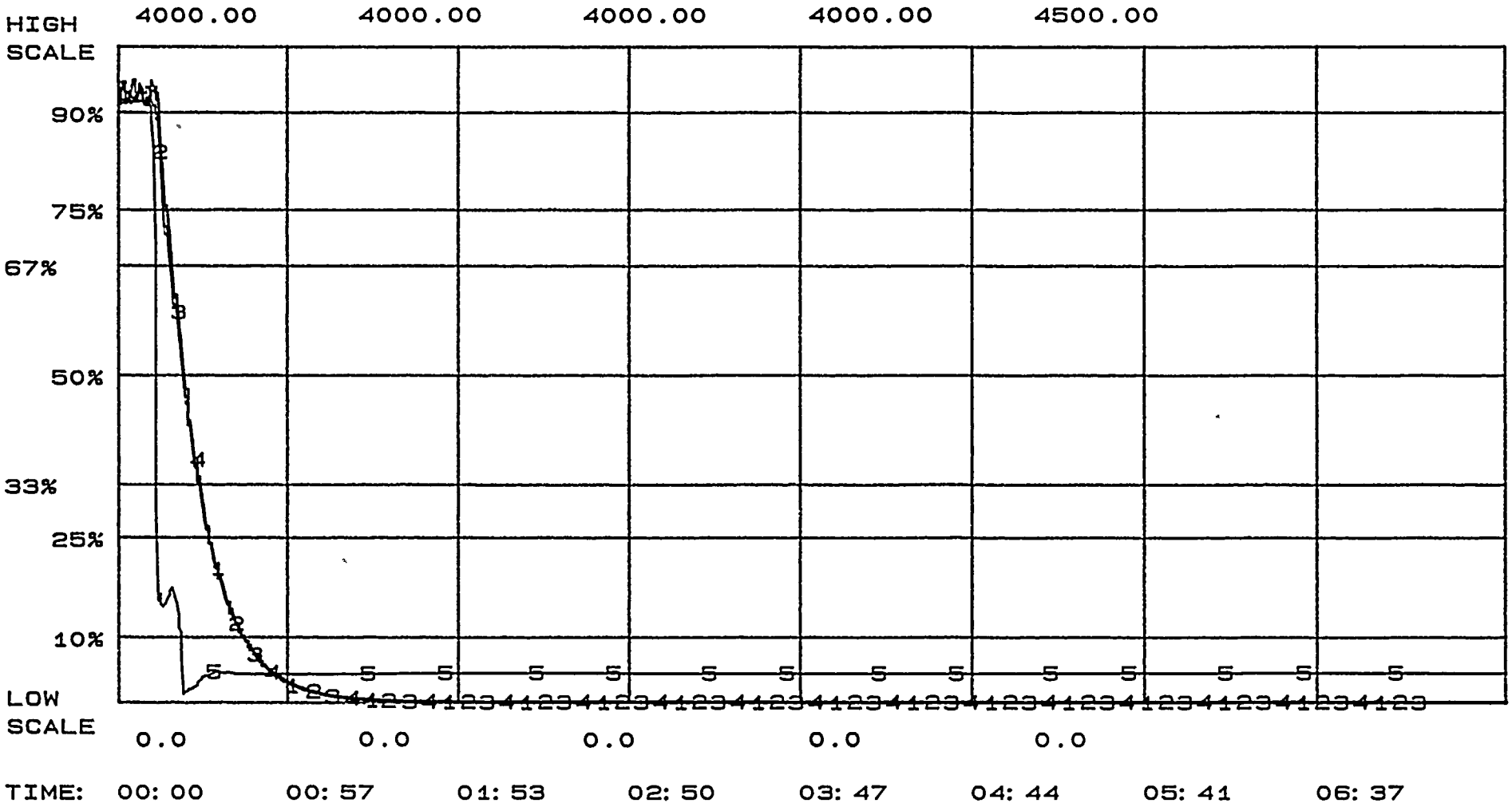
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 00: 07: 40
4	F1054	STEAM FLOW LOOP 4	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



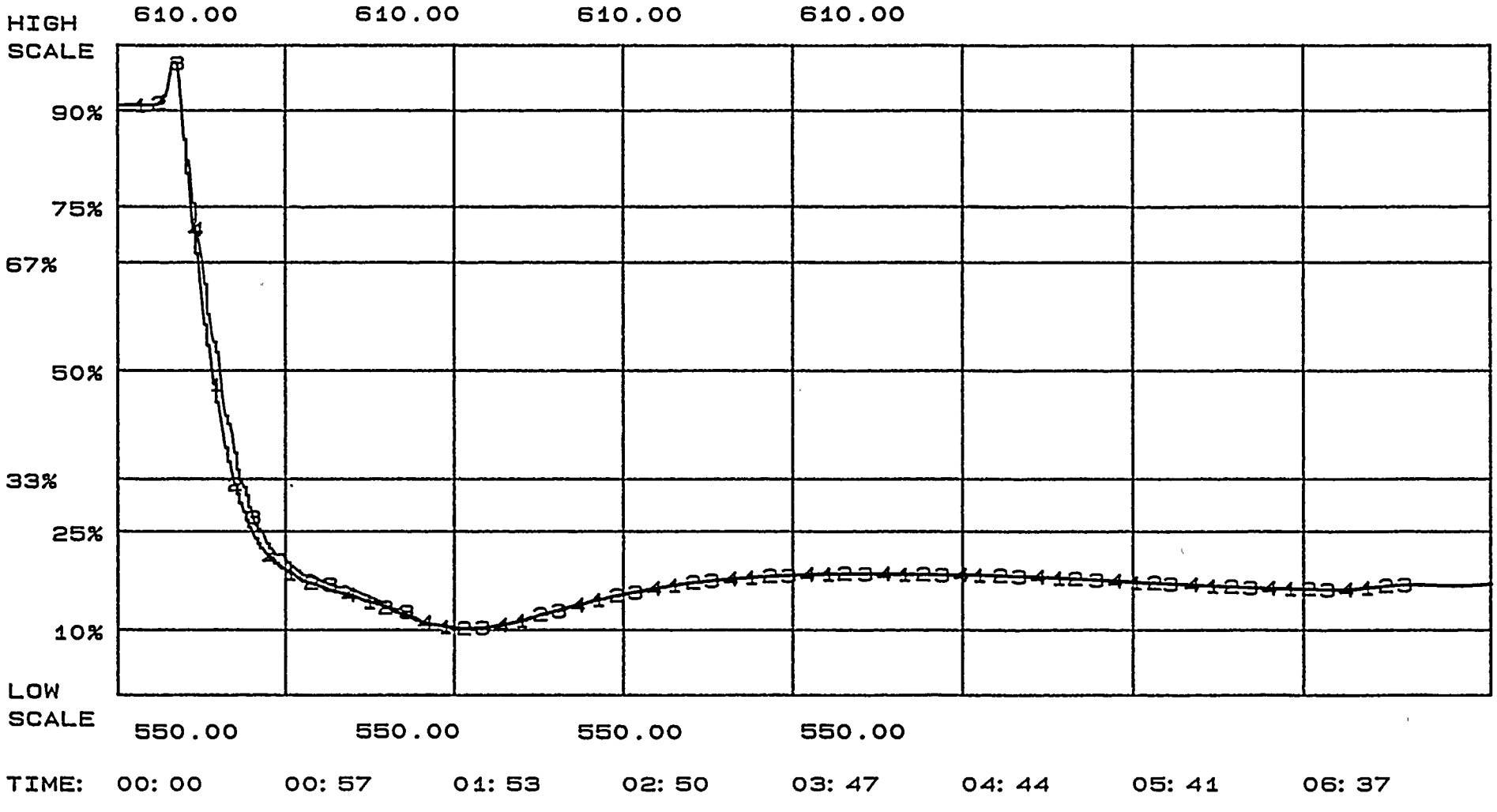
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR 1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR 2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR 3 FEED FLOW	KBH	STOP 00: 07: 40
4	F1203	STEAM GENERATOR 4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AUX INC)	LBS_S	
6				



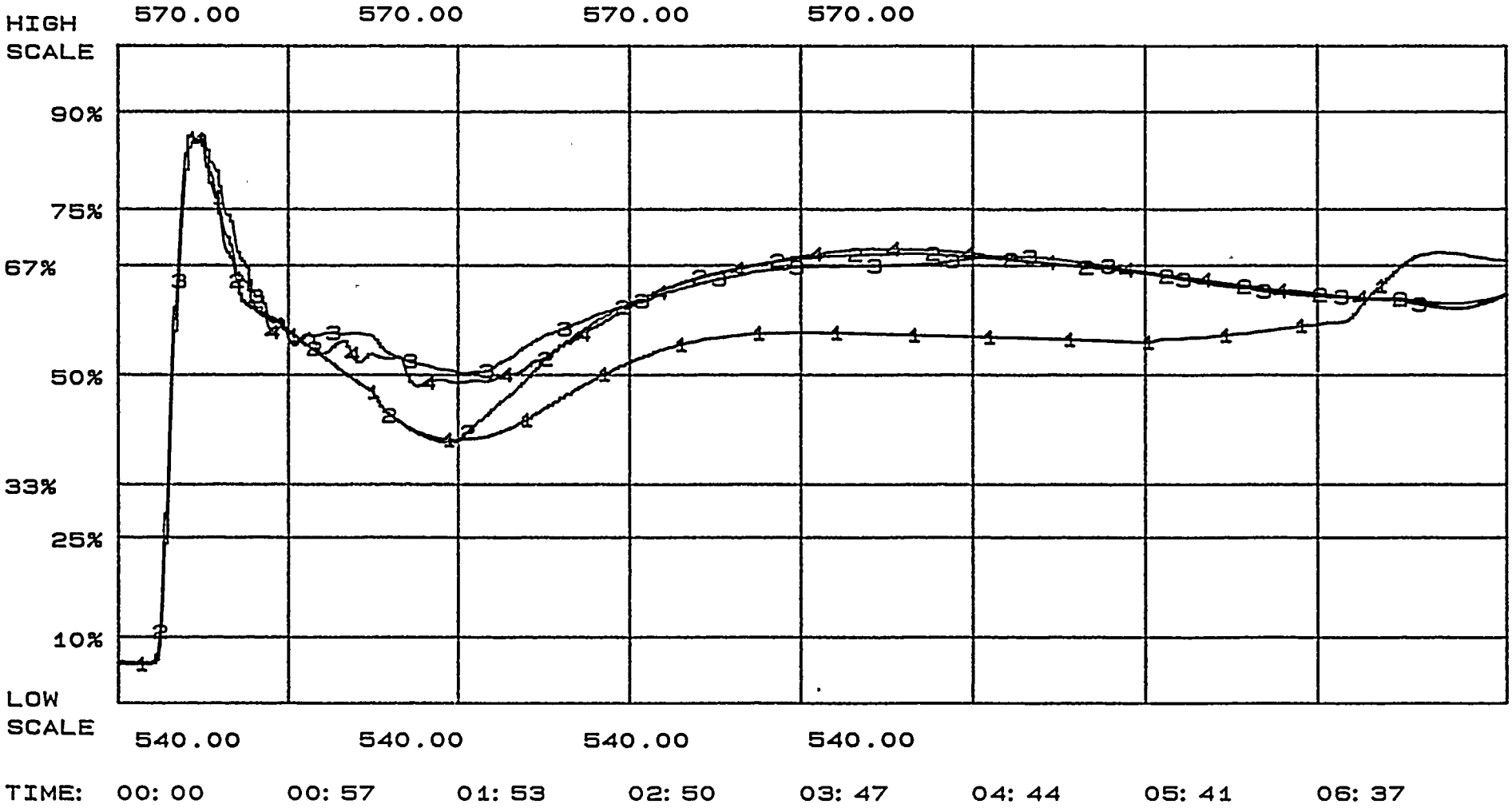
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	THOT LOOP 1	DEG_F	TIME
2	T1112	THOT LOOP 2	DEG_F	START 00: 00: 00
3	T1113	THOT LOOP 3	DEG_F	STOP 00: 07: 40
4	T1114	THOT LOOP 4	DEG_F	
5				
6				



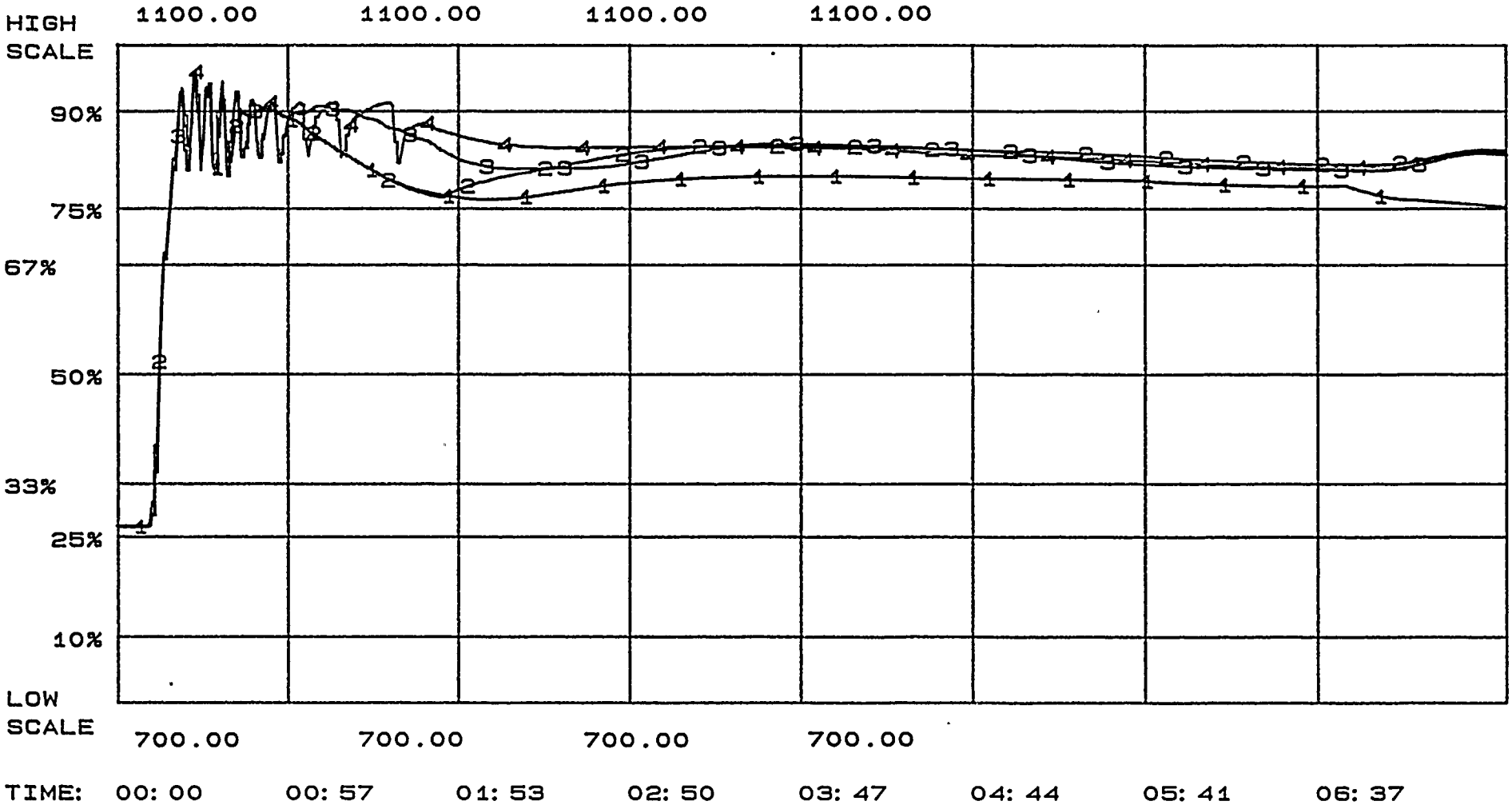
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 TCOLD	DEG_F	TIME
2	T1116	LOOP 2 TCOLD	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 TCOLD	DEG_F	STOP 00: 07: 40
4	T1118	LOOP 4 TCOLD	DEG_F	
5				
6				



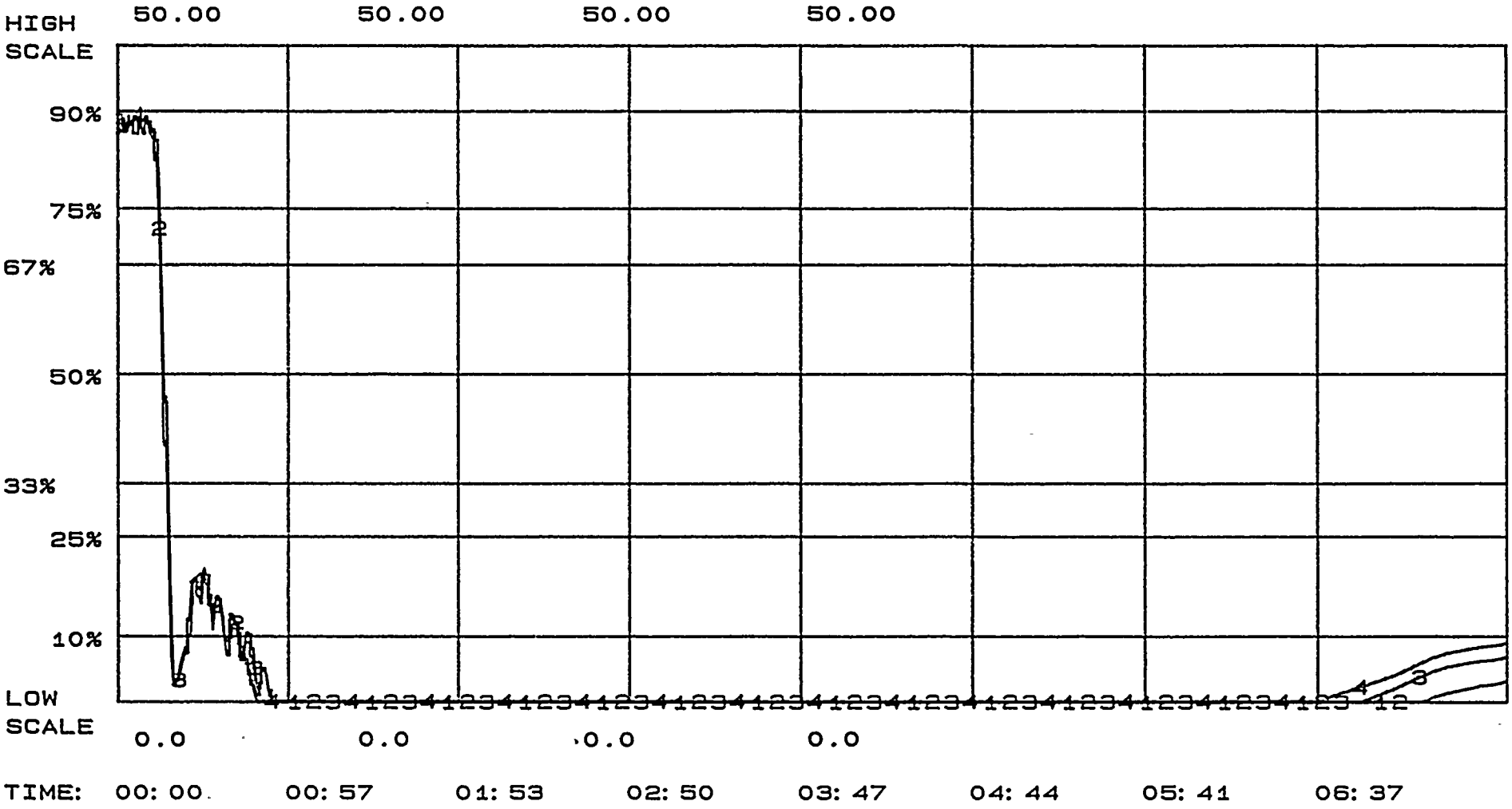
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR 1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR 2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR 3 PRESSURE	PSIG	STOP 00: 07: 40
4	P1031	STEAM GENERATOR 4 PRESSURE	PSIG	
5				
6				



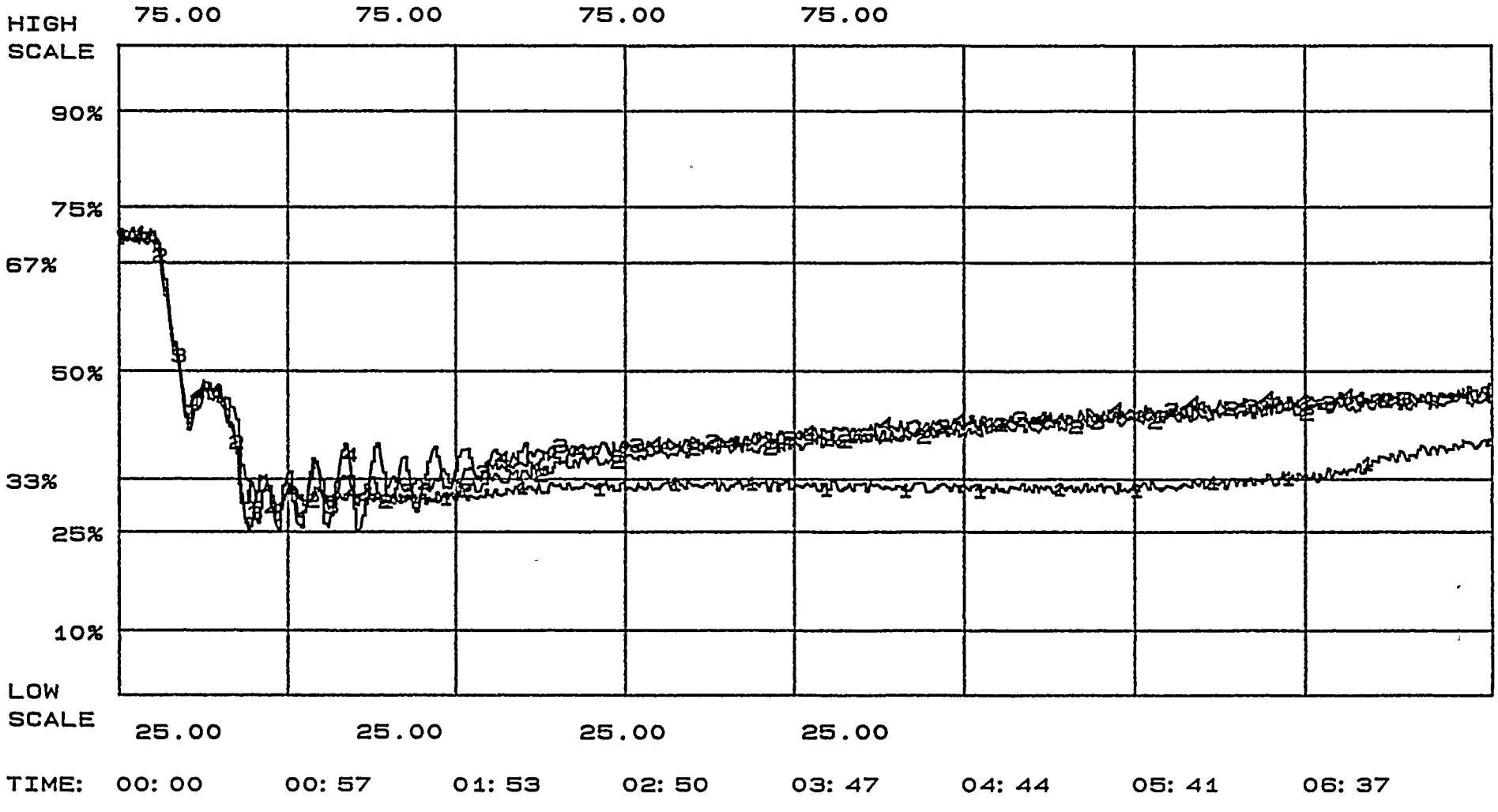
SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR 1 NR LEVEL	PC	TIME
2	L1207	STEAM GENERATOR 2 NR LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GENERATOR 3 NR LEVEL	PC	STOP 00: 07: 40
4	L1213	STEAM GENERATOR 4 NR LEVEL	PC	
5				
6				



SIMULTANEOUS CLOSURE OF ALL MAIN STEAM ISOLATION VALVES

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR 1 WR LEVEL	PC	TIME
2	L1201	STEAM GENERATOR 2 WR LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GENERATOR 3 WR LEVEL	PC	STOP 00: 07: 40
4	L1203	STEAM GENERATOR 4 WR LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a simultaneous trip of all Reactor Coolant Pumps per ANSI 3.5 - B2.2.

2) Ensure that the simulator will establish natural circulation conditions upon loss of forced Reactor Coolant System flow.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Natural Circulation conditions established as indicated by constant or decreasing RCS Hot Leg Temperatures.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted the following conditions:

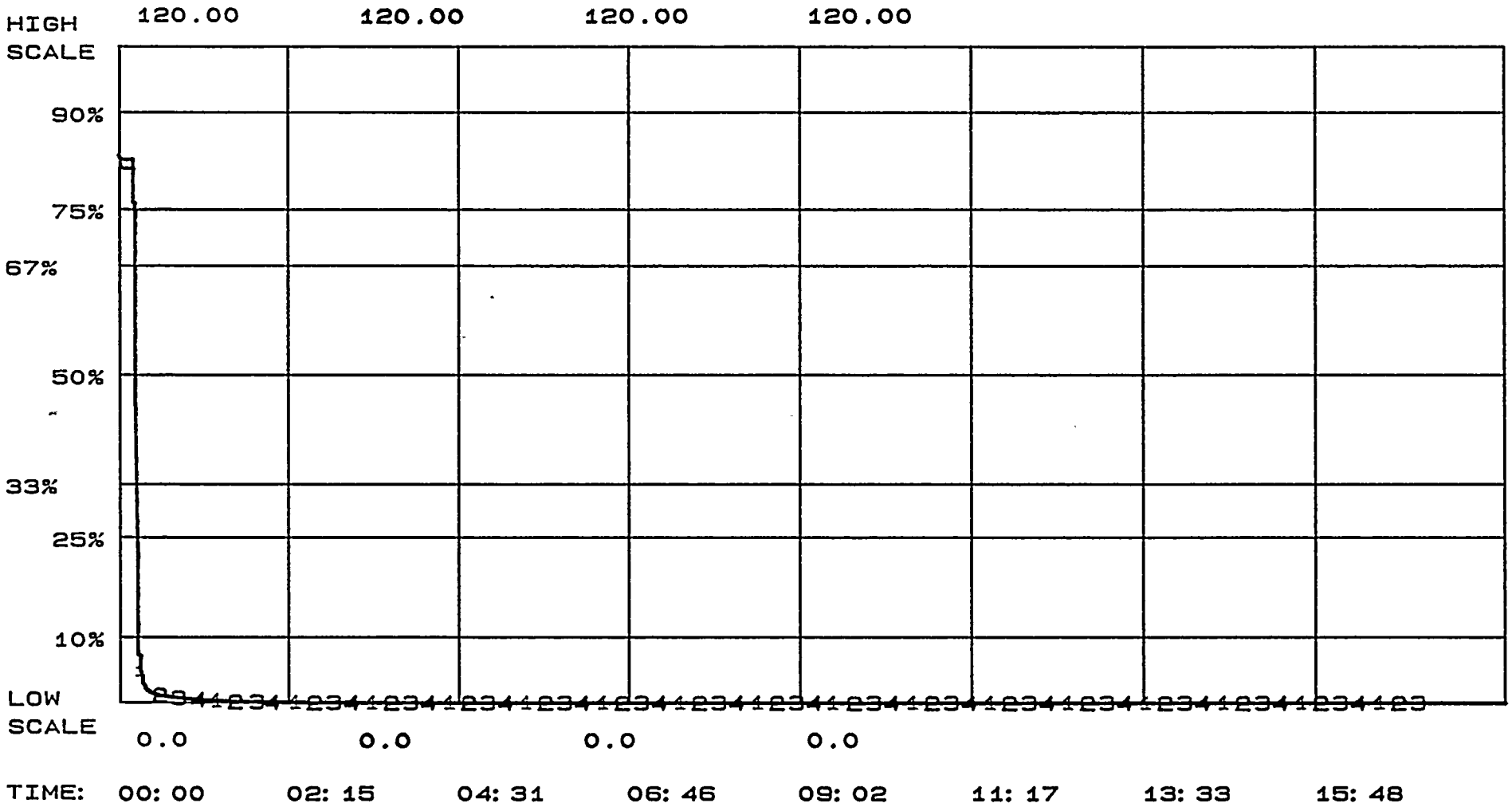
1) A Saftey Injection occurred just prior to the end of the transient. This was deemed to be an acceptable response based upon cooldown and auxiliary feedwater system flow.

2) An oscillation occurred which affected Steam Generator Wide Range/ Narrow Range Level and Steam Generator Pressure. A Discrepancy Report was written to investigate and correct the cause of the oscillation.

The team did note that Steam Generator #24 PORV (2-MRV-243) did not appear to have operated. The team ran the test on the simulator and determined that the lack of response of 2-MRV-243 was attributable to the setpoint dial (operator controlled) being slightly out of position. The team concluded that the response was correct for the condition.

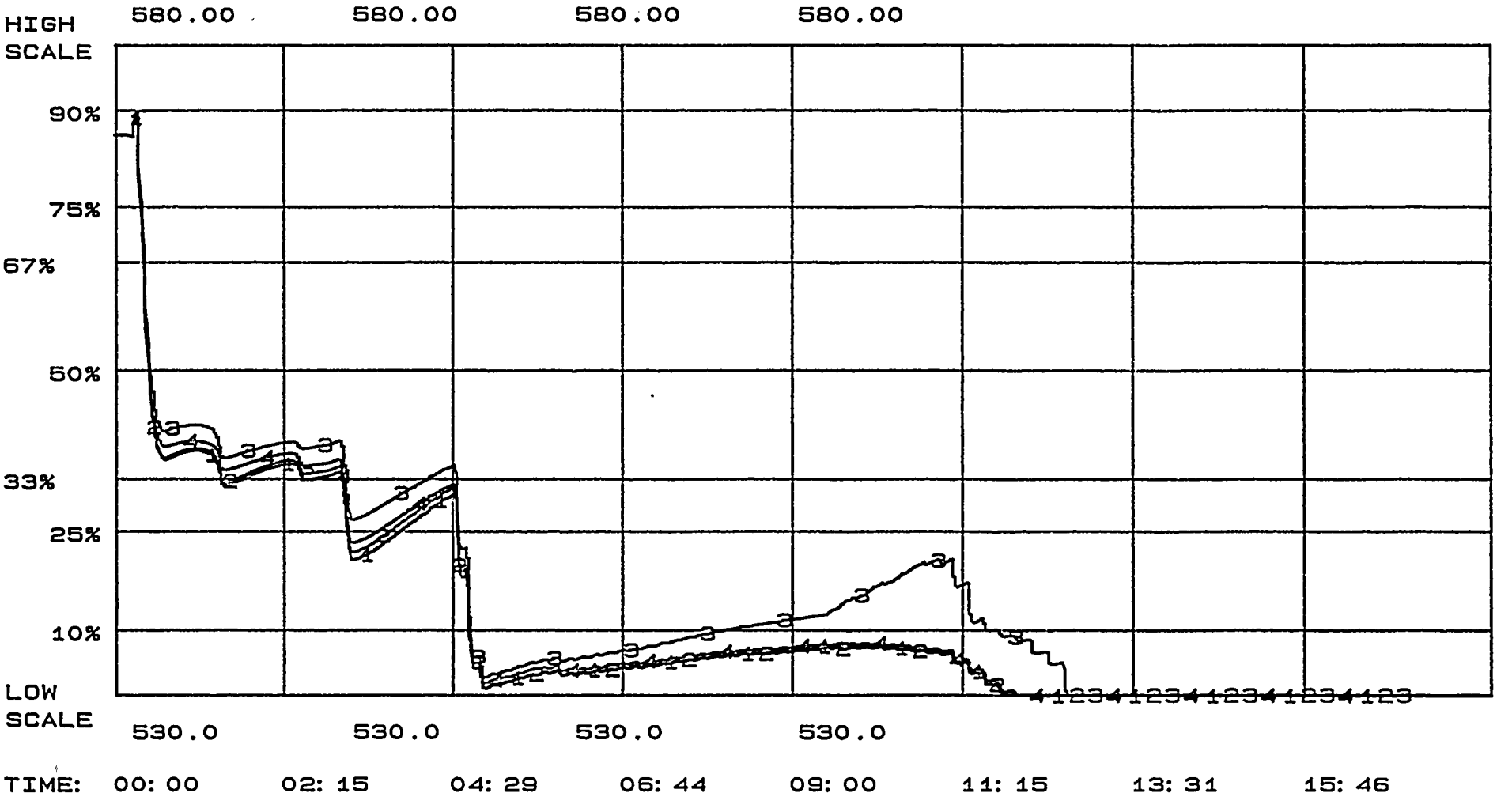
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	PWR RNG CH1 AVERAGE	PC	TIME
2	N1013	PWR RNG CH2 AVERAGE	PC	START 00: 00: 00
3	N1014	PWR RNG CH3 AVERAGE	PC	STOP 00: 18: 17
4	N1015	PWR RNG CH4 AVERAGE	PC	
5				
6				



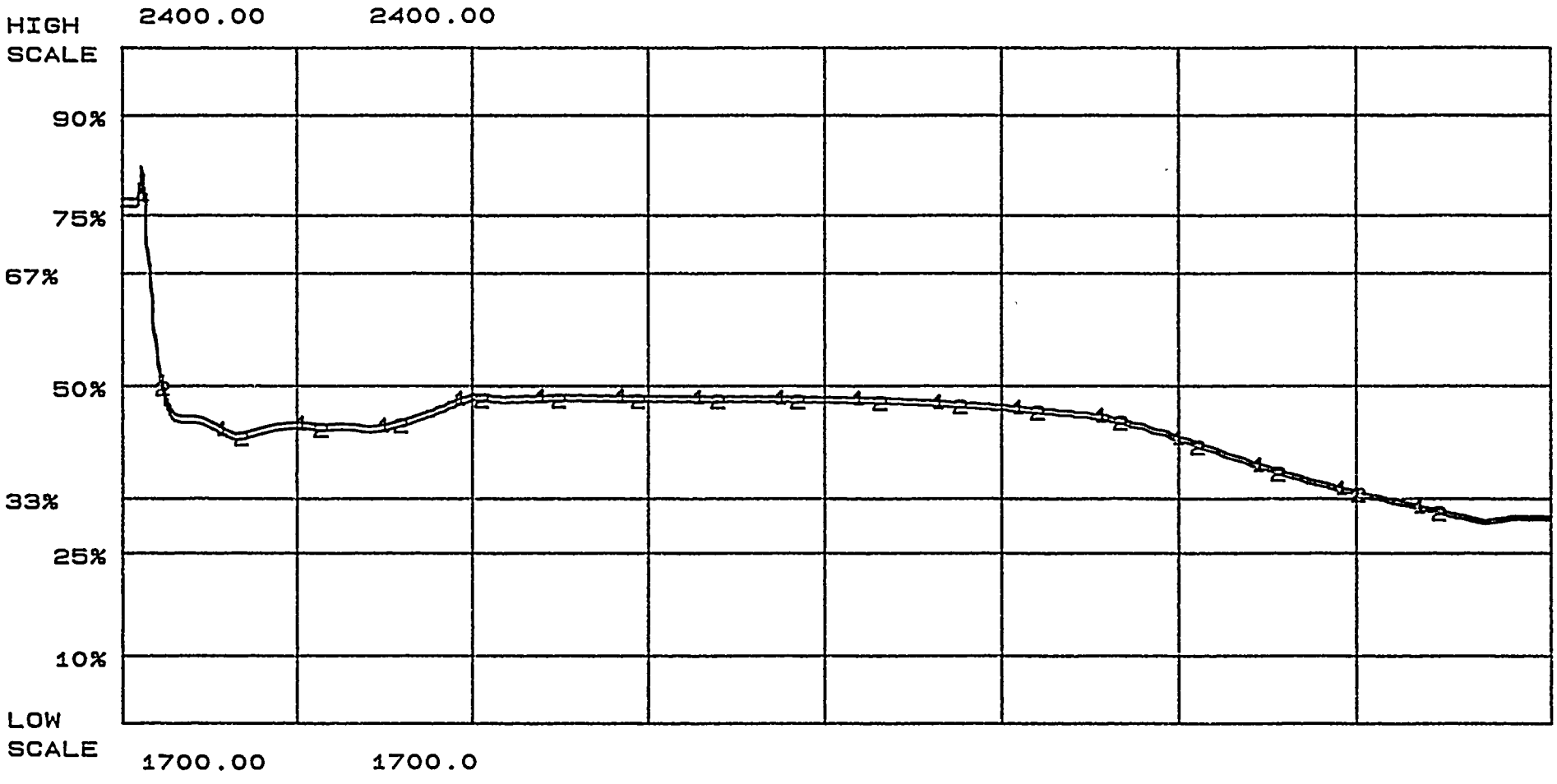
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	LOOP 1 AVG TEMP	DEG_F	TIME
2	T1102	LOOP 2 AVG TEMP	DEG_F	START 00: 00: 00
3	T1103	LOOP 3 AVG TEMP	DEG_F	STOP 00: 18: 17
4	T1104	LOOP 4 AVG TEMP	DEG_F	
5				
6				



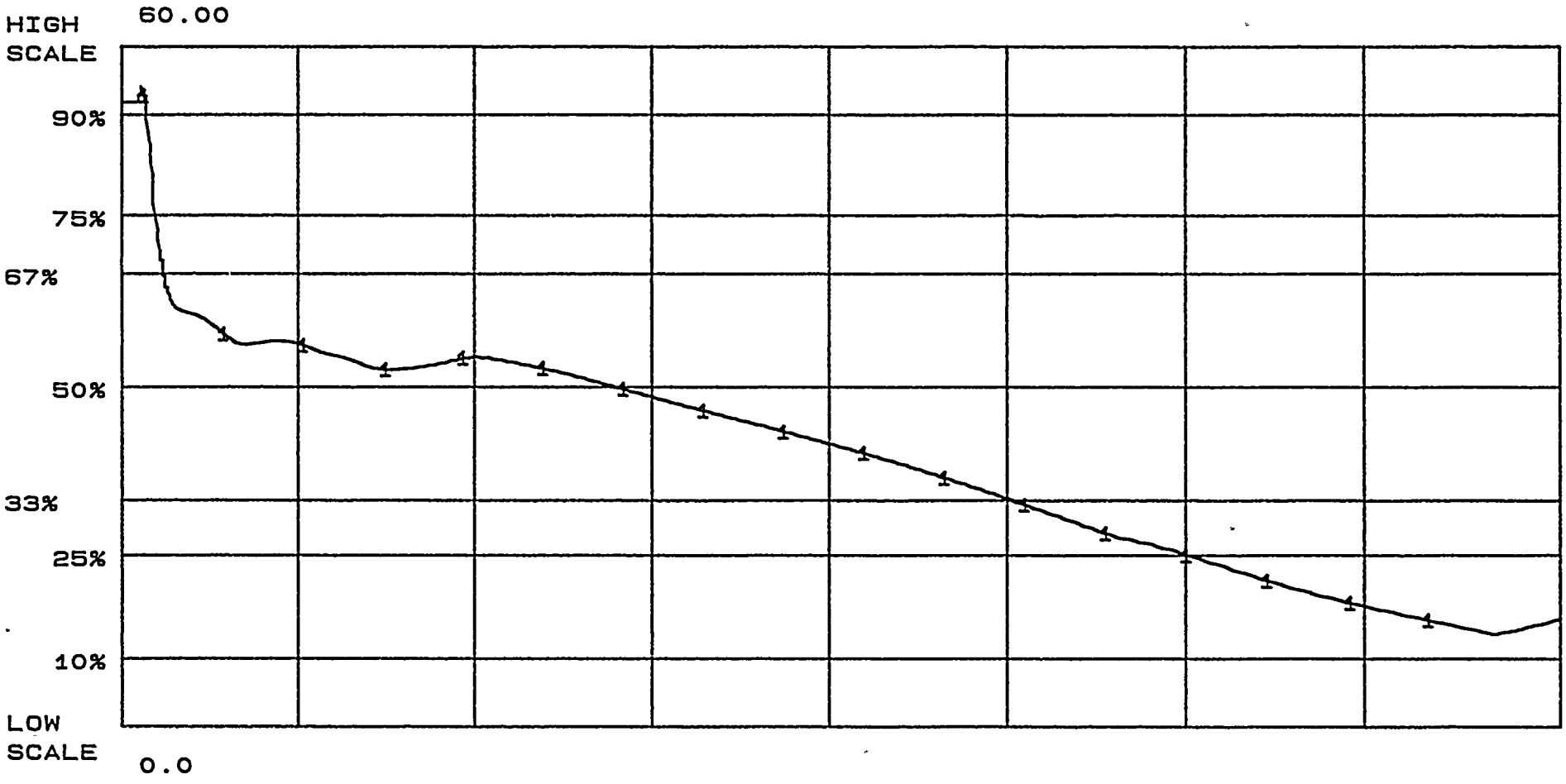
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RC WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 18: 17
4				
5				
6				



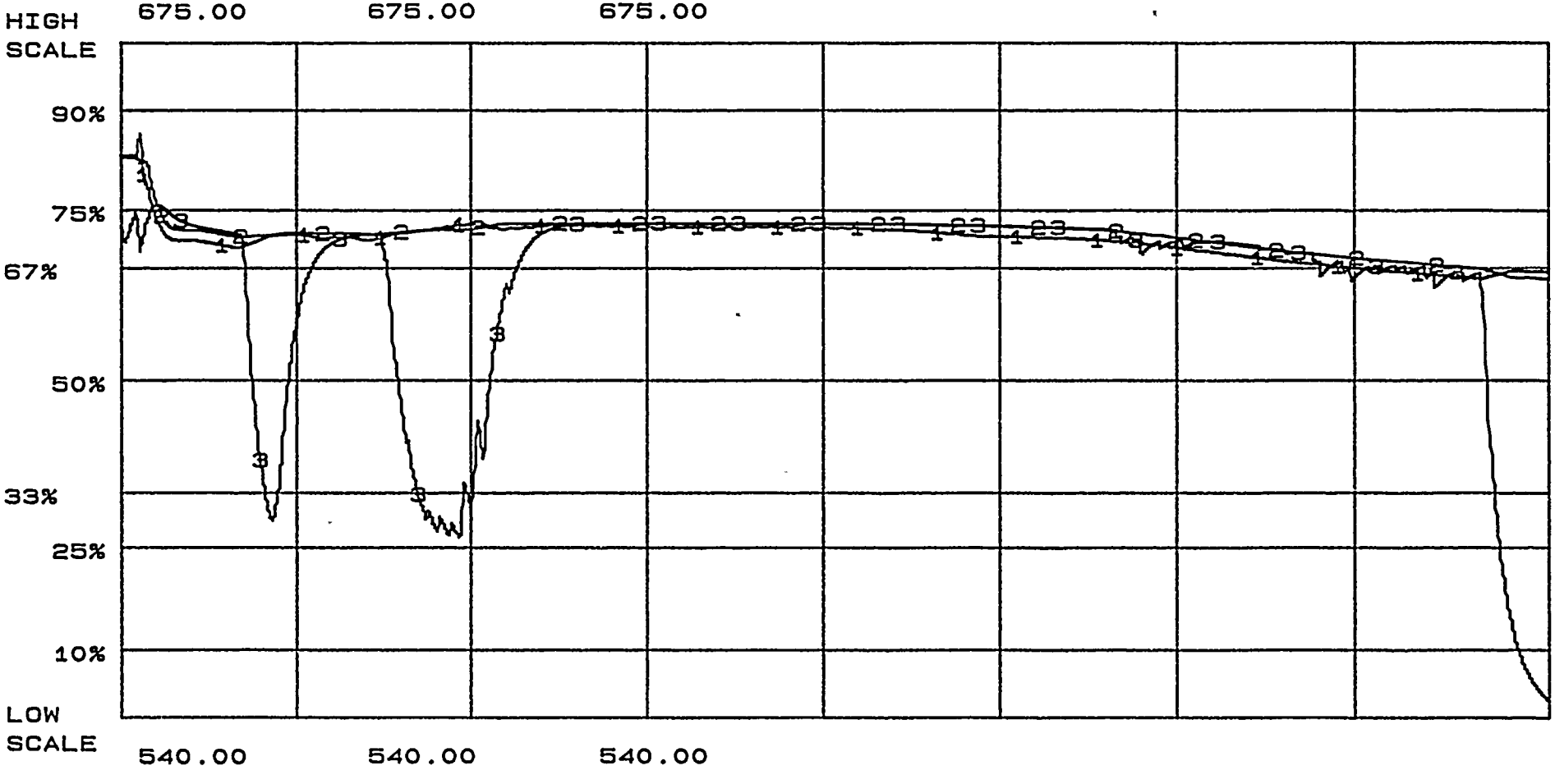
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER WATER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 18: 17
4				
5				
6				



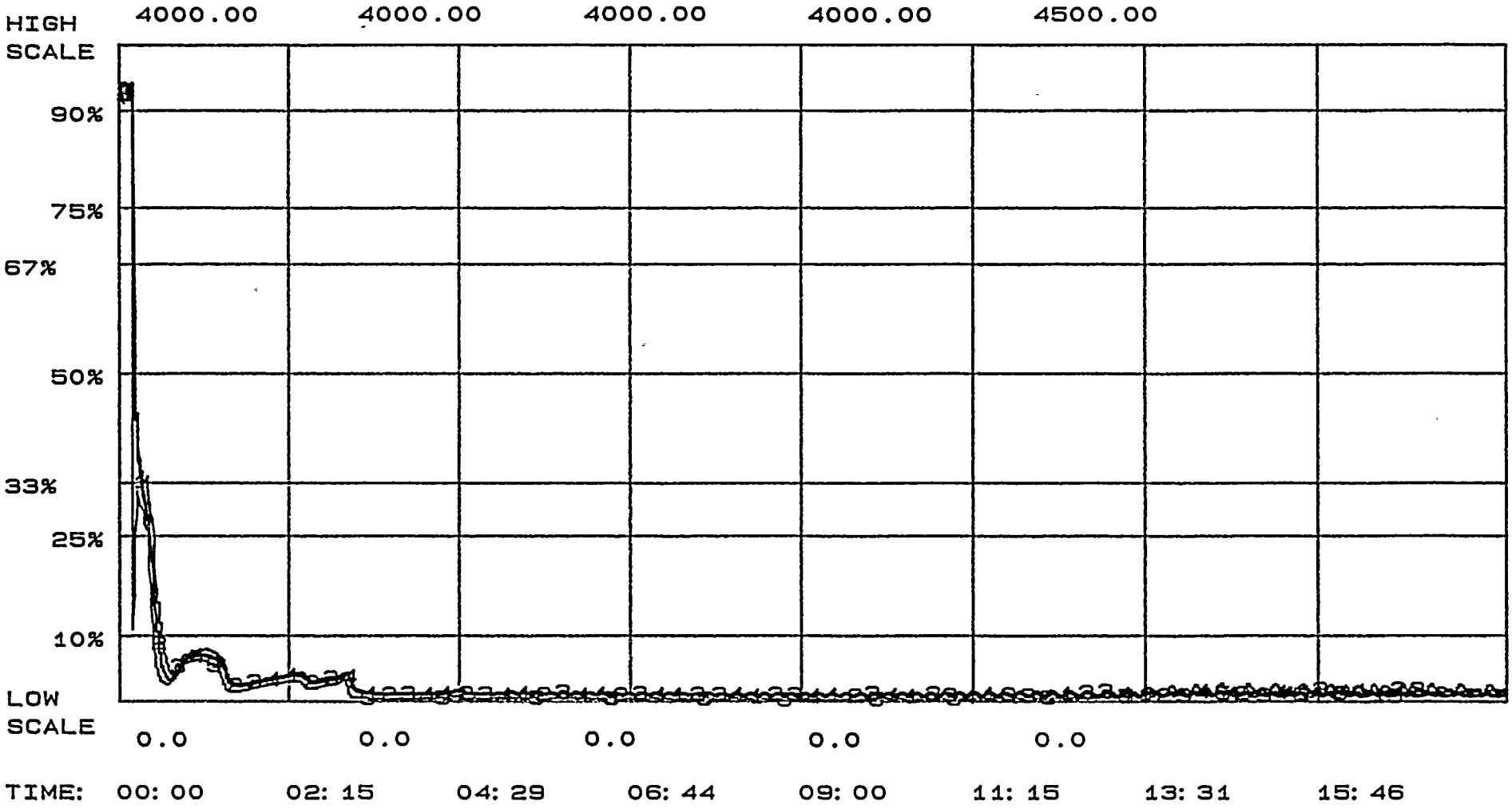
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PZR VAPOR TEMP	DEG_F	TIME
2	T1004	PZR LIQUID TEMP	DEG_F	START 00: 00: 00
3	RCTNTA253	83000 PRZ SURGE LINE TEMP	DEG_F	STOP 00: 18: 17
4				
5				
6				



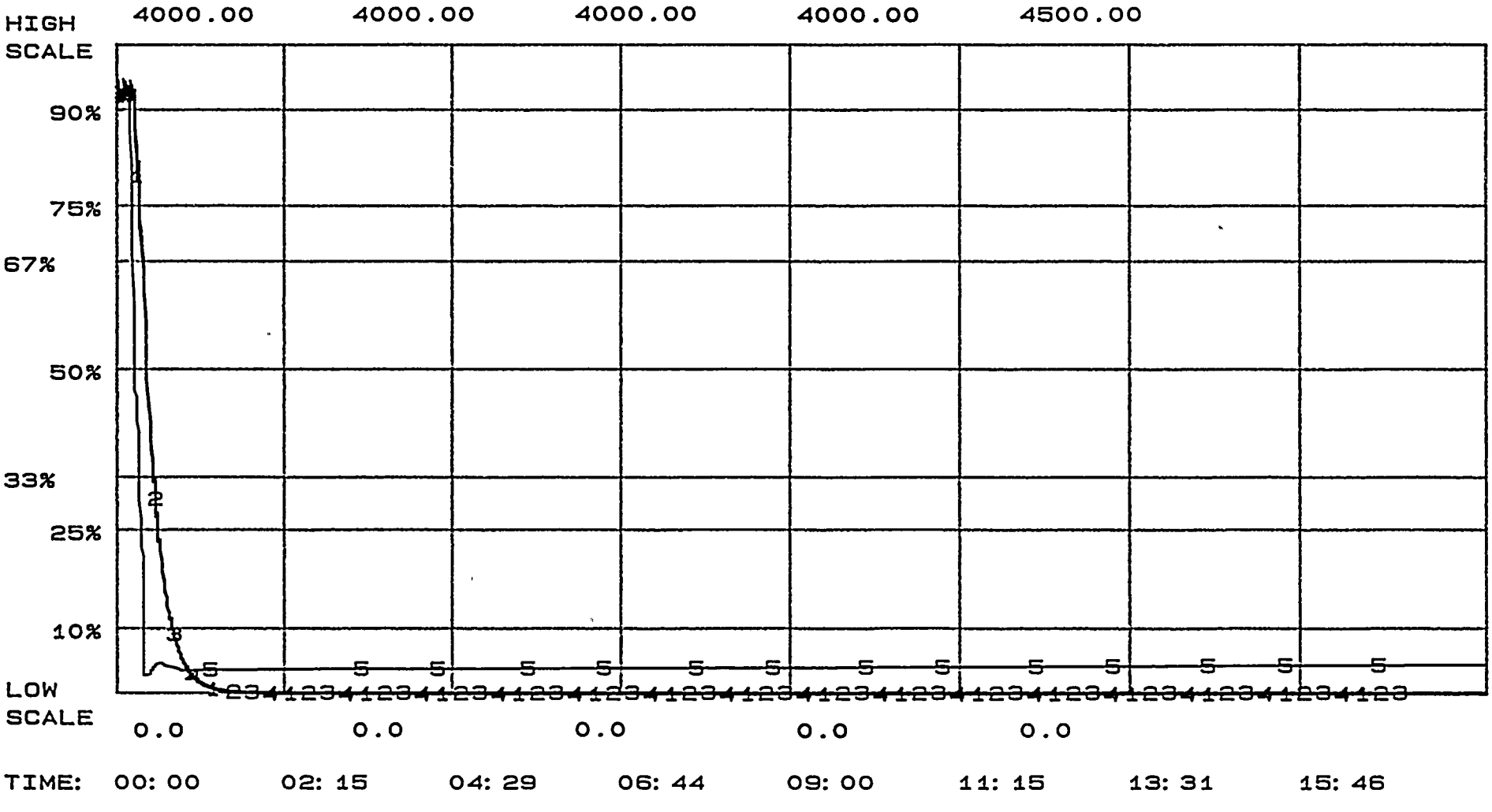
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM FLOW LOOP 1	KBH	TIME
2	F1050	STEAM FLOW LOOP 2	KBH	START 00: 00: 00
3	F1052	STEAM FLOW LOOP 3	KBH	STOP 00: 18: 17
4	F1054	STEAM FLOW LOOP 4	KBH	
5	MSFSUMOT	TOTAL STEAM GENERATOR STEAM FLOW	LBS_S	
6				



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

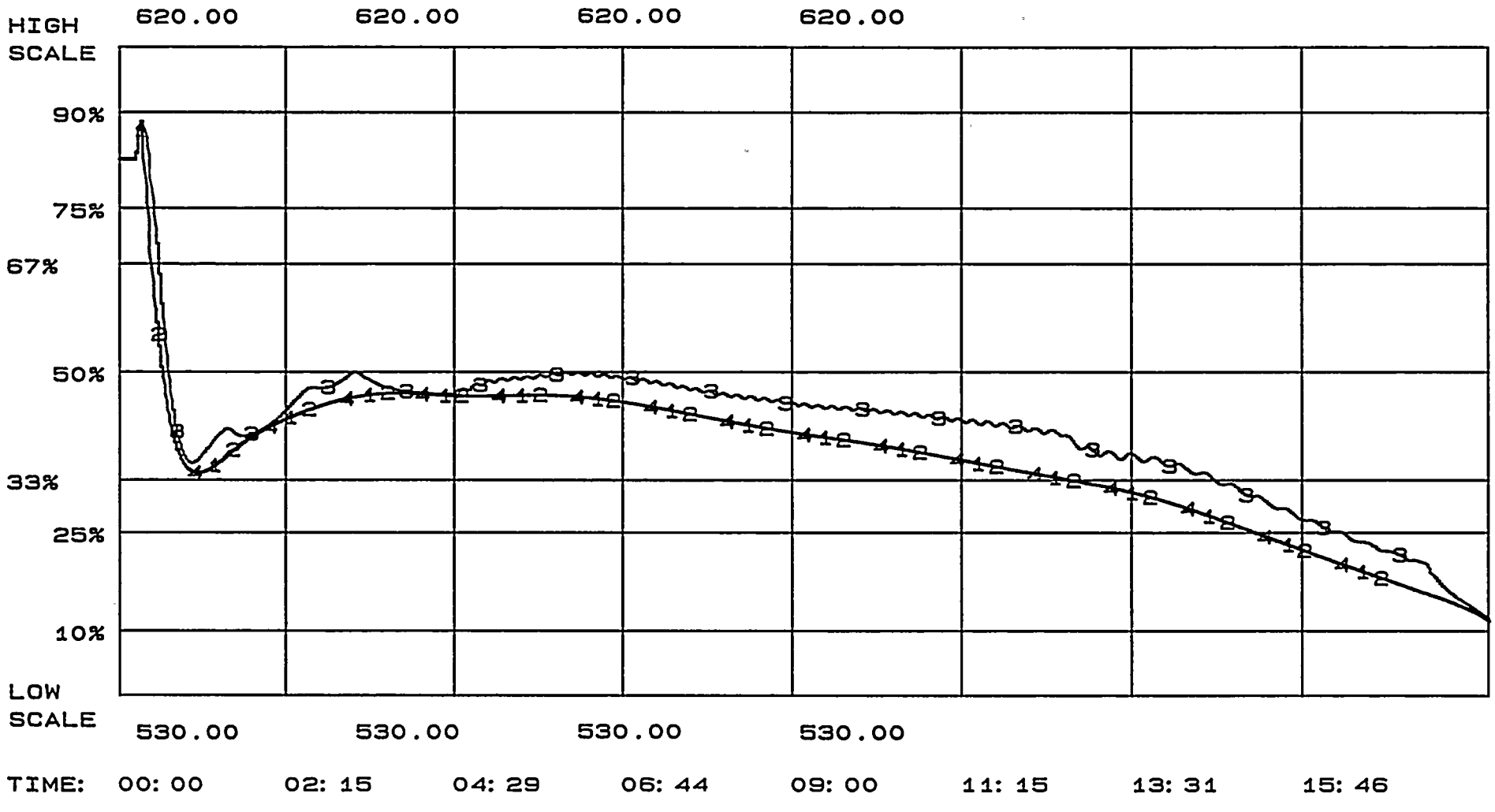
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR 1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR 2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR 3 FEED FLOW	KBH	STOP 00: 18: 17
4	F1203	STEAM GENERATOR 4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AFW INC)	LBS_S	
6				



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

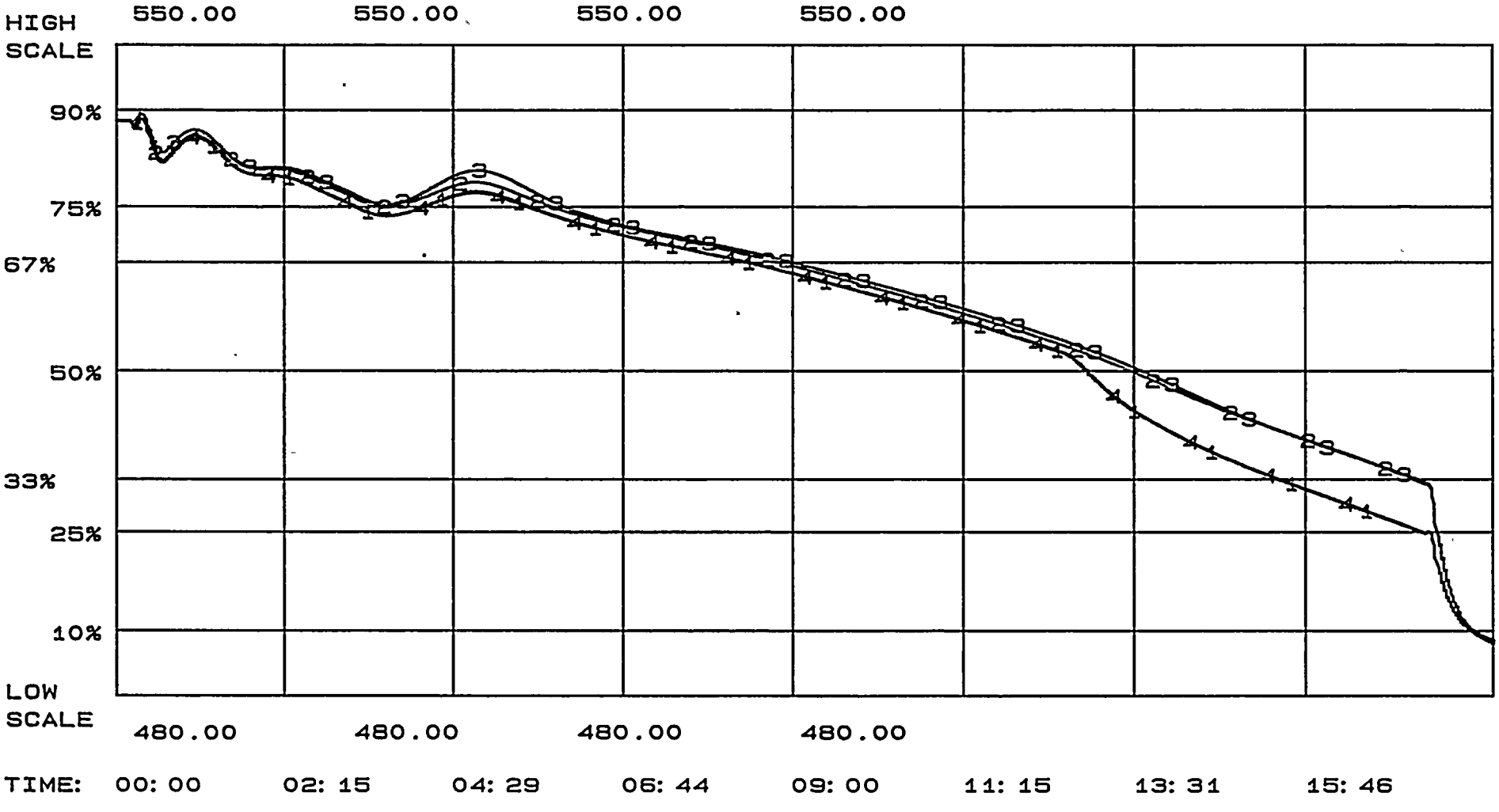
#	POINT ID	DESCRIPTION	UNITS
1	T1111	LOOP 1 HOT LEG TEMP	DEG_F
2	T1112	LOOP 2 HOT LEG TEMP	DEG_F
3	T1113	LOOP 3 HOT LEG TEMP	DEG_F
4	T1114	LOOP 4 HOT LEG TEMP	DEG_F
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 18: 17



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 COLD LEG TEMP	DEG_F	TIME
2	T1116	LOOP 2 COLD LEG TEMP	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 COLD LEG TEMP	DEG_F	STOP 00: 18: 17
4	T1118	LOOP 4 COLD LEG TEMP	DEG_F	
5				
6				



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

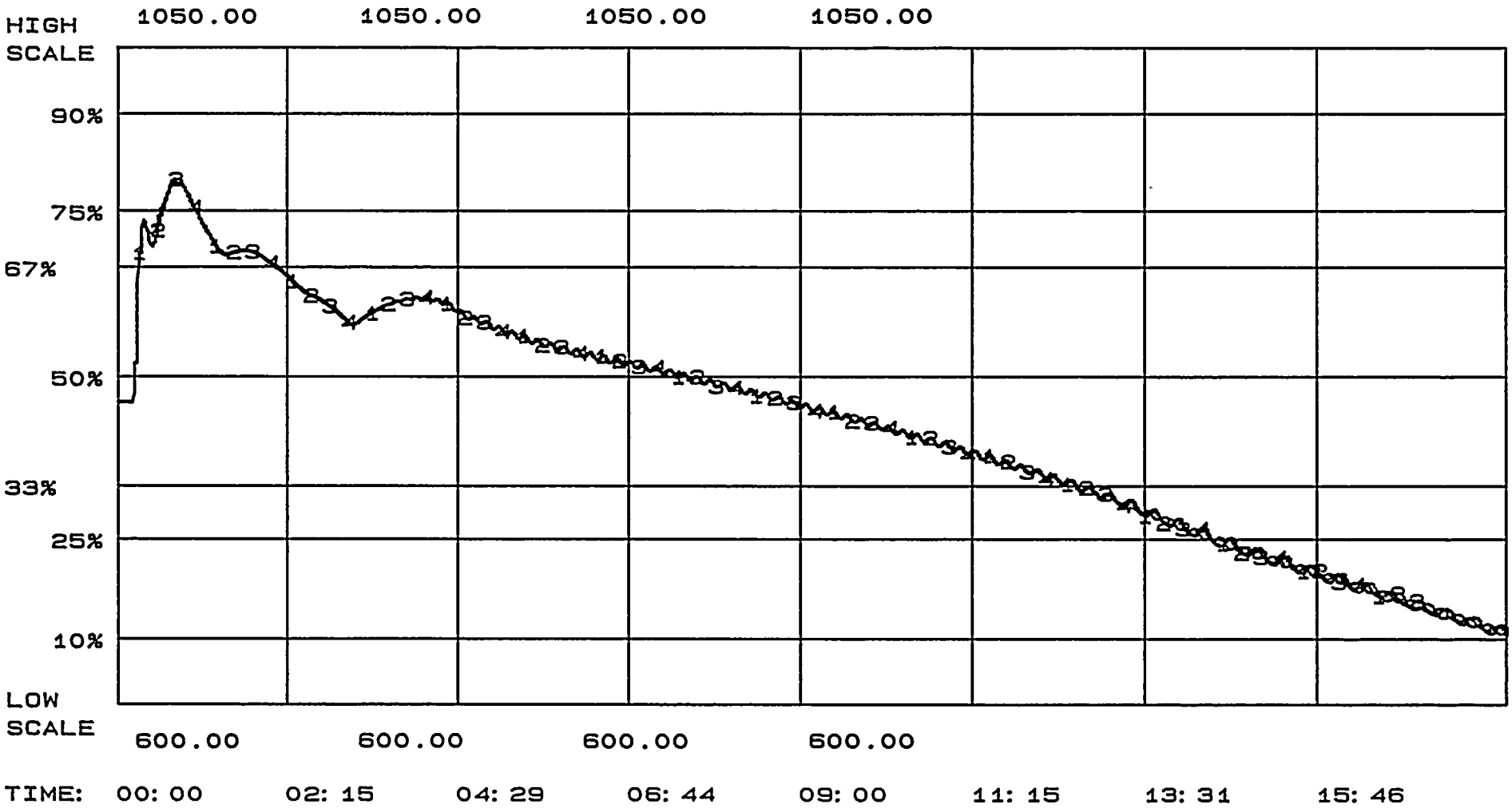
#	POINT ID	DESCRIPTION	UNITS
1	P1022	STM GEN OUTLET PRES LP 1	PSIG
2	P1025	STM GEN OUTLET PRES LP 2	PSIG
3	P1028	STM GEN OUTLET PRES LP 3	PSIG
4	P1031	STM GEN OUTLET PRES LP 4	PSIG
5			
6			

EDIT CONTROLS

TIME

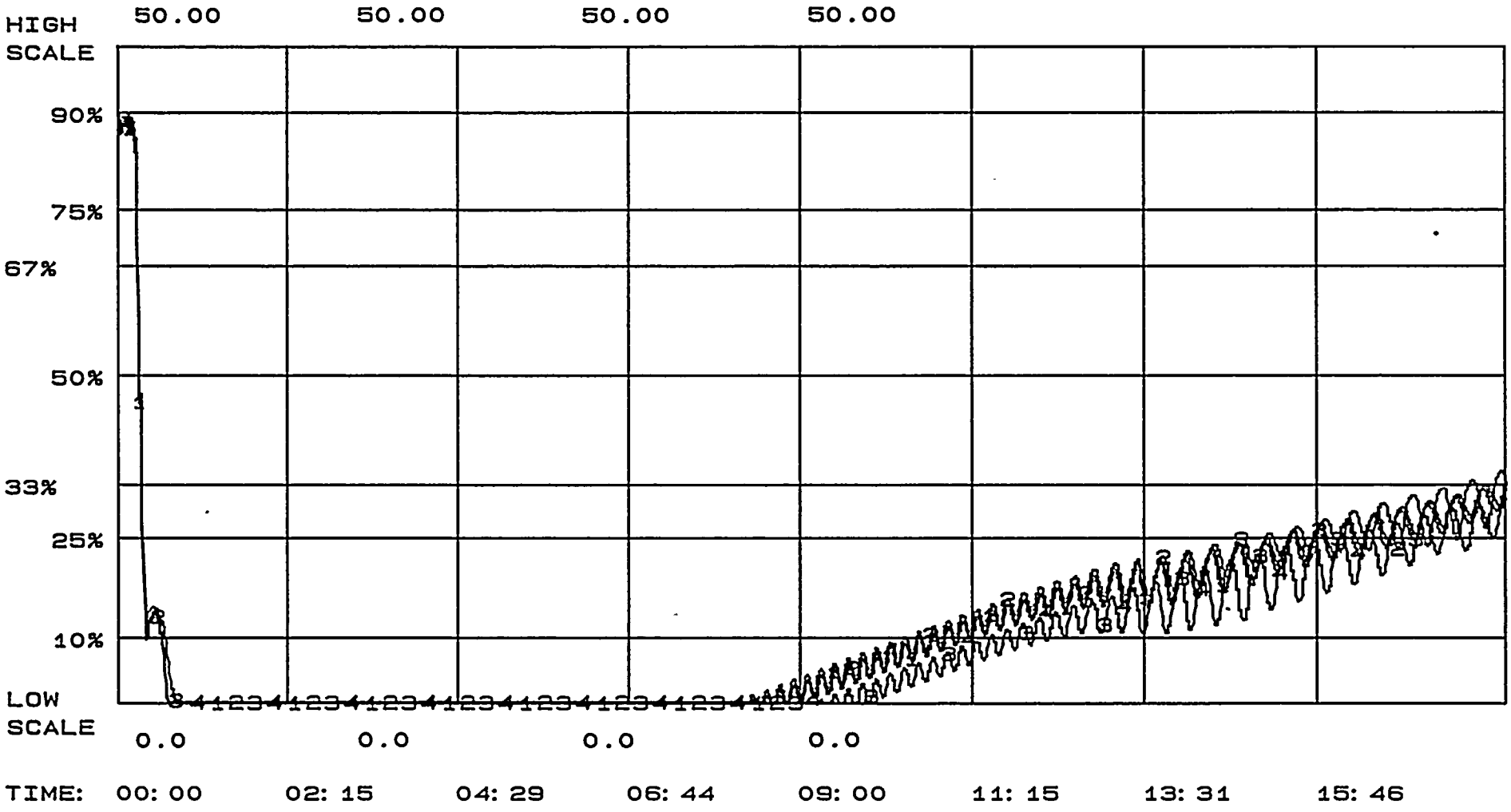
START 00: 00: 00

STOP 00: 18: 17



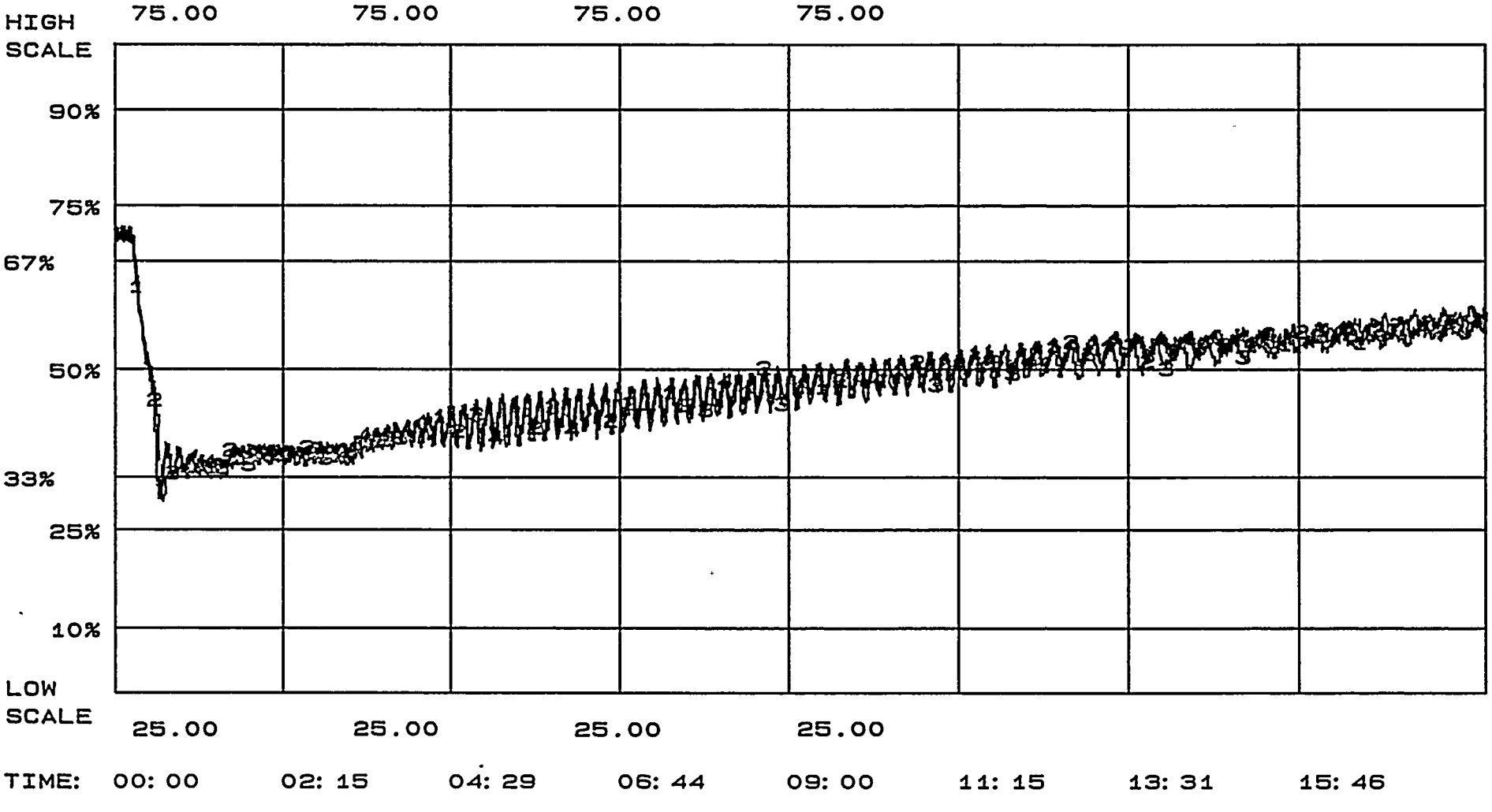
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STM GEN 1 NARROW LEVEL	PC	TIME
2	L1207	STM GEN 2 NARROW LEVEL	PC	START 00: 00: 00
3	L1210	STM GEN 3 NARROW LEVEL	PC	STOP 00: 18: 17
4	L1213	STM GEN 4 NARROW LEVEL	PC	
5				
6				



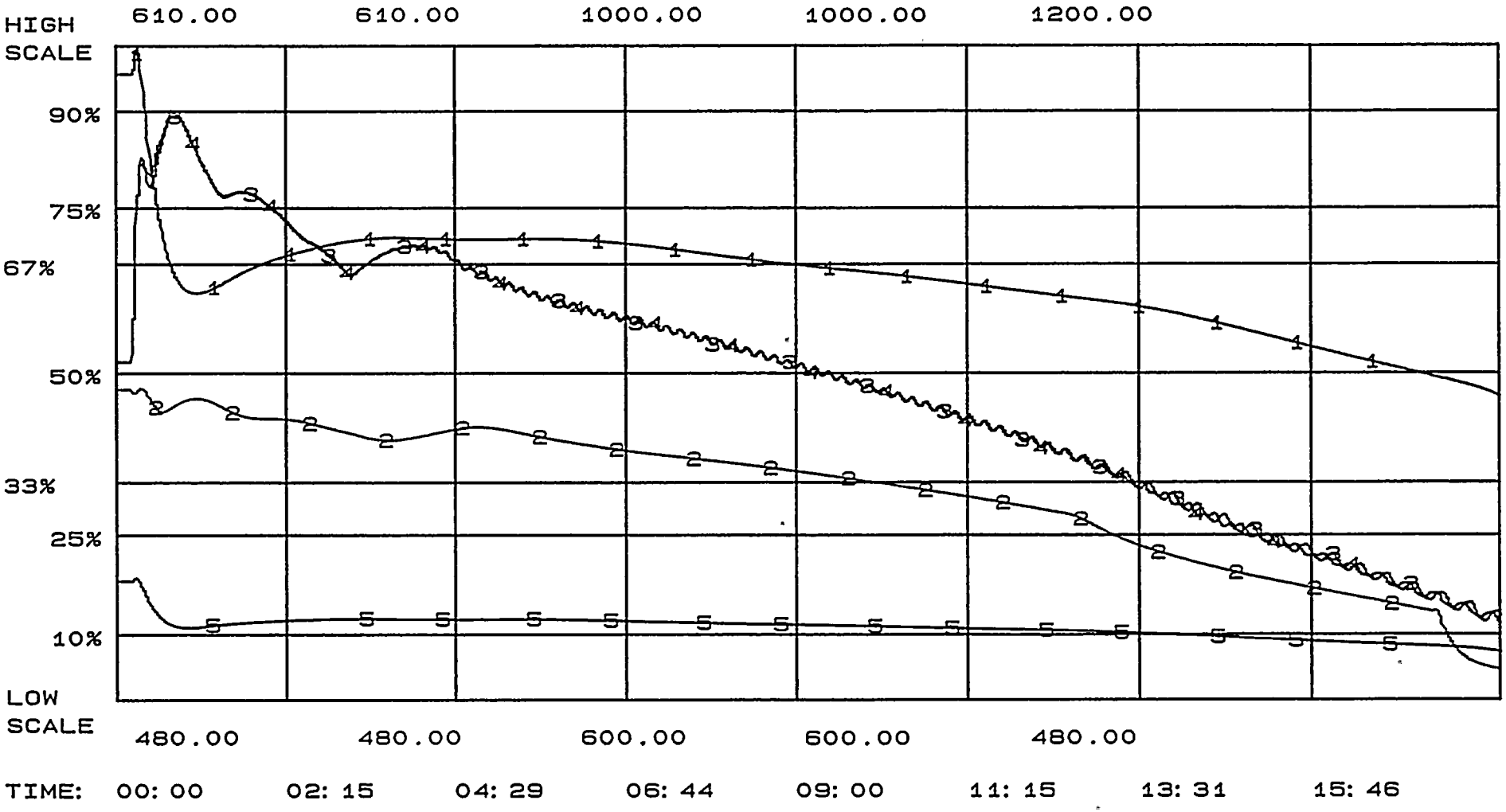
SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1200	STEAM GENERATOR 1 WR LEVEL	PC	TIME
2	L1201	STEAM GENERATOR 2 WR LEVEL	PC	START 00: 00: 00
3	L1202	STEAM GENERATOR 3 WR LEVEL	PC	STOP 00: 18: 17
4	L1203	STEAM GENERATOR 4 WR LEVEL	PC	
5				
6				



SIMULTANEOUS TRIP OF ALL REACTOR COOLANT PUMPS

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	RCS LOOP 1 THOT	DEG_F	TIME
2	T1115	RCS LOOP 1 TCOLD	DEG_F	START 00: 00: 00
3	P1022	STEAM GENERATOR 1 PRESSURE	PSIG	STOP 00: 18: 15
4	P1028	STEAM GENERATOR 3 PRESSURE	PSIG	
5	CRTTCEXIT	CORE EXIT T.C. TEMP	DEG_F	
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

TRIP OF REACTOR COOLANT PUMP #21

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a trip of Reactor Coolant Pump #21 per ANSI 3.5 - B2.2.

2) Ensure that the simulator will initiate Reactor Coolant Pump #21 flow coastdown and flow reversal.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS hot leg temperature
3) RCS cold leg temperature
4) Steam Generator pressure
5) Steam Generator level
6) Steam flow
7) Feedwater flow
8) RCS loop flow
9) RCS T average

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) RCS Loop 1 flow decreases to minimum then is re-established by flow reversal from the other RCS loops as indicated by Loop 1 T hot less than unaffected loops T cold.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

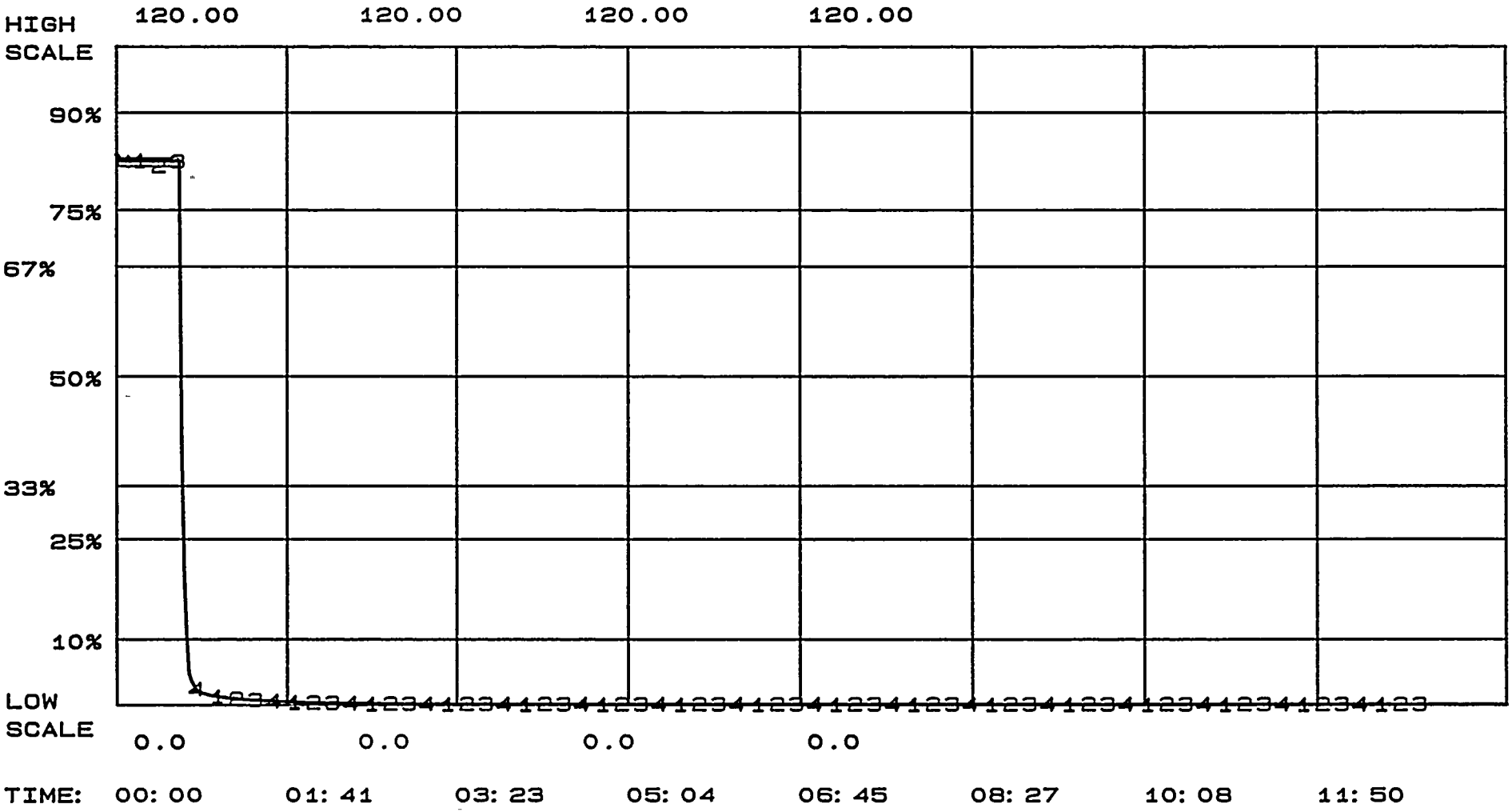
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

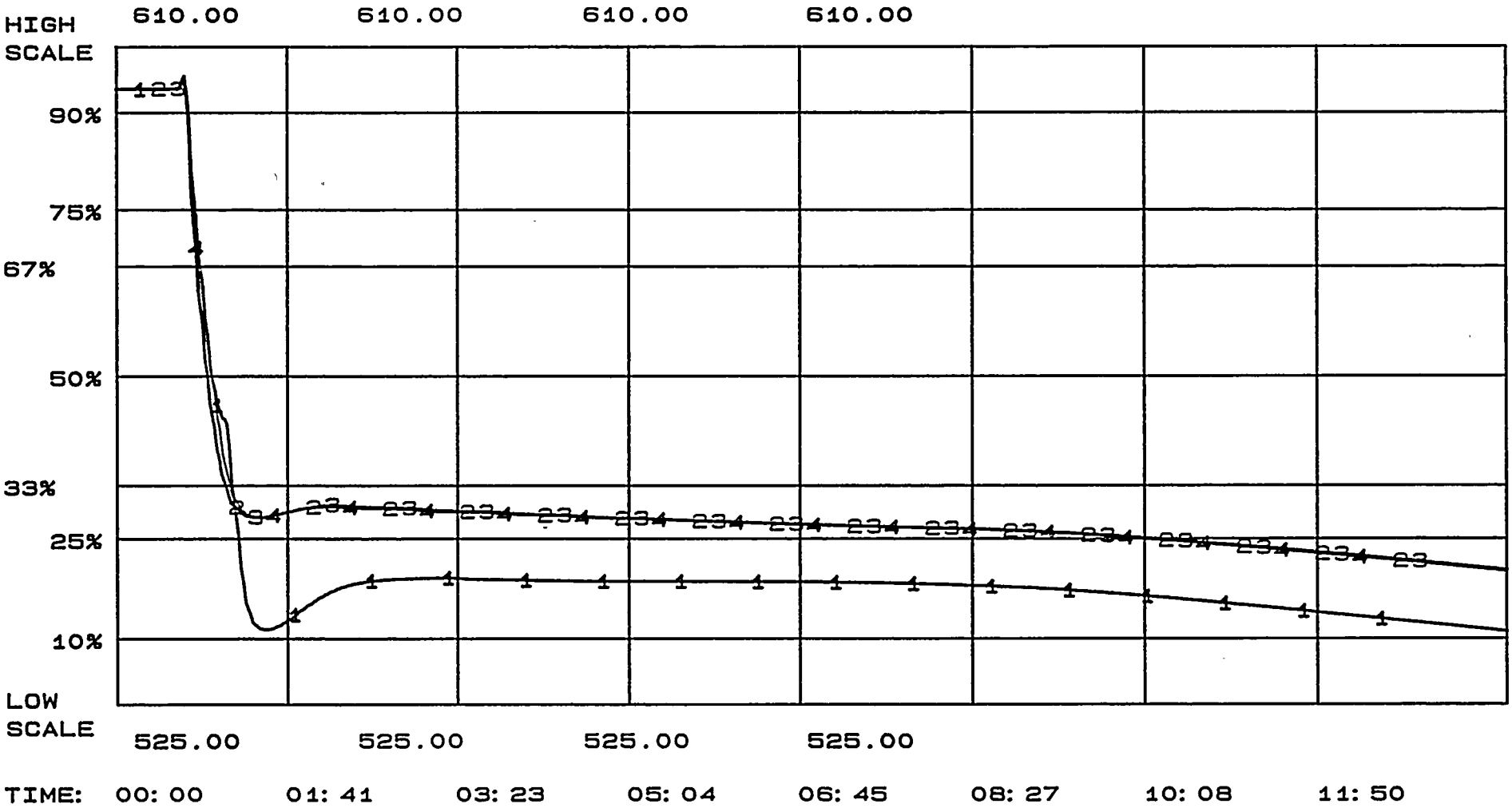
TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE CHANNEL N41	PC	TIME
2	N1013	POWER RANGE CHANNEL N42	PC	START 00: 00: 00
3	N1014	POWER RANGE CHANNEL N43	PC	STOP 00: 13: 41
4	N1015	POWER RANGE CHANNEL N44	PC	
5				
6				



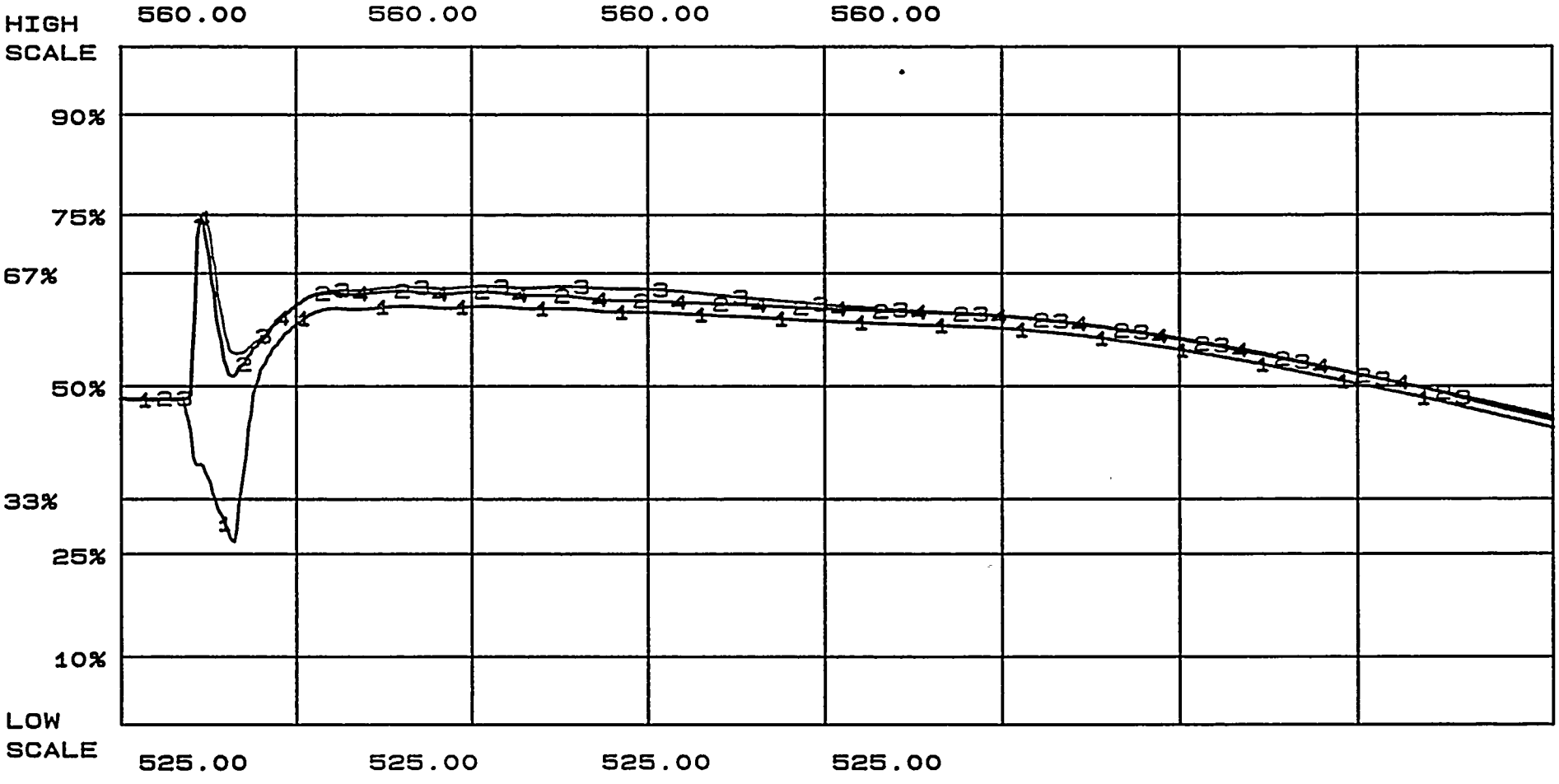
TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 THOT	DEG_F	TIME
2	T1112	LOOP 2 THOT	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 THOT	DEG_F	STOP 00: 13: 41
4	T1114	LOOP 4 THOT	DEG_F	
5				
6				



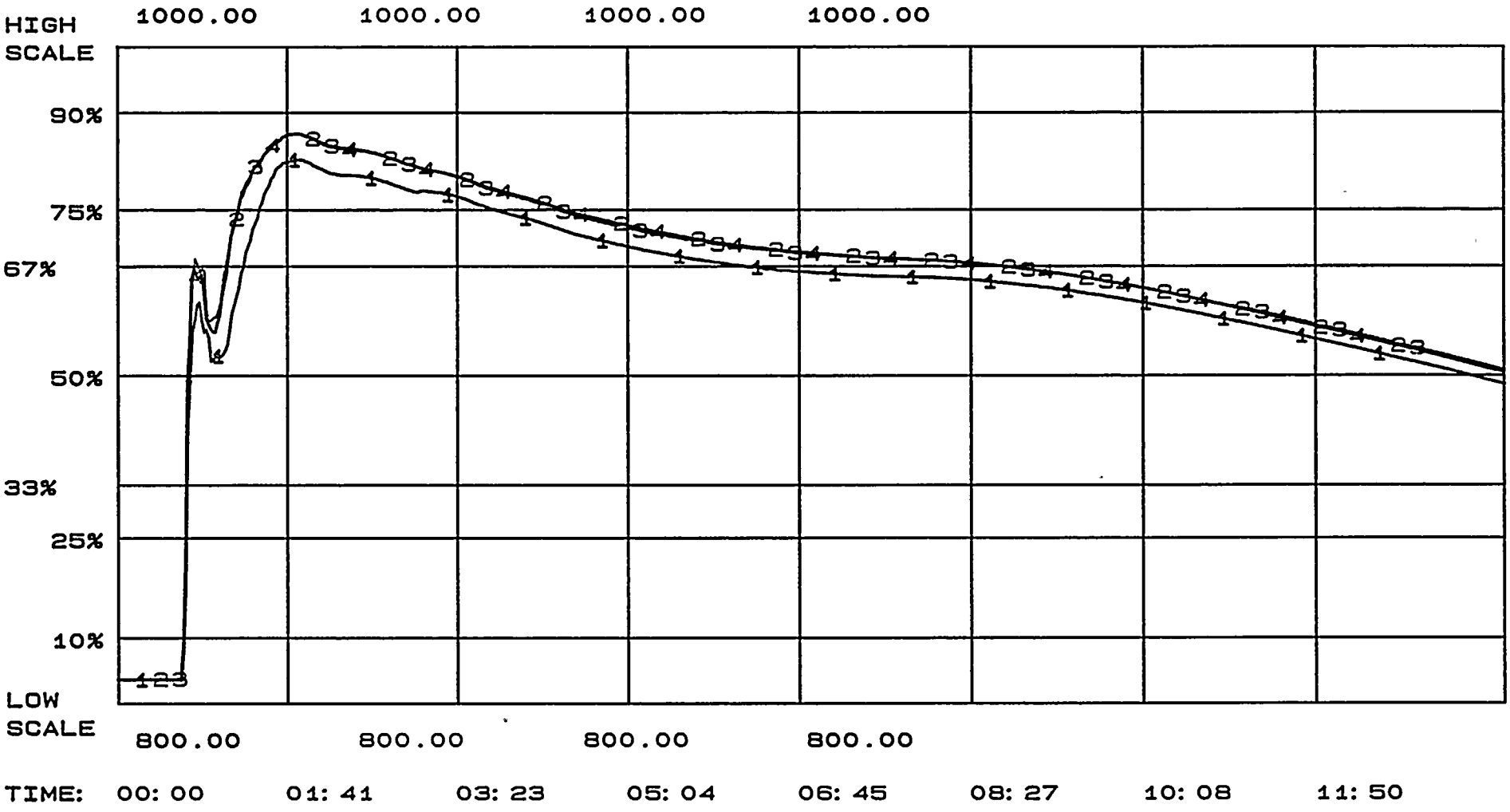
TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 TCOLD	DEG_F	TIME
2	T1116	LOOP 2 TCOLD	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 TCOLD	DEG_F	STOP 00: 13: 41
4	T1118	LOOP 4 TCOLD	DEG_F	
5				
6				



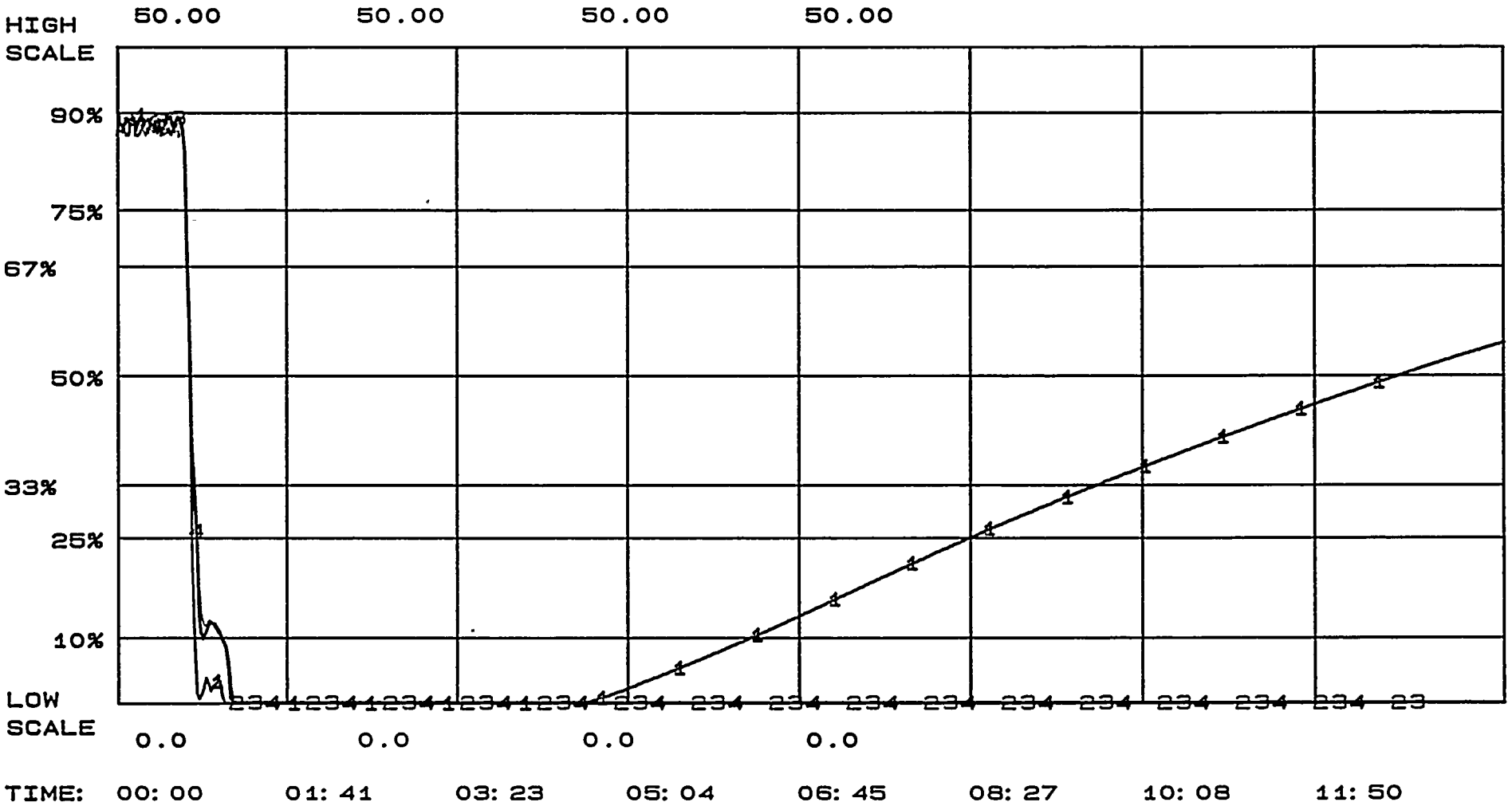
TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR 1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR 2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR 3 PRESSURE	PSIG	STOP 00: 13: 41
4	P1031	STEAM GENERATOR 4 PRESSURE	PSIG	
5				
6				



TRIP OF REACTOR COOLANT PUMP #21

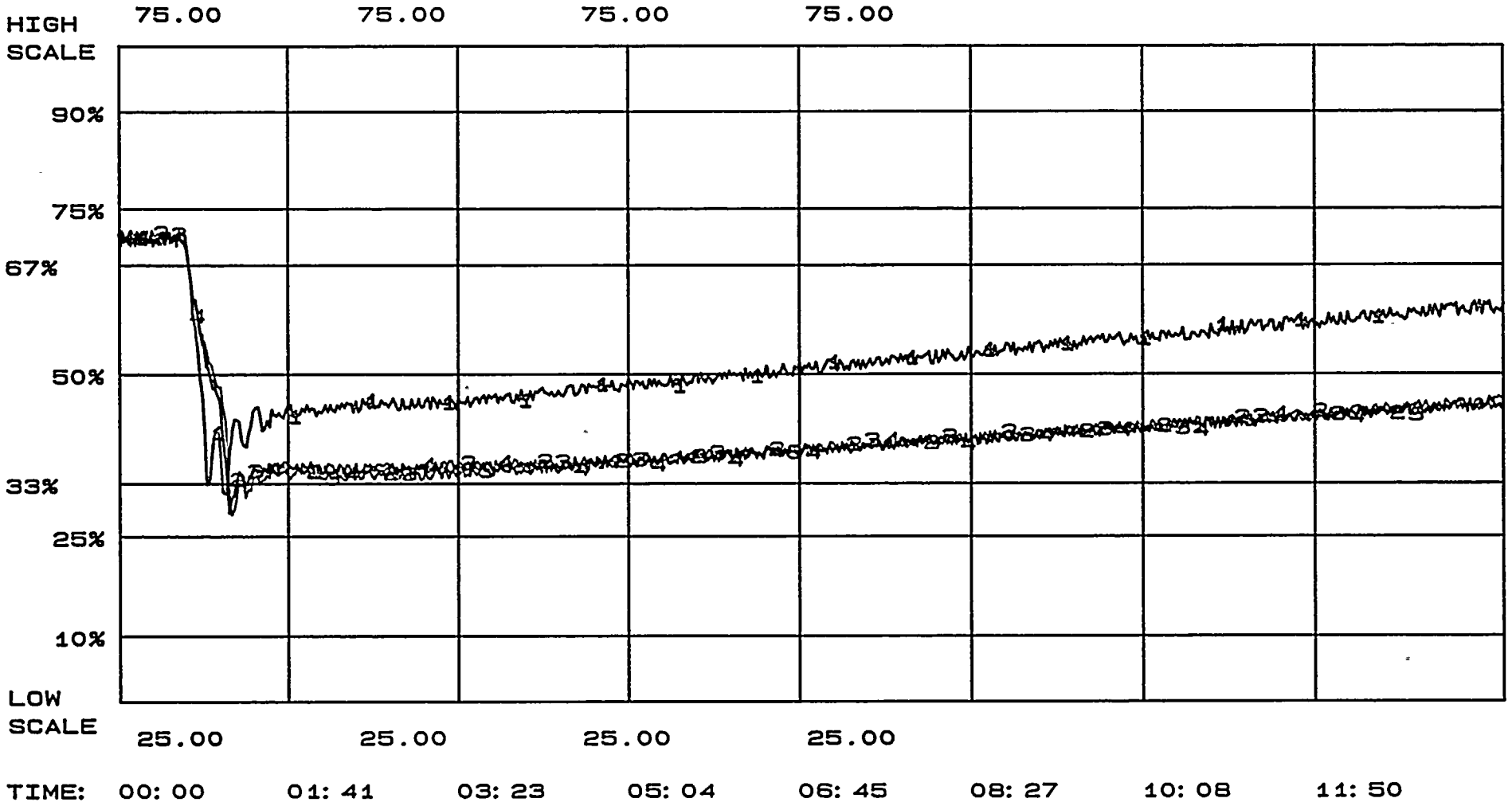
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR 1 NR LEVEL	PC	TIME
2	L1207	STEAM GENERATOR 2 NR LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GENERATOR 3 NR LEVEL	PC	STOP 00: 13: 41
4	L1213	STEAM GENERATOR 4 NR LEVEL	PC	
5				
6				



TRIP OF REACTOR COOLANT PUMP #21

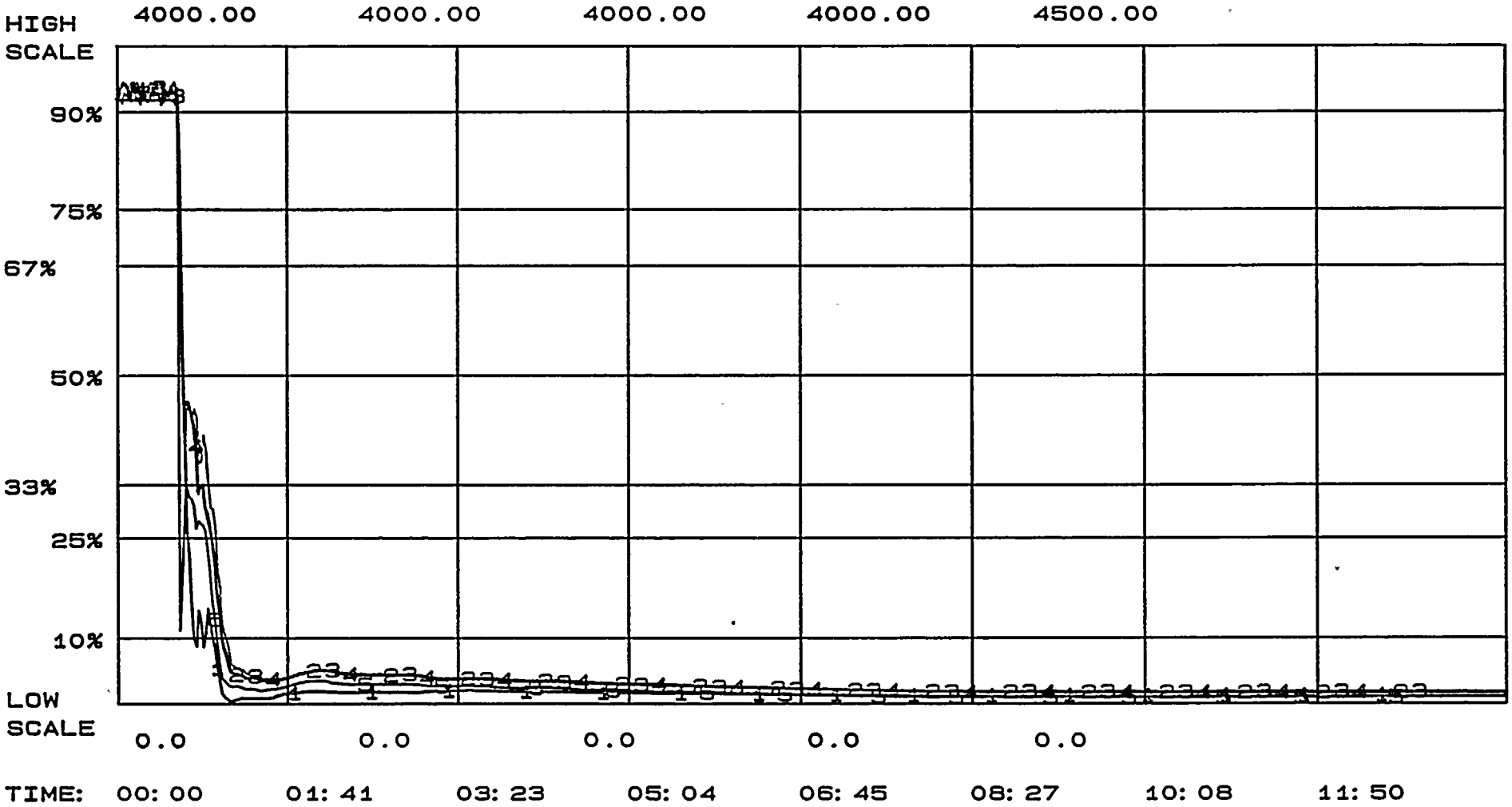
#	POINT ID	DESCRIPTION	UNITS
1	L1200	STEAM GENERATOR 1 WR LEVEL	PC
2	L1201	STEAM GENERATOR 2 WR LEVEL	PC
3	L1202	STEAM GENERATOR 3 WR LEVEL	PC
4	L1203	STEAM GENERATOR 4 WR LEVEL	PC
5			
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 13: 41



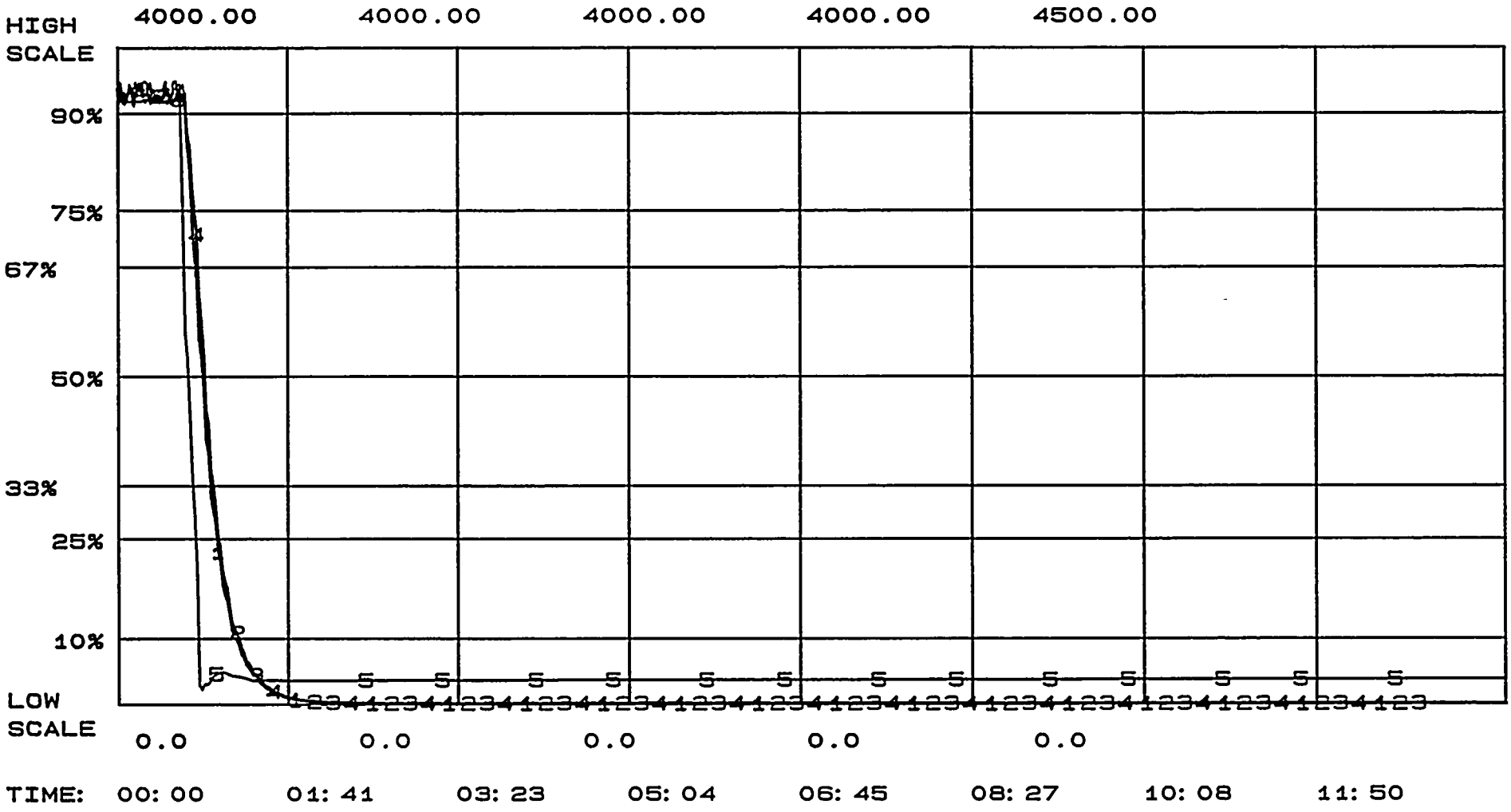
TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR 1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR 2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	STEAM GENERATOR 3 STEAM FLOW	KBH	STOP 00: 13: 41
4	F1054	STEAM GENERATOR 4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



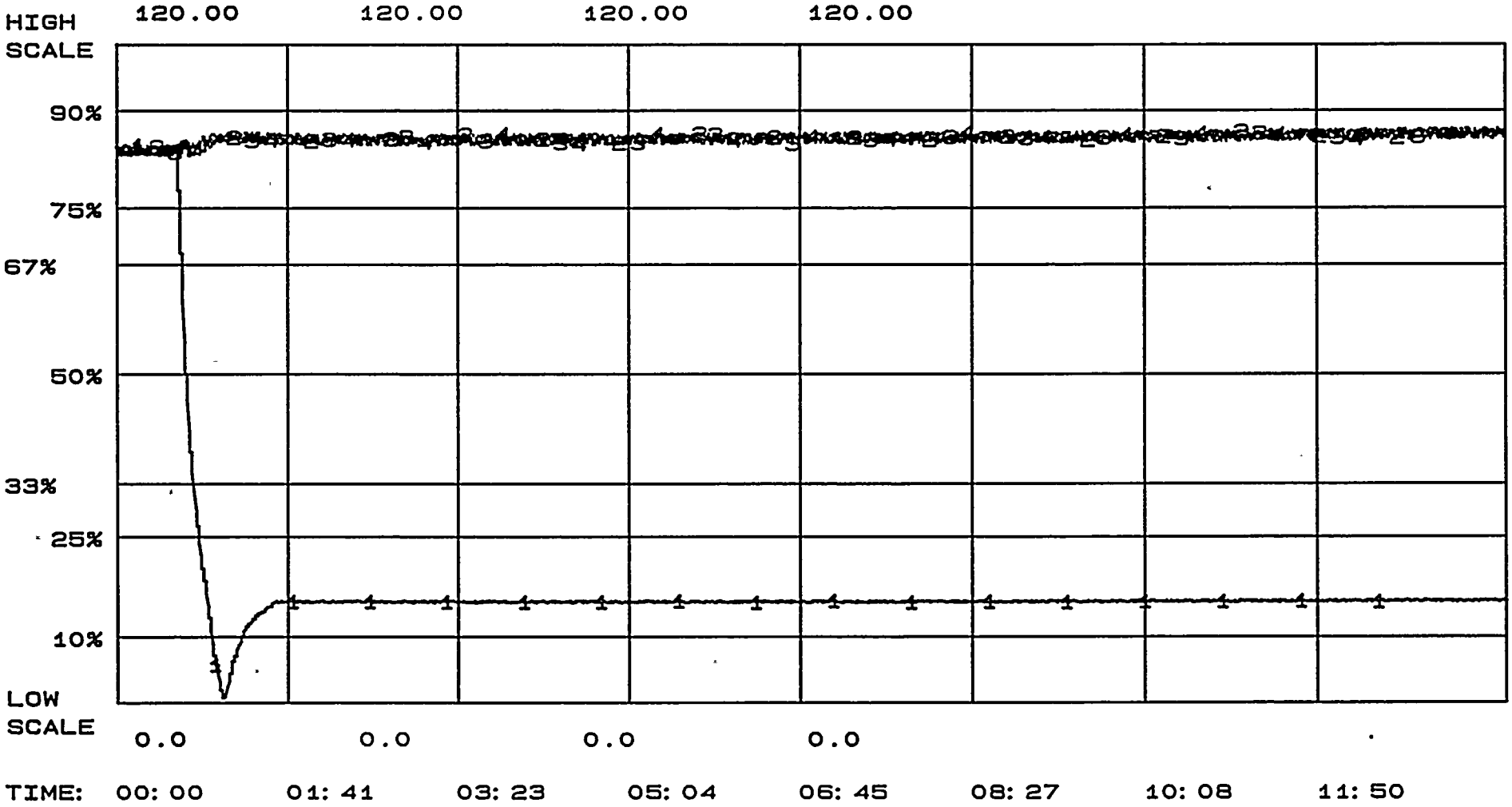
TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR 1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR 2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR 3 FEED FLOW	KBH	STOP 00: 13: 41
4	F1203	STEAM GENERATOR 4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AFW INC)	LBS_S	
6				



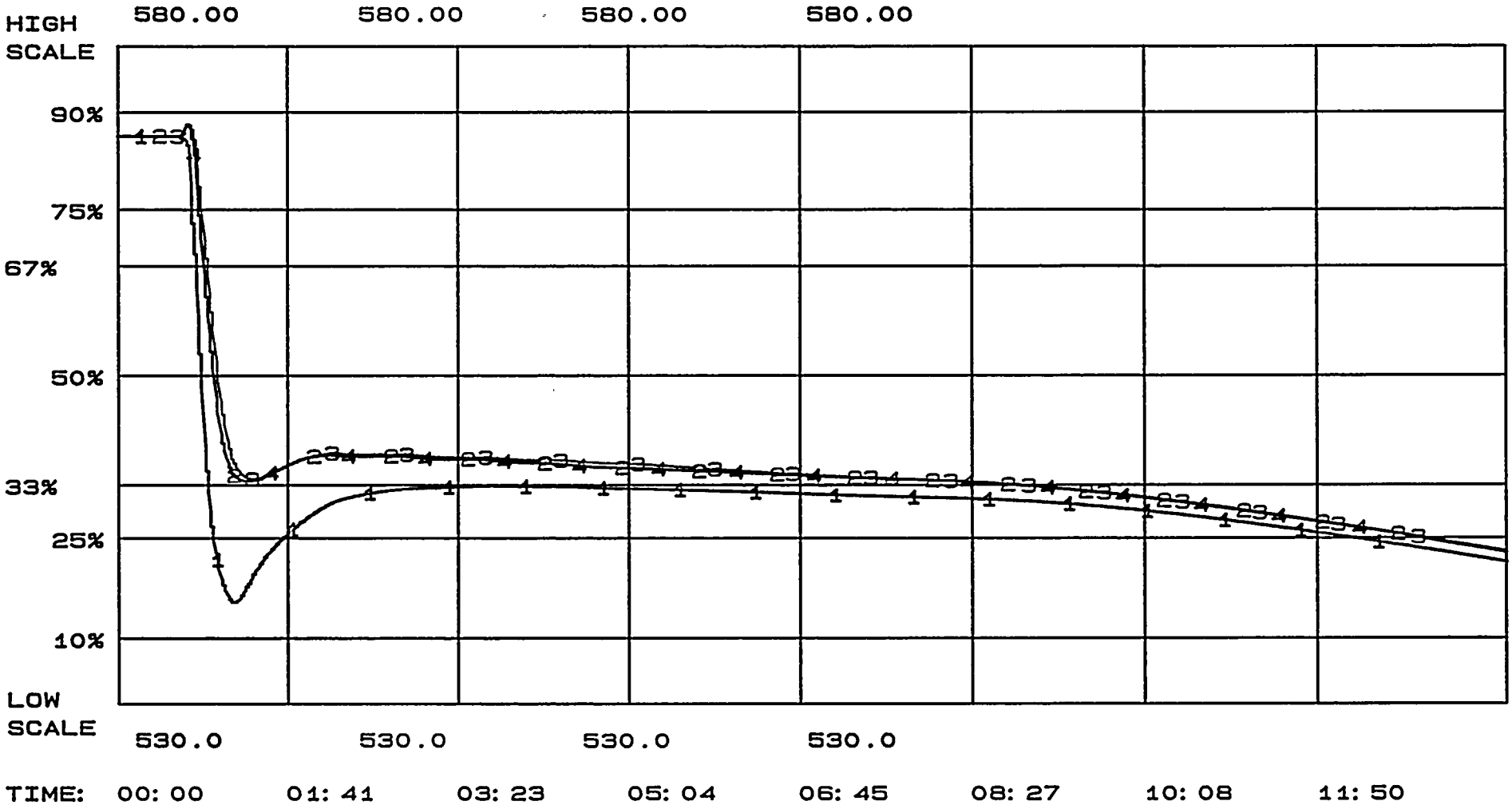
TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1089	RCS LOOP 1 FLOW	PC	TIME
2	F1092	RCS LOOP 2 FLOW	PC	START 00: 00: 00
3	F1095	RCS LOOP 3 FLOW	PC	STOP 00: 13: 41
4	F1098	RCS LOOP 4 FLOW	PC	
5				
6				



TRIP OF REACTOR COOLANT PUMP #21

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS LOOP 1 TAVE	DEG_F	TIME
2	T1102	RCS LOOP 2 TAVE	DEG_F	START 00: 00: 00
3	T1103	RCS LOOP 3 TAVE	DEG_F	STOP 00: 13: 41
4	T1104	RCS LOOP 4 TAVE	DEG_F	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

TRIP OF MAIN TURBINE FROM 9% POWER WITHOUT REACTOR TRIP

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a trip of the Main Turbine from the maximum power level (9%) which does not result in an immediate reactor trip per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to permit a Main Turbine trip without tripping the reactor as a direct result of the turbine trip.

II. Initial Conditions

1) The simulator is operating at middle of life core conditions, reactor power at approximately 9 percent, steam generator feedwater in automatic, steam dumps in steam pressure mode, main generator in parallel at approximately 85 MWe, and Tavg matched to Tref.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The plant stabilizes at a lower power than initial with a Tavg higher than initial and a differential temperature (Tavg - Tstm) which corresponds to the final power.

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

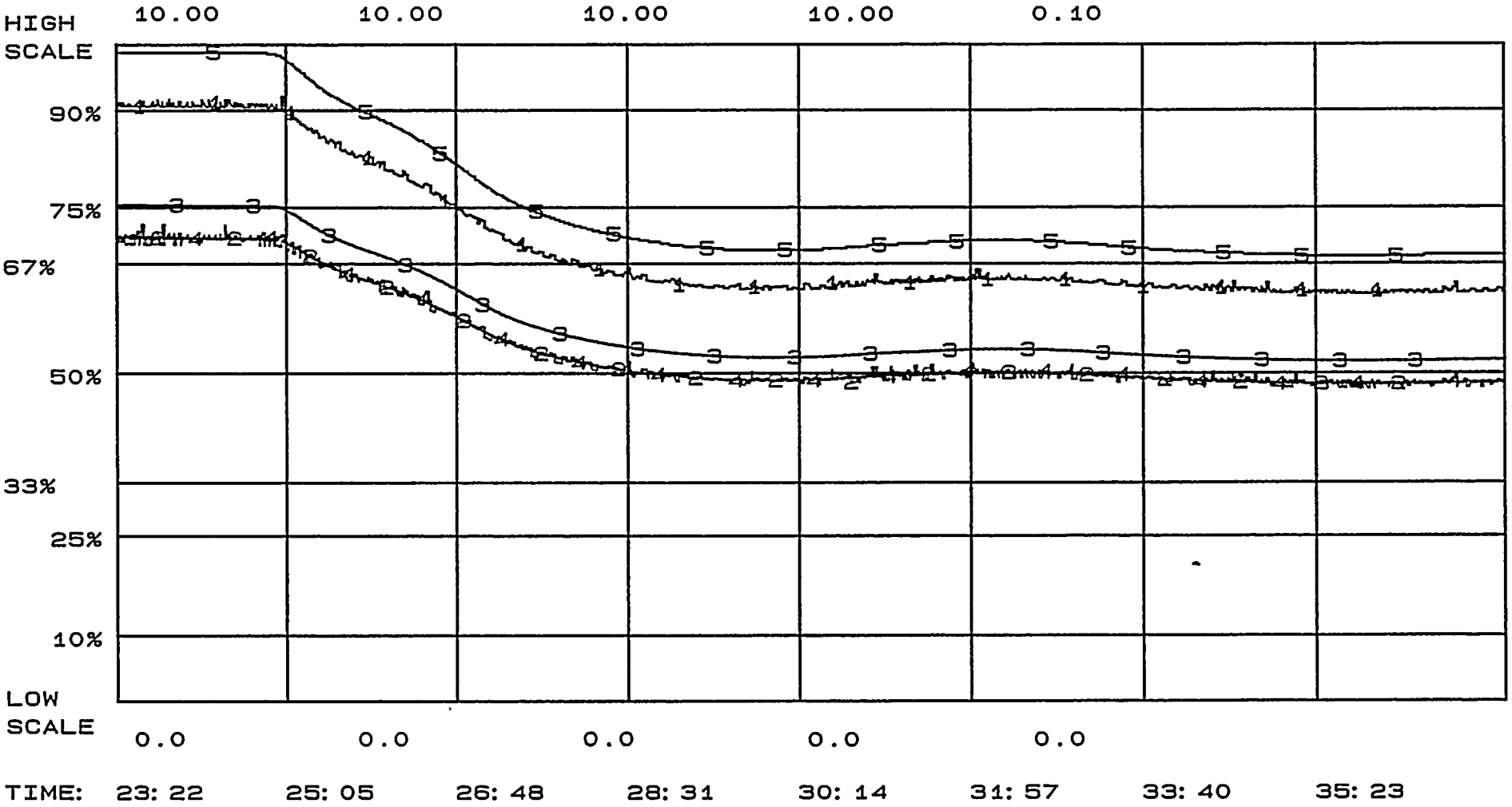
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

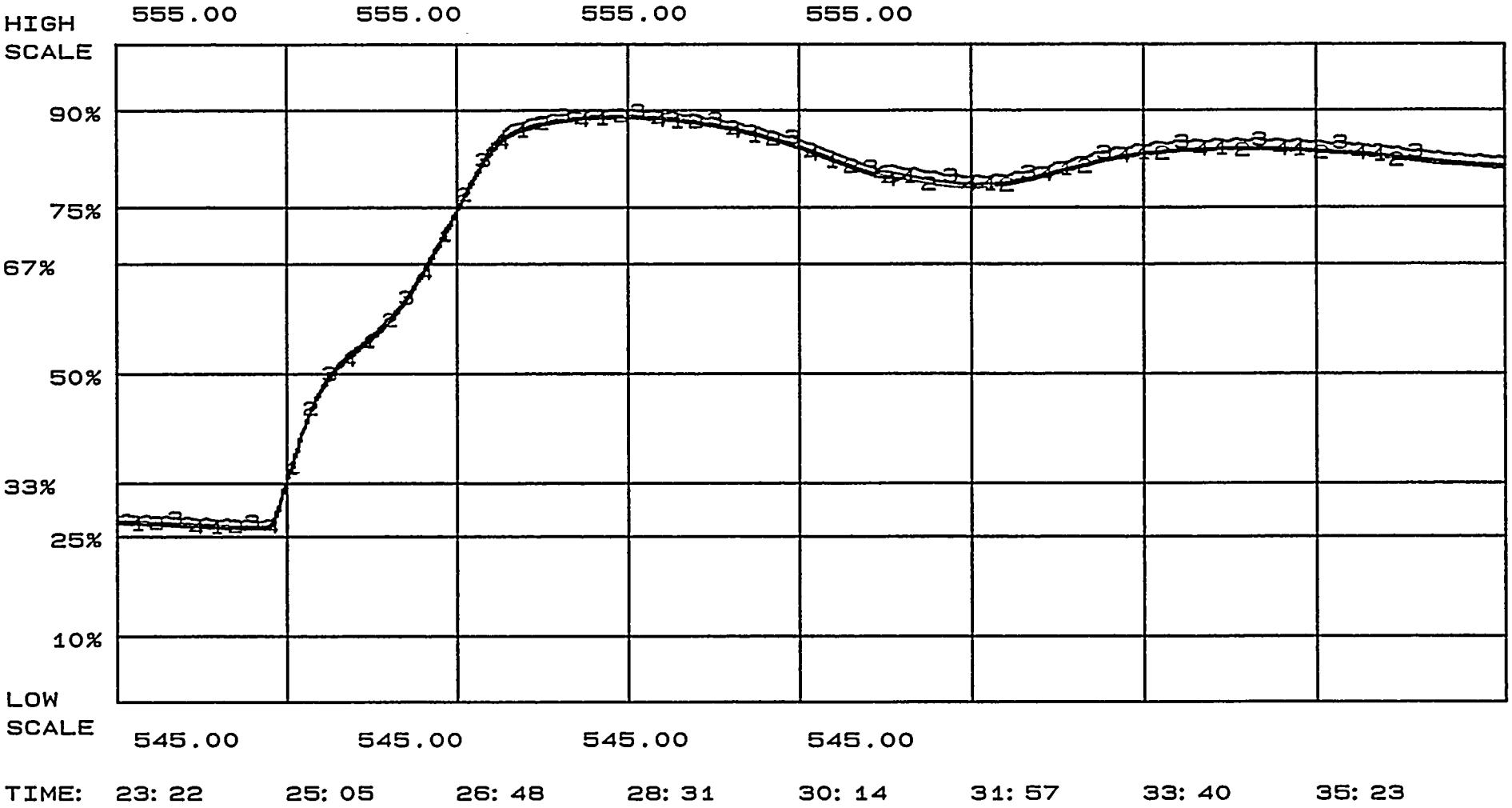
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. CHANNEL N-41	PC	TIME
2	N1013	POWER RANGE N.I. CHANNEL N-42	PC	START 00: 23: 22
3	N1014	POWER RANGE N.I. CHANNEL N-43	PC	STOP 00: 37: 16
4	N1015	POWER RANGE N.I. CHANNEL N-44	PC	
5	CRQN	REACTOR CORE HEAT FLUX	PC	
6				



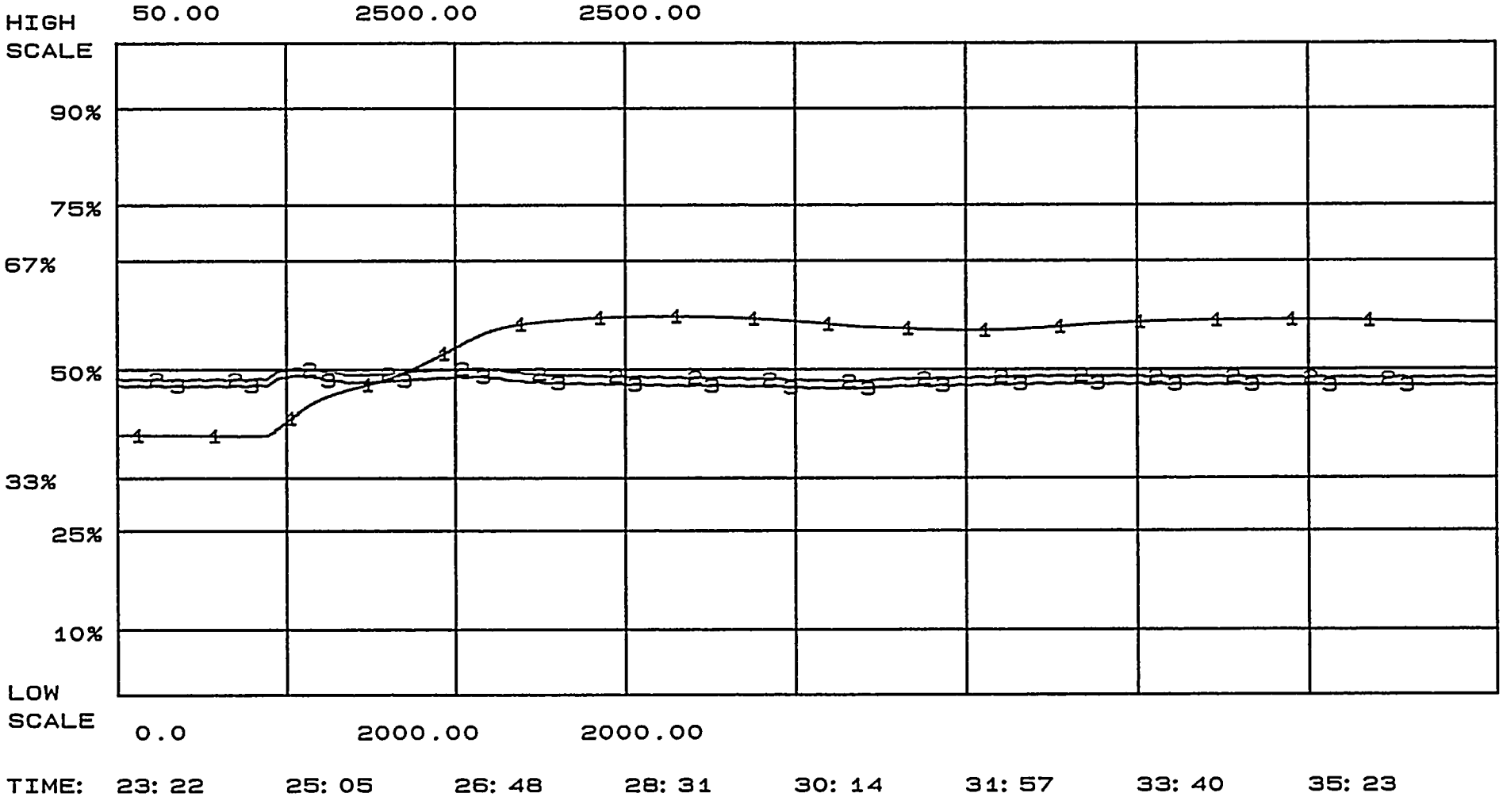
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS TAVE LOOP 1	DEG_F	TIME
2	T1102	RCS TAVE LOOP 2	DEG_F	START 00: 23: 22
3	T1103	RCS TAVE LOOP 3	DEG_F	STOP 00: 37: 16
4	T1104	RCS TAVE LOOP 4	DEG_F	
5				
6				



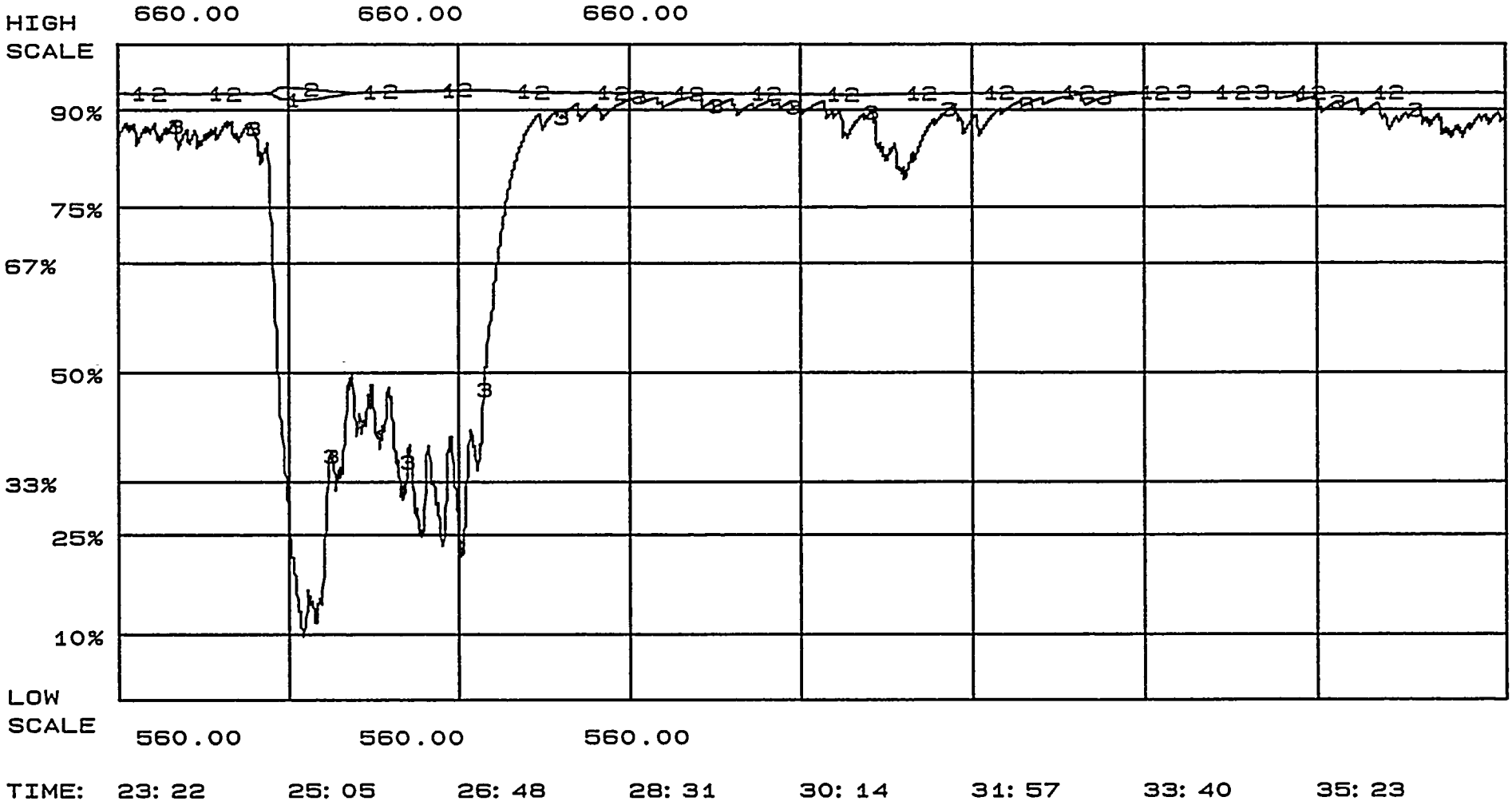
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2	P1034	RCS WIDE RANGE PRESSURE	PSIG	START 00: 23: 22
3	P1036	PRESSURIZER PRESSURE	PSIG	STOP 00: 37: 16
4				
5				
6				



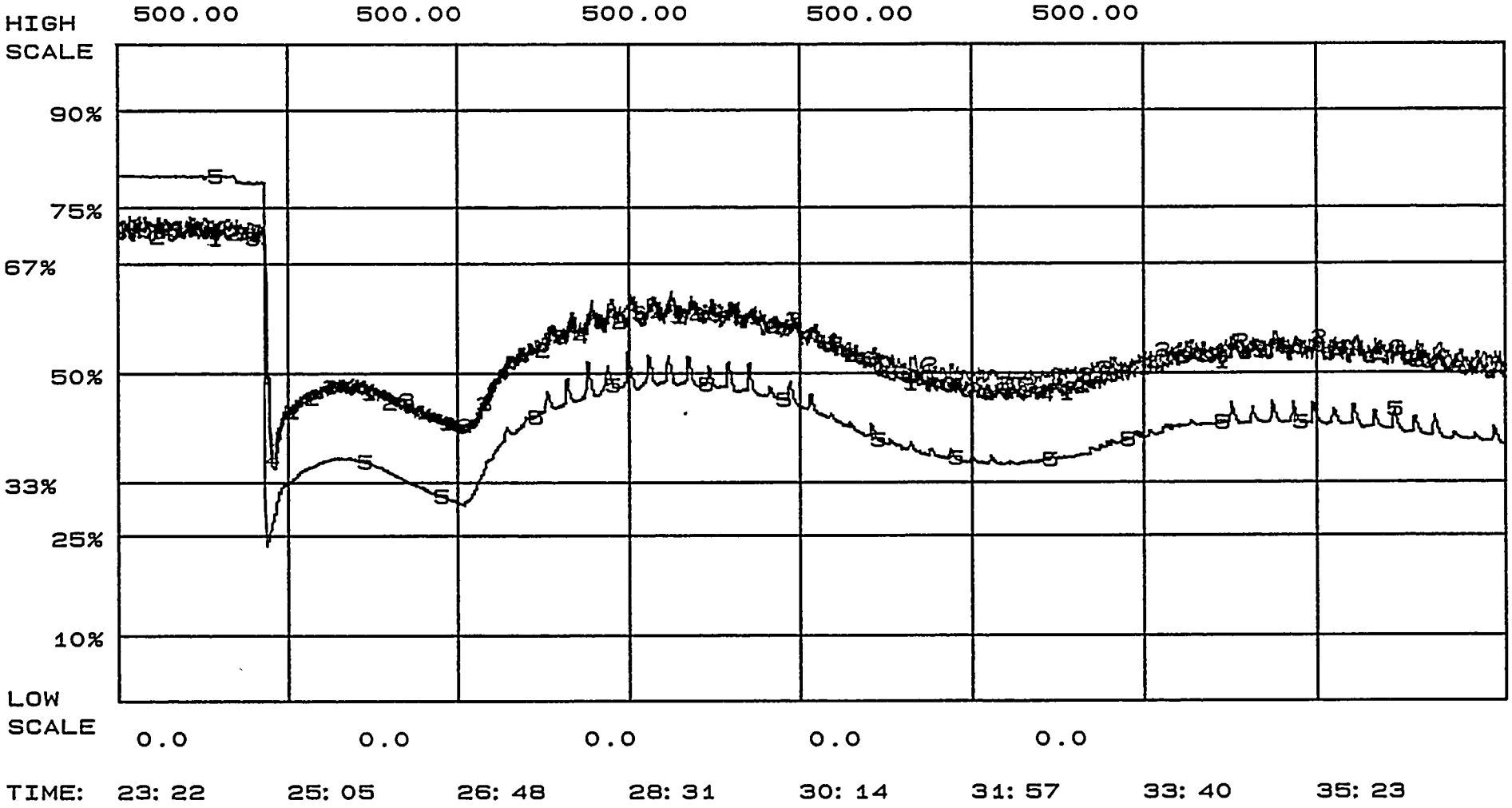
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	TIME
2	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	START 00: 23: 22
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP.	DEG_F	STOP 00: 37: 16
4				
5				
6				



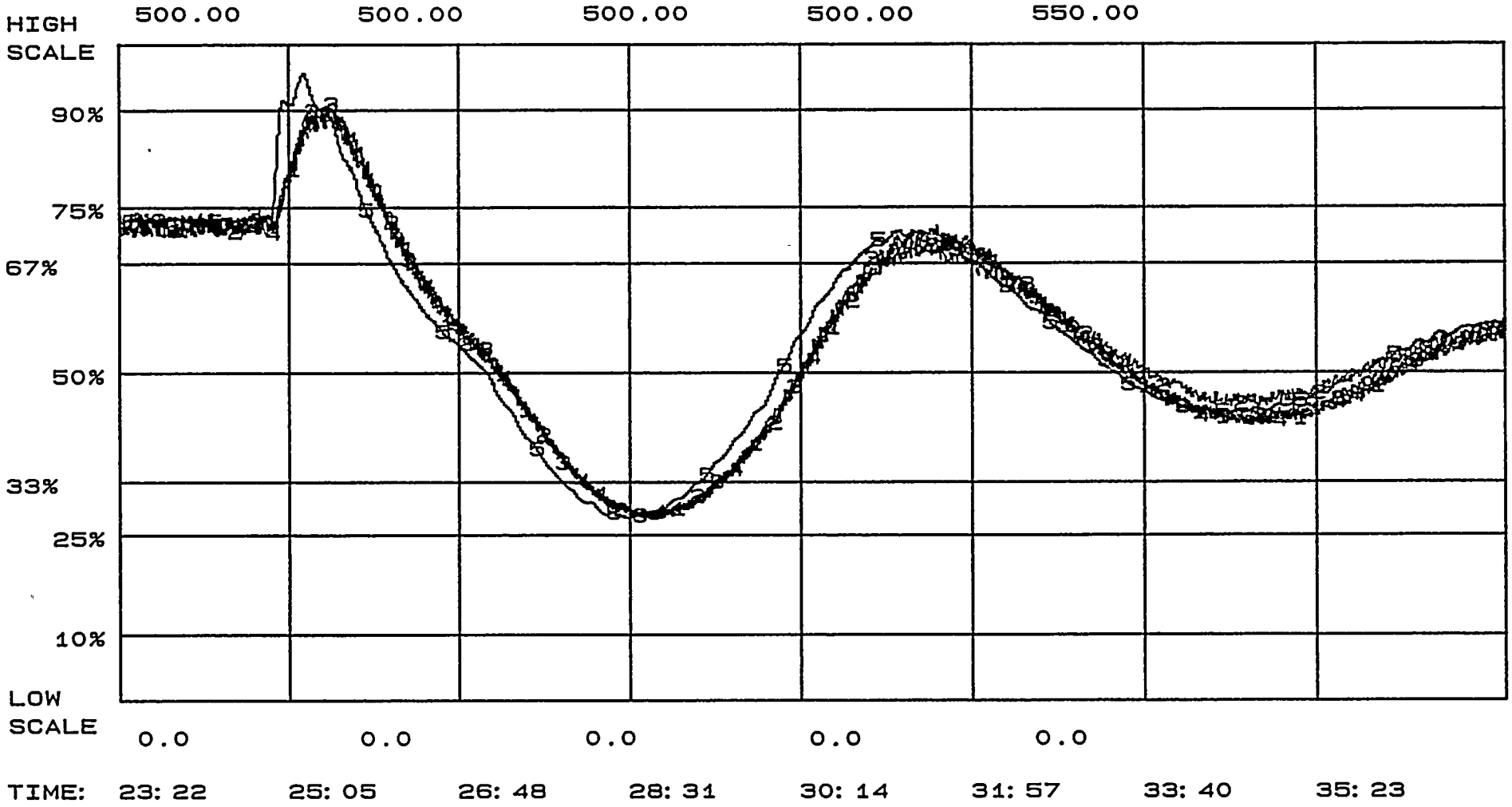
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR #1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR #2 STEAM FLOW	KBH	START 00: 23: 22
3	F1052	STEAM GENERATOR #3 STEAM FLOW	KBH	STOP 00: 37: 16
4	F1054	STEAM GENERATOR #4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



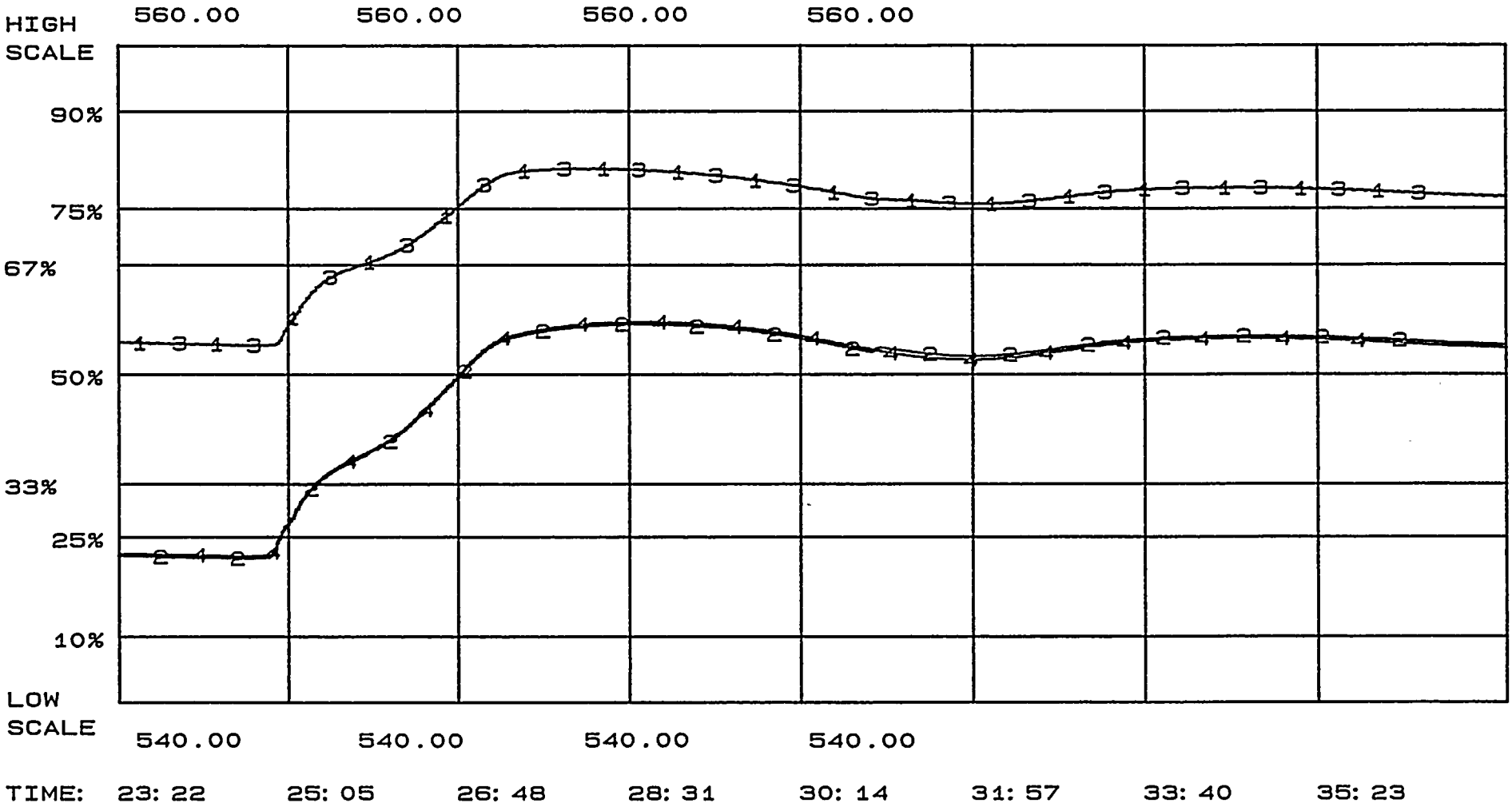
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR #1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR #2 FEED FLOW	KBH	START 00: 23: 22
3	F1202	STEAM GENERATOR #3 FEED FLOW	KBH	STOP 00: 37: 16
4	F1203	STEAM GENERATOR #4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW	LBS_S	
6				



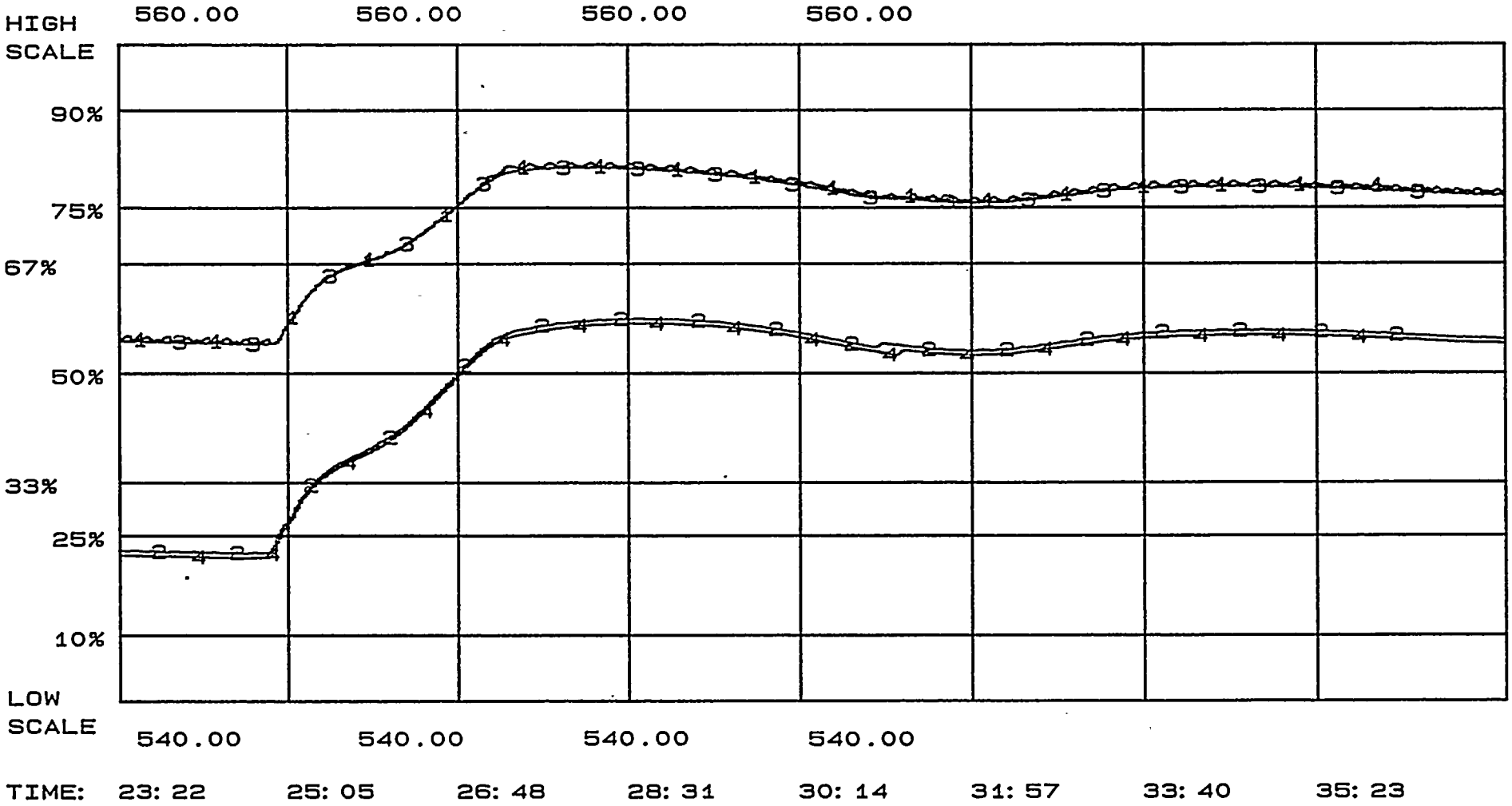
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	RCS LOOP 1 THOT	DEG_F	TIME
2	T1115	RCS LOOP 1 TCOLD	DEG_F	START 00: 23: 22
3	T1112	RCS LOOP 2 THOT	DEG_F	STOP 00: 37: 16
4	T1116	RCS LOOP 2 TCOLD	DEG_F	
5				
6				



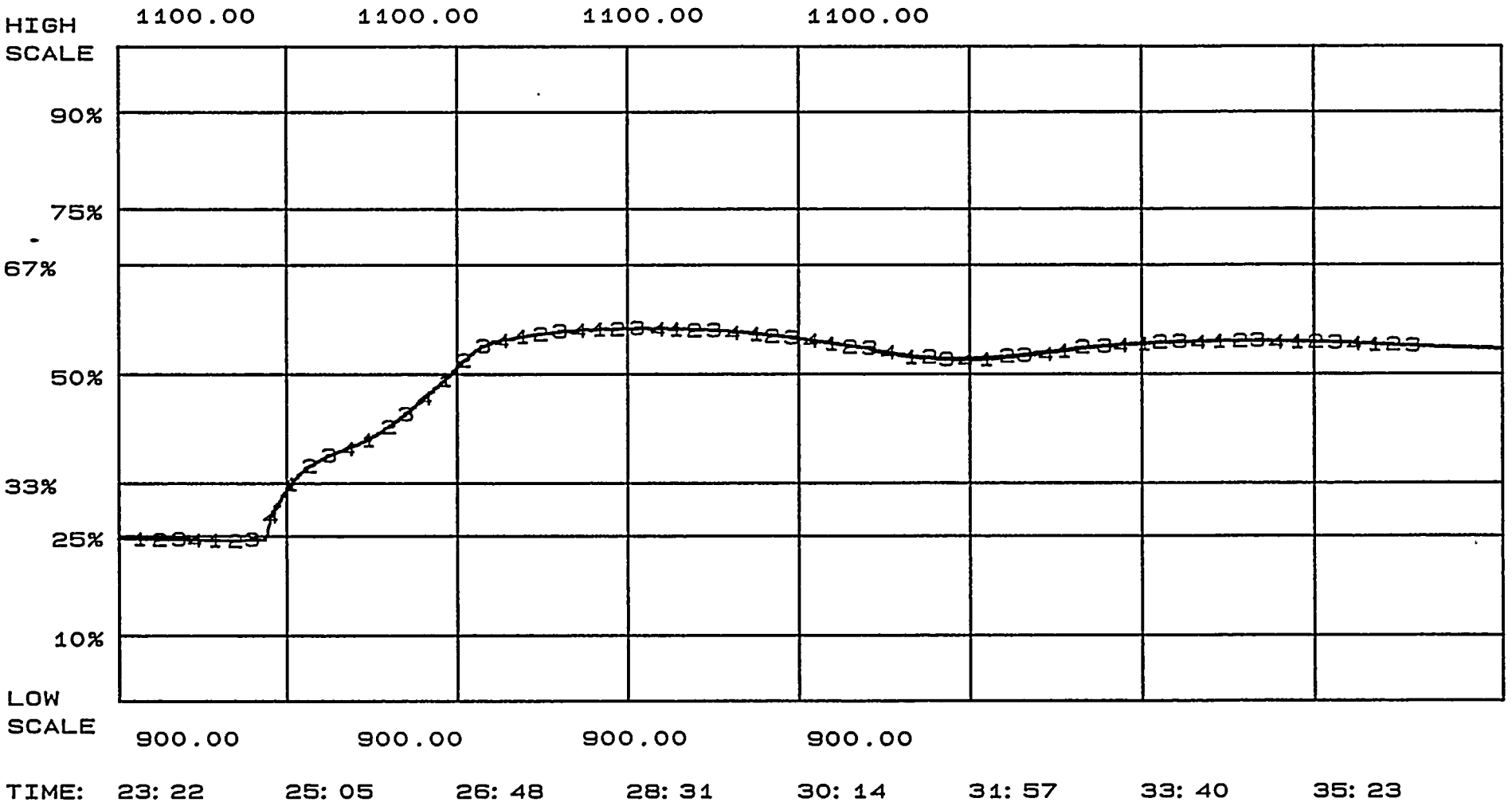
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1113	RCS LOOP 3 THOT	DEG_F	TIME
2	T1117	RCS LOOP 3 TCOLD	DEG_F	START 00: 23: 22
3	T1114	RCS LOOP 4 THOT	DEG_F	STOP 00: 37: 16
4	T1118	RCS LOOP 4 TCOLD	DEG_F	
5				
6				



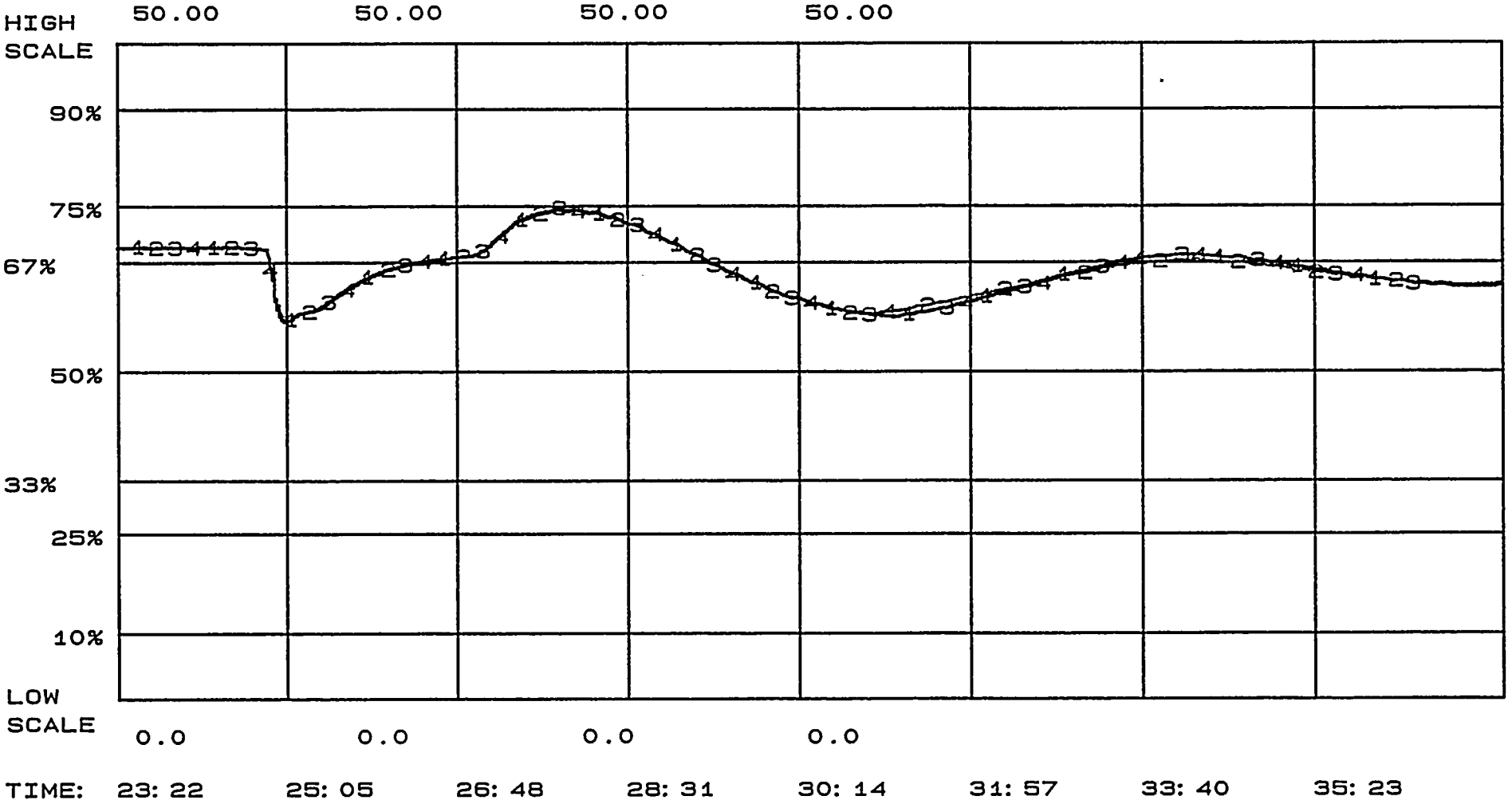
MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 23: 22
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 37: 16
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



MAIN TURBINE TRIP FROM 9% POWER (MAX POWER W/O TRIP)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR #1 N/R LEVEL	PC	TIME
2	L1207	STEAM GENERATOR #2 N/R LEVEL	PC	START 00: 23: 22
3	L1210	STEAM GENERATOR #3 N/R LEVEL	PC	STOP 00: 37: 16
4	L1213	STEAM GENERATOR #4 LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a maximum rate power ramp per ANSI 3.5 - B2.2.

2) Ensure that the simulator will maintain stability during a maximum rate power ramp.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Neutron flux
2) RCS average temperature
3) Pressurizer pressure
4) Pressurizer level
5) Pressurizer temperature
6) Steam flow
7) Feedwater flow
8) RCS hot leg temperature
9) RCS cold leg temperature
10) Steam generator pressure
11) Steam generator level

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

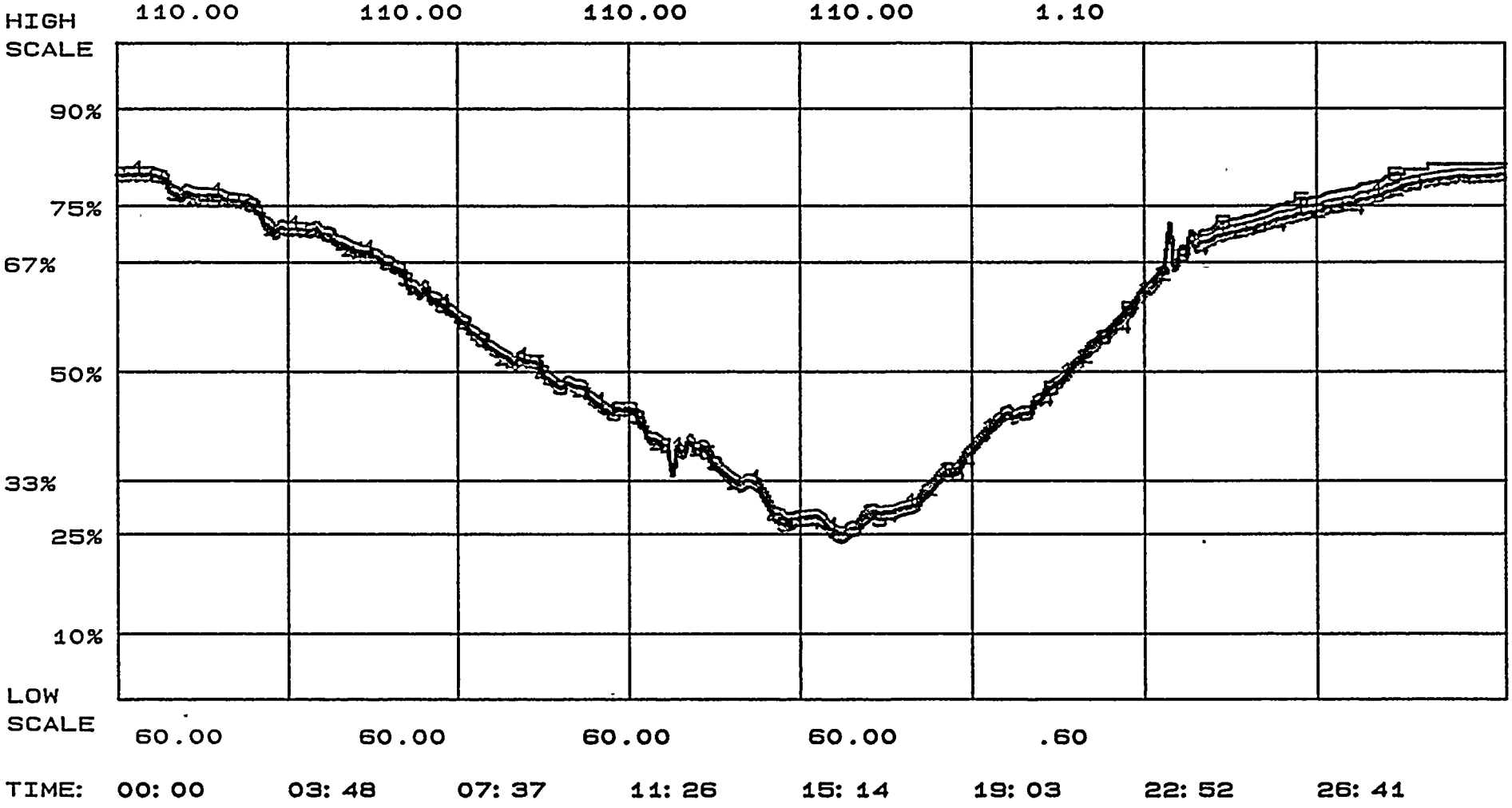
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

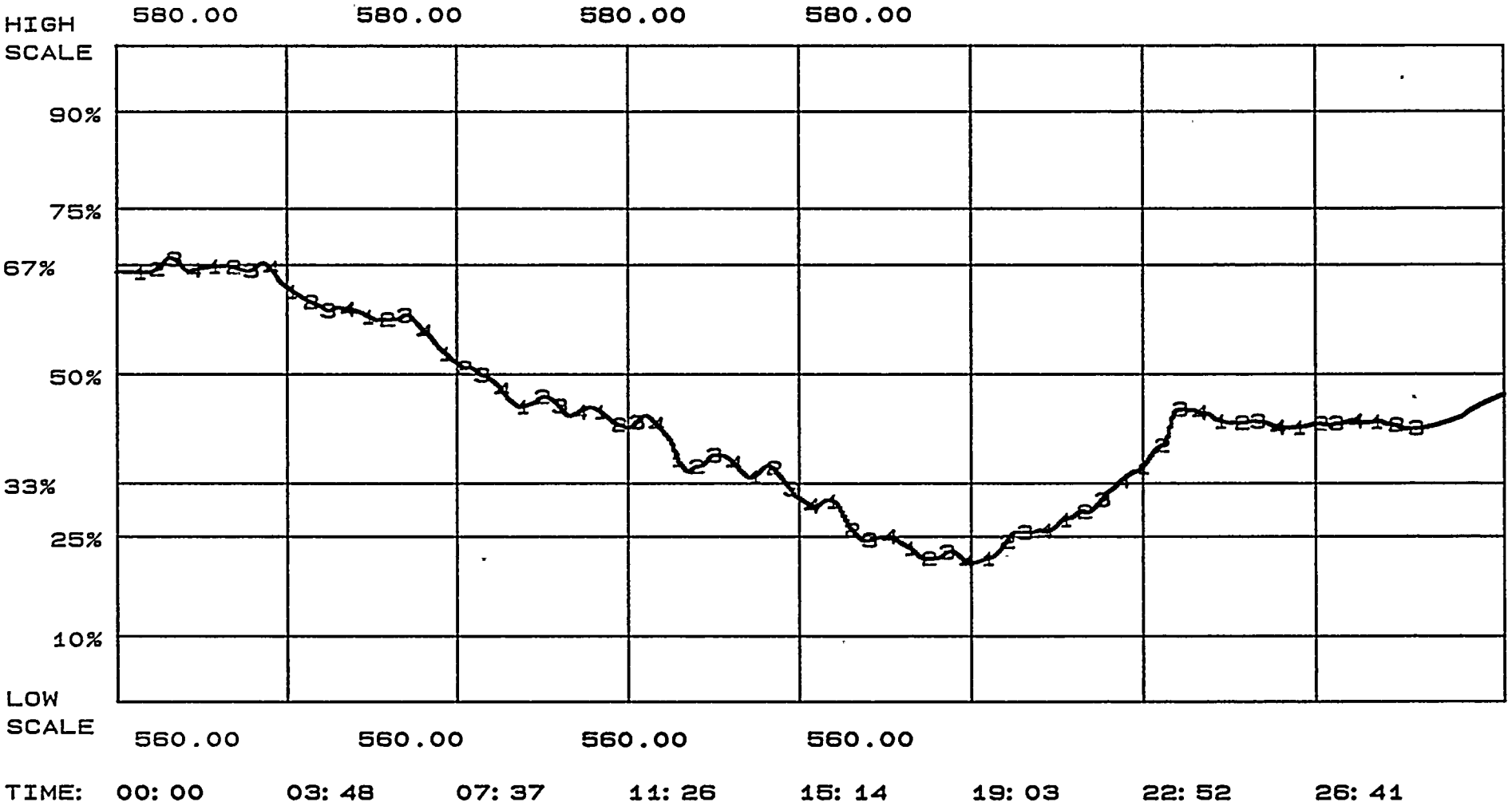
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	N1012	POWER RANGE N.I. CHANNEL N-41	PC	TIME
2	N1013	POWER RANGE N.I. CHANNEL N-42	PC	START 00: 00: 00
3	N1014	POWER RANGE N.I. CHANNEL N-43	PC	STOP 00: 30: 51
4	N1015	POWER RANGE N.I. CHANNEL N-44	PC	
5	CRQN	REACTOR CORE HEAT FLUX	PC	
6				



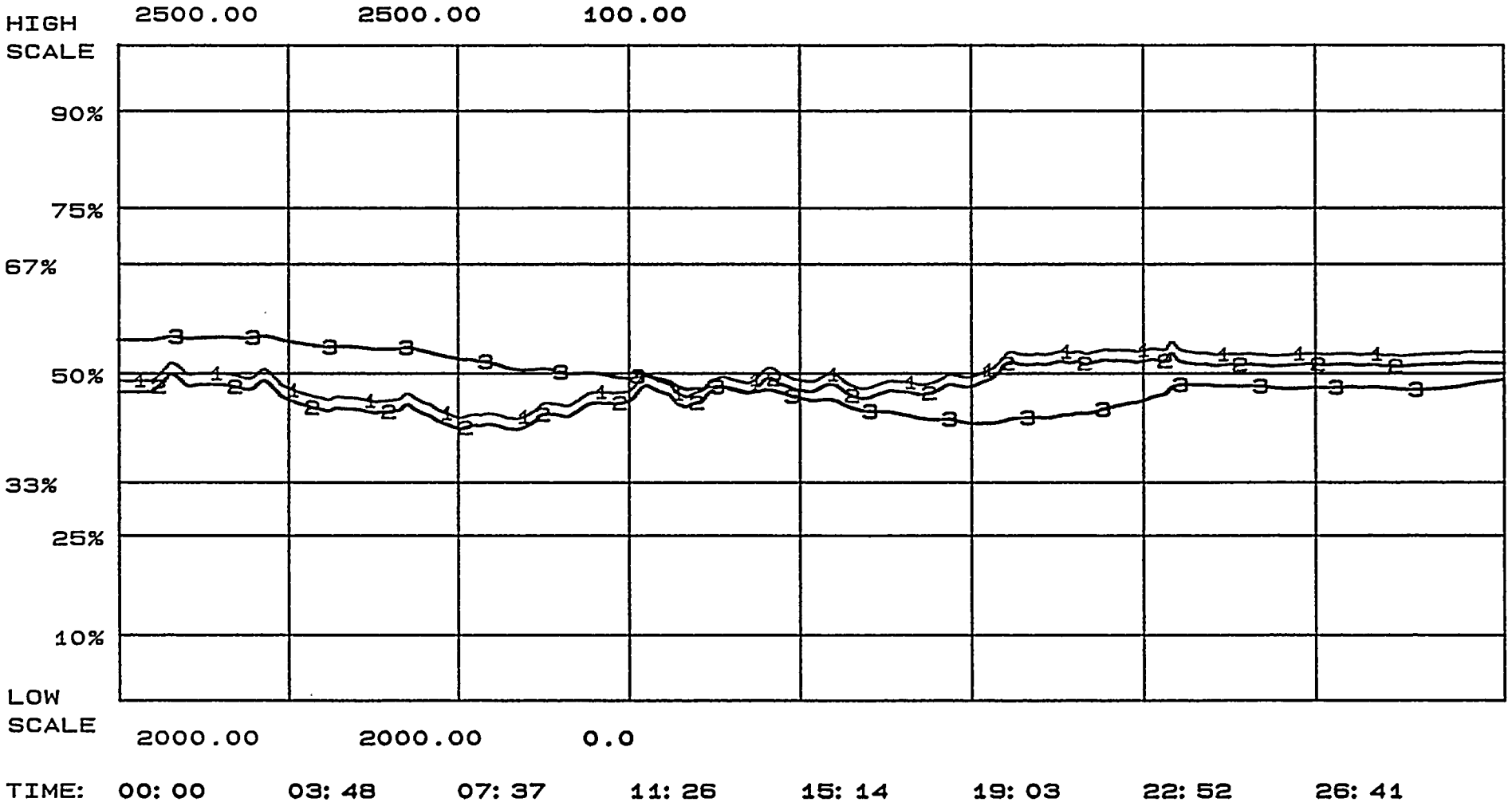
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS TAVE LOOP 1	DEG_F	TIME
2	T1102	RCS TAVE LOOP 2	DEG_F	START 00: 00: 00
3	T1103	RCS TAVE LOOP 3	DEG_F	STOP 00: 30: 51
4	T1104	RCS TAVE LOOP 4	DEG_F	
5				
6				



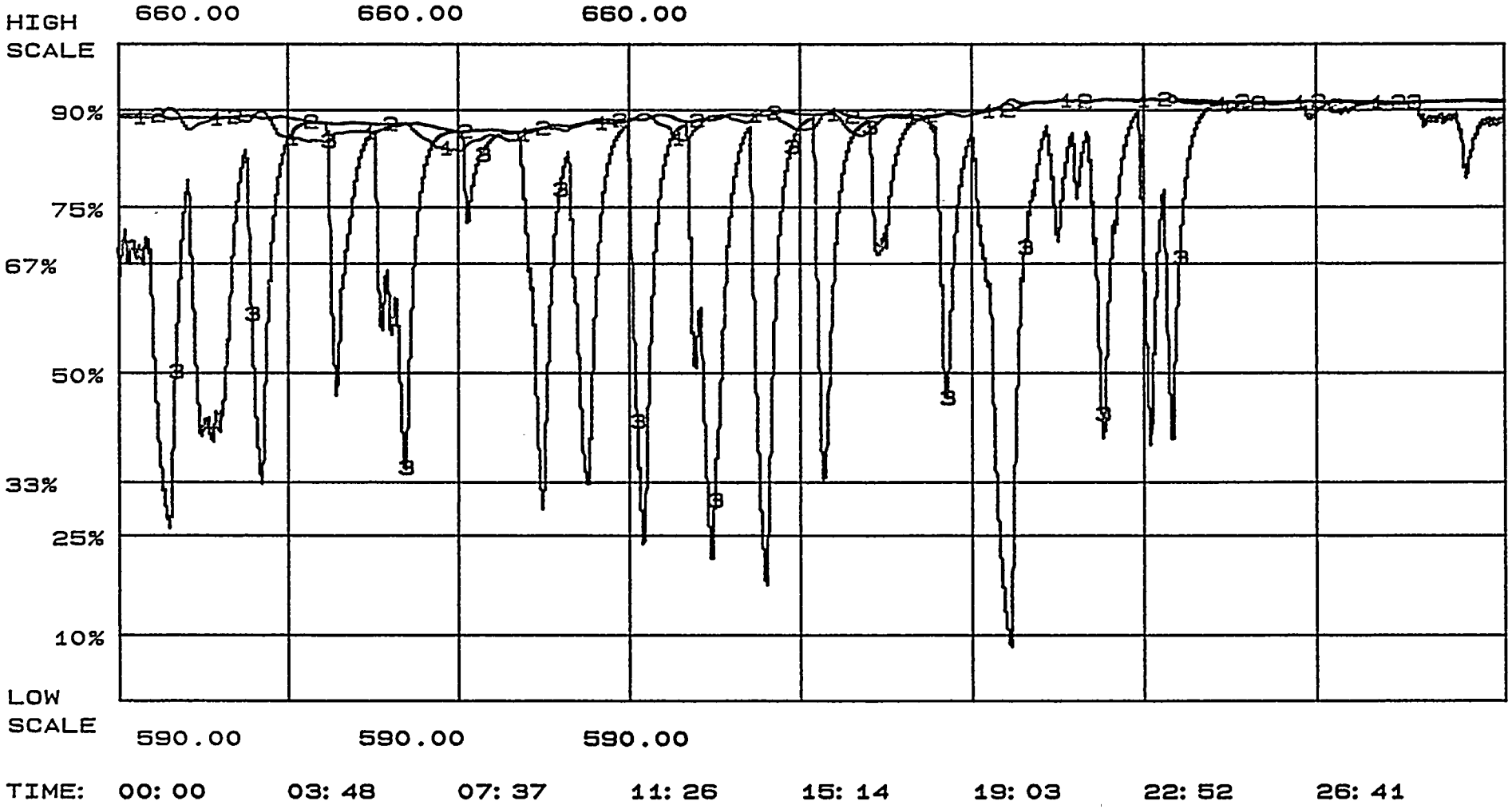
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	RCS WIDE RANGE PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3	L1091	PRESSURIZER LEVEL	PC	STOP 00: 30: 51
4				
5				
6				



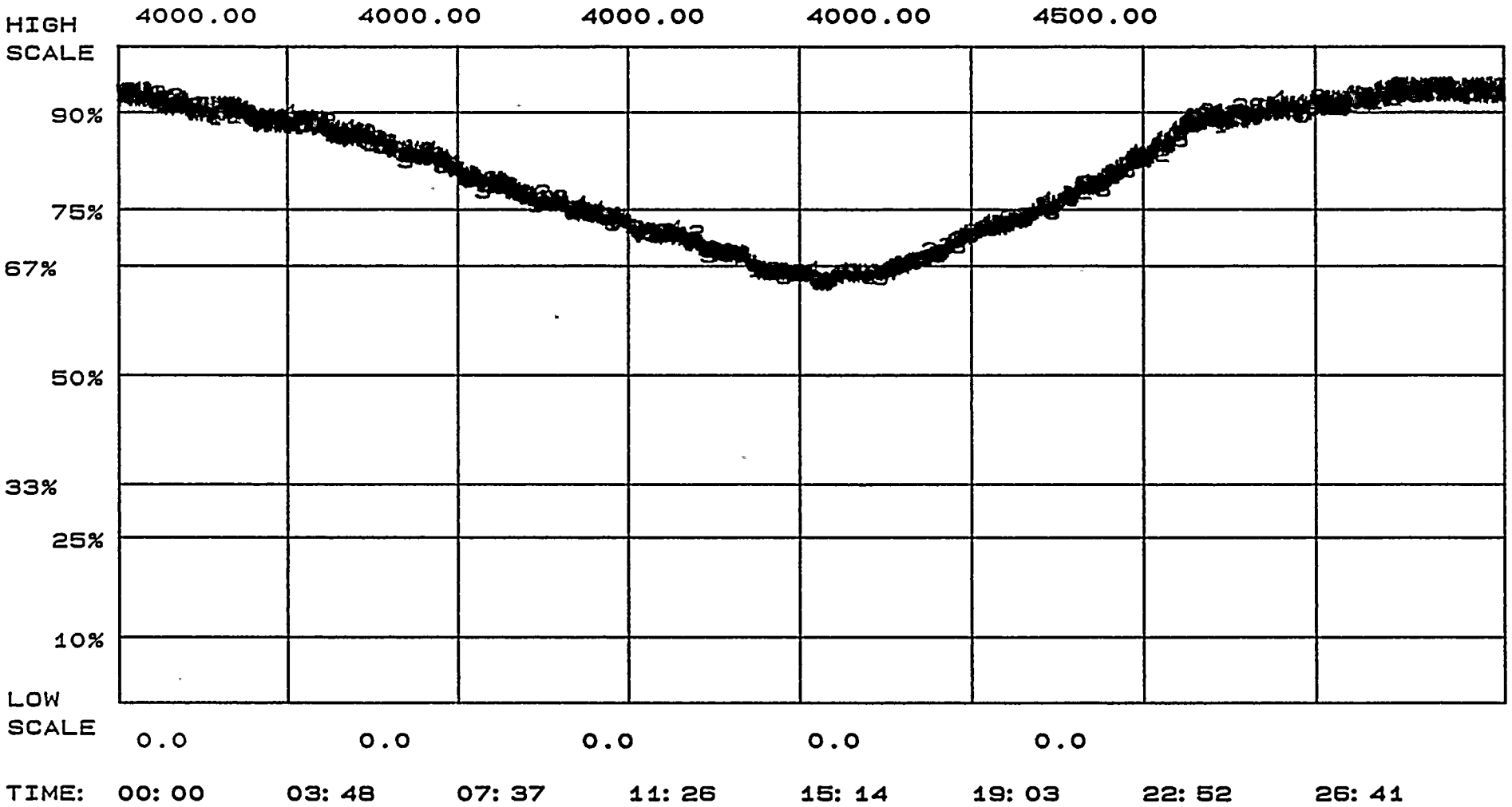
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PRESSURIZER STEAM TEMPERATURE	DEG_F	TIME
2	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 30: 51
4				
5				
6				



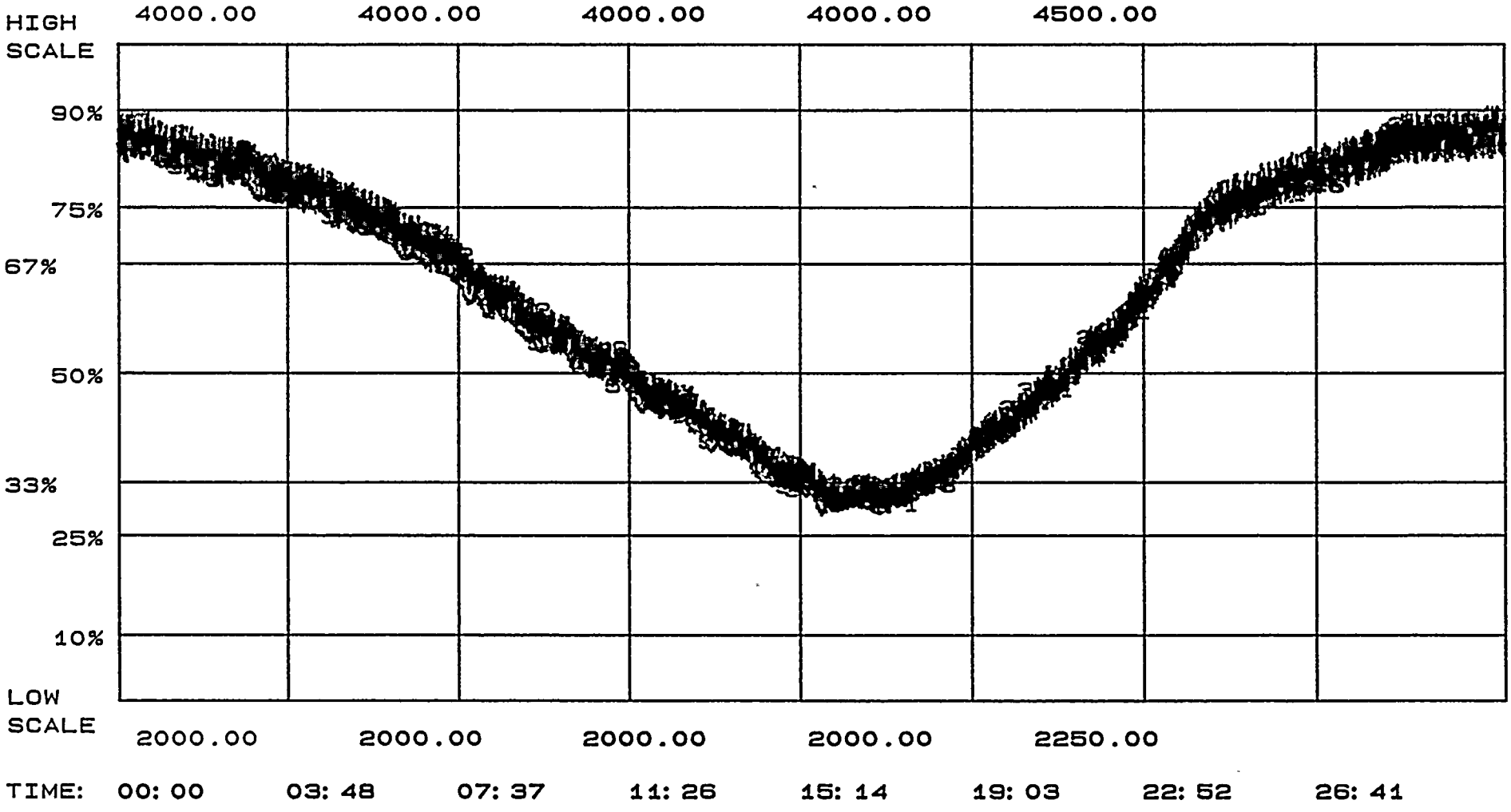
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1048	STEAM GENERATOR 1 STEAM FLOW	KBH	TIME
2	F1050	STEAM GENERATOR 2 STEAM FLOW	KBH	START 00: 00: 00
3	F1052	STEAM GENERATOR 3 STEAM FLOW	KBH	STOP 00: 30: 51
4	F1054	STEAM GENERATOR 4 STEAM FLOW	KBH	
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
6				



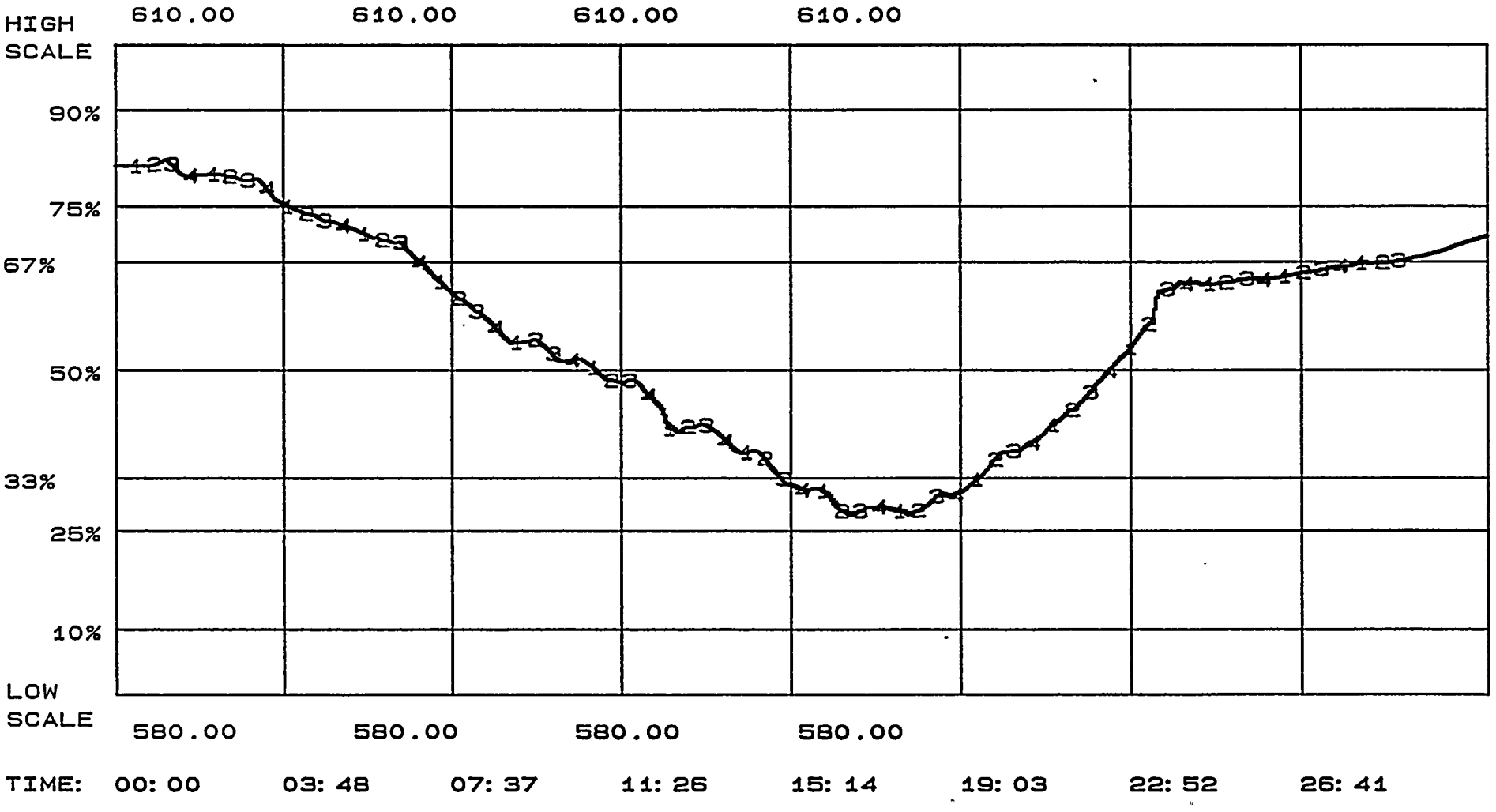
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR 1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR 2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR 3 FEED FLOW	KBH	STOP 00: 30: 51
4	F1203	STEAM GENERATOR 4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEEDWATER FLOW	LBS_S	
6				



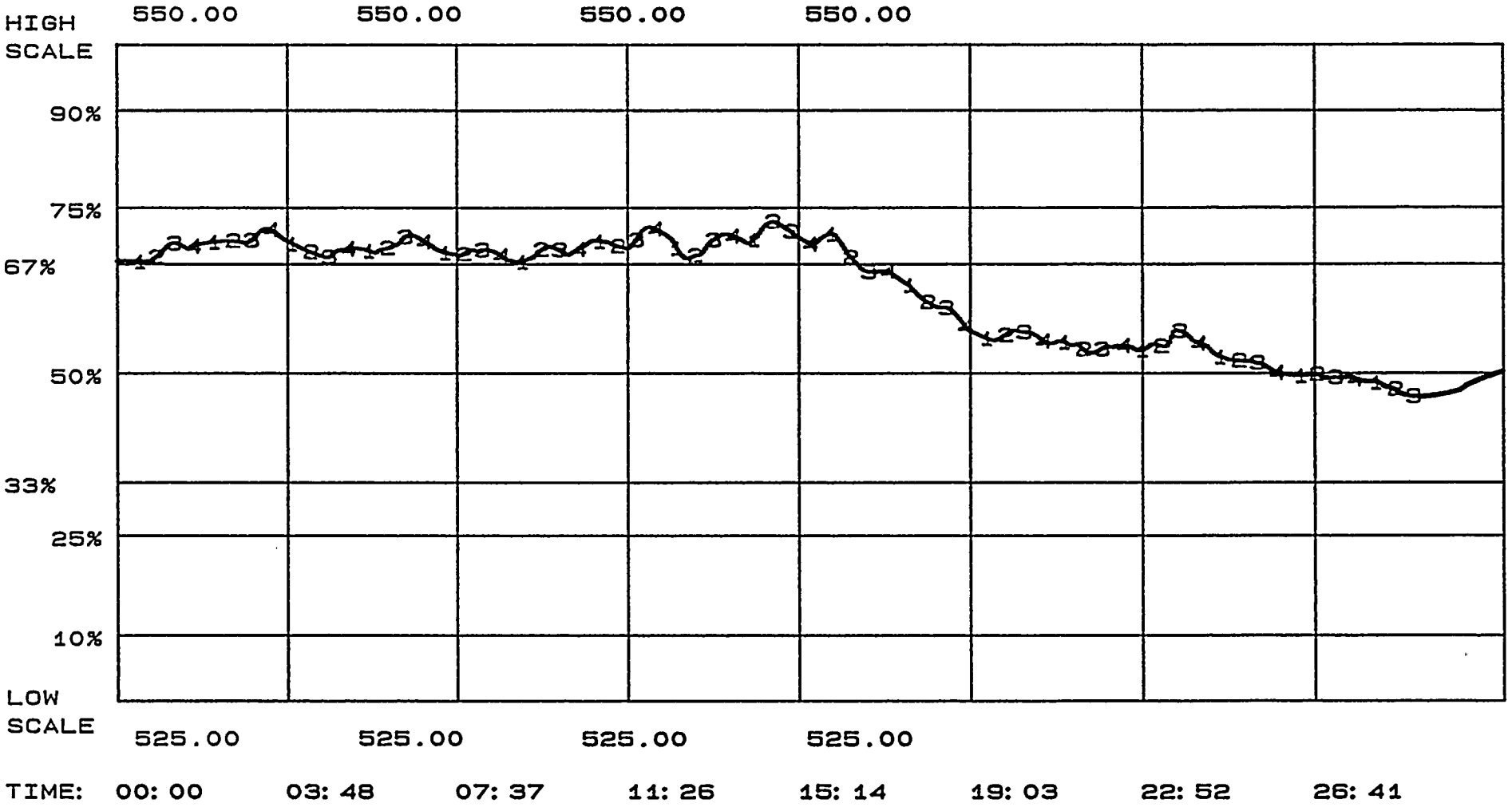
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	LOOP 1 THOT	DEG_F	TIME
2	T1112	LOOP 2 THOT	DEG_F	START 00: 00: 00
3	T1113	LOOP 3 THOT	DEG_F	STOP 00: 30: 51
4	T1114	LOOP 4 THOT	DEG_F	
5				
6				



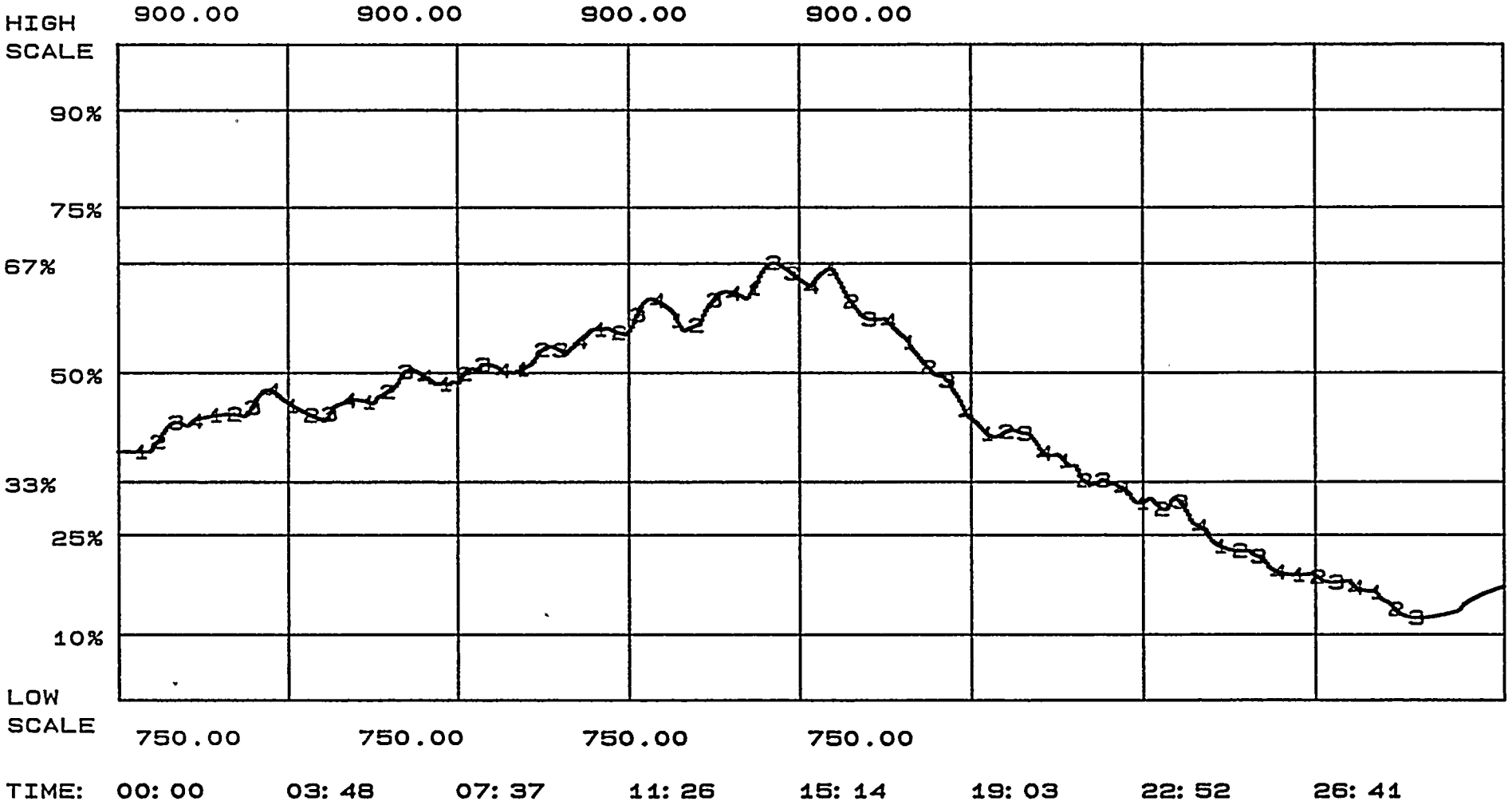
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1115	LOOP 1 TCOLD	DEG_F	TIME
2	T1116	LOOP 2 TCOLD	DEG_F	START 00: 00: 00
3	T1117	LOOP 3 TCOLD	DEG_F	STOP 00: 30: 51
4	T1118	LOOP 4 TCOLD	DEG_F	
5				
6				



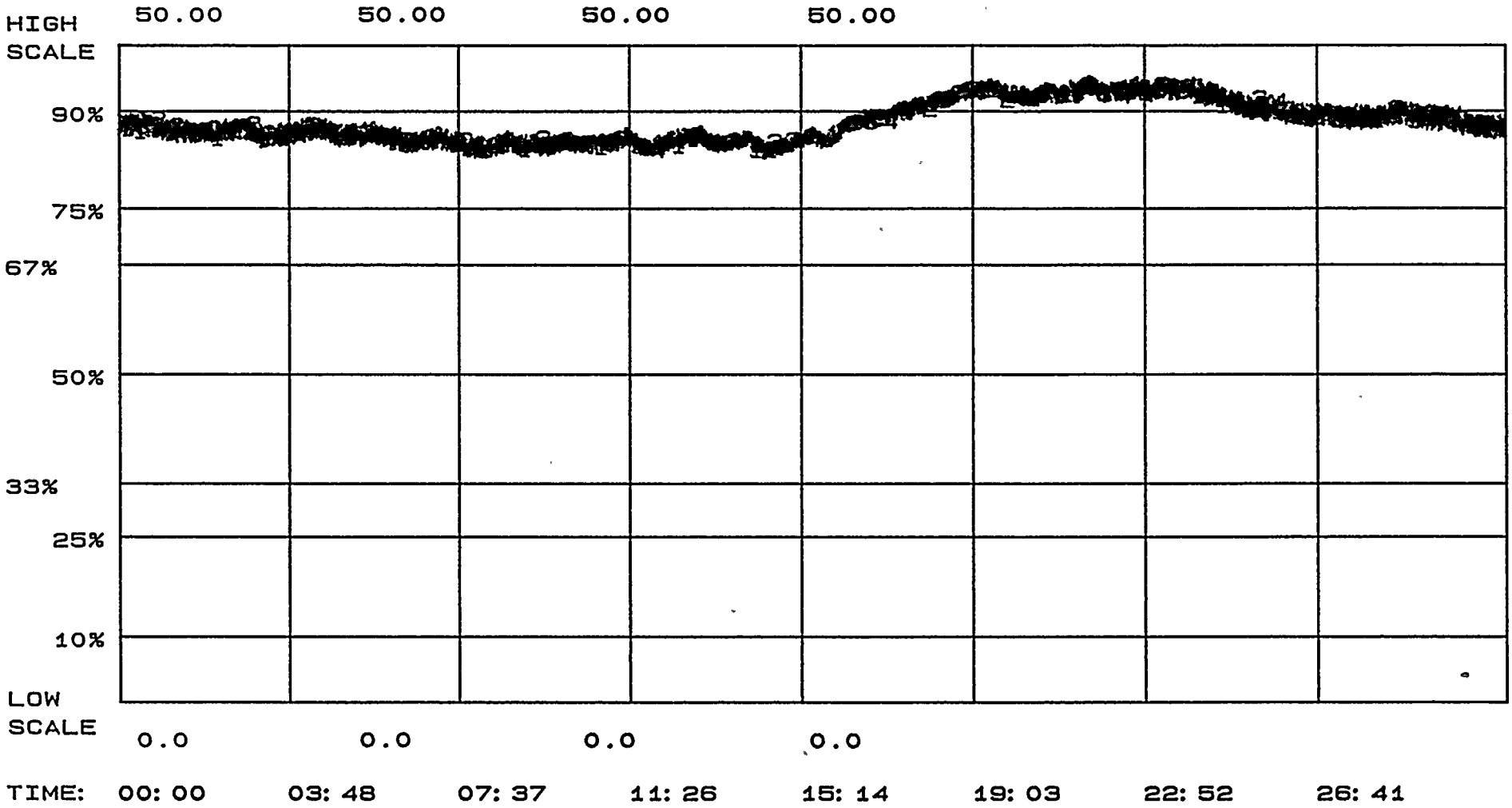
MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR 1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR 2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR 3 PRESSURE	PSIG	STOP 00: 30: 51
4	P1031	STEAM GENERATOR 4 PRESSURE	PSIG	
5				
6				



MAXIMUM RATE POWER RAMP (100% - 75% - 100%)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1204	STEAM GENERATOR 1 NR LEVEL	PC	TIME
2	L1207	STEAM GENERATOR 2 NR LEVEL	PC	START 00: 00: 00
3	L1210	STEAM GENERATOR 3 NR LEVEL	PC	STOP 00: 30: 51
4	L1213	STEAM GENERATOR 4 NR LEVEL	PC	
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MAXIMUM SIZE REACTOR COOLANT RUPTURE WITH LOSS OF ALL OFFSITE POWER

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a maximum size reactor coolant system rupture with a loss of all offsite power per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to accurately replicate containment response to a large break LOCA.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Pressurizer pressure
2) Narrow range pressurizer pressure
3) Pressurizer level
4) Containment pressure
5) Containment temperature

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

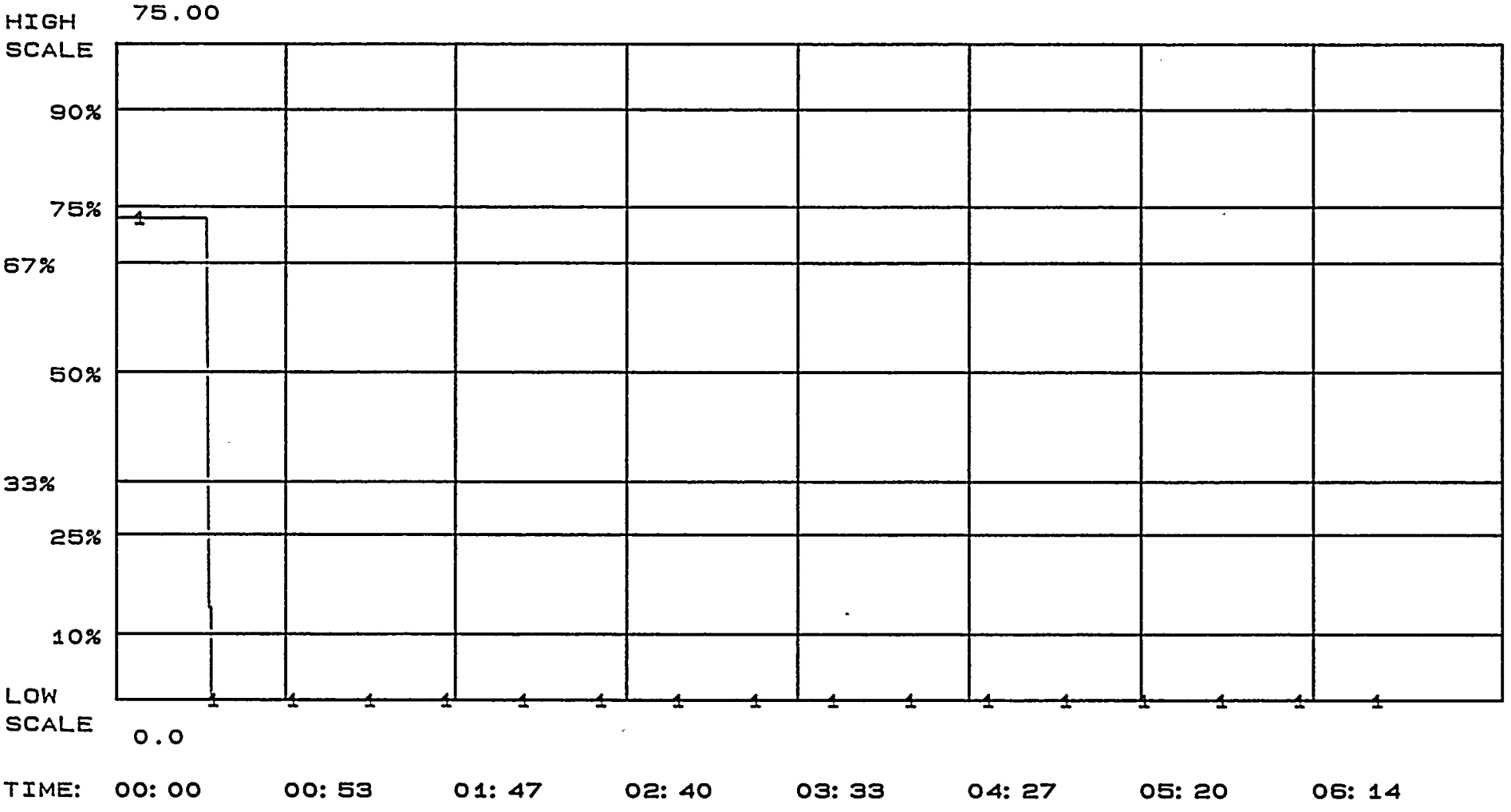
This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted that Narrow Range Pressurizer Pressure continued below 1700 psig and should not have. A discrepancy report has been initiated to correct this condition.

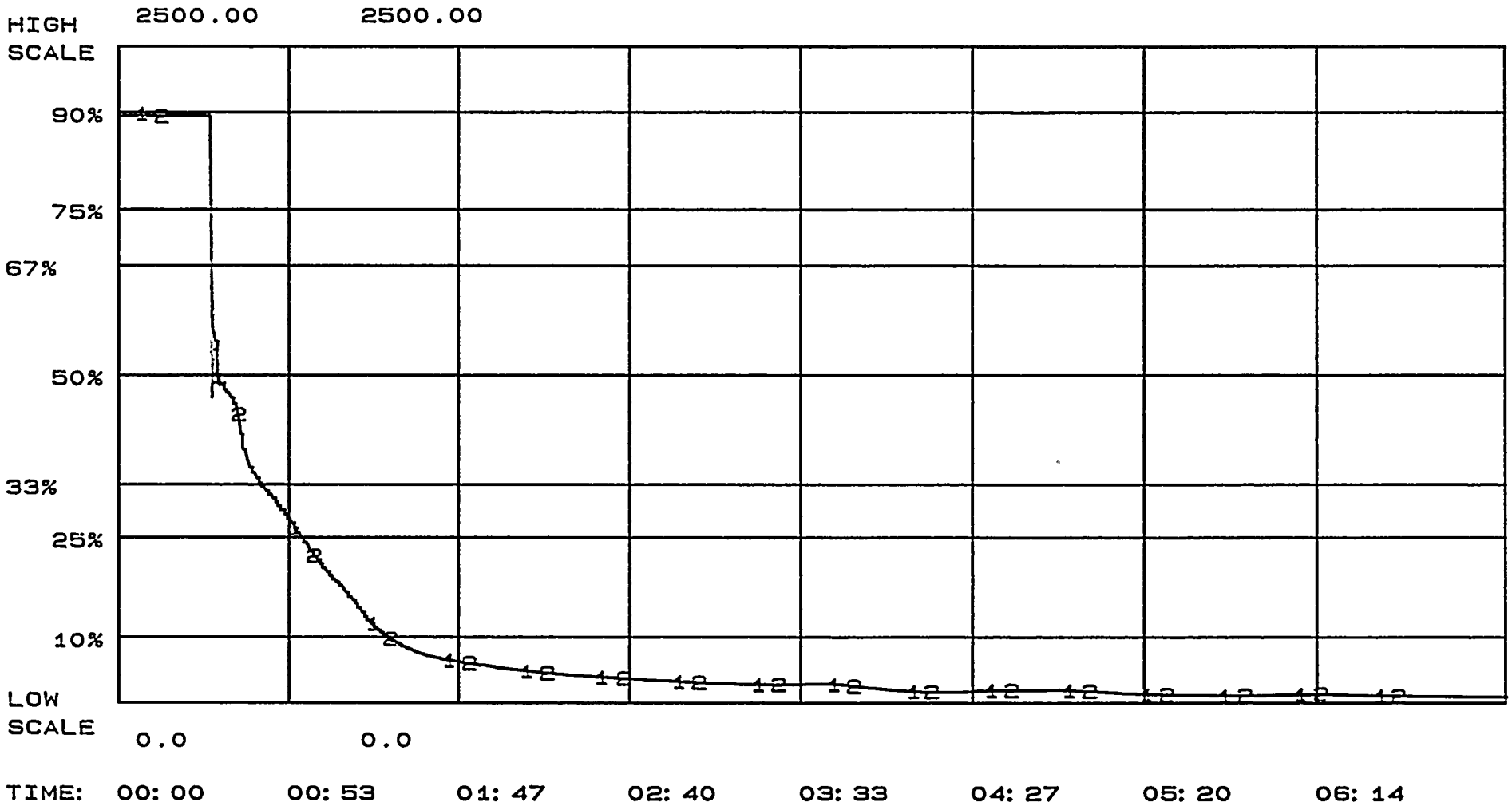
MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 07: 12
4				
5				
6				



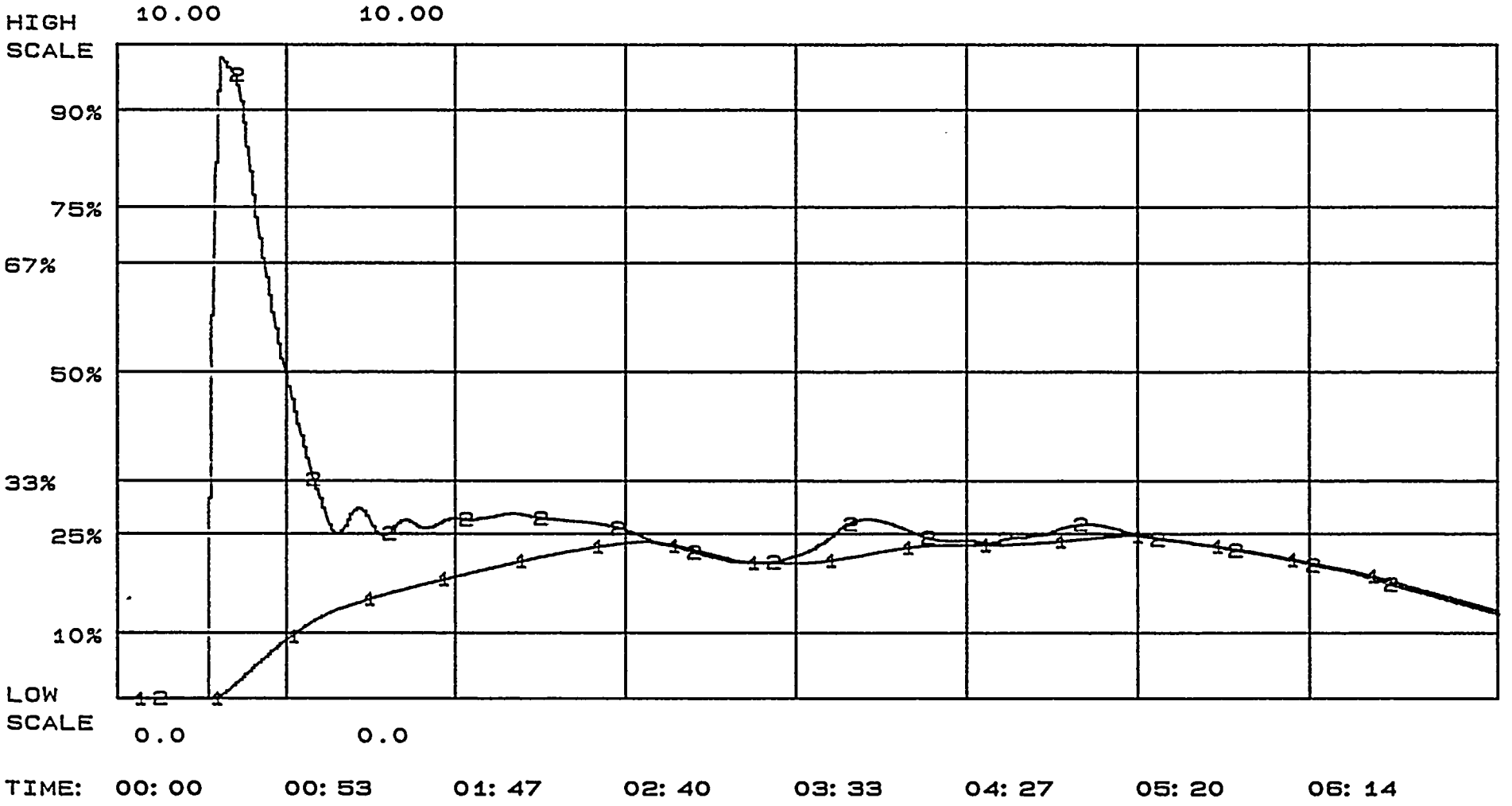
MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WR RCS PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 07: 12
4				
5				
6				



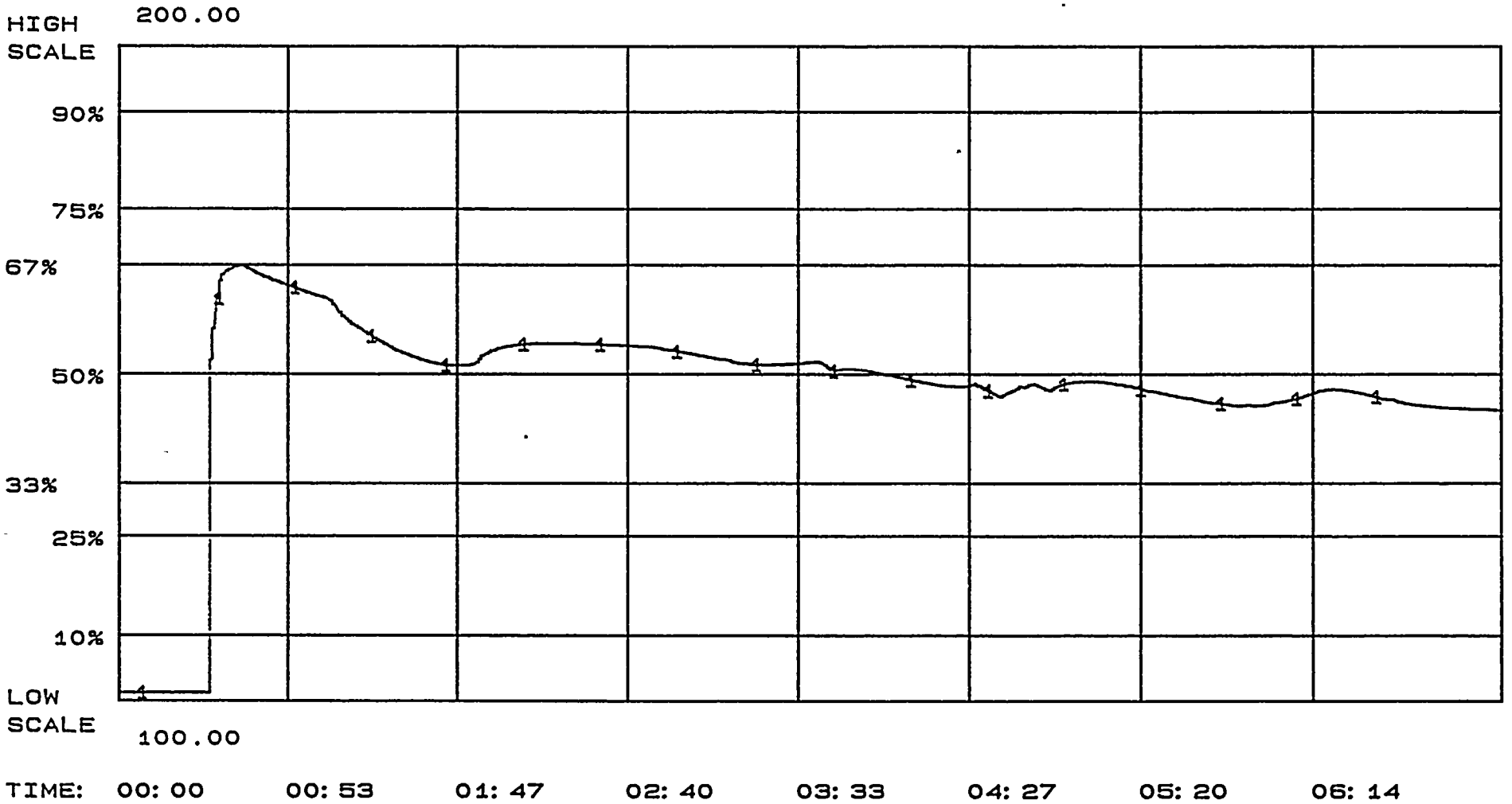
MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 07: 12
4				
5				
6				



MAXIMUM SIZE LOCA WITH LOSS OF ALL OFFSITE POWER

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	TIME
2				START 00: 00: 00
3				STOP 00: 07: 12
4				
5				
6				



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

MAXIMUM SIZE UNISOLABLE MAIN STEAM LINE RUPTURE

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a maximum size unisolable main steam line rupture per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to accurately replicate containment response to a large main steam line break.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Pressurizer pressure
2) Narrow range pressurizer pressure
3) Pressurizer level
4) Containment pressure
5) Containment temperature

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

2) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

VI. Discrepancies

The team of subject matter experts noted that:

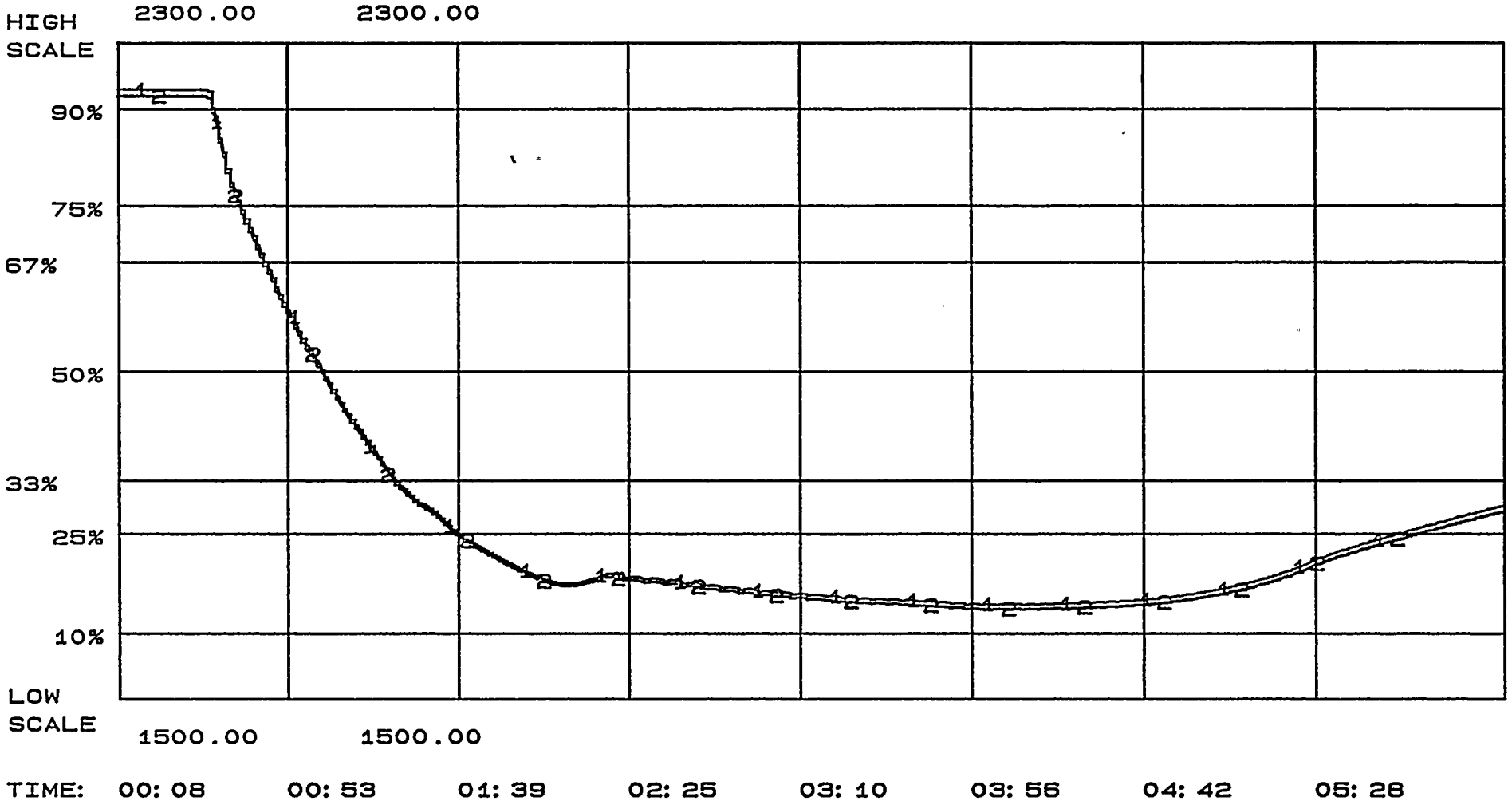
a) Narrow Range Pressurizer Pressure continued below 1700 PSIG and should not have.

b) Lower containment temperature decreased while containment pressure increased.

Discrepancy reports have been initiated to investigate and correct these conditions.

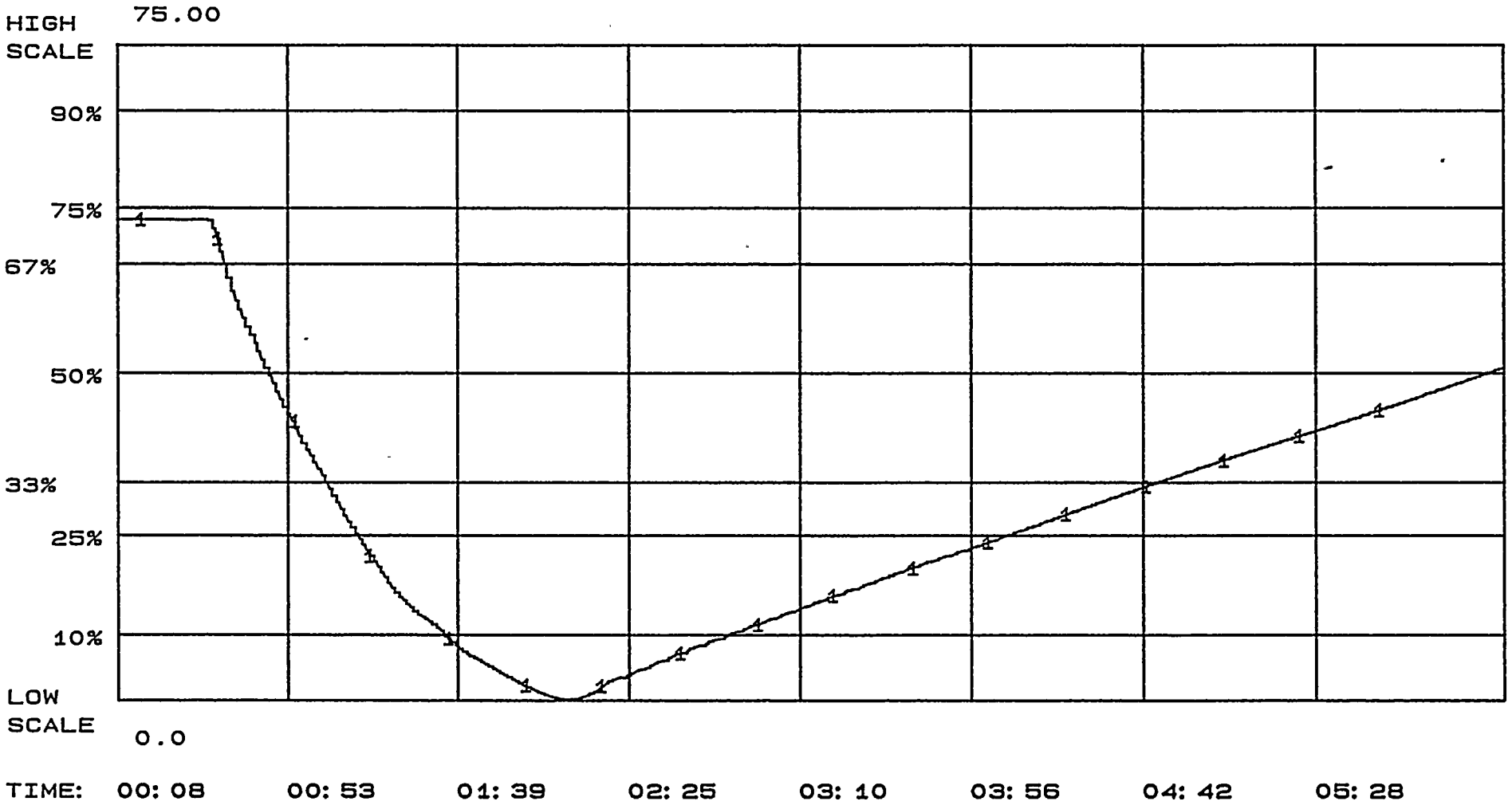
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WR RCS PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 08
3				STOP 00: 06: 18
4				
5				
6				



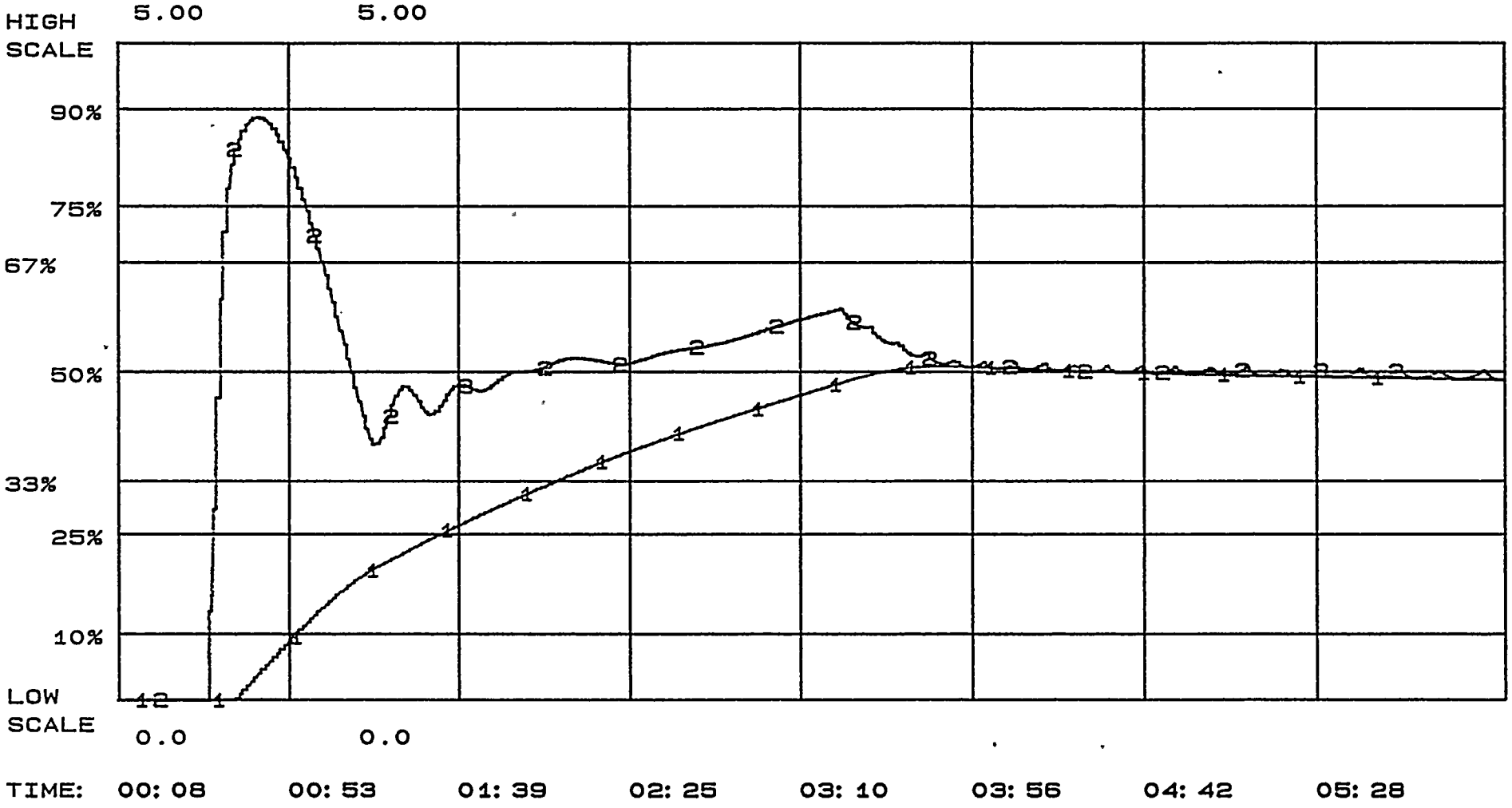
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 08
3				STOP 00: 06: 18
4				
5				
6				



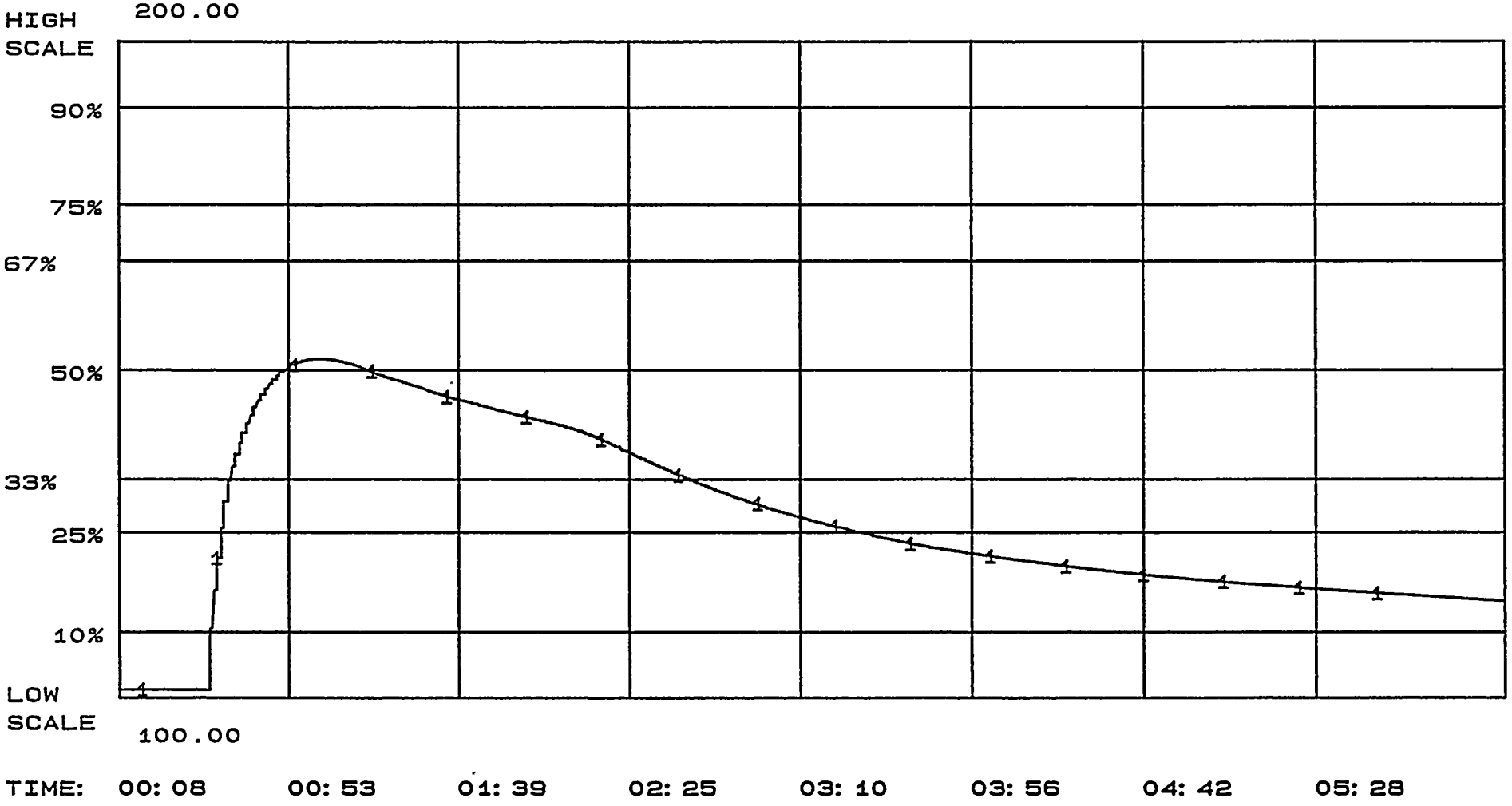
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1045	UPPER CONTAINMENT PRESSURE	PSIG	TIME
2	P1040	LOWER CONTAINMENT PRESSURE	PSIG	START 00: 00: 08
3				STOP 00: 06: 18
4				
5				
6				



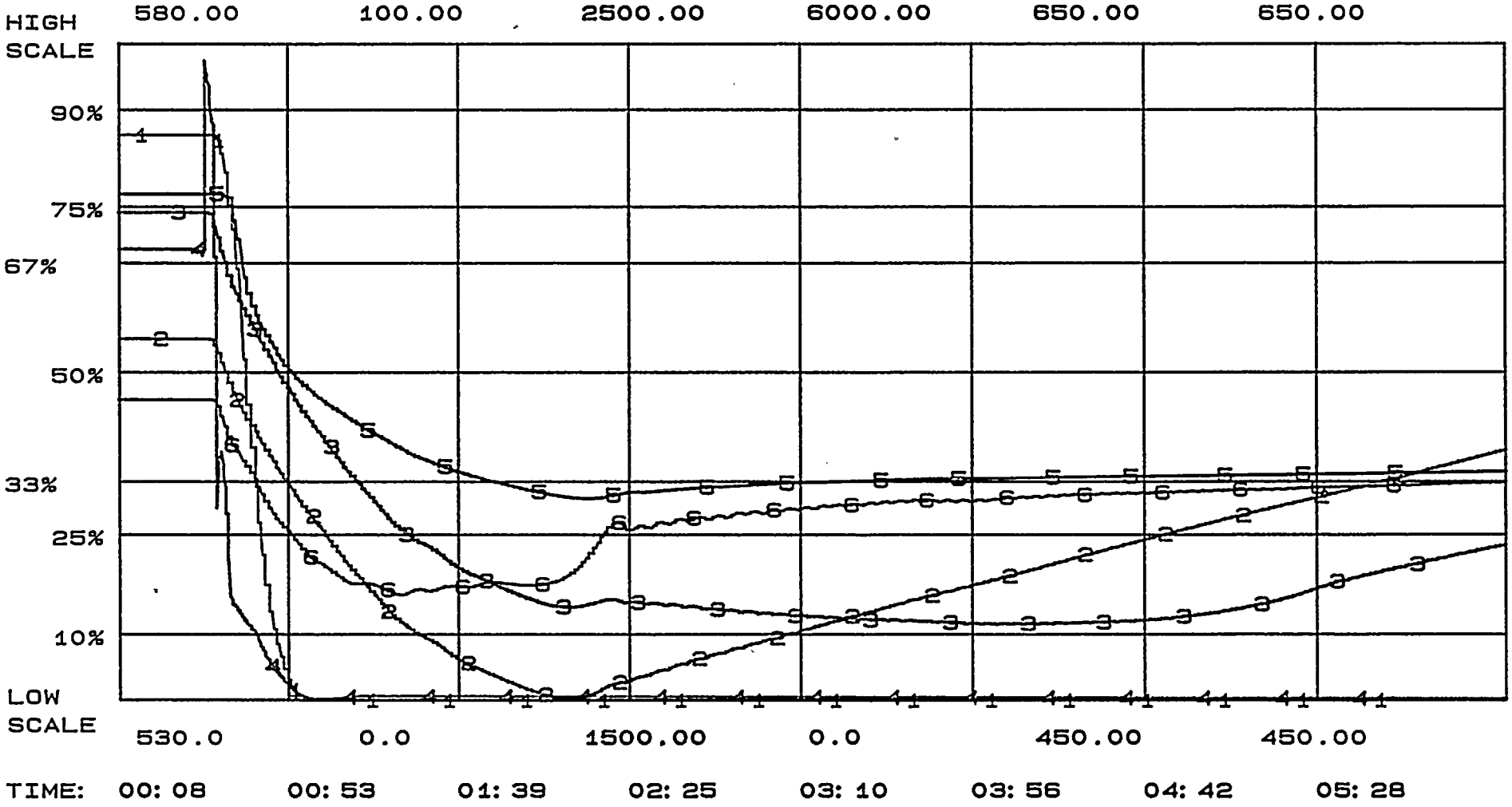
MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1162	LOWER CONTAINMENT TEMPERATURE	DEG_F	TIME
2				START 00: 00: 08
3				STOP 00: 06: 18
4				
5				
6				



MAXIMUM SIZE MAIN STEAM LINE BREAK (S/G #1)

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1101	RCS LOOP 1 TAVE	DEG_F	TIME
2	L1091	PRESSURIZER LEVEL	PC	START 00: 00: 08
3	P1034	RCS W/R PRESSURE	PSIG	STOP 00: 06: 18
4	MSFSUMOT	TOTAL STEAM FLOW	LBS_S	
5	T1111	RCS LOOP 1 THOT	DEG_F	
6	T1115	RCS LOOP 1 TCOLD	DEG_F	



COOK PLANT SIMULATOR

PWR SIMULATOR TRANSIENT TEST

SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

I. Introduction (ANS 3.5 - B2.2)

The purpose of this test is to:

1) Test the simulator response to a slow primary system depressurization to saturated conditions with high pressure Emergency Core Cooling System inhibited using a pressurizer relief valve per ANSI 3.5 - B2.2.

2) Ensure that the simulator will function to establish localized saturated conditions in the RCS while liquid is maintained in the pressurizer.

II. Initial Conditions

1) The simulator is operating at normal steady state, full power conditions with control rod bank D positioned to maintain axial flux difference within limits.

III. Data Collected

1) Pressurizer relief valve (PORV) flow
2) Pressurizer pressure
3) Pressurizer temperature
4) Surge line temperature
5) Pressurizer level
6) Loop flow rates
7) RCS hot leg temperature
8) Source range detector output
9) Reactor vessel level
10) RCS saturation margin

IV. Acceptance Criteria

The following acceptance criteria are to be used to determine acceptable simulator response:

1) Localized saturated conditions are established in the RCS as indicated by:

   a) RCS saturation margin decreasing to zero (0)
   b) RCS wide range pressure decreases to approximately Psat for RCS hot leg temperature
   c) Decreasing wide range RVLIS indications with increasing pressurizer level indications

2) The observable change in parameters corresponds in direction and magnitude to those expected from a best estimate analysis for the simulated transient and do not violate the physical laws of nature.

3) The simulator shall not fail to cause an alarm or automatic action if the reference plant would have caused an alarm and/or automatic action, and conversely, the simulator shall not cause an alarm and/or automatic action if the reference plant would not cause an alarm and/or automatic action.

V. Analysis

This transient was analyzed as a best estimate of expected actions.

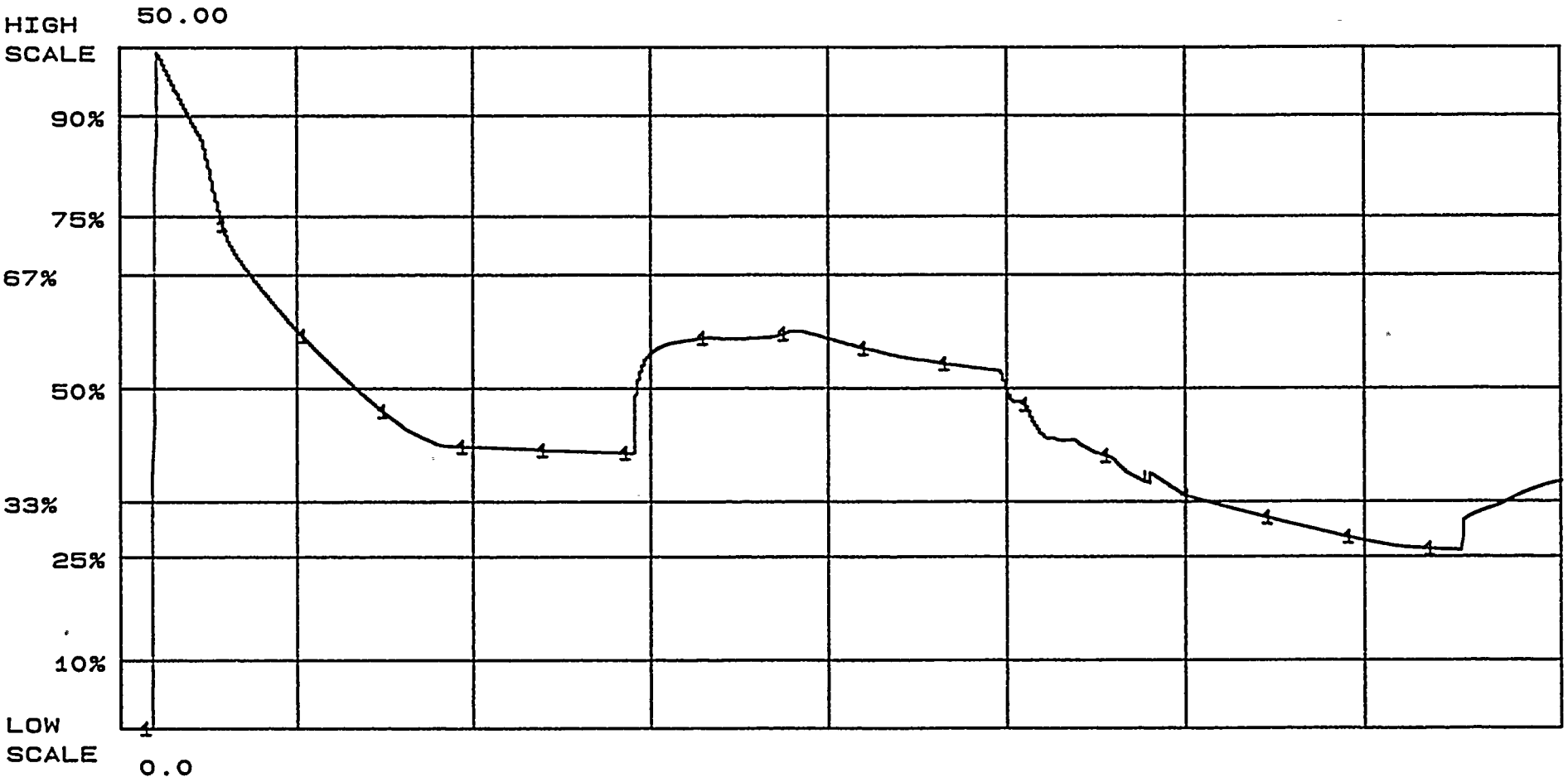
VI. Discrepancies

No discrepancies were noted by the team of subject matter experts.

The team did request that Steam Generator parameters be plotted to clarify that a cooldown was initiated at the approximately eleven (11) minute mark and noted that the response was correct for the condition (cooldown).

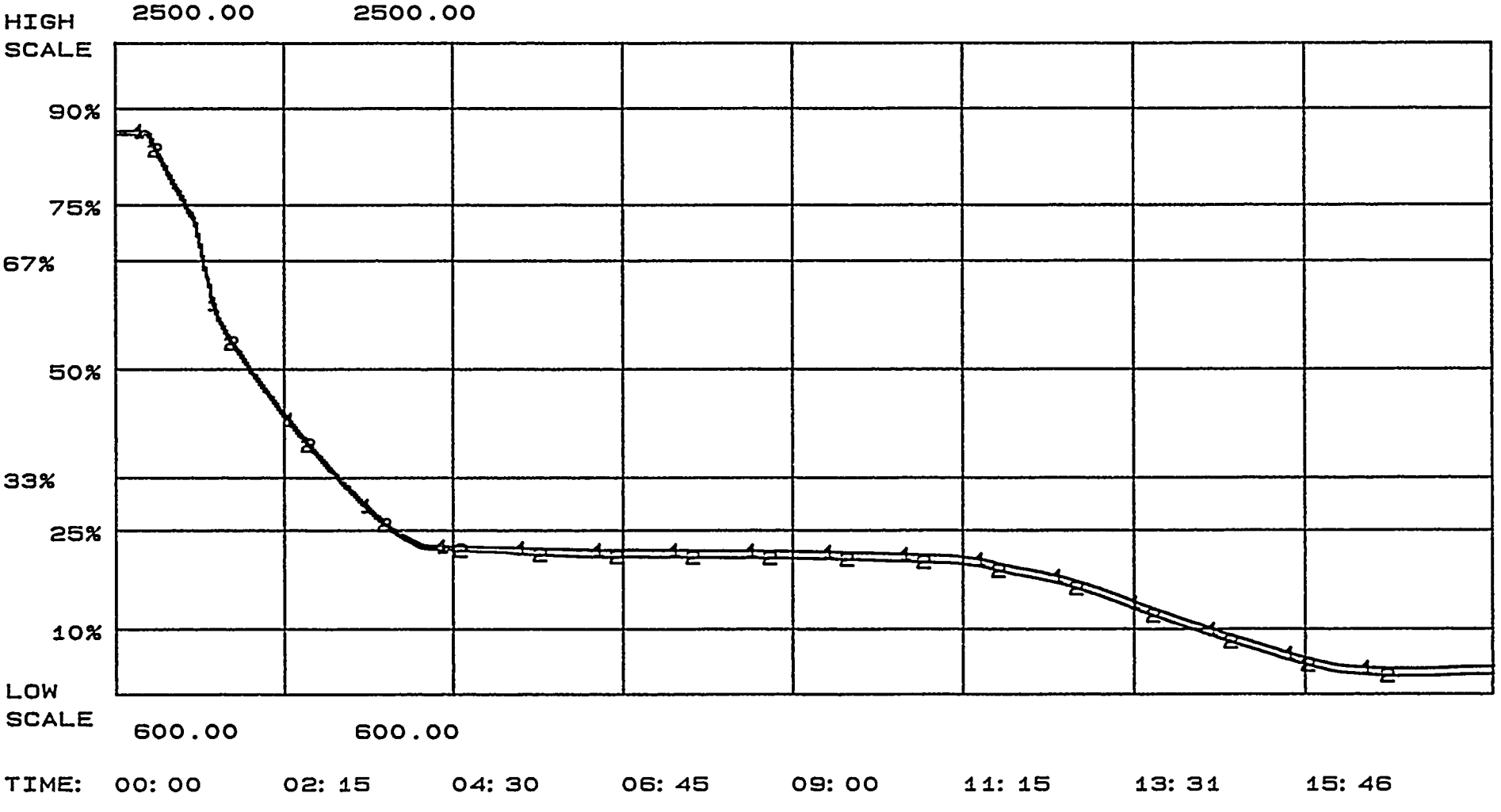
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RCFPORVHDR	PRESSURIZER PORV HEADER FLOW	LBS_S	TIME
2				START 00: 00: 00
3				STOP 00: 18: 14
4				
5				
6				



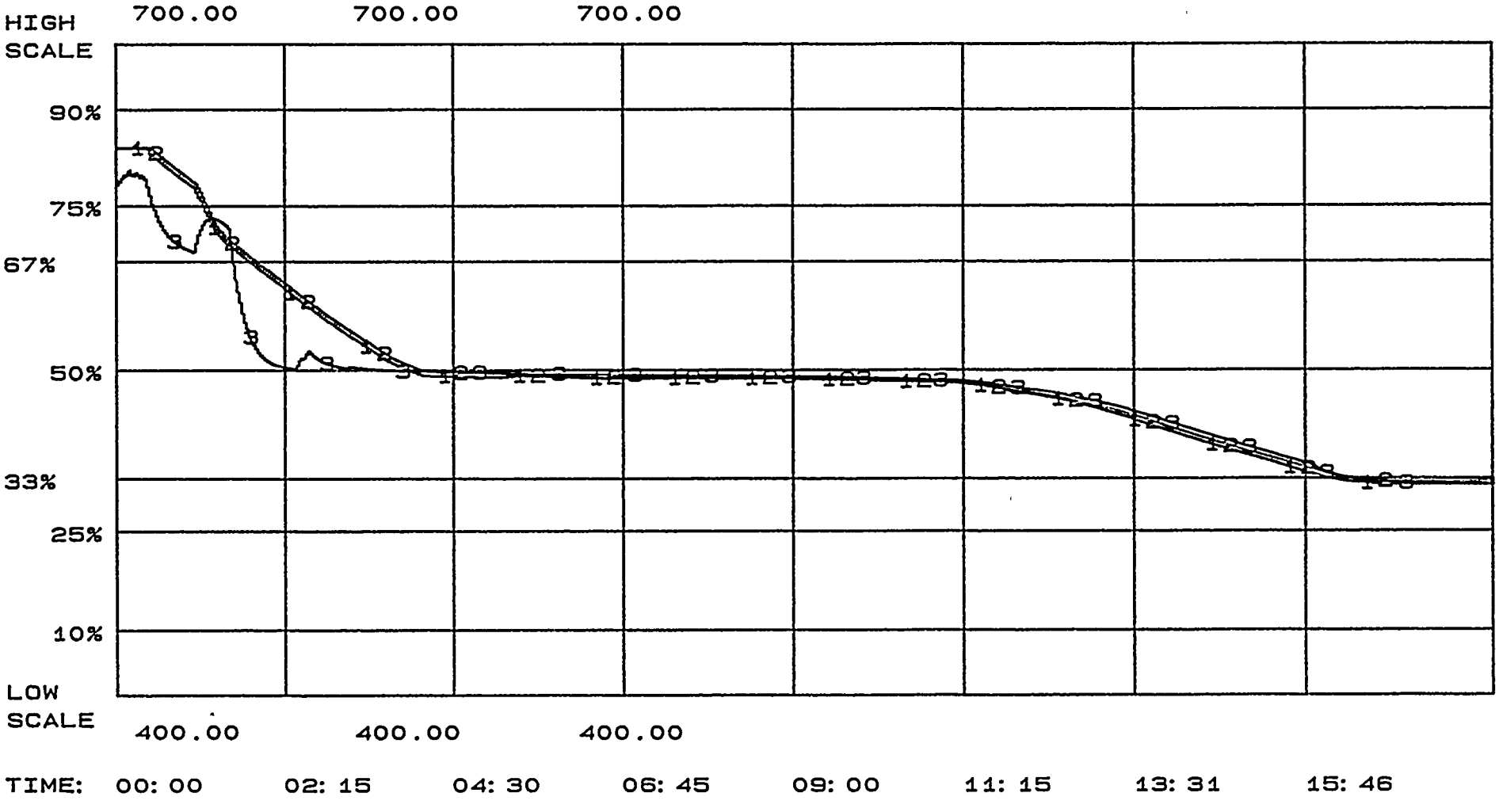
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1034	WR RCS PRESSURE	PSIG	TIME
2	P1036	PRESSURIZER PRESSURE	PSIG	START 00: 00: 00
3				STOP 00: 18: 14
4				
5				
6				



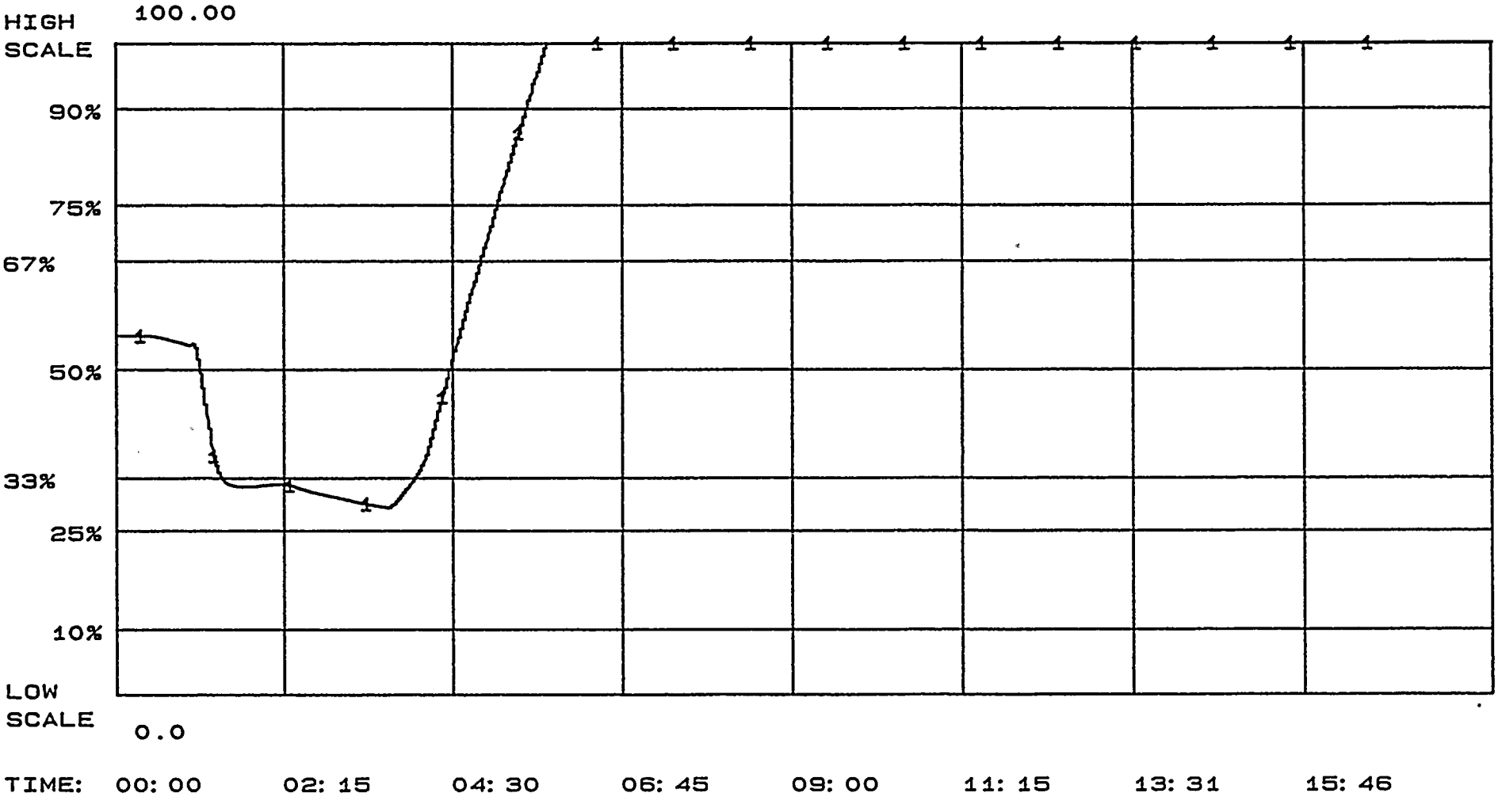
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1005	PRESSURIZER VAPOR TEMPERATURE	DEG_F	TIME
2	T1004	PRESSURIZER LIQUID TEMPERATURE	DEG_F	START 00: 00: 00
3	RCTNTA253	PRESSURIZER SURGE LINE TEMP	DEG_F	STOP 00: 18: 14
4				
5				
6				



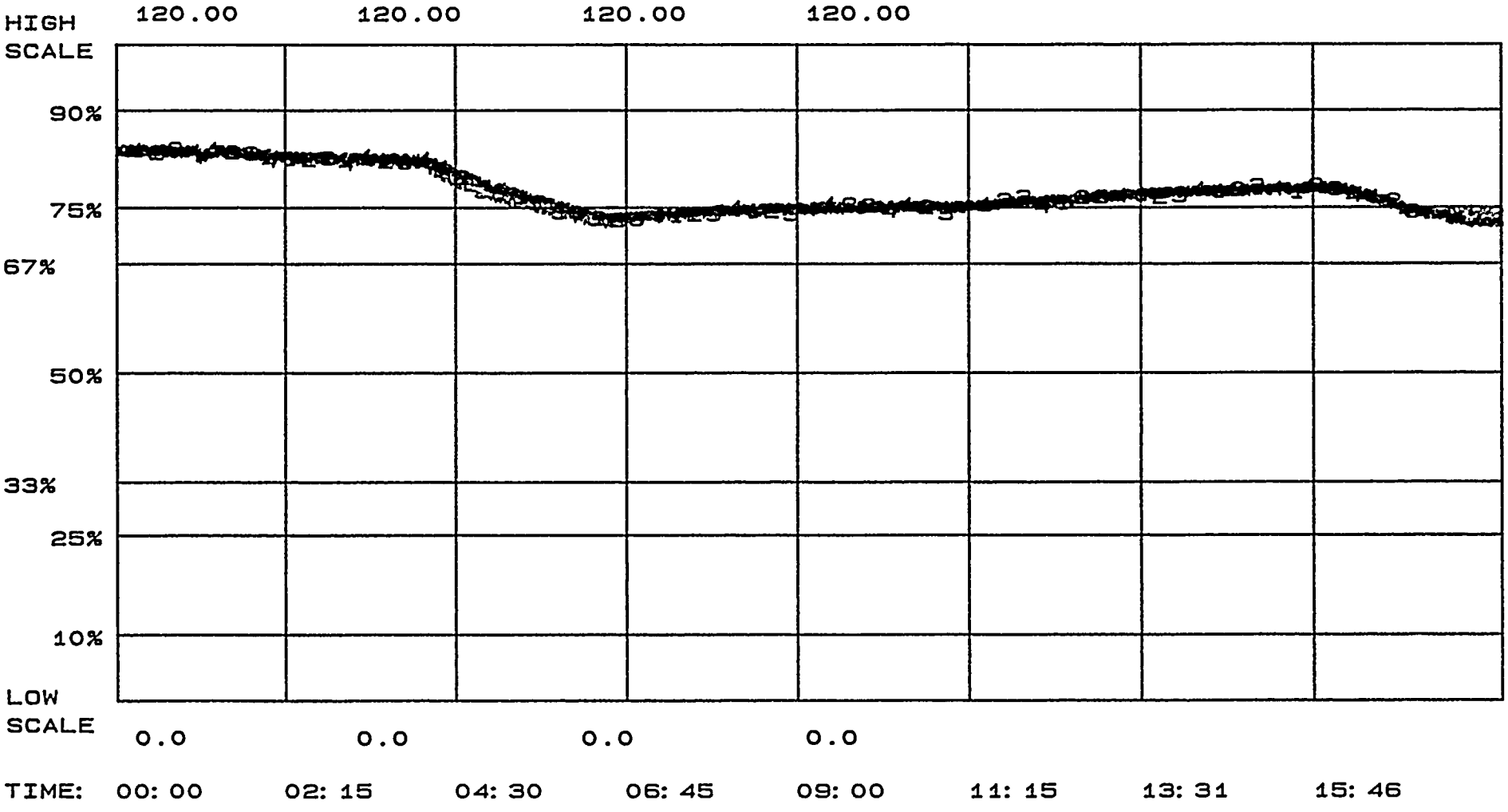
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1091	PRESSURIZER LEVEL	PC	TIME
2				START 00: 00: 00
3				STOP 00: 18: 14
4				
5				
6				



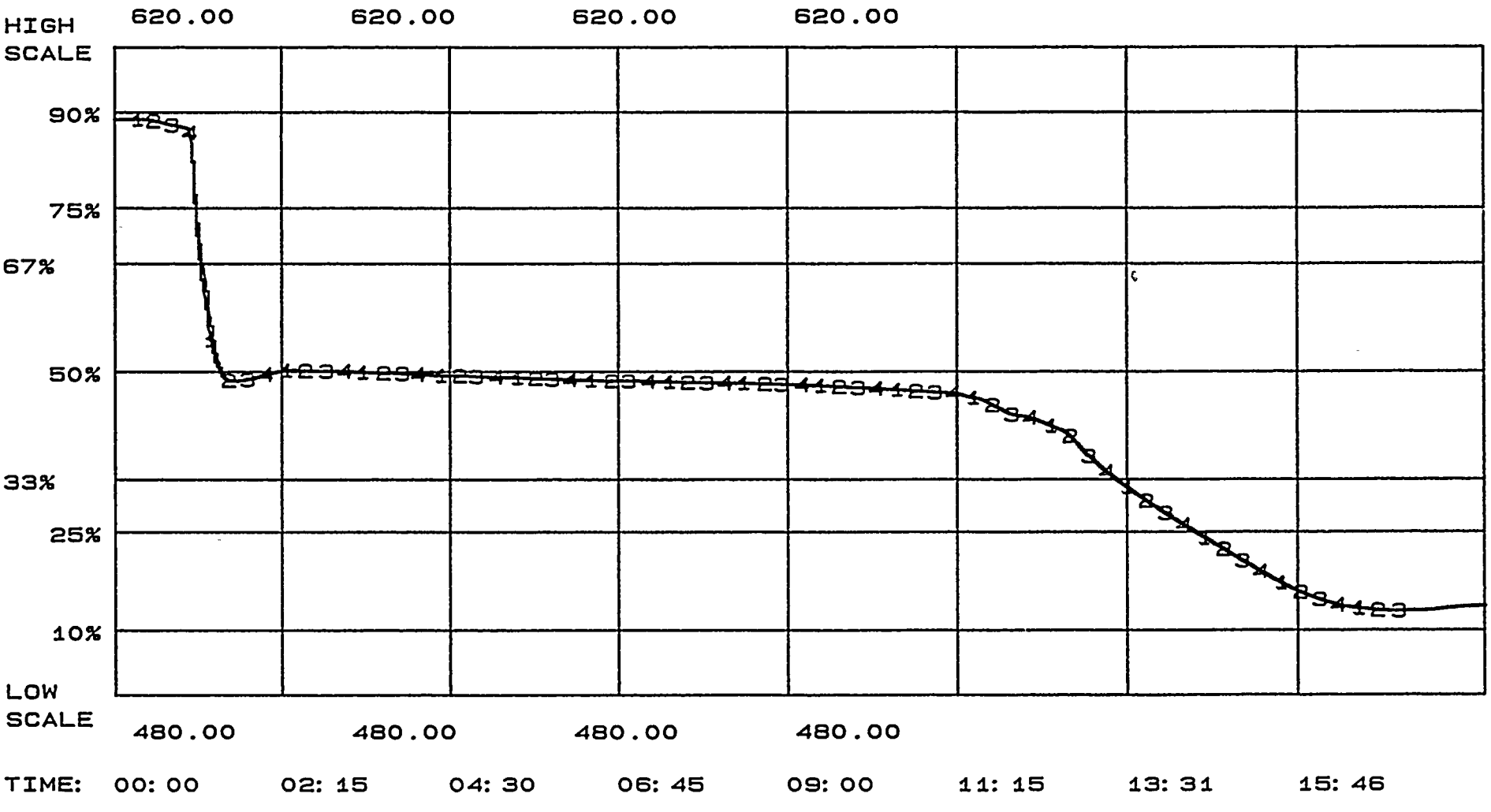
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1089	RCS LOOP 1 FLOW RATE	PC	TIME
2	F1092	RCS LOOP 2 FLOW RATE	PC	START 00: 00: 00
3	F1095	RCS LOOP 3 FLOW RATE	PC	STOP 00: 18: 14
4	F1098	RCS LOOP 4 FLOW RATE	PC	
5				
6				



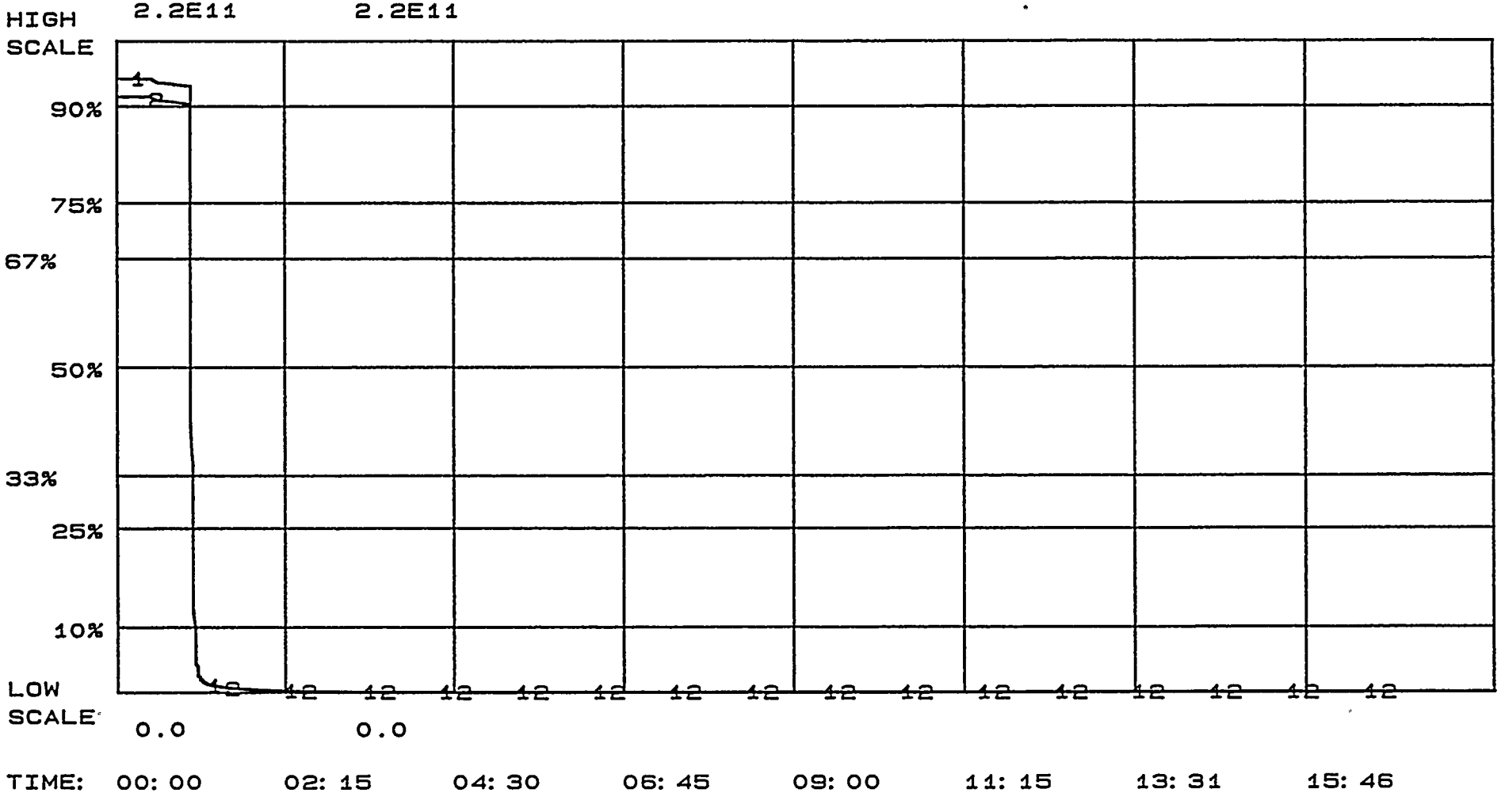
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	T1111	RCS LOOP 1 THOT	DEG_F	TIME
2	T1112	RCS LOOP 2 THOT	DEG_F	START 00: 00: 00
3	T1113	RCS LOOP 3 THOT	DEG_F	STOP 00: 18: 14
4	T1114	RCS LOOP 4 THOT	DEG_F	
5				
6				



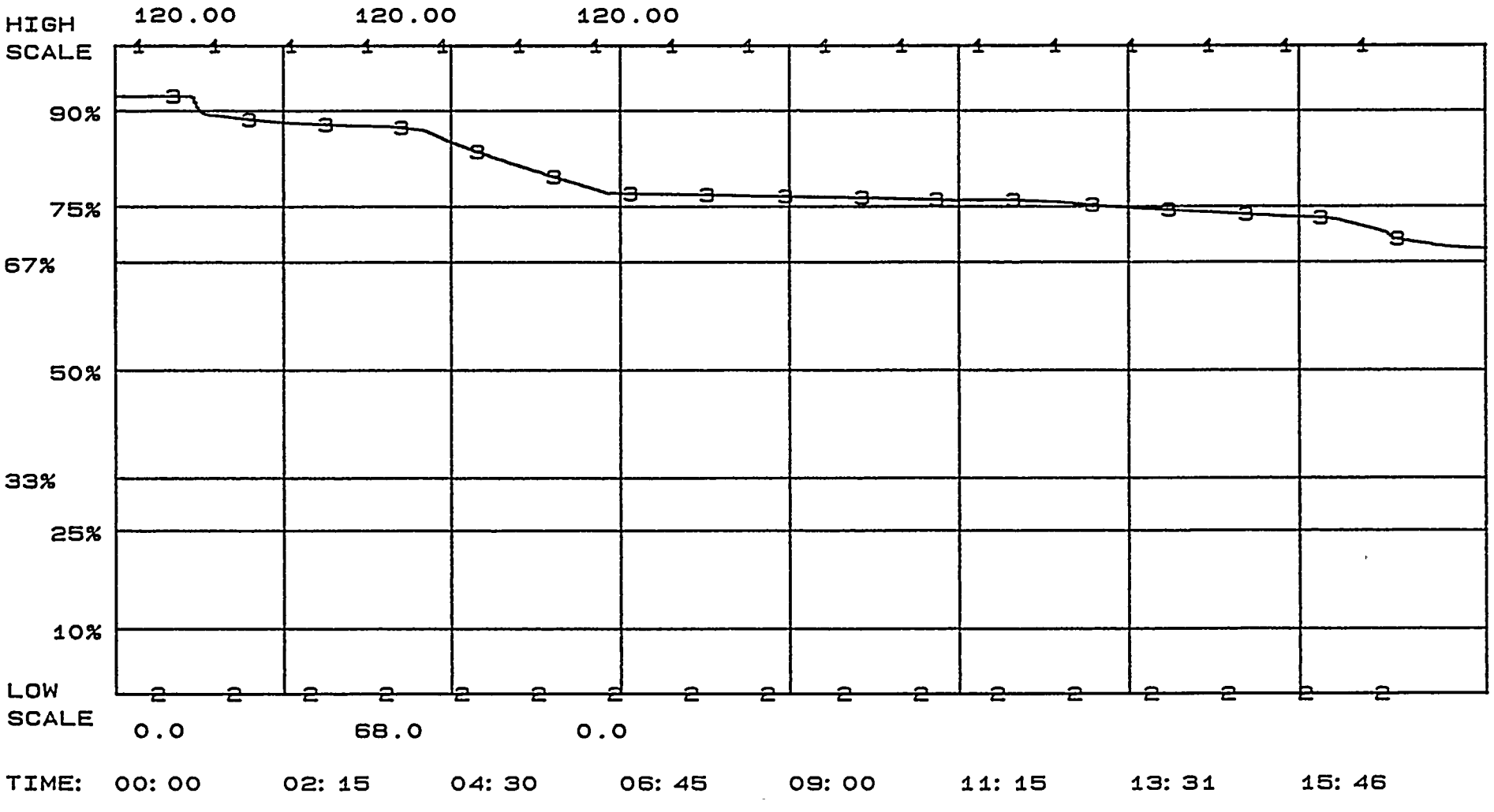
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	NILDTOU(1)	SR CHANNEL 1 DETECTOR OUT	CPS	TIME
2	NILDTOU(2)	SR CHANNEL 2 DETECTOR OUT	CPS	START 00:00:00
3				STOP 00:18:14
4				
5				
6				



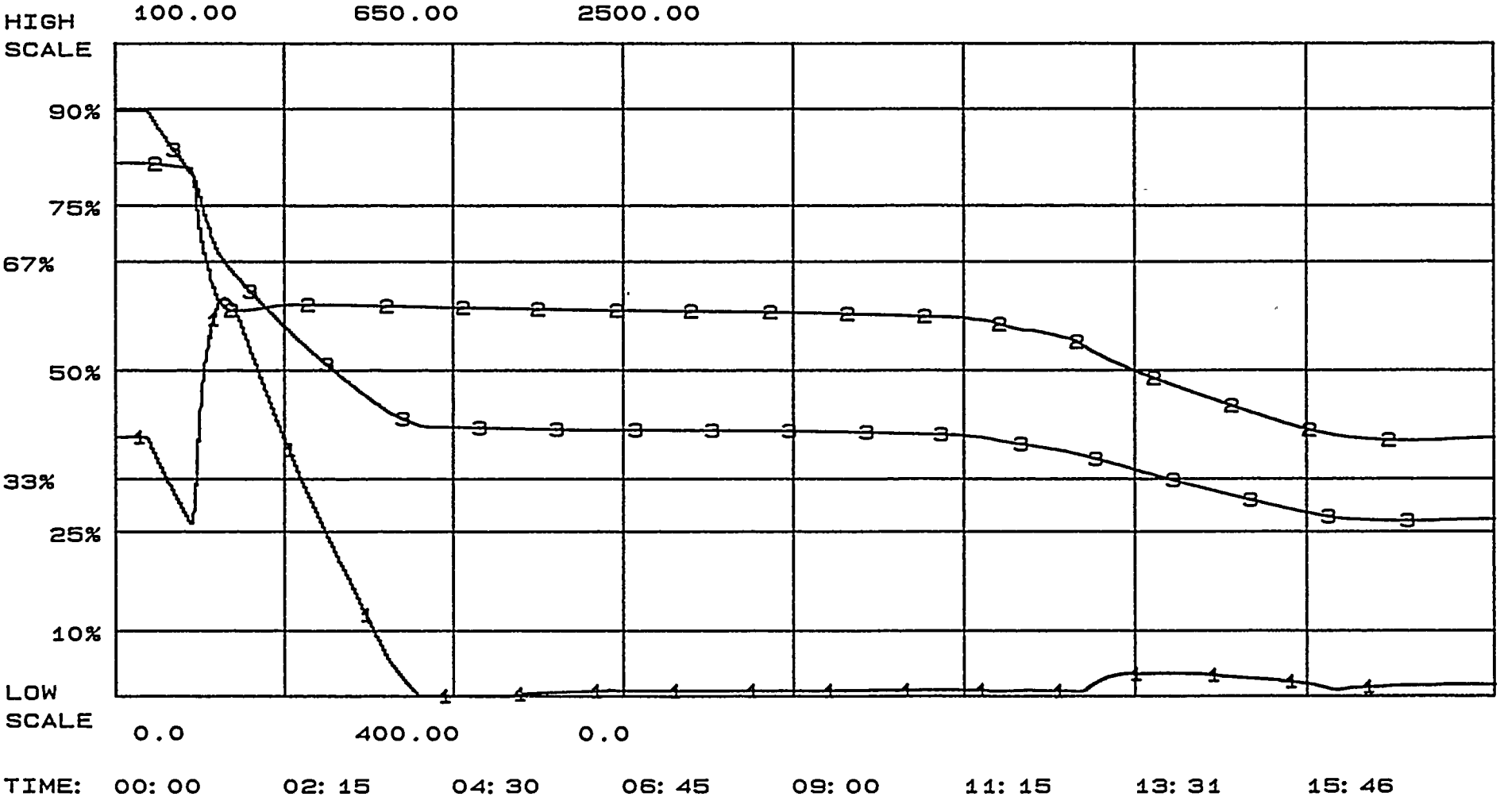
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	L1220	NARROW RANGE RVLIS	PC	TIME
2	L1222	UPPER RANGE RVLIS	PC	START 00: 00: 00
3	L1224	WIDE RANGE RVLIS	PC	STOP 00: 18: 14
4				
5				
6				



SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

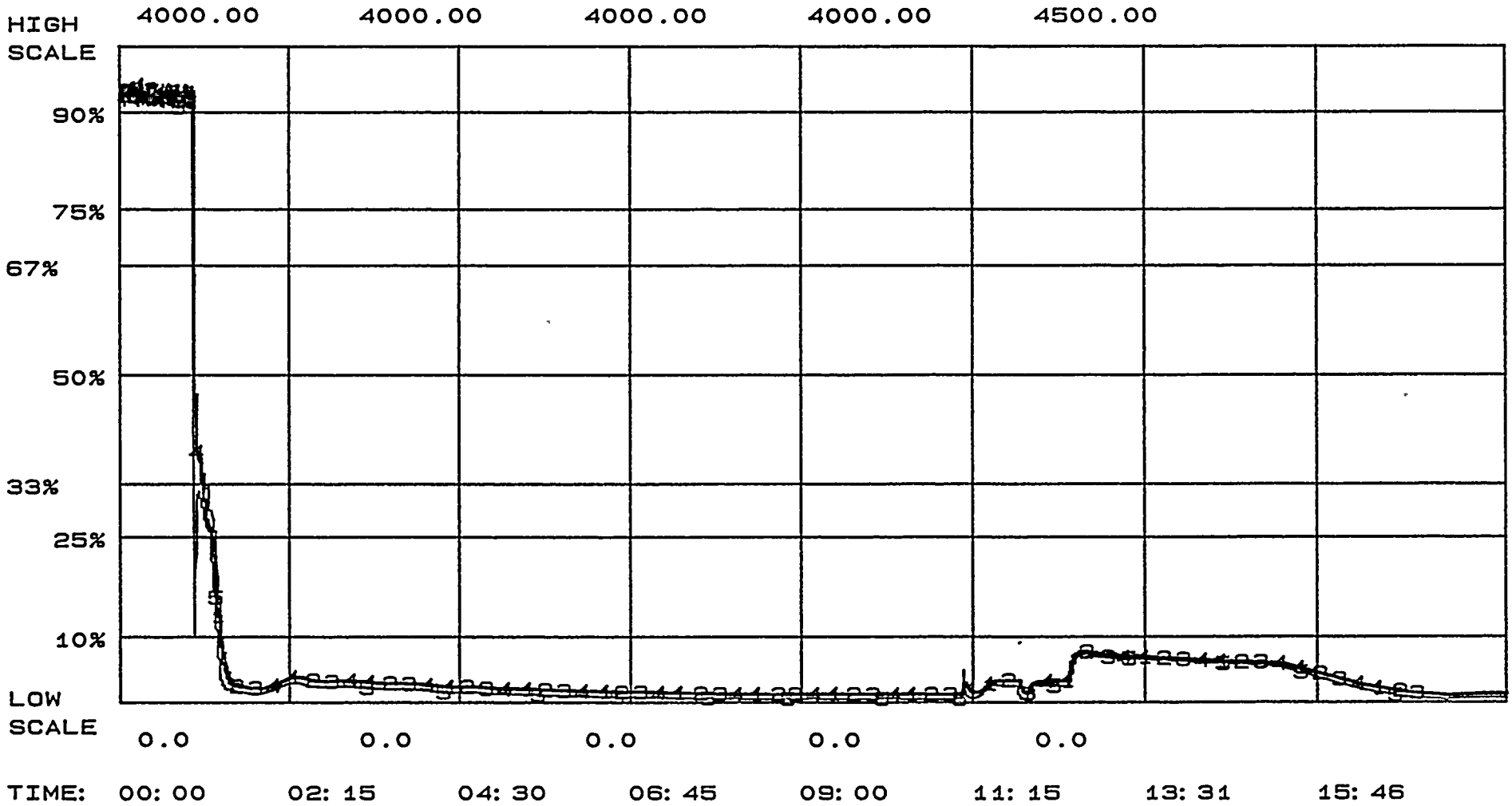
#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	RXTSC	SATURATION MARGIN	DEG_F	TIME
2	T1111	RCS LOOP 1 THOT	DEG_F	START 00: 00: 00
3	P1034	RCS WIDE RANGE PRESSURE	PSIG	STOP 00: 18: 14
4				
5				
6				



SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

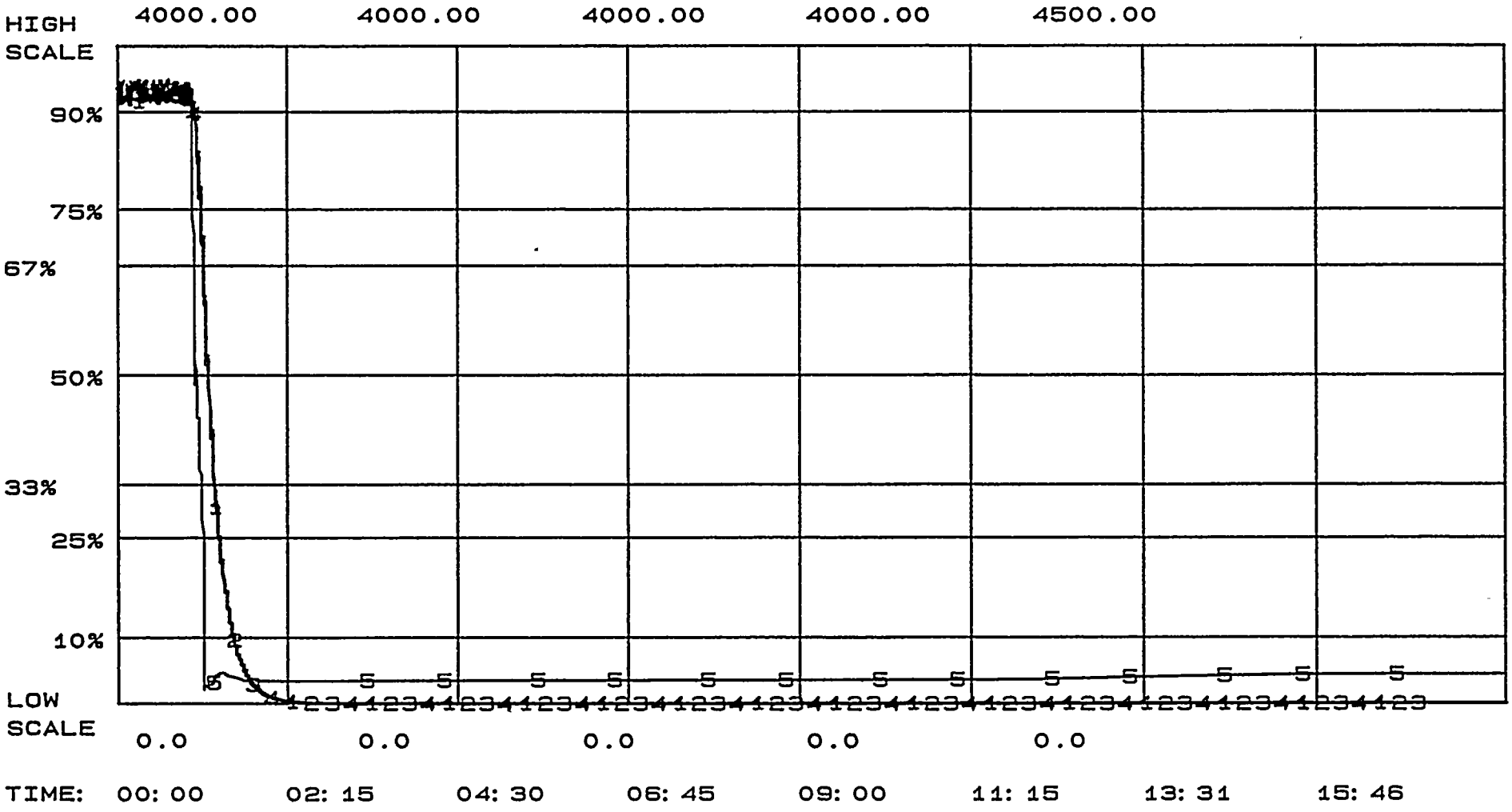
#	POINT ID	DESCRIPTION	UNITS
1	F1048	STEAM GENERATOR #1 STEAM FLOW	KBH
2	F1050	STEAM GENERATOR #2 STEAM FLOW	KBH
3	F1052	STEAM GENERATOR #3 STEAM FLOW	KBH
4	F1054	STEAM GENERATOR #4 STEAM FLOW	KBH
5	MSFSUMOT	TOTAL STEAM FLOW	LBS_S
6			

EDIT CONTROLS	
	TIME
START	00: 00: 00
STOP	00: 18: 14



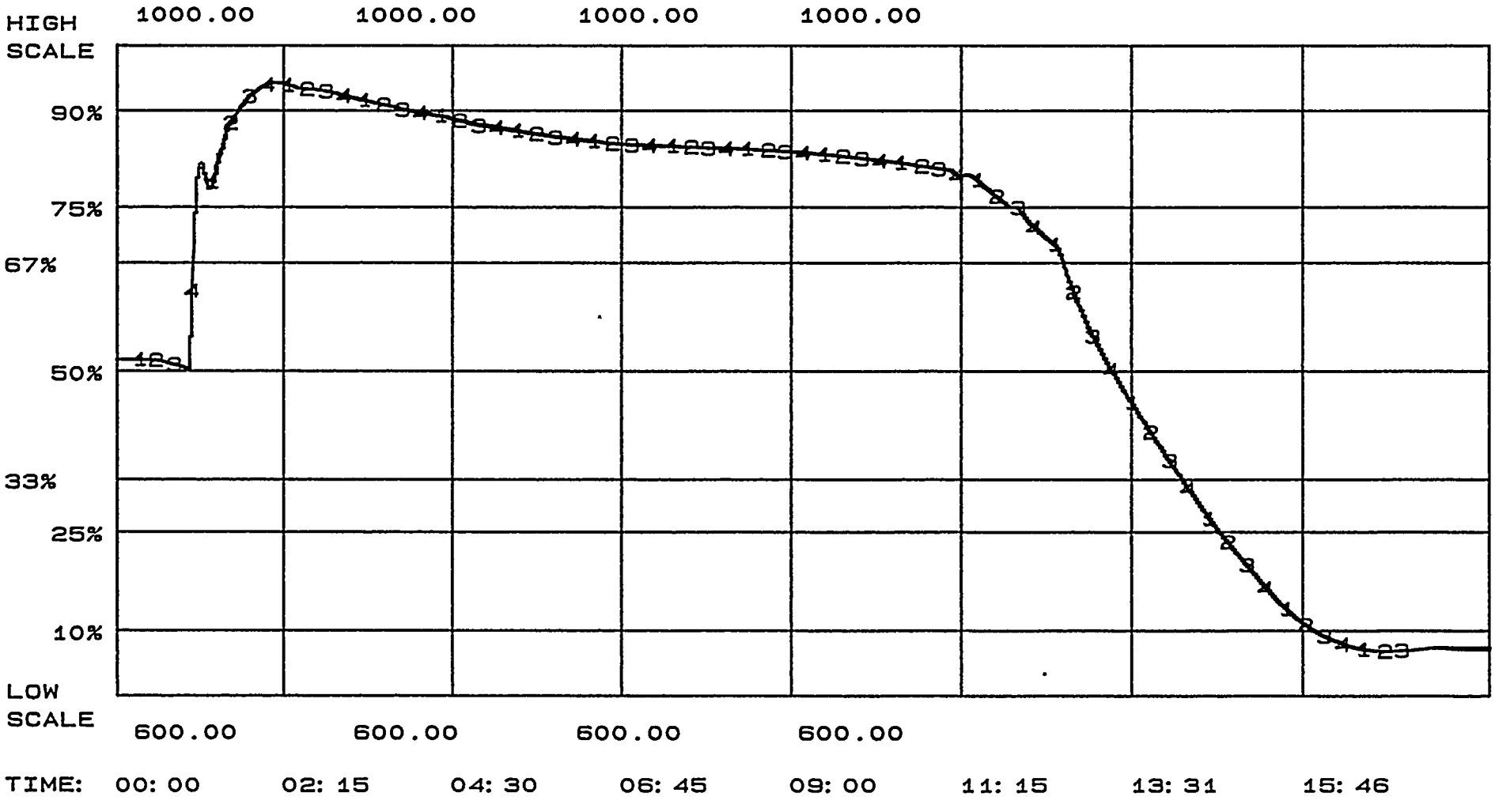
SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	F1200	STEAM GENERATOR #1 FEED FLOW	KBH	TIME
2	F1201	STEAM GENERATOR #2 FEED FLOW	KBH	START 00: 00: 00
3	F1202	STEAM GENERATOR #3 FEED FLOW	KBH	STOP 00: 18: 14
4	F1203	STEAM GENERATOR #4 FEED FLOW	KBH	
5	FWFTOTAL	TOTAL FEED FLOW (AFW INCL)	LBS_S	
6				



SLOW PRIMARY SYSTEM DEPRESSURIZATION TO SATURATION

#	POINT ID	DESCRIPTION	UNITS	EDIT CONTROLS
1	P1022	STEAM GENERATOR #1 PRESSURE	PSIG	TIME
2	P1025	STEAM GENERATOR #2 PRESSURE	PSIG	START 00: 00: 00
3	P1028	STEAM GENERATOR #3 PRESSURE	PSIG	STOP 00: 18: 14
4	P1031	STEAM GENERATOR #4 PRESSURE	PSIG	
5				
6				



COOK PLANT SIMULATOR

INSTRUCTOR STATION GENERAL INFORMATION

I. Overview (ANS 3.5 - 3.4)

The Cook Plant Simulator instructor station uses a Singer Link Advanced Man Machine Interface (AMMI) to allow the instructor to interface with the simulator training software.

The simulator instructor station serves as the main control center of the simulator complex. The instructor is provided with interactive color monitors featuring touch screen capabilities, video cameras connected to both a monitor and a video cassette recorder and communication equipment.

This equipment is used to establish simulator operating states, provide remote and local control, monitor student performance and obtain student exercise reports.

II. Simulator Operating Modes (ANS 3.5 - 3.4.3)

Freeze Mode

Freeze mode is the state of the simulator when all simulation is loaded, the panel I/O reflects the current conditions, but all simulation models have been suspended.

Run Mode

Run mode is the state of the simulator when all simulation is loaded, the panel I/O reflects the current conditions, the simulation models are executing and the simulator is responsive to student and/or instructor inputs.

Backtrack Mode

Backtrack mode is the state of the simulator when all simulation software is loaded, but the simulation models are suspended.

The Cook Plant Simulator stores 240 backtrack records at intervals of one tenth of a second to ten minutes (default is 1 minute) which provide the instructor the capability for replay and/or reinitialization of the simulator. Also, the instructor has the capability to preview backtrack conditions prior to resetting to a particular backtrack record.

Replay Mode

The Cook Plant Simulator has the capability to replay a given scenario from any backtrack record. The simulator is placed in the backtrack mode and then replay is selected from one of the 240 backtrack records.

When the simulator is placed in Replay Mode, the replay function will "stimulate" the simulator I/O and instructor station functions to drive the simulator software from the recorded operator/instructor actions.

Replay mode can be paused (freeze) and continued (run) to allow instructor comments during a scenario replay.

Snapshot Mode

The simulator has the capability to provide snapshots of simulator conditions at any given time in a training scenario. There are up to 100 snapshot records, with 40 snapshots being reserved for normal training scenarios.

Simulator Time Control

Real Time — Real time is the time mode in which each second of simulation corresponds to one second of actual plant operation.

Slow Time — Slow time allows close inspection of plant transients by expanding each second of simulation into several seconds of clock time. The slow time rate is variable by factors of 1/X, where X is an integer from 2 to 10.

Fast Time — Fast time mode allows slow, time consuming operations to be performed at an accelerated rate. Fast time rate is variable by a factor of X where X is an integer from 1 to N and N is a parameter dependent maximum rate as listed below:

Parameter	Maximum Rate
Xenon	60
Samarium	60
Turbine Metal Temperature	10
Reactor Coolant System Temperature	10
Condenser Vacuum	10
Containment Hydrogen	100
Decay Heat	200
Pressurizer Heater Power	10

III. Malfunctions (ANS 3.5 - 3.4.2)

The simulator has 306 malfunctions which can be used for various training scenarios. The instructor is provided the capability of selecting up to sixty active or pending malfunctions at one time. (The malfunctions are listed under the Malfunction Tab).

Each malfunction has the following capability:

Event Trigger - Triggers from any boolean event (allows for simultaneous insertion of malfunctions).

Initial Severity- Allows insertion of any malfunction at any initial severity from 0 to 100 %.

Ramp Time - Allows malfunctions to be ramped from an initial severity to a final severity with respect to time.

Final Severity - Allows determination of a final severity of any malfunction from 0 to 100%.

Delay Time - Allows for delay of malfunction from insertion to actuation with respect to time.

Global Malfunctions

Global malfunctions are provided to fail any motor operated valve by simulating a thermal overload condition and to fail any air operated valve by simulating a broken air line to the valve actuator.. Additionally all 4KV and 600 V breakers fail open by simulating a breaker latch failure.

Malfunctions can be inserted and/or deleted by either Malfunction Index Tableau, Simulation Diagram (P & ID) or expert mode command.

IV. Local Operator Actions (ANS 3.5 - 3.4.4)

Local operator actions allow the instructor to initiate remote auxiliary operator actions and other normal operations of equipment outside the control room. (Local operator actions are listed under Local Operator Action Tab). These actions allow the instructor to operate pertinent manual valves, breakers and equipment necessary for simulation located outside the control room from the instructor station.

Additionally, the instructor is provided the capability to communicate with the control room in a manner that the operator is accustomed to in the reference plant control room by page and/or telephone.

V. Overrides

Overrides allow the instructor to simulate failure of control room panel devices. Specifically, this includes lamps, switches, meters, pen recorders, relays and potentiometer.

VI. Initial Conditions (ANS 3.5 - 3.4.1)

The simulator provides up to 100 initial conditions for the instructor's use. Initial conditions 1 through 40 are protected and reserved for normal training scenarios. These 40 initial conditions contain various plant operating conditions, fission product concentrations and various times in core life as summarized below:

Core Life	-	BOL (0 MWD/MTU)	6
		MOL1(100 MWD/MTU)	3
		MOL2(9000 MWD/MTU)	24
		EOL1(17500 MWD/MTU)	4
		EOL2(18000 MWD/MTU)	4
Fission Product Poison	-	Xenon Free Startup	6
		Peak Xenon Startup	5
		Other Xenon Startup	4
Operating Conditions	-	Several	

VII. Exceeding Limits (ANS 3.5 - 4.3)

The simulator provides a method of alerting the instructor that the simulator is exceeding normal simulator operating limits (i.e., conditions that are unanalyzed). If one of the simulator operating limits is exceeded (Tab "Exceeding Limits"), the simulator is placed in a freeze condition and a "pop up" message is displayed on the instructor station that indicates which operating limit has been exceeded.

COOK PLANT SIMULATOR INITIAL CONDITION (IC) LIST

IC #	RCS TEMP (DEG F)	RCS PRESS (PSIG)	RX POWER %	BORON CONC (PPM)	XE CONC PCM	CORE AGE	DESCRIPTION
01							SPARE
02							SPARE
03	574	2235	100%	1221	-2407	BOL	100% POWER, EQUILIBRIUM XENON
04	566	2235	70%	1378	INC	BOL	70% POWER, POWER ESCALATION INCREASING XENON
05	560	2235	50%	1483	INC	BOL	50% POWER, POWER ESCALATION, INCREASING XENON
06	549	2235	E-8	1639	-19	BOL	POWER LEVELED FOR CRITICAL DATA POINT
07	549	2235	SUBCRIT	1639	-17	BOL	SB RODS OUT, READY TO WITHDRAW CONTROL RODS
08	100	ATMOS	SUBCRIT	2000	-10	BOL	HALF LOOP, MINIMUM DECAY HEAT
09							SPARE
10							SPARE
11	574	2235	100%	995	-2441	MOL1	100% POWER, EQUILIBRIUM XENON
12	560	2235	50%	1256	-2044	MOL1	50% POWER, EQUILIBRIUM XENON
13	549	2235	SUBCRIT	1412	-21	MOL1	HOT STANDBY, READY TO PULL SHUTDOWN RODS
14							SPARE
15							SPARE
16	574	2235	100%	577	-2517	MOL2	STEADY STATE, EQUILIBRIUM XENON
17	574	2235	100%	610	INC	MOL2	100% POWER, POWER ESCALATION
18	567	2235	80%	628	INC	MOL2	80% HOLD POINT DURING POWER ESCALATION
19	567	2235	80%	596	INC	MOL2	80% POWER REDUCTION, INCREASING XENON
20	561	2235	60%	590	INC	MO2	60% POWER, HOLDING POWER AFTER POWER REDUCTION
21	560	2235	50%	937	INC	MOL2	50% HOLD POINT DURING POWER ESCALATION
22	555	2235	30%	950	INC	MOL2	30% HOLD POINT DURING POWER ESCALATION
23	553	2235	25%	955	INC	MOL2	25% POWER ESCALATION, INCREASING XENON

COOK PLANT SIMULATOR INITIAL CONDITION (IC) LIST

IC #	RCS TEMP (DEG F)	RCS PRESS (PSIG)	RX POWER %	BORON CONC (PPM)	XE CONC PCM	CORE AGE	DESCRIPTION
24	554	2225	8%	961	INC	MOL2	8% MAIN TURBINE AT 1800 RPM, READY TO PARALLEL
25	554	2235	8%	961	INC	MOL2	8% READY TO ROLL MAIN TURBINE
26	552	2235	4%	962	INC	MOL2	4% READY FOR MODE CHANGE
27	549	2235	E-8	963	INC	MOL2	POWER LEVELED FOR CRITICAL DATA POINT
28	549	2235	SUBCRIT	963	-21	MOL2	SB RODS OUT, READY TO WITHDRAW CONTROL RODS
29	549	2235	SUBCRIT	505	-4154	MOL2	4 HOURS AFTER Rx TRIP, READY TO WITHDRAW CONTROL RODS
30	549	2235	SUBCRIT	511	-4185	MOL2	14 HOURS AFTER Rx TRIP, READY TO WITHDRAW CONTROL RODS
31	360	414	SUBCRIT	1396	-4389	MOL2	COOLDOWN IN PROGRESS, READY TO PLACE RHR IN SERVICE, RCPs ON
32	339	352	SUBCRIT	1407	-4370	MOL2	COOLDOWN IN PROGRESS, RHR IN SERVICE, RCPs ON
33	164	341	SUBCRIT	1488	-3983	MOL2	COOLDOWN IN PROGRESS, RHR IN SERVICE
34	128	2	SUBCRIT	1527	-3534	MOL2	READY TO START RCS DRAIN
35	123	ATMOS	SUBCRIT	1794	-2026	MOL2	HALF LOOP, 48 HOURS FROM SHUTDOWN
36	115	50	SUBCRIT	2109	-118	MOL2	DRAWING PRESSURIZER BUBBLE, BUBBLE FORMATION IN 15 MINUTES
37	157	350	SUBCRIT	2052	-1338	MOL2	RHR IN SERVICE, READY TO START RCPs
38	150	75	SUBCRIT	2138	-1065	MOL2	20 MINUTE RCP RUN COMPLETE, READY TO PERFORM RCS VENT
39	170	350	SUBCRIT	2000	-968	MOL2	RCPs AND RHR IN SERVICE, READY TO STOP RHR
40							SPARE
41							SPARE
42	574	2235	100%	56	-2671	EOL1	100% POWER, EQUILIBRIUM XENON
43	563	2235	60%	67	-2341	EOL1	60% POWER, EQUILIBRIUM XENON
44	547	2235	SUBCRIT	0	-3829	EOL1	XENON PRECLUDED STARTUP CONDITION

COOK PLANT SIMULATOR INITIAL CONDITION (IC) LIST

IC #	RCS TEMP (DEG F)	RCS PRESS (PSIG)	RX POWER %	BORON CONC (PPM)	XE CONC PCM	CORE AGE	DESCRIPTION
45	547	2235	SUBCRIT	460	-27	EOL1	SB RODS OUT, READY TO WITHDRAW CONTROL RODS
46							SPARE
47	572	2235	98%	0	-2712	EOL2	POWER COASTDOWN
48	547	2235	SUBCRIT	0	-3829	EOL2	HOT STANDBY AFTER TRIP RECOVERY
49	360	400	SUBCRIT	2000	-4958	EOL2	COOLDOWN IN PROGRESS, READY TO PLACE RHR IN SERVICE, RCPs ON
50	100	ATMOS	SUBCRIT	2000	-732	EOL2	HALF LOOP, 48 HOURS FROM SHUTDOWN

BOL - 0 MWD/MTU
MOL1 - 100 MWD/MTU
MOL2 - 9000 MWD/MTU
EOL1 - 17500 MWD/MTU
EOL2 - 18000 MWD/MTU

NOTE: Initial Condition snapshots may vary slightly with respect to boron concentration, temperature and pressure due to snapshots being rewritten periodically to account for changes in the plant.

Cook Plant Simulator Malfunction List

Malfunction #	Description
CC01	COMPONENT COOLING WATER PUMP TRIP
CC02	COMPONENT COOLING WATER PUMP FAILURE TO AUTO START
CC03	COMPONENT COOLING WATER RUPTURE
CC04	MISC CCW HEADER RUPTURE INSIDE CONTAINMENT
CC05	MISC CCW HEADER RUPTURE IN AUXILIARY BUILDING
CC06	SEAL WATER HX TUBE LEAK
CC07	COMPONENT COOLING HX TUBE RUPTURE
CC08	CCW INLEAKAGE INTO RCP UPPER BEARING OIL RESERVOIR
CC09	CCW LEAK ON RHR PUMP SUPPLY LINE
CH01	CONTAINMENT PRESSURE RELIEF VALVE FAILURE TO CLOSE
CH02	CONTAINMENT PRESSURE TRANSMITTER FAILURE
CS01	CONTAINMENT SPRAY PUMP TRIP
CS02	CONTAINMENT SPRAY PUMP SUCTION BLOCKAGE
CS03	REFUELING WATER STORAGE TANK LEAK
CS04	RWST LEVEL TRANSMITTER FAILURE
CV01	LETDOWN LINE RUPTURE INSIDE CONTAINMENT
CV02	LETDOWN LINE RUPTURE OUTSIDE CONTAINMENT
CV04	LETDOWN LINE ORIFICE ISOLATION VALVE FAILURE
CV05	LETDOWN HEAT EXCHANGER TUBE LEAK
CV06	LETDOWN LINE LOW PRESSURE CONTROL VALVE (QRV-301) FAILURE
CV08	LETDOWN LINE RELIEF VALVE SV-51 LEAKAGE
CV09	LETDOWN TEMPERATURE CONTROL FAILURE
CV10	NORMAL CHARGING LINE LEAK INSIDE CONTAINMENT
CV11	NORMAL CHARGING LINE LEAK OUTSIDE CONTAINMENT
CV12	CENTRIFUGAL CHARGING PUMP FLOW CONTROL VALVE FAILURE
CV13	CHARGING PUMP TRIP
CV14	CHARGING PUMP SUCTION LINE LEAKAGE
CV15	VCT LEVEL CONTROL VALVE (QRV-303) FAILURE
CV16	VCT LEVEL TRANSMITTER FAILURE
CV17	VOLUME CONTROL TANK LEAKAGE
CV20	INADVERTENT BORATION
CV21	INADVERTENT DILUTION
CV25	RCP THERMAL BARRIER HX RUPTURE
CV26	REACTOR COOLANT PUMP #1 SEAL FAILURE
CV27	REACTOR COOLANT PUMP #2 SEAL FAILURE
CV28	REACTOR COOLANT PUMP #3 SEAL FAILURE
CV30	REDUCED CENTRIFUGAL CHARGING PUMP CAPACITY
CV31	SEAL INJ. BACKPRESSURE CONTROL VALVE FAILURE (QRV-200)
CV32	PRIMARY WATER FLOW TRANSMITTER (QFC-422) FAILURE
CV33	BORIC ACID FLOW CONTROLLER (QFC-421) FAILURE
CW01	CIRCULATING WATER PUMP TRIP
CW02	CIRCULATING WATER PUMP DISCHARGE VALVE FAILURE
CW03	TRAVELING WATER SCREEN FOULING
ED01	LOSS OF 345KV BUS NO. 1
ED02	LOSS OF AUXILIARY TRANSFORMER
ED03	LOSS OF RESERVE AUXILIARY TRANSFORMER
ED04	LOSS OF EMERGENCY POWER SUPPLY TRNASFORMER TR-12-EP
ED05	LOSS OF 4160 VAC BUS
ED06	LOSS OF 600 VAC BUS
ED07	LOSS OF 480 VAC BUS
ED08	LOSS OF 600V MCC
ED10	LOSS OF 120 VAC CONTROL ROOM POWER DISTRIBUTION PANELS
ED11	LOSS OF 250 VDC BUS
ED12	LOSS OF 250 VDC DISTRIBUTION POWER PANELS (TRAIN A)
ED13	LOSS OF 250 VDC DIST. PANELS (TRAIN B)
ED14	LOSS OF 250 VDC BATTERY CHARGER
ED15	LOSS OF VITAL INSTRUMENT BUS STATIC SWITCH
ED16	AUXILIARIES AUTO BUS TRANSFER FAILURE

Malfunction #	Description
ED17	LOSS OF PLANT LIGHTING
ED18	GRID VOLTAGE OSCILLATION
ED19	ELECTRICAL GRID LOAD REJECTION
ED20	ANNUNCIATOR PANEL POWER SUPPLY FAILURE
ED21	4KV/600V AUX. TRANSFORMER LOSS
ED22	LOSS OF SWITCHGEAR CONTROL POWER (TRAIN B)
ED23	LOSS OF SWITCHGEAR CONTROL POWER (TRAIN A)
ED24	LOSS OF 250 VDC TRAIN "N" BATTERY
ED25	LOSS OF 765/345KV TRANSFORMER BANK #4
ED26	LOSS OF 765KV DUMONT LINE
EG01	MAIN GENERATOR TRIP
EG03	MAIN GENERATOR AUTO VOLTAGE REGULATOR FAILURE TO MANUAL
EG04	MAIN GENERATOR AUTO VOLTAGE REGULATOR FAILURE
EG05	MAIN GENERATOR OUTPUT BREAKER FAILURE TO TRIP
EG06	DIESEL GENERATOR TRIP
EG07	DIESEL GENERATOR SPEED CONTROL FAILURE
EG08	DIESEL GENERATOR SPEED GOVERNOR FAILURE
EG09	DIESEL GENERATOR VOLTAGE CONTROL FAILURE
EG10	DIESEL GENERATOR FAILURE TO START
EG11	DIESEL GENERATOR FAILURE TO TRIP
EG12	DIESEL GENERATOR OUTPUT BREAKER FAILURE TO AUTO CLOSE
EG13	DIESEL GENERATOR OUTPUT BREAKER FAILURE TO CLOSE
EG14	DIESEL GENERATOR RUNNING RELAY FAILURE
EG15	MAIN GENERATOR SEAL OIL UNIT PIPING RUPTURE
FP01	FIRE PROTECTION SYSTEM RUPTURE
FP02	INADVERTENT ACTUATION OF CHARCOAL FILTER FIRE PROT SYSTEM
FP03	DIESEL GENERATOR ROOM CO2 ACTUATION
FP05	CONTROL ROOM CABLE VAULT FIRE
FW01	MAIN FEEDWATER RUPTURE AT SG INLET
FW02	MAIN FEEDWATER RUPTURE BEFORE STEAM GENERATOR CHECK VALVE
FW03	MAIN FDWTR RUPTURE BETWEEN FEEDFLOW ELEMENT & FEED REG VAL
FW05	MAIN FEEDPUMP TURBINE TRIP
FW06	MAIN FEEDPUMP TURBINE SHEARED SHAFT (UNRECOVERABLE)
FW07	MAIN FEEDPUMP TURBINE BEARING FAILURE
FW12	FEEDPUMP TURBINE LUBE OIL SYSTEM LEAK
FW13	FEEDPUMP TURBINE OIL COOLING CONTROLLER FAILURE
FW15	FEEDWATER CONTROL VALVE FAILURE
FW16	HP HEATER #6 LEVEL CONTROL TRANSMITTER FAILURE
FW17	HP HEATER #6 LEVEL CONTROLLER AUTO FAILURE
FW18	HP HEATER #6 LEVEL CONTROL VALVE FAILURE
FW19	HP HEATER #6 TUBE RUPTURE
FW20	HP HEATER #5 LEVEL CONTROL TRANSMITTER FAILURE
FW21	HP HEATER #5 LEVEL CONTROLLER AUTO FAILURE
FW22	HP HEATER #5 LEVEL CONTROL VALVE FAILURE
FW23	HP HEATER #5 TUBE RUPTURE
FW24	HP HEATER #5 STEAM INLET RUPTURE
FW25	HOTWELL PUMP TRIP
FW26	LP HEATER #4 LEVEL CONTROL TRANSMITTER FAILURE
FW27	LP HEATER #4 LEVEL CONTROL VALVE FAILURE
FW28	LP HEATER #4 TUBE RUPTURE
FW29	LP HEATER #3 LEVEL CONTROL TRANSMITTER FAILURE
FW30	LP HEATER #3 LEVEL CONTROL VALVE FAILURE
FW31	LP HEATER #3 TUBE RUPTURE
FW32	LP HEATER #3 STEAM INLET RUPTURE
FW33	LP HEATER BYPASS VALVE FAILURE
FW34	CONDENSATE BOOSTER PUMP TRIP
FW35	CONDENSATE BOOSTER PUMP DISCHARGE PIPING RUPTURE
FW36	CONDENSATE BOOSTER PUMP RECIRC VALVE FAILURE

Cook Plant Simulator Malfunction List

Malfunction #	Description
FW37	HOTWELL PUMP DISCHARGE PIPING RUPTURE
FW38	LOSS OF CONDENSER VACUUM
FW39	CONDENSER TUBE LEAK
FW40	HOTWELL LEVEL CONTROLLER FAILURE
FW41	HOTWELL LEVEL CONTROL TRANSMITTER FAILURE
FW42	CONDENSATE STORAGE TANK LEAK
FW43	HEATER DRAIN PUMP TRIP
FW44	HEATER DRAIN PUMP BEARING FAILURE
FW45	HEATER DRAIN PUMP EMERGENCY LEAK OFF VALVE FAILS OPEN
FW46	AUX FEEDPUMP TRIP
FW47	AUX FEEDPUMP SUCTION LINE LEAKAGE
FW48	AUX FEEDPUMP AUTO START FAILURE
FW49	AUX FEEDPUMP TRIP SUCTION PRESSURE TRIP (DELETED)
FW50	TDAFW PUMP SPEED CONTROLLER FAILURE
FW51	TURBINE DRIVEN AUX FEEDPUMP TRIP & THROTTLE VALVE FAILURE
FW52	STEAM BOUND AFW PUMP
FW54	FDWTR RUPTURE OUTSIDE CONT DOWNSTREAM AUX FEED ISOL VALVE
FW56	FEED PUMP STEAM SUPPLY CONTROLLER FAILURE
IA01	PLANT AIR COMPRESSOR TRIP
IA02	PLANT AIR SYSTEM RUPTURE
IA03	CONTROL AIR COMPRESSOR TRIP
IA04	CONTROL AIR SYSTEM RUPTURE IN TURBINE BUILDING
IA05	CONTROL AIR SYSTEM RUPTURE IN CONTAINMENT
MS01	MAIN STEAM LINE BREAK AT SG EXIT BEFORE FLOW RESTRICTOR
MS02	MAIN STEAM LINE BREAK AT SG EXIT AFTER FLOW RESTRICTOR
MS03	MAIN STM LINE BREAK OUTSIDE CONT BEFORE SG STOP VALVE
MS04	MAIN STM LINE BREAK DOWNSTREAM SG STOP VALVES
MS05	MAIN STEAM POWER RELIEF VALVE LEAK
MS06	STEAM GENERATOR SAFETY VALVE LEAK
MS08	STEAM GENERATOR STOP VALVE DRIFTS SHUT
MS09	MSR TUBE RUPTURE
MS10	MSR COIL DRAIN TANK LEVEL CONTROLLER FAILURE
MS11	MSR COIL DRAIN TANK LEVEL CONTROL VALVE FAILURE
MS12	MSR DRAIN TANK ALTERNATE DRAIN LEVEL CONTROLLER FAILURE
MS13	MSR DRAIN TANK ALTERNATE LEVEL CONTROL VALVE FAILURE
MS14	MSR STEAM SUPPLY VALVE FAILURE
MS16	STEAM SEAL CONTROLLER FAILURE
MS17	STEAM SEAL CONTROLLER OSCILLATION
MS18	STEAM DUMP CONTROL VALVE FAILURE
MS21	AUX. STEAM 150 # HEADER CONTROL VALVE FAILURE
NI01	SOURCE RANGE MONITOR FAILURE
NI02	SOURCE RANGE HIGH VOLTAGE FAILURE TO DEENERGIZE
NI03	INCORRECT SOURCE RANGE CHANNEL RESPONSE
NI04	SOURCE RANGE ENERGIZATION AT POWER (P10 BLOCK FUNC)
NI05	SOURCE RANGE CHANNEL SPIKES
NI06	INTERMEDIATE RANGE MONITOR FAILURE
NI07	INTERMEDIATE RANGE IMPROPER COMPENSATION
NI08	POWER RANGE CHANNEL UPPER DETECTOR FAILURE
NI09	POWER RANGE CHANNEL LOWER DETECTOR FAILURE
NI10	POWER RANGE CHANNEL FAILURE
NI11	POWER RANGE CHANNEL OUTPUT OSCILLATION
NI12	AUDIO COUNT RATE CHANNEL FAILURE
NI13	SOURCE RANGE INSTRUMENT BLOWN FUSE
NI14	INTERMEDIATE RANGE CHANNEL BLOWN FUSE
NI15	POWER RANGE CHANNEL BLOWN FUSE
RC01	RCS COLD LEG LOOP RUPTURE
RC02	RCS HOT LEG LOOP LEAK
RC03	RCS LEAK

Cook Plant Simulator Malfunction List

Malfunction #	Description
RC04	PRESSURIZER SURGE LINE LEAK
RC05	REACTOR VESSEL HEAD FLANGE LEAK
RC06	RCS EMERGENCY VENT LEAKAGE
RC07	REACTOR COOLANT PUMP LOCKED ROTOR
RC08	REACTOR COOLANT PUMP SHAFT BREAK
RC09	REACTOR COOLANT PUMP TRIP
RC11	REACTOR COOLANT PUMP HIGH VIBRATION
RC13	REACTOR COOLANT PUMP UPPER BEARING OIL RESERVOIR LEAK
RC14	PRESSURIZER HIGH GAS CONCENTRATION IN VAPOR SPACE
RC15	PRESSURIZER SPRAY VALVE FAILURE
RC16	PRESSURIZER STEAM SPACE MANWAY LEAK
RC17	PRESSURIZER POWER RELIEF VALVE FAILURE
RC19	PRESSURIZER SAFETY VALVE FAILURE
RC21	PRESSURIZER RELIEF TANK RUPTURE DISC FAILURE
RC23	STEAM GENERATOR TUBE RUPTURE
RC24	STEAM GENERATOR TUBE LEAK
RC25	STEAM GENERATOR BLOWDOWN LINE LEAK DOWNSTREAM CONT ISOL
RC26	FAILED FUEL ELEMENT
RC27	RTD BYPASS MANIFOLD FLOW DEGRADATION
RC28	PRESSURIZER INSTRUMENT LINE LEAKAGE
RD01	DROPPED CONTROL ROD
RD02	BROKEN CONTROL ROD
RD03	STUCK CONTROL ROD (TRIPPABLE)
RD04	STUCK CONTROL ROD (UNTRIPPABLE)
RD05	EJECTION OF ROD WITH RUPTURED MECHANISM HOUSING
RD06	UNCONTROLLED ROD BANK CONTINUOUS WITHDRAWAL
RD07	UNCONTROLLED ROD BANK CONTINUOUS INSERTION
RD08	IN-HOLD-OUT SWITCH FAILURE
RD09	UNCONTROLLED ROD MOTION DEMAND (AUTOMATIC)
RD10	CONTROL RODS MOVE OPPOSITE TO DEMAND SIGNAL
RD11	AUTO CONTROL ROD SPEED FAILURE
RD12	FAILURE OF CONTROL RODS TO MOVE
RD13	ROD GROUP FAILURE TO MOVE
RD14	IMPROPER BANK OVERLAP
RD15	IRPI POWER LOSS
RD16	IRPI FAILURE
RD17	ROD GROUP STEP COUNTER FAILURE
RD18	ROD CONTROL MG SET TRIP
RH01	RHR PUMP TRIP
RH02	RHR PUMP SEAL FAILURE
RH03	RHR HEAT EXCHANGER BYPASS FLOW CONTROL VALVE FAILURE
RH04	RHR HEAT EXCHANGER FLOW CONTROL VALVE FAILURE
RH05	RHR HEAT EXCHANGER TUBE LEAK
RH06	RHR INJECTION HEADER RELIEF VALVE (SV-104) FAILURE
RH07	RHR NORMAL COOLDOWN SUCTION LINE LEAK INSIDE CONTAINMENT
RH08	RWST SUPPLY LINE TO RHR PUMP RUPTURE
RH09	RHR PUMP SUCTION PIPE RUPTURE
RH11	RHR RETURN FLOW TRANSMITTER FAILURE (IFI-335)
RH12	SI LOOP CHECK VALVE LEAKAGE
RH13	SI ACCUMULATOR TANK CHECK VALVE LEAKAGE
RH14	SI ACCUMULATOR TANK LEVEL LOSS
RH15	SI ACCUMULATOR N2 PRESSURE LOSS
RM01	AREA RADIATION MONITOR FAILURE
RM02	PROCESS RADIATION MONITOR FAILURE
RP01	REACTOR TRIP ACB AUTO TRIP FAILURE
RP03	FAILURE OF REACTOR TRIP BREAKER
RP06	SPURIOUS STEAM LINE ISOLATION
RP07	FAILURE OF STEAM LINE ISOLATION TO ACTIVATE

Malfunction #	Description
RP08	SPURIOUS FEEDWATER ISOLATION TRIP
RP09	FAILURE OF FEEDWATER ISOLATION TRIP TO OCCUR
RP10	FAILURE OF SAFETY INJECTION TO AUTO ACTUATE
RP11	FAILURE OF SAFETY INJECTION TO MANUALLY ACTUATE
RP12	SPURIOUS ACTUATION OF SAFETY INJECTION
RP12	SPURIOUS ACTUATION OF SAFETY INJECTION
RP13	FAILURE OF CONTAINMENT ISOLATION PHASE A TO AUTO ACTUATE
RP14	FAILURE OF CONTAINMENT ISOLATION PHASE A TO MANUAL ACTUATE
RP15	SPURIOUS ACTUATION OF CONTAINMENT ISOLATION PHASE A
RP16	FAILURE OF CONTAINMENT ISOLATION PHASE B TO AUTO ACTUATE
RP17	FAILURE OF CONTAINMENT ISOL PHASE B TO MANUALLY ACTUATE
RP18	SPURIOUS ACTUATION OF CONTAINMENT ISOLATION PHASE B
RP19	TRAIN "A" K600 RELAY FAILURE
RP20	TRAIN "B" K600 RELAY FAILURE
RP05	REACTOR COOLANT FLOW TRANSMITTER FAILURE
RX01	RCS HOT LEG PRESSURE TRANSMITTER FAILURE
RX02	RCS HOT LEG TEMPERATURE TRANSMITTER FAILURE (NARROW RANGE)
RX03	RCS COLD LEG TEMPERATURE TRANSMITTER FAILURE
RX04	PRESSURIZER PRESSURE TRANSMITTER FAILURE
RX05	PRESSURIZER LEVEL TRANSMITTER FAILURE (PROTECTION CHANNEL)
RX06	PRESSURIZER CALIBRATION LEVEL TRANSMITTER FAILURE
RX07	REDUCED PRESSURIZER HEATER CAPACITY
RX08	PRESSURIZER SPRAY VALVE AUTO CONTROL FAILURE
RX09	PRESSURIZER PRESSURE MASTER CONTROLLER FAILURE
RX10	PRESSURIZER WATER LEVEL CONTROLLER OSCILLATION
RX11	STEAM GENERATOR RELIEF VALVE CONTROLLER FAILURE
RX12	MAIN STEAM RELIEF VALVE CONTROLLER OSCILLATION
RX13	STEAM DUMP "TAVG" CONTROLLER FAILURE
RX14	STEAM DUMP "PRESSURE" CONTROLLER FAILURE
RX15	STEAM DUMP SYSTEM FAILURE TO RESPOND (DELETED)
RX16	STEAM DUMP PRESSURE CONTROLLER ERRATIC OPERATION
RX17	STEAM GENERATOR PRESSURE TRANSMITTER FAILURE
RX18	MAIN STEAM TURB BYPASS HEADER PRESS TRANSMITTER FAILURE
RX19	TURBINE IMPULSE TRANSMITTER FAILURE
RX20	STEAM GENERATOR STEAM FLOW TRANSMITTER FAILURE
RX21	STEAM GENERATOR FEED FLOW TRANSMITTER FAILURE
RX22	STEAM GENERATOR PROGRAMMED LEVEL SIGNAL FAILURE
RX23	STEAM GENERATOR LEVEL TRANSMITTER FAILURE
RX24	FEEDWATER CONTROL VALVE CONTROLLER FAILURE
RX25	FEEDWATER CONTROL VALVE OSCILLATION
RX26	FEED PUMP TURBINE SPEED CONTROLLER FAILURE
RX27	FEED PUMP OP CONTROLLER FAILURE
RX28	LOSS OF 480V MCC
SI01	SAFETY INJECTION PUMP TRIP
SI02	SAFETY INJECTION PUMP SHEARED SHAFT
SI03	HIGH HEAD SAFETY INJECTION LINE RUPTURE
SW01	NON ESSENTIAL SERVICE WATER PUMP TRIP
SW02	NON ESSENTIAL SERVICE WATER PIPING RUPTURE IN TURB BLDG
SW03	NESW PIPING RUPTURE ON LOWER CONT VENT COOLER SUPPLY LINE
SW04	ESSENTIAL SERVICE WATER PUMP TRIP
SW05	ESSENTIAL SERVICE WATER PIPING RUPTURE
SW06	FEEDPUMP TURBINE OIL COOLING CONTROLLER FAILURE
SW07	MAIN TURBINE OIL TEMPERATURE CONTROLLER FAILURE
TC01	MAIN TURBINE TRIP
TC02	MAIN TURBINE FAILURE TO TRIP
TC03	MAIN TURBINE AUTO TRIP FAILURE
TC04	MAIN TURBINE STOP VALVE FAILURE
TC05	MAIN TURBINE CONTROL VALVE FAILURE

Cook Plant Simulator Malfunction List

Malfunction #	Description
TC06	MAIN TURBINE ERRATIC CONTROL VALVE
TC07	MAIN TURBINE INTERCEPT VALVE FAILURE
TC09	MAIN GENERATOR LOAD LIMITER FAILURE
TC10	MAIN GENERATOR OPERATING DEVICE FAILURE
TC11	AUTO LOAD SET OSCILLATION
TC12	MAIN TURBINE SPEED SIGNAL FAILURE
TC13	TURBINE RUNBACK FAILURE
TP01	TURBINE AUX COOLING PUMP TRIP
TP02	TURBINE AUX COOLING PIPING RUPTURE
TP03	MAIN GENERATOR STATOR COOLING SYSTEM RUPTURE
TP05	STATOR COOLING WATER SYSTEM HIGH CONDUCTIVITY
TU01	AUXILIARY LUBE OIL PUMP TRIP
TU03	MAIN TURBINE HIGH VIBRATION
TU05	MAIN TURBINE BEARING FAILURE
TU06	TURBINE BLADE EJECTION
WD01	ACCIDENTAL RELEASE OF RADIOACTIVE GAS FROM DECAY TANK

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
CCR01	"E" CCW PUMP BKR (T2103)	RI, RO
CCR02	"W" CCW PUMP BKR (T21A7)	RI, RO
CCR03	CCW FROM RCP TH. BARR ISOL (CC-454) LOC OP	0 to 100 %
CCR04	RCP #21 CCW ISOL. (CCW-123,130,131-1)	OPEN, CLOSE
CCR05	RCP #22 CCW ISOL. (CCW-123,130,131-2)	OPEN, CLOSE
CCR06	RCP #23 CCW ISOL. (CCW-123,130,131-3)	OPEN, CLOSE
CCR07	RCP #24 CCW ISOL. (CCW-123,130,131-4)	OPEN, CLOSE
CCR08	INLET TO SEAL H2O HX (CCW-157)	OPEN, CLOSE
CCR09	OUTLET FROM SEAL H2O HX (CCW-159)	0 to 100 %
CCR10	CCW TO LETDOWN HX (CCW-160)	OPEN, CLOSE
CCR11	LETDOWN HX TEMP CV CRV-470 OUTLET (CCW-164)	0 to 100 %
CCR12	LETDOWN HX TEMP CV CRV-470 BYPASS (CCW-165)	0 to 100 %
CCR13	"E" CCW PUMP SUCTION ISOL. (CCW-174E)	OPEN, CLOSE
CCR14	"W" CCW PUMP SUCTION ISOL. (CCW-174W)	OPEN, CLOSE
CCR15	"E" CCW HX INLET ISOL. (CCW-178E)	OPEN, CLOSE
CCR16	"W" CCW HX INLET ISOL. (CCW-178W)	OPEN, CLOSE
CCR17	CCW TO RHR HX ISOL (CCW-180E)	OPEN, CLOSE
CCR18	CCW TO RHR HX ISOL (CCW-180W)	OPEN, CLOSE
CCR19	CCW SURGE TANK ISOL TO EAST TRAIN (CCW-220)	OPEN, CLOSE
CCR20	CCW SURGE TANK ISOL TO WEST TRAIN (CCW-214)	OPEN, CLOSE
CCR21	CCR21 CRV-410 ISOL VLV(CCW-356)	OPEN, CLOSE
CCR22	SOUTH SPENT FUEL PIT HX HEATLOAD	0 to 1.5e+07 BTU/HR
CCR23	CCW SYSTEM LEAKAGE	0 to 100 GPH
CCR24	CCR24 CRV-411 ISOL VLV(CCW-354)	OPEN, CLOSE
CHR01	AIR HANDLER UNIT CONTROL	ON, OFF
CHR02	"A" TRAIN H2 ANALYZER (CP-A)	ON, OFF
CHR03	"B" TRAIN H2 ANALYZER (CP-B)	ON, OFF
CHR04	CONT PRESS RELIEF FAN BYP (HV-CDP-2)	OPEN, CLOSE
CHR05	INST ROOM PURGE SUPPLY FAN (HV-CIPS-1)	STOP, RUN
CHR06	INST ROOM PURGE EXH FAN (HV-CIPX-1)	STOP, RUN
CHR07	50 FT WIND SPEED	0 to 100 MPH
CHR08	150 FT WIND SPEED	0 to 100 MPH
CHR09	WIND SPEED VARIANCE	-20 to 20 MPH
CHR10	50 FT WIND DIRECTION	1 to 360 DEGREES
CHR11	150 FT WIND DIRECTION	1 to 360 DEGREES
CHR12	WIND DIRECTION VARIANCE	-90 to 90 DEGREES
CHR13	30 FT OUTSIDE TEMPERATURE	-30 to 40 DEG C
CHR14	OUTSIDE DELTA TEMPERATURE	-20 to 20 DEG C
CHR15	DEW POINT	-30 to 40 DEG C
CHR16	ATMOPSHERIC PRESSURE	26 to 33 IN HGA
CRR01	FUEL MISLOADING REMOTE FUNCTION	NORMAL, MISLOAD
CSR01	CTS TEST LINE ISOL (CTS-105E)	0 to 100 %
CSR02	CTS TEST LINE ISOL (CTS-105W)	0 to 100 %
CSR03	SPRAY ADD TANK ISOL (CTS-116)	OPEN, CLOSE
CSR04	"E" CTS PUMP SUCT. FROM RECIRC SUMP	OPEN, CLOSE

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
	(CTS-139E)	
CSR05	"W" CTS PUMP SUCT. FROM RECIRC SUMP (CTS-139W)	OPEN, CLOSE
CSR06	SPRAY ADD TANK N2 REG GRV-330	0 to 30 PSIG
CSR07	"E" CTS PUMP BKR (T21D4)	RI, RO
CSR08	"W" CTS PUMP BKR (T21A3)	RI, RO
CSR09	TEST LINE TO EDUCTOR (SI-181/182)	OPEN, CLOSE
CVR01	RECIP. CHARGING PUMP BKR (21C13)	RI, RO
CVR02	"E" CENT CHARGING PUMP BKR (T21D7)	RI, RO
CVR03	"W" CENT CHARGING PUMP BKR (T21A8)	RI, RO
CVR04	"N" MIXED BED DEMIN ISOL (CS103N/CS109N)	OPEN, CLOSE
CVR05	"S" MIXED BED DEMIN ISOL (CS103S/CS109S)	OPEN, CLOSE
CVR06	CVCS CATION BED BYPASS (CS-110)	0 to 100 %
CVR07	CVCS CATION BED DEMIN ISOL (CS-111/117)	OPEN, CLOSE
CVR08	DEMIN BYPASS TO DEBORATION (CS-118)	OPEN, CLOSE
CVR09	DEBORATING BED ISOLATION VLV (CS120N/127N)	OPEN, CLOSE
CVR10	DEBORATING BED ISOLATION VLV (CS120S/127S)	OPEN, CLOSE
CVR11	DEBORATING DEMIN ISOL (CS-131)	OPEN, CLOSE
CVR12	CVCS MIXED BED DEMIN % BORATED	0 to 100 %
CVR13	CVCS DEBORATING DEMIN % BORATED	0 to 100 %
CVR14	MANUAL ALTERNATE EMERG. BORATION (CS-294)	OPEN, CLOSE
CVR15	SUPPLY TO SEAL INJ FILTER (CS-300E)	0 to 100 %
CVR16	SUPPLY TO SEAL INJ FILTER (CS-300W)	0 to 100 %
CVR17	CCP DISCHARGE VALVE (CS-301E)	OPEN, CLOSE
CVR18	CCP DISCHARGE VALVE (CS-301W)	OPEN, CLOSE
CVR19	RCP SEAL INJ FCV QRV-251 ISOL (CS-303)	0 to 100 %
CVR20	NORTH SEAL WATER INJ FILTER ISOL (CS-308N/311N)	0 to 100 %
CVR21	SOUTH SEAL WATER INJ FILTER ISOL (CS-308S/311S)	0 to 100 %
CVR22	PD CHG PP DISCHARGE (2-CS-306)	OPEN, CLOSE
CVR23	CHARGING HEADER PCV QRV-200 ISOL (CS-317)	OPEN, CLOSE
CVR24	CHARGING HEADER PCV QRV-200 BYPASS (CS-319)	0 to 100 %
CVR25	LETDOWN BACK PRESSURE CV QRV-301 OUTLET ISOL (CS-336)	OPEN, CLOSE
CVR26	LETDOWN BACK PRESSURE CV QRV-301 BYPASS (CS-338)	0 to 100 %
CVR27	SEAL WATER HX INLET ISOL (CS-362)	OPEN, CLOSE
CVR28	SEAL WATER HX BYPASS (CS-367)	0 to 100 %
CVR29	SEAL WATER HX OUTLET ISOL (CS-368)	0 to 100 %
CVR30	SEAL WATER RETURN TO VCT/CHG PP (CS-369/370)	VCT, CP
CVR31	VCT VENT VALVE RSO-300 ISOL (CS-372)	0 to 100 %
CVR32	RX COOLANT FILTER OUTLET ISOL (CS-379)	0 to 100 %
CVR33	BLENDER TO RWST (CS-388)	OPEN, CLOSE
CVR34	BATCH TK TO B.A. PUMPS 3 AND 4 (CS-407)	OPEN, CLOSE

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
CVR35	"M" B.A. TK TO B.A. PUMPS 3 AND 4 (CS-409)	OPEN, CLOSE
CVR36	#3 AND 4 B.A. PUMPS SUCTION X-TIE (CS-411)	OPEN, CLOSE
CVR37	#3 B.A. PUMP TO #2 B.A. FILTER (CS-416-3)	OPEN, CLOSE
CVR38	#4 B.A. PUMP TO #2 B.A. FILTER (CS-416-4)	OPEN, CLOSE
CVR39	#2 B.A. FILTER TO #3 B.A. PUMP FILTER BYPASS (CS-417-3)	OPEN, CLOSE
CVR40	#4 B.A. PUMP FILTER BYPASS (CS-417-4)	OPEN, CLOSE
CVR41	#2 B.A. FILTER TO "M" B.A. TANK (CS-422S)	OPEN, CLOSE
CVR42	#2 B.A. FILTER TO "S" B.A. TANK (CS-423S)	OPEN, CLOSE
CVR43	BATCHING TANK VOLUME	0 to 1000 GAL
CVR44	"M" BAST CONCENTRATION	0 to 30000 PPM
CVR45	"S" BAST CONCENTRATION	0 to 30000 PPM
CVR46	"M" B.A. TANK RECIRC (QRV-420)	0 to 100 %
CVR47	RCP 21 SEAL INJ NEEDLE VALVE (CS-438-1)	0 to 100 %
CVR48	RCP 22 SEAL INJ NEEDLE VALVE (CS-438-2)	0 to 100 %
CVR49	RCP 23 SEAL INJ NEEDLE VALVE (CS-438-3)	0 to 100 %
CVR50	RCP 24 SEAL INJ NEEDLE VALVE (CS-438-4)	0 to 100 %
CVR51	PW TO BLENDER (PW-263)	OPEN, CLOSE
CVR52	PW TO EM BORATION LINE (PW-265)	OPEN, CLOSE
CVR53	LOCAL VCT LEVEL IND (QLC-451)	0 to 100 %
CVR54	N2/H2 REGULATOR S.P. TO VCT	0 to 100 PSIG
CVR55	"S" BA TANK OUTLET (CS-437S)	OPEN, CLOSE
CVR56	BIT RECIRC ALIGNMENT (CS-434/435)	MBAT, SBAT
CVR57	UI CCP DISCH TO BIT (CS-534)	0 to 100 %
CVR58	UI CCP DISCH TO SEAL INJ (CS-535)	0 to 100 %
CVR59	UI CCP DISCH TO CCP DISCH HDR (CS-536)	0 to 100 %
CVR60	MIN VALVE POSITION (QRV-251)	0 to 100 %
CWR01	"S" SCREEN WASH PUMP BKR (21C4)	RI, RO
CWR02	#21 CIRC PUMP BKR (2D4)	RI, RO
CWR03	#22 CIRC PUMP BKR (2A6)	RI, RO
CWR04	#23 CIRC PUMP BKR (2B3)	RI, RO
CWR05	#24 CIRC PUMP BKR (2C11)	RI, RO
CWR06	TACW HX INLET (CW-177)	OPEN, CLOSE
CWR07	TACW HX BACKWASH OUTLET (CW-178)	0 to 100 %
CWR08	TACW COOLER OUTLET (CW-181)	0 to 100 %
CWR09	TACW HX BACKWASH INLET (CW-182)	OPEN, CLOSE
CWR10	VACUUM PRIMING AIR LOAD	0 to 100 %
CWR11	LAKE WATER SYSTEM DEICING CONTROL	0 to 100 %
CWR12	LAKE WATER TEMPERATURE	32 to 85 DEG F
CWR13	LAKE WATER HEIGHT	566 to 596 FT
CWR14	MAIN CONDENSER "AN" TUBE PLUGGING	0 to 50 %
CWR15	MAIN CONDENSER "AS" TUBE PLUGGING	0 to 50 %
CWR16	MAIN CONDENSER "BN" TUBE PLUGGING	0 to 50 %
CWR17	MAIN CONDENSER "BS" TUBE PLUGGING	0 to 50 %
CWR18	MAIN CONDENSER "CN" TUBE PLUGGING	0 to 50 %
CWR19	MAIN CONDENSER "CS" TUBE PLUGGING	0 to 50 %

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
CWR20	"N" SCREEN WASH PUMP CONTROL	ON, OFF
CWR21	TACW HX TUBE PLUGGING	0 to 50 %
EDR01	1200 AMP DISCONNECTS ON 12 EP TO 4KV BUS	OPEN, CLOSE
EDR02	21A FEED FROM TR21A (21A11)	RI, RO
EDR03	21A/21C CROSS-TIE (21AC)	RI, RO
EDR04	21B FEED FRO TR21B (21B11)	RI, RO
EDR05	21BMC/21CMC CROSS-TIE (21BMC)	RI, RO
EDR06	21B/21D CROSS-TIE (21BD)	RI, RO
EDR07	21BMC FEED FROM TR21BMC (21BMC1)	RI, RO
EDR08	21C FEED FROM TR21C (21C1)	RI, RO
EDR09	21CMC FEED FROM TR21CMC (21CMC11)	RI, RO
EDR10	21D FEED FROM TR21D (21D1)	RI, RO
EDR11	RESERVE FEED TO BUS 2A (2A5)	RI, RO
EDR12	AUX FEED TO BUS 2A (2A7)	RI, RO
EDR13	RESERVE FEED TO BUS 2B (2B5)	RI, RO
EDR14	AUX FEED TO BUS 2B (2B7)	RI, RO
EDR15	TR 21BMC FEED (2B6)	RI, RO
EDR16	RESERVE FEED TO BUS 2C (2C4)	RI, RO
EDR17	AUX FEED TO BUS 2C (2C6)	RI, RO
EDR18	RESERVE FEED TO BUS 2D (2D3)	RI, RO
EDR19	AUX FEED TO BUS 2D (2D5)	RI, RO
EDR20	TR 21CMC FEED (2C5)	RI, RO
EDR21	"N" TRAIN BATTERY CHARGER	TR"A", NEITHER, TR"B"
EDR22	TR21PHA FEED BKR (T21A6)	RI, RO
EDR23	T21A NORM FEED BKR (T21A9)	RI, RO
EDR24	TR21A FEED BKR (T21A10)	RI, RO
EDR25	T21A2 EP FEED BKR MANUAL CLOSURE	NORM, CLOSE
EDR26	T21B NORM FEED BKR (T21B1)	RI, RO
EDR27	T21B EP FEED BKR (T21B2)	RI, RO
EDR28	T2C NORM FEED BKR (T21C1)	RI, RO
EDR29	T21C EP FEED BKR (T21C2)	RI, RO
EDR30	TR21D NORM FEED BKR (T21D12)	RI, RO
EDR31	T21D1 EP FEED BKR MANUAL CLOSURE	NORM, CLOSE
EDR32	TR21D FEED BKR (T21D2)	RI, RO
EDR33	TR21PHC FEED BKR (T21D9)	RI, RO
EDR34	"N" PLANT LIGHTING XFMR BKR (21D10)	TRIP, RESET
EDR35	"S" PLANT LIGHTING XFR BKR (21A4)	TRIP, RESET
EDR36	CH I STATIC INV. MAN BYP SW	NORMAL, ALT
EDR37	CH II STATIC INV. MAN BYP SW	NORMAL, ALT
EDR38	CH III STATIC INV. MAN BYP SW	NORMAL, ALT
EDR39	CH IV STATIC INV. MAN BYP SW	NORMAL, ALT
EDR40	GRID FREQUENCY VARIANCE	58 to 62 HZ
EDR41	GRID VOLTAGE VARIANCE (765 KV)	690 to 840 KV
EDR42	CKT 5 TR "A"/CKT 4 TR "B" 250 VDC BATTERY X-TIE	OPEN, CLOSE
EDR43	UNIT ONE AC/DC POWER AVAILABILITY	ON, OFF
EDR44	T21A EP FEED BKR (T21A12)	RI, RO
EDR45	T21D EP FEED BKR (T21D1)	RI, RO
EDR46	PLT/CT STBY LTG XFMR BKR (21CB)	TRIP, RESET
EDR47	MAIN TRANSF AUX (NORM) BKR (21C9)	TRIP, RESET
EDR48	MAIN TRANSF AUX (EMERG) BKR (21D9)	TRIP, RESET
EDR49	MCC TBC-CN SUPPLY BKR (21C16)	TRIP, RESET
EDR50	MCC TBG-BW/TBP-BN BKR (21B5)	TRIP, RESET
EDR51	AIR BREAK SWITCH "U"	OPEN, CLOSE
EDR52	"BE" BREAKER CONTROL	OPEN, CLOSE
EDR53	"BC" BREAKER CONTROL	OPEN, CLOSE
EDR54	"B2" BREAKER CONTROL	OPEN, CLOSE

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
EDR55	DUMONT 765KV SUPPLY LINE	ON, OFF
EGR01	DGAB TEST BREAKER (ACB-DGT-DGAB)	RI, RO
EGR02	DGCD TEST BREAKER (ACB-DGT-DGCD)	RI, RO
EGR03	D/G AB JACKET WATER PUMP CONTROL	OFF, AUTO
EGR04	D/G CD JACKET WATER PUMP CONTROL	OFF, AUTO
EGR05	MAIN GEN DISCONNECTS FOR BACKFEED	NORMAL, DISC
EGR06	H2 OIL PUMP COLLECTOR END	ON, OFF
EGR07	H2 OIL PUMP TURBINE END	ON, OFF
EGR08	DGAB LOCAL START PUSH-BUTTON	IN, OUT
EGR09	DGAB LOCAL STOP PUSH-BUTTON	IN, OUT
EGR10	DGCD LOCAL START PUSH-BUTTON	IN, OUT
EGR11	DGCD LOCAL STOP PUSH-BUTTON	IN, OUT
EGR12	T21A DGAB FEED BKR (T21A11)	RI, RO
EGR13	T21B DGAB FEED BKR (T21B4)	RI, RO
EGR14	T21C DGCD FEED BKR (T21C3)	RI, RO
EGR15	T21D DGCD FEED BKR (T21D8)	RI, RO
EGR16	VACUUM OIL PUMP CONTROL	STOP, RUN
FPR01	HIGH DEMAND FIRE PUMP BKR (21C14)	RI, RO
FWR01	SJAE #1 VALVES (AUX-118,LPD1311,LPD1321)	INSERV, OUTSERV
FWR02	SJAE #2 VALVES (AUX-115A,LPD1312,LPD1322)	INSERV, OUTSERV
FWR03	SJAE #3 VALVES (AUX-115B,LPD13130LPD1323)	INSERV, OUTSERV
FWR04	SJAE #4 VALVES (AUX-115C,LPD1314,LPD1324)	INSERV, OUTSERV
FWR05	UI-UII AFP SUCTION X-TIE (12-CRV-51)	OPEN, CLOSE
FWR06	UI MDAFP SUPPLY TO SG 21 AND 24 (1-FW-129)	OPEN, CLOSE
FWR07	UI MDAFP SUPPLY TO SG 22 AND 23 (2-FW-129)	OPEN, CLOSE
FWR08	"N" HOTWELL PUMP BKR (2D6)	RI, RO
FWR09	"M" HOTWELL PUMP BKR (2A8)	RI, RO
FWR10	"S" HOTWELL PUMP BKR (2C8)	RI, RO
FWR11	"N" COND. BOOSTER PUMP BKR (2D7)	RI, RO
FWR12	"M" COND. BOOSTER PUMP BKR (2A10)	RI, RO
FWR13	"S" COND. BOOSTER PUMP BKR (2C9)	RI, RO
FWR14	"N" HEATER DRAIN PUMP BKR (2D2)	RI, RO
FWR15	"M" HEATER DRAIN PUMP BKR (2B2)	RI, RO
FWR16	"S" HEATER DRAIN PUMP BKR (2C10)	RI, RO
FWR17	"N" HOTWELL PUMP DISCHARGE (C-114N)	0 to 100 %
FWR18	"M" HOTWELL PUMP DISCHARGE (C-14M)	0 to 100 %
FWR19	"S" HOTWELL PUMP DISCHARGE (C-114S)	0 to 100 %
FWR20	CONDENSATE OVERBOARD (C-132/133)	0 to 100 %
FWR21	COND. EXCESS LETDOWN VALVE CRV-155 ISOL (C-136)	OPEN, CLOSE
FWR22	"N" COND BOOSTER PUMP ELO ISOL (C-152N)	0 to 100 %
FWR23	"M" COND BOOSTER PUMP ELO ISOL (C-152M)	0 to 100 %
FWR24	"S" COND BOOSTER PUMP ELO ISOL (C-152S)	0 to 100 %
FWR25	COND. MAKEUP VALVE CRV-55 ISOL (C-165)	OPEN, CLOSE
FWR26	SG FILL VALVE (FP BYPASS) (C-252/254)	OPEN, CLOSE
FWR27	CST OUTLET VALVE (C-259)	OPEN, CLOSE

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
FWR28	DEMIN M/U SELECTED TO CST/HW (DW-266/334)	CST, HW
FWR29	FW CONSERVATION JUMPER FOR TEST VALVE 2-FRV-245	NORMAL, DEFEAT
FWR30	FW CONSERVATION JUMPER FOR TEST VALVE 2-FRV-255	NORMAL, DEFEAT
FWR31	TDAFP FEED VALVE FMO-211 HAND CRANK	0 to 100 %
FWR32	TDAFP FEED VALVE FMO-221 HAND CRANK	0 to 100 %
FWR33	TDAFP FEED VALVE FMO-231 HAND CRANK	0 to 100 %
FWR34	TDAFP FEED VALVE FMO-241 HAND CRANK	0 to 100 %
FWR35	"E" MDAFP TEST VALVE (FRV-255)	0 to 100 %
FWR36	"W" MDAFP TEST VALVE (FRV-245)	0 to 100 %
FWR37	TDAFP TEST VALVE (FRV-256)	0 to 100 %
FWR38	FRV-256 CONTROL POWER FUSES	NORMAL, REMOVE
FWR39	"E" MFP DISCHG VLV BYP (FW-105E)	0 to 100 %
FWR40	"W" MFP DISCHG VLV BYP (FW-105W)	0 to 100 %
FWR41	AFW TEST LINE ISOL (FW-125)	OPEN, CLOSE
FWR42	"E" MDAFP DISCH (2-FW-130)	OPEN, CLOSE
FWR43	"W" MDAFP DISCH (FW-158)	OPEN, CLOSE
FWR44	FMO-212 ISOL VLV (FW-131-1)	0 to 100 %
FWR45	FMO-222 ISOL VLV (FW-131-2)	0 to 100 %
FWR46	FMO-232 ISOL VLV (FW-131-3)	0 to 100 %
FWR47	FMO-242 ISOL VLV (FW-131-4)	0 to 100 %
FWR48	FMO-211 ISOL VLV (FW-137-1)	0 to 100 %
FWR49	FMO-221 ISOL VLV (FW-137-2)	0 to 100 %
FWR50	FMO-231 ISOL VLV (FW-137-3)	0 to 100 %
FWR51	FMO-241 ISOL VLV (FW-137-4)	0 to 100 %
FWR52	TDAFP DISCH VLV (FW-136)	OPEN, CLOSE
FWR53	FP/MAIN COND AIR OFFTAKE X-TIE (LPD-146)	OPEN, CLOSE
FWR54	"N" HTR DRN PP ELO ISOL (LPD-328A)	0 to 100 %
FWR55	"M" HTR DRN PP ELO ISOL (LPD-328B)	0 to 100 %
FWR56	"S" HTR DRN PP ELO ISOL (LPD-328C)	0 to 100 %
FWR57	MCM-221 STEAM SUPPLY MANUAL CRANK TO TDAFP	0 to 100 %
FWR58	MCM-231 STEAM SUPPLY MANUAL CRANK TO TDAFP	0 to 100 %
FWR59	MS TO "E" MFP ARV-11 ISOL (RS-107E)	0 to 100 %
FWR60	MS TO "W" MFP ARV-12 ISOL (RS-107W)	0 to 100 %
FWR61	"E" MDAFP BKR (T21D11)	RI, RO
FWR62	"W" MDAFP BKR (T21A2)	RI, RO
FWR63	TDAFP SPEED CONTROL MODE	LOCAL, REMOTE
FWR64	TDAFP LOCAL SPEED CONTROL	0 to 100 %
FWR65	TDAFP SUCTION SUPPLY SOURCE (FW-133,ESW-240)	CST, ESW
FWR66	"E" MDAFP SUCTION SUPPLY SOURCE (FW-123,ESW-145)	CST, ESW
FWR67	"W" MDAFP SUCTION SUPPLY SOURCE (FW-162,ESW-243)	CST, ESW
FWR68	COND DEAERATING STEAM ISOL (AUX-134A,B,C)	OPEN, CLOSE
FWR69	CONDENSER AIR INLEAKAGE AT 28 IN HG	0 to 100 SCFM
FWR70	MAIN CONDENSER MANOMETER ALIGNMENT	ISOL, A, B, C
FWR71	FP TURBINE CONDENSER MANOMETER ALIGNMENT	ISOL, E, W
FWR72	MISC DRAIN TANK TO CONDENSER/WATER (LPD-169/360)	COND-B, OVBD
FWR73	ARV-60 AUX STEAM TO FP ISOL	0 to 100 %

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
	(AUX-163)	
FWR74	EAST FPT CONDENSATE DRAIN/SJAE ISOL (C-176E/LPD-145E)	OPEN, CLOSE
FWR75	WEST FPT CONDENSATE DRAIN/SJAE ISOL (C-176W/LPD-145W)	OPEN, CLOSE
FWR76	LEAD RTFW,2-OHP 4023 FR-H.1 ATT A	INST, LIFTED
FWR77	LEAD RTFE,2-OHP 4023 FR-H.1 ATT A	INST, LIFTED
HVR01	AUX BLDG EXH X-TIE DAMPER	OPEN, CLOSE
HVR02	CR PRESSURIZATION INTAKE (HV-ACRDA-2)	OVRD, OPEN, NEUT, CLOSE
HVR03	CR PRESSURIZATION RECIRC (HV-ACRDA-3)	OPEN, NEUT, CLOSE
HVR04	CR AIR HANDLING O.S. AIR INLET (HV-ACRDA-1)	OPEN, NEUT, CLOSE
HVR05	GEN AUX BLDG SUPPLY FAN 2-HV-AS1	ON, OFF
IAR01	PLANT AIR COMPRESSOR BKR (21B10)	RI, RO
IAR02	CONTROL AIR COMP BKR 2AB-D (52-CA)	RI, RO
IAR03	PAC UNLOADER VALVE CONTROL	AUTO, MAN
IAR04	PAC UNLOADER MANUAL VALVE POSITION	0 to 100 %
IAR05	XCR-100,101,102,103 STEM BLOCKS	INSTALL, REMOVE
IAR06	PLANT AIR USAGE IN BOP	0 to 1000 SCFM
IAR07	UNIT 1 PLANT AIR SUPPLY	ON, OFF
IAR08	CONTROL AIR USAGE IN CONTAINMENT	0 to 50 SCFM
IAR09	CONTROL AIR USAGE IN BOP	0 to 1500 SCFM
IAR10	PA TO CA ISOLATION (PA128)	OPEN, CLOSE
MSR01	50# STEAM TO AUX STEAM ARV-500 S.P.	0 to 100 PSIG
MSR02	50# STEAM FROM REHEAT CONTROLLER ARV-516 S.P.	0 to 100 PSIG
MSR03	U-1/U-2 150/50# AUX ST X-CONN AUX-443/447	OPEN, CLOSE
MSR04	STEAM CYCLE STEAM LEAKAGE	0 to 100 GPM
MSR05	SRV-400 ISOL (AUX-431-2)	0 to 100 %
MSR06	SRV-402 ISOL (AUX-432-2)	0 to 100 %
MSR07	S/G PORV MRV-213 HANDWHEEL CONTROL	AUTO, MAN
MSR08	S/G PORV MRV-213 MANUAL POSITION	0 to 100 %
MSR09	S/G PORG MRV-223 HANDWHEEL CONTROL	AUTO, MAN
MSR10	S/G PORV MRV-223 MANUAL POSITION	0 to 100 %
MSR11	S/G PORV MRV-233 HANDWHEEL CONTROL	AUTO, MAN
MSR12	S/G PORV MRV-233 MANUAL POSITION	0 to 100 %
MSR13	S/G PORV MRV-243 HANDWHEEL CONTROL	AUTO, MAN
MSR14	S/G PORV MRV-243 MANUAL POSITION	0 to 100 %
MSR15	S/G PORV MRV-213 ISOL (MSV-101-1)	OPEN, CLOSE
MSR16	S/G PORV MRV-223 ISOL (MSV-101-2)	OPEN, CLOSE
MSR17	S/G PORV MRV-233 (MSV-101-3)	OPEN, CLOSE
MSR18	S/G PORV MRV-243 ISOL (MSV-101-4)	OPEN, CLOSE
MSR19	DRV407 AT DRIP REC MAN ISOL (MS-141)	0 to 100 %
MSR20	SRV-12 MANUAL ISOL (SS-144)	OPEN, CLOSE
MSR21	SRV-22 MANUAL ISOL (SS-101)	OPEN, CLOSE
MSR22	SRV-25 MANUAL ISOL (SS-103)	OPEN, CLOSE
MSR23	URV-110 STEAM DUMP FUSES	IN, OUT
MSR24	URV-111 STEAM DUMP FUSES	IN, OUT
MSR25	URV-112 STEAM DUMP FUSES	IN, OUT
MSR26	URV-113 STEAM DUMP FUSES	IN, OUT
MSR27	URV-114 STEAM DUMP FUSES	IN, OUT
MSR28	URV-115 STEAM DUMP FUSES	IN, OUT
MSR29	URV-116 STEAM DUMP FUSES	IN, OUT
MSR30	URV-120 STEAM DUMP FUSES	IN, OUT

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
MSR31	URV-121 STEAM DUMP FUSES	IN, OUT
MSR32	URV-122 STEAM DUMP FUSES	IN, OUT
MSR33	URV-123 STEAM DUMP FUSES	IN, OUT
MSR34	URV-124 STEAM DUMP FUSES	IN, OUT
MSR35	URV-125 STEAM DUMP FUSES	IN, OUT
MSR36	URV-126 STEAM DUMP FUSES	IN, OUT
MSR37	URV-130 STEAM DUMP FUSES	IN, OUT
MSR38	URV-131 STEAM DUMP FUSES	IN, OUT
MSR39	URV-132 STEAM DUMP FUSES	IN, OUT
MSR40	URV-133 STEAM DUMP FUSES	IN, OUT
MSR41	URV-134 STEAM DUMP FUSES	IN, OUT
MSR42	URV-135 STEAM DUMP FUSES	IN, OUT
MSR43	URV-136 STEAM DUMP FUSES	IN, OUT
MSR44	MSR STM SUPPLY MRV-411 ISOL (TBP-102R)	OPEN, CLOSE
MSR45	SR STM SUPPLY MRV-412 ISOL (TBP-103L)	OPEN, CLOSE
MSR46	SG STOP VALVE NO 1 BYPASS ISOL (MS-148)	0 to 100 %
MSR47	SG STOP VALVE NO 4 BYPASS ISOL (MS-147)	0 to 100 %
MSR48	SSG STOP VALVE BYPASS ISOL SIZE	1 to 10 NORMAL
MSR49	50# AUX STM HEADER USAGE	0 to 100000 LBM/HR
MSR50	150# AUX ST HEADER USAGE	0 to 100000 LBM/HR
NIR01	N41 HIGH FLUX TRIP SETPOINT	0 to 120 %
NIR02	N42 HIGH FLUX TRIP SETPOINT	0 to 120 %
NIR03	N43 HIGH FLUX TRIP SETPOINT	0 to 120 %
NIR04	N44 HIGH FLUX TRIP SETPOINT	0 to 120 %
NIR05	HI FLUX AT SHUTDOWN ALARM SETPOINT	1 to 1e+06 CPS
RCR01	#21 RCP BKR (2B9)	RI, RO
RCR02	#22 RCP BKR (2C2)	RI, RO
RCR03	#23 RCP BKR (2D9)	RI, RO
RCR04	#24 RCP BKR (2A4)	RI, RO
RCR05	B/D TREATMENT PUMP CONTROL	STOP, RUN
RCR06	B/D SYSTEM/FLASH TANK LINE-UP	NORMAL, SU
RCR07	HEAD FLANGE LEAK DET. LINE ISOL (DRV-100)	OPEN, CLOSE
RCR08	REACTOR VESSEL SEAL DRAIN ALIGNMENT (RC-119/118)	INNER, OUTER
RCR09	LOOP 1 RTD BYP MANIFOLD FLOW (NFA-210)	0 to 400 GPM
RCR10	LOOP 2 RTD BYP MANIFOLD FLOW (NFA-220)	0 to 400 GPM
RCR11	LOOP 3 RTD BYP MANIFOLD FLOW (NFA-230)	0 to 400 GPM
RCR12	LOOP 4 RTD BYP MANIFOLD FLOW (NFA-240)	0 to 400 GPM
RCR13	PZR SPRAY VALVE BYP VALVES (RC-122/123)	0 to 100 %
RCR14	RX VESSEL HEAD VENTS (RC-137/133)	0 to 100 %
RCR15	PZR SV-45A LEAKAGE AT 2235 PSID	0 to 10 GPM
RCR16	PZR SV-45B LEAKAGE AT 2235 PSID	0 to 10 GPM
RCR17	PZR SV-45C LEAKAGE AT 2235 PSID	0 to 10 GPM
RCR18	PZR NRV-151 LEAKAGE AT 2235 PSID	0 to 10 GPM
RCR19	PZR NRV-152 LEAKAGE AT 2235 PSID	0 to 10 GPM
RCR20	PZR NRV-153 LEAKAGE AT 2235 PSID	0 to 10 GPM
RCR21	N2 TO PRT REG GRV-321	0 to 30 PSIG
RCR22	RCS/PZR/CVCS BORON CONCENTRATION	0 to 2000 PPM

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
RCR23	PZR BORON CONCENTRATION	0 to 2000 PPM
RCR24	NO 1 STEAM GENERATOR TUBE PLUGGING	0 to 100 %
RCR25	NO 2 STEAM GENERATOR TUBE PLUGGING	0 to 100 %
RCR26	NO 3 STEAM GENERATOR TUBE PLUGGING	0 to 100 %
RCR27	NO 4 STEAM GENERATOR TUBE PLUGGING	0 to 100 %
RCR28	REACTOR VESSEL METAL TEMPERATURE IND	0 to 1000 DEG F
RCR29	RCS LOOP DRAINS (RC-113-L1-4)	0 to 100 %
RCR30	RX HEAD VOID SIZE INDICATION	0 to 100 %
RCR31	RCS TYGON LEVEL INDICATOR STATUS	IN, OUT
RCR32	RCS TYGON LEVEL INDICATION	613 to 680 FT
RCR33	PRT MANUAL VENT (WD-238)	OPEN, CLOSE
RDR01	"2N" ROD DRIVE MG CONTROL	ON, OFF
RDR02	"2N" ROD DRIVE MG BKR	RI, RO
RDR03	"2S" ROD DRIVE MG CONTROL	ON, OFF
RDR04	"2S" ROD DRIVE MG BKR	RI, RO
RDR05	CONTROL BANK A P-A CONVERTER RESET	0 to 228 STEPS
RDR06	CONTROL BANK B P-A CONVERTER RESET	0 to 228 STEPS
RDR07	CONTROL BANK C P-A CONVERTER RESET	0 to 228 STEPS
RDR08	CONTROL BANK D P-A CONVERTER RESET	0 to 228 STEPS
RDR09	CONTROL BANK OVERLAP COUNTER RESET	0 to 612 STEPS
RHR01	"E" RHR PUMP SUCTION PRESSURE	0 to 50 PSIG
RHR02	"W" RHR PUMP SUCTION PRESSURE	0 to 50 PSIG
RHR03	ACCUM N2 SUPPLY GRV-313	0 to 650 PSIG
RHR04	ICM-129 CONTROL POWER BREAKER	OPEN, CLOSE
RHR05	IMO-128 CONTROL POWER BREAKER	OPEN, CLOSE
RHR06	"E" RHR PP SUCT FROM RECIRC SUMP (RH-104E)	OPEN, CLOSE
RHR07	"W" RHR PP SUCT FROM RECIRC SUMP (RH-104W)	OPEN, CLOSE
RHR08	"E" RHR HX INLET (RH-116E)	OPEN, CLOSE
RHR09	"W" RHR HX INLET (RH-116W)	OPEN, CLOSE
RHR10	RHR HX BYPASS ISOL (RH-117)	OPEN, CLOSE
RHR11	RHR LETDOWN TO CVCS "E" (RH-121E)	OPEN, CLOSE
RHR12	RHR LETDOWN TO CVCS "W" (RH-121W)	OPEN, CLOSE
RHR13	RHR TO COOLDOWN LINE "E" (RH-128E)	OPEN, CLOSE
RHR14	RHR TO COOLDOWN LINE "W" (RH-128W)	OPEN, CLOSE
RHR15	RHR RETURN TO RWST (RH-130)	0 to 100 %
RHR16	"E" RHR PUMP BKR (T21D6)	RI, RO
RHR17	"W" RHR PUMP BKR (T21A4)	RI, RO
RHR18	SI PUMP TEST LINE ISOL (SI-171/194)	OPEN, CLOSE
RPR001	REACTOR TRIP BYPASS BREAKER "A" (BYA)	RI, RO
RPR002	REACTOR TRIP BYPASS BREAKER "B" (BYB)	RI, RO
RPR003	REACTOR TRIP BYPASS BREAKER "A" CONTROL	TRIP, CLOSE
RPR004	REACTOR TRIP BYPASS BREAKER "B" CONTROL	TRIP, CLOSE
RPR005	FS-414A RCS LOW FLOW LOOP 1	NORMAL, TRIP
RPR006	FS-415A RCS LOW FLOW LOOP 1	NORMAL, TRIP
RPR007	FS-416A RCS LOW FLOW LOOP 1	NORMAL, TRIP
RPR008	FS-424A RCS LOW FLOW LOOP 2	NORMAL, TRIP
RPR009	FS-425A RCS LOW FLOW LOOP 2	NORMAL, TRIP
RPR010	FS-426A RCS LOW FLOW LOOP 2	NORMAL, TRIP
RPR011	FS-434A RCS LOW FLOW LOOP 3	NORMAL, TRIP
RPR012	FS-435A RCS LOW FLOW LOOP 3	NORMAL, TRIP
RPR013	FS-436A RCS LOW FLOW LOOP 3	NORMAL, TRIP

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
RPR014	FS-444A RCS LOW FLOW LOOP 4	NORMAL, TRIP
RPR015	FS-445A RCS LOW FLOW LOOP 4	NORMAL, TRIP
RPR016	FS-446A RCS LOW FLOW LOOP 4	NORMAL, TRIP
RPR017	FS-510A FW>FS ALARM LOOP 1 CH 1	NORMAL, TRIP
RPR018	FS-510B FW<FS RX TRIP LOOP 1 CH 1	NORMAL, TRIP
RPR019	FS-511A FW>FS ALARM LOOP 1 CH 2	NORMAL, TRIP
RPR020	FS-5118A FW<FS TX TRIP LOOP 1 CH 2	NORMAL, TRIP
RPR021	FS-512B FW>FS REF STM LINE ISO LP 1 CH 1	NORMAL, TRIP
RPR022	FS-513B FW>FS REF STM LINE ISO LP 1 CH 2	NORMAL, TRIP
RPR023	FS-520A FW>FS ALARM LOOP 2 CH 1	NORMAL, TRIP
RPR024	FS-520B FW<FS RX TRIP LOOP 2 CH 1	NORMAL, TRIP
RPR025	FS-521A FW>FS ALAR LOOP 2 CH 2	NORMAL, TRIP
RPR026	FS-521B FW<FS RX TRIP LOOP 2 CH 2	NORMAL, TRIP
RPR027	FS-522B FW>FS REF STM LINE ISO LP 2 CH 1	NORMAL, TRIP
RPR028	FS-523B FW>FS REF STM LINE ISO LP 2 CH 2	NORMAL, TRIP
RPR029	FS-530A FW>FS ALARM LOOP 3 CH 1	NORMAL, TRIP
RPR030	FS-530B FW<FS RX TRIP LOOP 3 CH 1	NORMAL, TRIP
RPR031	FS-531A FW>FS ALARM LOOP 3 CH 2	NORMAL, TRIP
RPR032	FS-531B FW<FS RX TRIP LOOP 3 CH 2	NORMAL, TRIP
RPR033	FS-523B FW>FS REF STM LINE ISO LP 3 CH 1	NORMAL, TRIP
RPR034	FS-533B FW>FW REF ST LINE ISO LP 3 CH 2	NORMAL, TRIP
RPR035	FS-540A FW>FS ALARM LOOP 4 CH 1	NORMAL, TRIP
RPR036	FS-540B FW<FS RX TRIP LOOP 4 CH 1	NORMAL, TRIP
RPR037	FS-541A FW>FW ALARM LOOP 4 CH 2	NORMAL, TRIP
RPR038	FS-541B FW<FS RX TRIP LOOP 4 CH 2	NORMAL, TRIP
RPR039	FS-542B FW>FS REF STM LINE ISO LP 4 CH 1	NORMAL, TRIP
RPR040	FS-543B FW>FS REF STM LINE ISO LP 4 CH 2	NORMAL, TRIP
RPR041	LS-459A PZR HIGH LEVEL TRIP CH 1	NORMAL, TRIP
RPR042	LS-460A PZR HIGH LEVEL TRIP CH 2	NORMAL, TRIP
RPR043	LS-461A PZR HIGH LEVEL TRIP CH 3	NORMAL, TRIP
RPR044	LS-517A S/G HI-HI TURB TRIP LP 1 CH 4	NORMAL, TRIP
RPR045	LS-517B S/G LO-LO RX TRIP LP 1 CH 4	NORMAL, TRIP
RPR046	LS-517C S/G LOW LVL RX TRIP LP 1 CH 4	NORMAL, TRIP
RPR047	LS-518A S/G HI-HI TURB TRIP LP 1 CH 3	NORMAL, TRIP
RPR048	LS-518B S/G LO-LO RX TRIP LP 1 CH 3	NORMAL, TRIP
RPR049	LS-518C S/G LOW LVL RX TRIP LP 1 CH 3	NORMAL, TRIP
RPR050	LS-519A S/G HI-HI TURB TRIP LP 1 CH 2	NORMAL, TRIP
RPR051	LS-519B S/G LO-LO RX TRIP LP 1 CH 2	NORMAL, TRIP
RPR052	LS-527A S/G HI-HI TURB TRIP LP 2 CH 4	NORMAL, TRIP
RPR053	LS-527B S/G LO-LO RX TRIP LP 2 CH 4	NORMAL, TRIP
RPR054	LS-527C S/G LOW LVL RX TRIP LP 2 CH 4	NORMAL, TRIP
RPR055	LS-528A S/G HI-HI TURB TRIP LP 2 CH 3	NORMAL, TRIP

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
RPR096	PS-516C S/G LOW DP SI LP 1 CH 4, S/G HIGH DP SI LP 4 CH 4	NORMAL, TRIP
RPR097	PS-516D S/G LOW DP SI LP 4 CH 4, S/G HIGH DP SI LP 1 CH 4	NORMAL, TRIP
RPR098	PS-525A S/G LOW DP SI LP 2 CH 2, S/G HIGH DP SI LP 4 CH 2	NORMAL, TRIP
RPR099	PS-525B S/G LOW DP SI LP 4 CH 2, S/G HIGH DP SI LP 2 CH 2	NORMAL, TRIP
RPR100	PS-525C S/G LOW PRESS SI LOOP 2 CH 2	NORMAL, TRIP
RPR101	PS-525D S/G LOW PRESS ALARM LOOP 2 CH 2	NORMAL, TRIP
RPR102	PS-526C S/G LOW DP SI LP 2 CH 3, S/G HIGH DP SI LP 3 CH 3	NORMAL, TRIP
RPR103	PS-526D S/G LOW DP SI LP 3 CH 3, S/G HIGH DP SI LP 3 CH 3	NORMAL, TRIP
RPR104	PS-534A S/G LOW DP SI LP 3 CH 1, S/G HIGH DP SI LP 4 CH 1	NORMAL, TRIP
RPR105	PS-534B S/G LOW DP SI LP 4 CH 1, S/G HIGH DP SI LP 3 CH 1	NORMAL, TRIP
RPR106	PS-536A S/G LOW PRESS SI LOOP 3 CH 3	NORMAL, TRIP
RPR107	PS-536B S/G LOW PRESS ALARM LOOP 3 CH 3	NORMAL, TRIP
RPR108	PS-546A S/G LOW PRESS SI LOOP 4 CH 4	NORMAL, TRIP
RPR109	PS-546B S/G LOW PRESS ALARM LOOP 4 CH 4	NORMAL, TRIP
RPR110	PS-934A CONTAINMENT PRESS HI-HI CH 4	NORMAL, TRIP
RPR111	PS-934B CONTAINMENT PRESS HIGH CH 4	NORMAL, TRIP
RPR112	PS-935A CONTAINMENT PRESS HI-HI CH 3	NORMAL, TRIP
RPR113	PS-935B CONTAINMENT PRESS HIGH CH 3	NORMAL, TRIP
RPR114	PS-936A CONTAINENT PRESS HI-HI CH 2	NORMAL, TRIP
RPR115	PS-936B CONTAINMENT PRESS HIGH CH 2	NORMAL, TRIP
RPR116	PS-937A CONTAINMENT PRESS HI-HI CH 1	NORMAL, TRIP
RPR117	TS-411C OTDT TRIP LOOP 1	NORMAL, TRIP
RPR118	TS-411D OTDT RUNBACK LOOP 1	NORMAL, TRIP
RPR119	TS-411G OPDT TRIP LOOP 1	NORMAL, TRIP
RPR120	TS-411H OPDT RUNBACK LOOP 1	NORMAL, TRIP
RPR121	TS-412D LO-LO TAVG LOOP 1	NORMAL, TRIP
RPR122	TS-412G LOW TAVG LOOP 1	NORMAL, TRIP
RPR123	TS-421C OTDT TRIP LOOP 2	NORMAL, TRIP
RPR124	TS-421D OTDT RUNBACK LOOP 2	NORMAL, TRIP
RPR125	TS-421G OPDT TRIP LOOP 2	NORMAL, TRIP
RPR126	TS-421H OPDT RUNBACK LOOP 2	NORMAL, TRIP
RPR127	TS-422D LO-LO TAVG LOOP 2	NORMAL, TRIP
RPR128	TS-422G LOW TAVG LOOP 2	NORMAL, TRIP
RPR129	TS-431C OTDT TRIP LOOP 3	NORMAL, TRIP
RPR130	TS-431D OTDT RUNBACK LOOP 3	NORMAL, TRIP
RPR131	TS-431G OPDT TRIP LOOP 3	NORMAL, TRIP
RPR132	TS-431H OPDT RUNBACK LOOP 3	NORMAL, TRIP
RPR133	TS-432D LO-LO TAVG LOOP 3	NORMAL, TRIP
RPR134	TS-432G LOW TAVG LOOP 3	NORMAL, TRIP
RPR135	TS-441C OTDT TRIP LOOP 4	NORMAL, TRIP
RPR136	TS-441D OTDT RUNBACK LOOP 4	NORMAL, TRIP

Remote #	Description	Range
RPR137	TS-441G OPDT TRIP LOOP 4	NORMAL, TRIP
RPR138	TS-441H OPDT RUNBACK LOOP 4	NORMAL, TRIP
RPR139	TS-442D LO-LO TAVG LOOP 4	NORMAL, TRIP
RPR140	TS-442G LOW TAVG LOOP 4	NORMAL, TRIP
RPR141	RTA LOCAL TRIP FUNCTION	NORMAL, TRIP
RPR142	RTB LOCAL TRIP FUNCTION	NORMAL, TRIP
RPR143	RPR143 TRAIN A FW ISOL JUMPER	INST, LIFTED
RPR144	RPR144 TRAIN B FW ISOL JUMPER	INST, LIFTED
RX001	RF FOR BISTABLE PS-505A	RI, RO
RX002	RF FOR BISTABLE PS-506A	RI, RO
RX003	RF FOR BISTABLE PS-505C	RI, RO
RXR01	PS-505A P-13 PERM. (MPC-253)	NORM, TRIP
RXR02	PS-506A P-13 PERM. (MPC-254)	NORM, TRIP
RXR03	PS-505C AUTO ROD WITHDRAWAL BLOCK	NORM, TRIP
SIR01	TEST LINE FROM SI PUMPS (IRV-260)	OPEN, CLOSE
SIR02	"N" SI PP MAN FLOW CONTROL (SI-121N)	0 to 100 %
SIR03	"S" SI PP MAN FLOW CONTROL (SI-121S)	0 to 100 %
SIR04	BIT BYPASS TEST ISOL (SI-125)	OPEN, CLOSE
SIR05	BIT INJ THROTTLE VLV (SI-141-L1)	0 to 100 %
SIR06	BIT INJ THROTTLE VLV (SI-141-L2)	0 to 100 %
SIR07	BIT INJ THROTTLE VLV (SI-141-L3)	0 to 100 %
SIR08	BIT INJ THROTTLE VLV (SI-141-L4)	0 to 100 %
SIR09	"N" PUMP BKR (T21D5)	RI, RO
SIR10	"S" PUMP BKR (T21A1)	RI, RO
SIR11	ACCUM FILL FROM CHG PPS (IRV-50)	OPEN, CLOSE
SIR12	ACCUM FILL FROM SI PPS (IRV-60)	OPEN, CLOSE
SWR01	"1E" ESW PUMP CONTROL	STOP, AUTO, START
SWR02	"1W" ESW PUMP CONTROL	STOP, AUTO, START
SWR03	"1N" NESW PUMP CONTROL	STOP, AUTO, START
SWR04	"1S" NESW PUMP CONTROL	STOP, AUTO, START
SWR05	"2N" NESW PUMP BKR (21C17)	RI, RO
SWR06	"2S" NESW PUMP BKR (21B12)	RI, RO
SWR07	"E" FP TCV WRV-978 ISOL (NSW-158E)	OPEN, CLOSE
SWR08	"W" FP TCV WRV-979 ISOL (NSW-158W)	OPEN, CLOSE
SWR09	MAIN TURB OIL TCV WRV-970 ISOL (NSW-166)	OPEN, CLOSE
SWR10	"2E" ESW PUMP BKR (T21D10)	RI, RO
SWR11	"2W" ESW PUMP BKR (T21A5)	RI, RO
SWR12	"2E" ESW HDR X-TIE (WM0708) MAN CNTRL	0 to 100 %
SWR13	"2W" ESW HDR X-TIE (WMO-706) MAN CNTRL	0 to 100 %
SWR14	UI & XTIE NESW FLOW AND CONTROL	0 to 100 %
SWR15	UI EAST ESW FLOW LOAD CONTROL	0 to 100 %
SWR16	UI WEST ESW FLOW LOAD CONTROL	0 to 100 %
TCR01	MANUAL TURBINE TRIP (FRONT STANDARD)	NORM, TRIP
TPR01	"2E" TACW PUMP BKR (21B6)	RI, RO
TPR02	"2W" TACW PUMP BKR (21A10)	RI, RO
TPR03	TACW MAKEUP ISOL (C-207)	OPEN, CLOSE
TPR04	TACW OPEN/CLOSED CYCLE CONTROL (C-310,246,249)	OPEN, CLOSE
TPR05	TACW FROM STATOR WATER COOLER "U" (C-226U)	0 to 100 %
TPR06	TACW FROM STATOR WATER COOLER "L" (C-226L)	0 to 100 %

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
TPR07	TACW OUTLET FROM H2 CLR #1 (C-230-1)	0 to 100 %
TPR08	TACW OUTLET FROM H2 CLR #2 (C-230-2)	0 to 100 %
TPR09	TACW OUTLET FROM H2 CLR #3 (C-230-3)	0 to 100 %
TPR10	TACW OUTLET FROM H2 CLR #4 (C-230-4)	0 to 100 %
TPR11	MAIN GEN H2 PRESSURE REG S.P. (BBC-287)	0 to 80 PSIG
TPR12	STATOR COOLING SYSTEM LEAKAGE	0 to 100 GPH
TUR01	AUX OIL PUMP BKR (21C18)	RI, RO
TUR02	TURNING GEAR MOTOR BKR (2B4)	RI, RO
TUR03	EAST AC AIR-OIL PUMP CONTROL	OFF, AUTO, RUN
TUR04	WEST AC AIR-OIL PUMP CONTROL	OFF, AUTO, RUN
TUR05	DC AIR-OIL PUMP CONTROL	OFF, AUTO, RUN
WDR01	"2E" RCDT PUMP CONTROL	STOP, AUTO, RUN
WDR02	"2W" RCDT PUMP CONTROL	STOP, AUTO, RUN
WDR03	"S" RADWASTE EVAPORATOR	ON, OFF
WDR04	RCDT LEVEL (DCL-150)	0 to 100 %
WDR05	RCDT PRESSURE (DPA-150)	0 to 100 PSIG
WDR06	RCDT TEMPERATURE (DTA-150)	0 to 200 DEG F
WDR07	N2 TO RCDT REG GRV-320	0 to 30 PSIG
WDR08	"S" CVCS HOLD-UP TANK EVAP RATE	0 to 30 GPM
WDR09	SG BLOWDOWN SAMP VLV RAD MON OVERRIDE (RMO-43)	NORMAL, OVRD
WDR10	SG #1 BD SAMP VLV DCR-301 CONTROL	OPEN, AFT.OP, CLOSE
WDR11	SG #2 BD SAP VLV DCR-302 CONTROL	OPEN, AFT.OP, CLOSE
WDR12	SG #3 BD SAMP VLV DCR-303 CONTROL	OPEN, AFT.OP, CLOSE
WDR13	SG #4 BD SAMP VLV DCR-304 CONTROL	OPEN, AFT.OP, CLOSE
WDR14	RCDT ISOL. VLV DCR-205 (101-DCR-205)	CLOSE, AUTO, OPEN

COOK PLANT SIMULATOR REMOTE FUNCTION LIST

Remote #	Description	Range
RPR056	LS-528B S/G LO-LO RX TRIP LP 2 CH 3	NORMAL, TRIP
RPR057	LS-528C S/G LOW LVL RX TRIP LP 2 CH 3	NORMAL, TRIP
RPR058	LS-529A S/G HI-HI TURB TRIP LP 2 CH 2	NORMAL, TRIP
RPR059	LS-529B S/G LO-LO RX TRIP LP 2 CH 2	NORMAL, TRIP
RPR060	LS-537A S/G HI-HI TURB TRIP LP 3 CH 4	NORMAL, TRIP
RPR061	LS-537B S/G LO-LO RX TRIP LP 3 CH 4	NORMAL, TRIP
RPR062	LS-537C S/G LOW LVL RX TRIP LP 3 CH 4	NORMAL, TRIP
RPR063	LS-538A S/G HI-HI TURB TRIP LP 3 CH 3	NORMAL, TRIP
RPR064	LS-538B S/G LO-LO RX TRIP LP 3 CH 3	NORMAL, TRIP
RPR065	LS-538C S/G LOW LVL RX TRIP LP 3 CH 3	NORMAL, TRIP
RPR066	LS-539A S/G HI-HI TURB TRIP LP 3 CH 2	NORMAL, TRIP
RPR067	LS-539B S/G LO-LO RX TRIP LP 3 CH 2	NORMAL, TRIP
RPR068	LS-547A S/G HI-HI TURB TRIP LP 4 CH 4	NORMAL, TRIP
RPR069	LS-547B S/G LO-LO RX TRIP LP 4 CH 4	NORMAL, TRIP
RPR070	LS-547C S/G LOW LVL RX TRIP LP 4 CH 4	NORMAL, TRIP
RPR071	LS-548A S/G HI-HI TURB TRIP LP 4 CH 3	NORMAL, TRIP
RPR072	LS-548B S/G LO-LO RX TRIP LP 4 CH 3	NORMAL, TRIP
RPR073	LS-548C S/G LOW LVL RX TRIP LP 4 CH 3	NORMAL, TRIP
RPR074	LS-549A S/G HI-HI TURB TRIP LP 4 CH 2	NORMAL, TRIP
RPR075	LS-549B S/G LO-LO RX TRIP LP 4 CH 2	NORMAL, TRIP
RPR076	PS-455A PZR HIGH PRESS TRIP CH 1	NORMAL, TRIP
RPR077	PS-455B PZR LOW PRESS P-11 CH 1	NORMAL, TRIP
RPR078	PS-455C PZR LOW PRESS TRIP CH 1	NORMAL, TRIP
RPR079	PS-455D PZR LOW PRESS SI CH 1	NORMAL, TRIP
RPR080	PS-456A PZR HIGH PRESS TRIP CH 2	NORMAL, TRIP
RPR081	PS-456B PZR LOW PRESS P-11 CH 2	NORMAL, TRIP
RPR082	PS-456C PZR LOW PRESS TRIP CH 2	NORMAL, TRIP
RPR083	PS-456D PZR LOW PRESS SI CH 2	NORMAL, TRIP
RPR084	PS-457A PZR HIGH PRESS TRIP CH 3	NORMAL, TRIP
RPR085	PS-457B PZR LOW PRESS P-11 CH 3	NORMAL, TRIP
RPR086	PS-457C PZR LOW PRESS TRIP CH 3	NORMAL, TRIP
RPR087	PS-457D PZR LOW PRESS SI CH 3	NORMAL, TRIP
RPR088	PS-458A PZR HI PRESS TRIP CH 4	NORMAL, TRIP
RPR089	PS-458C PZR LO PRESS TRIP CH 4	NORMAL, TRIP
RPR090	PS-S14A S/G LOW DP SI LP 1 CH 1, S/G HI DP SI LP 2 CH 1	NORMAL, TRIP
RPR091	PS-514B S/G HIGH DP SI LP 1 CH 1, S/G LOW DP SI LP 2 CH 1	NORMAL, TRIP
RPR092	PS-514C S/G LOW PRESS SI LOOP 1 CH 1	NORMAL, TRIP
RPR093	PS-514D S/G LOW PRESS ALARM LOOP 1 CH 1	NORMAL, TRIP
RPR094	PS-515A S/G HIGH DP SI LP 3 CH 2, S/G LOW DP SI LP 3 CH 2	NORMAL, TRIP
RPR095	PS-515B S/G HIGH DP SI LP 1 CH 2, S/G LOW DP SI LP 3 CH 2	NORMAL, TRIP

COOK PLANT SIMULATOR

SIMULATOR OPERATING LIMITS ABSTRACT

I. Introduction

Section 4 of the standard states that administrative controls shall be provided to alert instructors that the simulator is exceeding design and/or known operating conditions.

II. Implementation

The Cook Plant Simulator supports fuel damage (melt) and reactor coolant system two-phase flow conditions, therefore, there are no limits to alert the instructor of two phase flow or fuel melt conditions.

However, to provide the instructor with a means to determine if the simulator is approaching and/or exceeding design operating conditions, a Simulator Operations Limit (SOL) pop up screen on the instructor station is activated when limits, as described on the attached sheets, are exceeded.

This warning screen is activated when the assigned parameter is within ten percent of the limit, and if the limit is exceeded, the simulator is placed in a "freeze" condition.

COOK PLANT SIMULATOR

SIMULATOR EXCEEDING LIMITS SUMMARY

PARAMETER	LOW LIMIT	HIGH LIMIT	UNITS	DESCRIPTION
RCTHL1-4	32	10000	deg f	RCS HOT LEG TEMPERATURES
		BASIS:		lo - Freezing point of water hi - Point not reachable
RCTCL1-4	32	10000	deg f	RCS COLD LEG TEMPERATURES
		BASIS:		lo - Freezing point of water hi - Point not reachable
RCPHL1-4	0	3100	psia	RCS HOT LEG PRESSURE
		BASIS:		lo - Zero Pressure hi - Greater than Design Pressure
RCBORON	0	53000	ppm	RCS BORON CONCENTRATION
		BASIS:		lo - Zero Boron hi - Boron Saturation at 212 degrees
RCTNTA251	32	10000	deg f	PRESSURIZER LIQUID TEMP
		BASIS:		lo - Freezing point of water hi - Point not reachable
RCTNTA252	32	10000	deg f	PRESSURIZER VAPOR SPACE TEMP
		BASIS:		lo - Freezing point of water hi - Point not reachable
RCTNTA253	32	10000	deg f	PRESSURIZER SURGE LINE TEMP
		BASIS:		lo - Freezing point of water hi - Point not reachable
RCPPRZ	0	3086	deg f	PRESSURIZER PRESSURE
		BASIS:		lo - Zero Pressure hi - RCS Design Pressure
RCBORONPRZ	0	53000	ppm	PRESSURIZER BORON CONC.
		BASIS:		lo - Zero Boron hi - Boron Saturation at 212 degrees
CRQN	0	1.25		REACTOR POWER
		BASIS:		lo - Zero Power hi - Greater than any expected power level

COOK PLANT SIMULATOR

SIMULATOR EXCEEDING LIMITS SUMMARY

PARAMETER	LOW LIMIT	HIGH LIMIT	UNITS	DESCRIPTION
RCTCOREOUT	32	10000	deg f	CORE EXIT TEMP. BASIS: lo - Freezing point of water hi - Point not reachable
MSPSG[1-4]	0	1302	psia	STEAM GENERATOR PRESSURE BASIS: lo - Zero Pressure hi - Design Pressure + 20%
RCTSGDM[1-4]	32	2500	deg f	STEAM GENERATOR DOME TEMP BASIS: lo - Freezing point of water hi - Greater than any expected temperature
FWPCN[1-3]	0	22.7	psia	MAIN CONDENSER PRESSURE BASIS: lo - Perfect Vacuum hi - Rupture Disk pressure + 14.7 psi
FWPAFPTCNE/W	0	22.7	psia	MFP CONDENSER PRESSURE BASIS: lo - Perfect Vacuum hi - Rupture Disk pressure + 14.7 psi
CHPUC	10	28	psia	UPPER CONTAINMENT PRESSURE BASIS: lo - < -3 PSIG hi - > 12 PSIG
CHPLC	10	28	psia	LOWER CONTAINMENT PRESSURE BASIS: lo - < -3 PSIG hi - > 12 PSIG
CHTUC	32	240	deg f	UPPER CONTAINMENT TEMP. BASIS: lo - Freezing point of water hi - TSAT for 28 psia
CHTLC	32	240	deg f	LOWER CONTAINMENT TEMP. BASIS: lo - Freezing point of water hi - Tsat for 28 psia

COOK PLANT SIMULATOR

SIMULATOR EXCEEDING LIMITS SUMMARY

PARAMETER	LOW WARNING	HIGH WARNING	UNITS	DESCRIPTION
RCTHL1-4	65	1000	deg f	HOT LEG TEMP
RCTCL1-4	65	1000	deg f	COLD LEG TEMP
RCPHL1-4		2735	deg f	HOT LEG PRESS
RCBORON		35000	ppm	RCS BORON
RCNTA251/2/3	65	1000	deg f	PZR TEMPS
RCPPRZ		2735	psia	PZR PRESS
RCBORONPRZ		35000	ppm	PRZ BORON
CRQN		1.1		REACTOR POWER
RCTCOREOUT	65	4000	deg f	CORE EXIT TEMP
MSPSG[1-4]		1200	psia	STEAM GENERATOR PRESS
RCTSGDM[1-4]	65	1000	deg f	S/G DOME TEMP
CHTUC/LC	65	225	deg f	CONT TEMPS

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9001014	R		02RFC1619	0	DESIGN NEW LEVEL COLUMN ASSOCIATED INST.ROUTING AND PIPING FOR U2 RIGHT SOUTH REHEATER COIL DRAIN TANK TK-97	10/14/83	03/29/90	08/01/91					/ /
8800846	S	Y	02RFC2198		UNIT 2 CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER FAN AND VALVE CLOSURE TIME 9 TO 10 MINUTES	03/03/78	08/03/88	08/01/91	C	C	O	O	/ /
9000559	R		02RFC2574	0	REMOVE SV-64 & LOCATE DOWNSTREAM OF REGEN HEAT EXCHANGER INSIDE OF CONTAINMENT.	/ /	03/16/90	/ /					/ /
9000471	R		02RFC2685	1	MODIFICATIONS TO ESW & CCW CONTROL CIRCUIT ISOLATION.	/ /	03/14/90	/ /					/ /
9000469	S	Y	02RFC2686	0	ELIMINATE "OTHER UNIT" CONTROL OF THE ESW PUMP.	06/17/86	03/14/90	08/01/91	O	O		O	/ /
9000427	S	Y	02RFC2748	0	PROVIDE 3 HR. FIRE RATED ENCLOSURE AROUND U1 HOR SHUTDOWN PANEL LOCATED IN U2 MAIN CONTROL ROOM ELEV. 633'0"	/ /	03/14/90	/ /	O			O	/ /
9000423	R		02RFC2754	0	INSTALL THEROCOUPLES TO MONITOR MAIN BEARING CAP TEMPRATURES ON THE DIESEL GENERATORS ON U2	/ /	03/14/90	/ /					/ /
8800794	S	Y	02RFC2810	1	UPGRADE INCORE THERMOCOUPLE SYSTEM TO COMPLY WITH REQUIREMENTS NOTED IN REG. GUIDE 1.97 REV.3 & NUREG 0737.	/ /	07/25/88	/ /	C	C	O	O	/ /
8800795	S	Y	02RFC2873		INSTALL ANTICIPATED TRANSIENTS W/O SCRAM(ATWS) MITIGATION SYSTEM ACTUATION CIRC.(AMSAC).	06/17/89	07/25/88	08/01/91	C	C		O	/ /
9000320	R		02RFC2887	0	PROPOSED CHANGE - REPLACEMENT OF TERRY TURBINES ELECTRICAL OVERSPEED TRIP	/ /	03/14/90	/ /					/ /
8800796	S	Y	02RFC2916		WIRING.MODS. TO THE OVERPOWER DELTA T REACTOR TRIP CIRCUITRY FOR PROTECTION	05/12/82	07/25/88	08/01/91		O		O	/ /

STATUS P - WAITING FOR PARTS W - WORKING ON C - COMPLETE O - OPEN N - NO CHANGE REQUIRED R - REVIEW

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					CHANNELS 1,2,3,&4.								
8800799	S	Y	02RFC2981		RE-ROUTE & RE-CONNECT BOP & ESS LOAD DIST. CABLES IN 250VDC PANELS.	12/08/87	12/08/87	08/01/91	0	0		0	/ /
9001334	S	Y	02RFC3040	0	REMOVE F (DELTA I) PENALTY FROM OP DELTAT U2 TRIP SETPOINT	/ /	04/05/90	/ /		0		0	/ /
9001573	R		02RFC4096	0	TRIM ONE INCH OFF THE STANCHION BETWEEN THE CTS PIPE AND THE 5 INCH WIDEFLANGE FOR THE TECH. SPEC. SNUBBERS	/ /	06/26/90	/ /					/ /
9000998	S	Y	12RFC1651	0	INSTALL ICE CONDENSER ICE BED AVERAGING INSTRUMENTATION WHICH READS SPECIFIC RTDIN ICE CONDENSER & IND. AVER. TEMP RTD	/ /	03/29/90	/ /	0	0		0	/ /
9000994	R		12RFC1659	0	CHANGES TO MAKE FAILED FUEL DETECTOR MORE RELIABLE & REDUCE POSS. OF RCS WATER LOSSES DUE TO EXCESS. PRESS.	11/02/82	03/29/90	08/01/91					/ /
9000989	R		12RFC1667	0	INSTALL CHART SHOWING CONSTANT GAS PRESSURES OF THE 6 GAS DECAY TANKS.	03/24/81	03/29/90	08/01/91					/ /
9000988	R		12RFC1668	0	INSTALL INSTRUMENTATION FOR CONTINUOUS RECORDING OF GASEOUS AND LIQUID RELEASES	04/08/80	03/29/90	08/01/91					/ /
9000976	R		12RFC1683	0	HEAT TRACE INSTRUMENT SENSING LINES FOR QLS-950, 951, QLA-951, CLR-110, 111 AND CLI-110 ON CST & RWST	/ /	03/27/90	/ /					/ /
9000966	S	Y	12RFC1704	0	MOVE DIGITAL DISPLAY GAGE ITI-900 RWST TEMPERATURE GAGE.	06/12/81	03/27/90	08/01/91	0			0	/ /
9000932	S	Y	12RFC1754	0	RELOCATE CONTAINMENT AIR TEMP RECORDER (SG-18) FROM CAS PANEL TO CONTROL ROOM	03/24/82	03/27/90	08/01/91	0	0		0	/ /

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8900541	S	Y	12RFC1805	0&1	CHANGE SETPOINTS FOR XPS-470 AS PER ECP 1-2-C4-4	06/07/89	05/30/89	08/01/91		O		O	/ /
8800853	R		12RFC1812		CHANGE PRESSURE INDICATOR AND ANNUNCIATOR ALARM SYSTEM ON THE ACCUMULATORS	10/20/81	08/03/88	08/01/91					/ /
9000869	R		12RFC1826	0	INSTALL A HOPPER AND CONVEYOR FOR ADDINGBORIC ACID TO THE BA BATCH TANK.	/ /	03/22/90	/ /					/ /
9000862	R		12RFC1842	0	MODIFY AIR SUPPLY LINES & WIRING FOR GLYCOL LINE CONTAINMENT ISOLATION VALVESVCR-11 & VCR-12 IN UNIT 1	/ /	03/22/90	/ /					/ /
9000855	R		12RFC1856	0	INCORPORATE AGASTAT TIMING DELAY FOR STARTING SUPPLY FANS HV-DGS1 & HV-DGS2 ON D/G ROOM HVAC & REPLACE DAMPER MOTOR	/ /	03/22/90	/ /					/ /
9000852	R		12RFC1860	0	MOD. CONTROL CIRCUITRY FOR CO2 FIRE SYS.SO CO2 WILL BE PREVENTED FROM DISCHARGE BY DE-ENERGIZING RELAY THAN ENERGIZING.	/ /	03/22/90	/ /					/ /
9000829	R		12RFC1879	0	INSTALL ISOLATION VALVES ON GAUGES IN THE FULL FLOW FILTER FOR ALL 4 DIESEL GENERATORS.	/ /	03/21/90	/ /					/ /
9000801	R		12RFC1921	0	INSTALL RUN TIME METERS ON TECH.SPEC. FILTER UNIT TO RECORD USE OF CHARCOAL ABSORBER BANKS.	/ /	03/21/90	/ /					/ /
9000788	R		12RFC1937	0	INSTALL DIFFERENT TYPE BASKET CRUCIFORMSIN UNIT 1&2 ICE CONDENSERS.	/ /	03/21/90	/ /					/ /
8900153	S	Y	12RFC1950	0	REPLACE RCP HIGH 7 LOW RANGE CONTROLLER LEAKAGE ROTOMETER.	/ /	02/16/89	/ /		O		O	/ /

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9000780	R		12RFC1951	0	REPLACE ANALOG ROD POSITION INDICATION SYSTEM WITH LATEST DESIGN.	/ /	03/21/90	/ /					/ /
9000772	R		12RFC1964	0	FABRICATE & INSTALL PLATFORM OVER ICE MACHINE BORAX BATCH TANK.	/ /	03/21/90	/ /					/ /
8800883	S	Y	12RFC1984		CHANGE SPAN ON ACCUMULATOR LEVEL INDICATION INSTRUMENTS ILA-110,120,130,140 TO 300-1000 FT3	05/31/86	08/16/88	08/01/91	C	C	O	O	/ /
8900889	S	Y	12RFC1987			05/01/87	12/06/89	08/01/91	C	C		C	/ /
8900119	S	Y	12RFC1996	0	S/G SPARGE CONNECTIONS	01/26/89	02/09/89	08/01/91		O		O	/ /
9000737	R		12RFC2074	0	INSTALLATION OF 15 GPM WASTE EVAP. TO REPLACE EXISTING 2 GPM WASTE EVAP.	/ /	03/20/90	/ /					/ /
9000729	S	Y	12RFC2124	0	ADD LOSS OF FLOW ALARM TO IFI-335 ON RHRSYSTEM.	09/12/79	03/20/90	08/01/91	O	O		O	/ /
9000724	R		12RFC2135	0	CANCEL RFC12-2073 & FURNISH ADEQUATE VENT. FOR EACH WEST STEAM VALVE ENCLOS. & MAIN STREAM PASSAGE WAY.	/ /	03/20/90	/ /					/ /
9000720	R		12RFC2149	0	UPGRADE SECURITY SAFEGUARDS PER 10CFR73.55 INCLUDING REVISIONS TO POST #2.	/ /	03/20/90	/ /					/ /
9000122	R		12RFC2294	0	MODIFICATIONS TO THE ICE CONDENSER AIR HANDLING UNITS (AHU) CONTROLS	/ /	02/25/90	/ /					/ /
9000675	R		12RFC2382	0	ELIMINATION OF REACTOR TRIP ON REACTOR COOLANT PUMP BREAKER POSITION INDICATION	/ /	03/20/90	/ /					/ /

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8800854	S		12RFC2392		INSTALL ADDITIONAL CONTACTS ON THE D/G BREAKER CONTROL SWITCH ON THE CIRCUIT BREAKER CLOSING CIRCUIT	07/11/79	08/03/88	08/01/91	C	C	O	O	/ /
9000654	R		12RFC2436	0	UNDERFILING OF TURBINE DRIVEN AUX. FEED-PUMP IMPELLERS.	/ /	03/20/90	/ /					/ /
9000641	S	Y	12RFC2448	0-6	INSTALL HIGH RANGE CONTAINMENT AREA RAD.MONITORS	08/01/87	03/20/90	08/01/91	O	O		O	/ /
9000645	R		12RFC2448	10	INSTALL HIGH RANGE CONTAINMENT AREA RAD-IATION MONITORS.	12/23/86	03/20/90	08/01/91					/ /
8800864	S	Y	12RFC2452		ADDED CLI-113 CST LEVEL INDICATION AND MODIFIED ALARM SETPOINTS	03/01/82	08/05/88	08/01/91	C	C	O	O	/ /
9000640	S	Y	12RFC2460	0	INSTALL INSTRUMENTATION FOR AUX. FEED-PUMP TRIP ON LOW SUCTION PRESSURE.	04/21/81	03/20/90	08/01/91		O		O	/ /
9000639	S	Y	12RFC2461	0	CONNECT PRESS. HEATER BUSES TO THE SAFETY BUSES	06/19/86	03/20/90	08/01/91		O		O	/ /
9000638	S	Y	12RFC2462	0	INSTALL REACTOR VESSEL HEAD VENT & PRESSURIZER VENT SYSTEMS.	12/31/81	03/20/90	08/01/91	O	O		O	/ /
9000635	R		12RFC2465	0	POST ACCIDENT SAMPLING OF REACTOR COOL-ANT & CONTAINMENT AIR.	/ /	03/20/90	/ /					/ /
9000626	R		12RFC2474	0	INSTALL SPARE 4-KV BREAKERS IN COMPART-MENT 1C7 IN UNIT 1 AND 2C7 IN UNIT 2	/ /	03/16/90	/ /					/ /

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9000619	R		12RFC2489	0	MODIFY EXISTING HANGERS FOR SPENT FUEL HANDLING TOOLS. ALSO 2 ADDITIONAL HANGERS TO BE INSTALLED	/ /	03/16/90	/ /					/ /
9000608	R		12RFC2503	0	REPLACE THE GENERATOR STARTOR & GAS & STATOR WATER TEMPERATURE RECORDERS WITH NEW GENERATOR MONITORING SYSTEM	/ /	03/16/90	/ /					/ /
9000598	R		12RFC2515	0	PROVIDE MAIN GENERATOR STATOR WATER TEMPCONTROL. INCLUDE U1-L CASO TO R. KROGER	/ /	03/16/90	/ /					/ /
9000588	S	Y	12RFC2530	0	ADD A CHECK VALVE TO EACH REACTOR COOLANT PUMP NO.1 SEAL LEAK-OFF LINE TO PREVENT REVERSE FLOW.	06/18/84	03/16/90	08/01/91		O		O	/ /
9000580	S	Y	12RFC2543	0	REWIRE CIRCUIT BREAKER CONTROL SWITCH FOR CCP, SAFETY INJECTION PUMP, & RHR PUMPS TO AVOID BREAKER LOCKOUT COND.	09/16/83	03/16/90	08/01/91		O		O	/ /
9000578	3		12RFC2545	0	PROVIDE A ALARM THAT SHOWS "NO FLOW" CONDITION EXISTS WITH THE ESW PUMP STRAINERWHEN INLET & OUTLET GATES ALIGN.	03/16/82	03/16/90	08/01/91					03/16/82
9000576	S	Y	12RFC2547	0	ADD POSITION INDICATION TO VALVE ICM-111WHEN POWER TO MOTOR OPERATOR IS REMOVED.	06/25/86	03/16/90	08/01/91	O	O		O	/ /
9000555	S	Y	12RFC2578	0	ADD CONTAINMENT PURGE TRIP FUNCTIONS TO R-2.	01/05/84	03/16/90	08/01/91		O		O	/ /
9000544	R		12RFC2591	0	REPLACE AGA SAMPLING PANEL. CONNECT AGA PANEL TO NUC. SAMPL. ROOM VENT SYSTEM	/ /	03/16/90	/ /					/ /
9000524	R		12RFC2616	0	PROVIDE 4 IN-LINE BOOSTER FANS IN ICE CONDITION AIR SIDE REFRIG. SYS. TO DISCHARGE AIR INTO AIR DIST. HEADER	/ /	03/16/90	/ /					/ /
8900389	S	Y	12RFC2639	0	PROVIDE INTERLOCK BETWEEN CRID II POWER AVAIL. AND OVERALL STEAM DUMP PERMISSIVEC-9.	05/02/86	04/17/89	08/01/91		O		O	/ /

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9000486	R		12RFC2656	1	CHANGE PIPE MATERIAL ON 4" BLOWDOWN LINEFROM DOWNSTREAM OF RO-47 TO TK-99 FROM CARBON TO STAINLESS STEEL.	/ /	03/15/90	/ /					/ /
9000478	S	Y	12RFC2661	0	CHANGE NORMAL CONTROL AIR SUPPLY TO PORVFROM 50 PSIG TO 55 PSIG.	08/31/86	03/14/90	08/01/91		O		O	/ /
9000476	S	Y	12RFC2663	0	MOD. TRIP CONTROL OF REACTOR TRIP BREAK-ERS SO RPS AUTOMATIC TRIP SIGNAL WILL ACTIVATE BOTH UNDERVLT & SHUT TRIP COILS	11/06/85	03/14/90	08/01/91		O		O	/ /
9000474	S	Y	12RFC2665	0	PROVIDE A PERMANENT INTER-UNIT CVCS CROSSTIE LINE AT THE DISCHARGE HEADER OFTHE CENT. CHARGING PUMPS.	06/15/86	03/14/90	08/01/91		O		O	/ /
9000126	R		12RFC2722	2	INSTALL EQUALIZING LINES ON IMO-315 & 325	/ /	02/25/90	/ /					/ /
9000440	R		12RFC2731	0	REVISIONS TO ELECTRICAL DESIGN E/D DWGS AS DEFINED IN DESIGN DIVISION PROCEDURE I23 TO REFLECT AS FOUND COND. DC COOK	/ /	03/14/90	/ /					/ /
9000437	R		12RFC2735	0	REVISIONS TO MECHANICAL DRAWINGS TO RE-FLECT "AS FOUND" CONDITIONS AT D.C. COOK PLANT	/ /	03/14/90	/ /					/ /
9000417	R		12RFC2760	0	FOUR AMERICAN WARMING DAMPERS SERVING THE DIESEL GENERATOR ROOMS REQUIRE NEW OPERATORS. ADDENDUM #1 ASSD	/ /	03/14/90	/ /					/ /
9000416	R		12RFC2761	0	SELECT, PURCHASE, SEISMICALLY QUALIFY & REPLACE THE OVERSPEED TRIP DEVICES FOR THE U1 & U2 EMERGENCY DIESEL ENGINES	/ /	03/14/90	/ /					/ /
9000415	S	Y	12RFC2763	0	ADD 2 ANNUNCIATOR POINTS TO EA. UNIT TO OPERATE WHEN UNDERVOLTAGE TRIP DEVICE FOR REACTOR TRIP CB'S ARE DE-ENERGIZED	/ /	03/14/90	/ /	O	O		O	/ /

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9000406	S	Y	12RFC2776	0	RELOCATE TWO WIDE RANGE PRESSURE TRANS-MITTERS NPS-121 & NPS-122 OUTSIDE CONTAIMENT IN AREA AWAY FROM POTENTIAL STEAM	/ /	03/14/90	/ /		O		O	/ /
9000404	S	Y	12RFC2778	0	COMBINE & REMOVE 6 RVLIS LEVEL TRANSMIT-TER BYPASS VALVES. REMOVE FEATURE WHICHCAN ACTIVALE ANNUNCIATOR ALARM.	/ /	03/14/90	/ /		O		O	/ /
9000403	S	Y	12RFC2779	0	TRANSFER POWER SOURCE TO THE RMS BUBBLE MEMORY FROM CCRP INVERTER TO TSC UPS INVERTER	/ /	03/14/90	/ /		O		O	/ /
9000121	R		12RFC2789	0&1	RADIATION MONITORING SYSTEM WIRING MODIFICATIONS.	/ /	02/25/90	/ /					/ /
9000393	R		12RFC2789	0	EXTEND EBERLINE CONTROL TERMINAL ANNUNCIATOR DURATION ADJUSTMENT ABILITY, REVISESPING UNITS LOCAL A.C. FEED DISTRIBUTION	/ /	03/14/90	/ /					/ /
9000380	R		12RFC2806	0	INSTALL STAINLESS STEEL TEE WITH 1/2 ADAPTOR IN THE 3/8" TUBING FOR PRESSURE INDICATORS QPI-254 & QPI-255	/ /	03/14/90	/ /					/ /
9000376	R		12RFC2811	0	REPLACE THE CONCENTRATE PUMPS ON THE NORTH BORIC ACID & SOUTH RADWASTE EVAPORATORS	/ /	03/14/90	/ /					/ /
9000375	R		12RFC2812	0	REVISION TO MECHANICAL DWGS TO REFLECT AS FOUND CONDITIONS AT D.C. COOK	/ /	03/14/90	/ /					/ /
8900090	S	Y	12RFC2813	2	REPLACE THE MOLYTEK RECORDERS 1-SG-1, 2-SG-1, AND 12-SG-29.	04/21/87	02/08/89	08/01/91	C	O		O	/ /
9000367	R		12RFC2822	0	REVISIONS TO ELECTRICAL DESIGN E/D DWGS AS DEFINED IN DESIGN DIVISION PROCEDURESI-23 TO REFLECT "AS FOUND" CONDITIONS	/ /	03/14/90	/ /					/ /

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8900873	R		12RFC2845	0	REDUCING THE CAPACITY OF THE STEAM DUMP SYSTEM FROM 85% OF FULL LOAD TO APPROXIMATELY 40%.	/ /	12/01/89	/ /	N	C			/ /
8900259	S	Y	12RFC2849	1	INSTALLATION OF A NEW ORIFICE PLATE IN THE STEAM JET AIR EJECTOR DISCHARGE & THE REPLACEMENT OF TRANSMITTER SFR 401.	/ /	03/08/89	/ /		O		O	/ /
9001333	S	Y	12RFC2849	1	RECALIBRATION OF SRF-401 TO READ 0-250 SCFM AND INSTALL NEW CHART PAPER AND SCALE IN RECORDER. (MR-54)	/ /	04/05/90	/ /	O	O		O	/ /
8900254	S	Y	12RFC2853	0	INSTALLATION OF NEW EBERLINE LIQUID WASTE EFFLUENT MONITOR.	/ /	03/08/89	/ /		O		O	/ /
9000341	R		12RFC2857	0	1)ADD ADHESIVE-BACKED GASKET TO THE DUSTSHIELD ON BBC, K-LINE SERIES BREAKERS 2)REPAIR OF ANY WIRE SHOWING SIGNS OF ABRA	/ /	03/14/90	/ /					/ /
8900097	S	Y	12RFC2864	0&1	INSTALL DIESEL GENERATOR SLOW START CIRCUITS ON ALL FOUR DIESELS.	/ /	02/08/89	/ /	O	O		O	/ /
9000330	R		12RFC2875	0	REF: B.J. SWEENEY TO T.P. BEILMAN	/ /	03/14/90	/ /					/ /
9000323	R		12RFC2883	0	INSTALL SUPPLEMENTAL COOLING EQUIPMENT TO ELECTRICAL PANELS IN THE DIESEL GENERATOR ROOM	/ /	03/14/90	/ /					/ /
9000127	R		12RFC2884	0	CANCELS RFC'C 12-856,12-1605,12-1731, & 12-1780	/ /	02/25/90	/ /					/ /
9000093	S	Y	12RFC2887	0 & 1	REPLACE THE TURBINE DRIVNE AUX. FEED ELECTRONIC OVERSPEED DEVICE	/ /	02/05/90	/ /		O		O	/ /
9000318	R		12RFC2888	0		/ /	03/14/90	/ /					/ /

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9000123	R		12RFC2889	0	REMOVAL OF EQUALIZING LINES FOR VALVE 1-RH-128E, 2-RH-128W, 2-RH-128E	/ /	02/25/90	/ /					/ /
9000317	R		12RFC2889	0	THE PERMANENT REMOVAL OF THE 3/4" STAIN-LESS EQUALIZING LINES TO PRECLUDE FURTHER FAILURE OF THEIR WELDED CONNECT	/ /	03/14/90	/ /					/ /
9000316	R		12RFC2890	0	PREVENT FIRE PROTECTION WATER DAMAGE TO CHARCOAL IN AIR FILTER UNITS	/ /	03/14/90	/ /					/ /
9000314	R		12RFC2891	0	ANCHOR THE STEEL FORM PLATE TO THE S/G & PZR. ENCLOSURE WALLS	/ /	03/14/90	/ /					/ /
9000308	R		12RFC2900	0	PROVIDE A MECHANISM TO IMPLEMENT PHYSICAL MOD. COMMITTED TO IN AEP:NRC:07730 WHICH DETAILS REQUIREMENTS FOR POST	/ /	03/14/90	/ /					/ /
9000165	S	Y	12RFC2900-E.02	0	INSTALL 25 EBERLINE AREA RADIATION MONITORS AND 1 DAM 4/A ERA-7600	/ /	03/01/90	/ /		O		O	/ /
9001337	S	Y	12RFC2900/A.02	0	REPLACE RCS WIDE RANGE PRESSURE RECORDERWITH SEISMICALLY QUALIFIED RECORDERS	/ /	04/05/90	/ /	O	O		O	/ /
9001336	S	Y	12RFC2900/A.16	0	REPLACE RCS WIDE RANGE PRESSURE RECORDERWITH SEISMICALLY QUALIFIED RECORDERS	/ /	04/05/90	/ /	O	O		O	/ /
8900459	S	Y	12RFC2900/B.01	0	UPGRADE THE NUCLEAR INSTRUMENTATION SYSTEM (NIS)	/ /	05/11/89	/ /	O	O		O	/ /
9001335	S	Y	12RFC2900/B.04	0	UPGRADE FOUR WIDE RANGE REACTOR COOLANT SYSTEM TEMPERATURE CHANNELS.	/ /	04/05/90	/ /	O	O		O	/ /
8900065	S	Y	12RFC2900/D.14	0	CHANGE RTD AND RANGE OF PRESS. RELIEF TANK TEMP. INDICATION.	/ /	02/03/89	/ /		O		O	/ /

STATUS P - WAITING FOR PARTS W - WORKING ON C - COMPLETE O - OPEN N - NO CHANGE REQUIRED R - REVIEW

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8801099	S	Y	12RFC2900/D.19		ADD SECOND SEISMACALLY QUALIFIED CLASS 1E CHANNEL TO MEASURE CONDENSATE STORAGETANK LEVEL.	/ /	12/27/88	/ /	C	C	O	O	/ /
8900546	S	Y	12RFC2900/D.22	0	REPLACE 6 CONTAINMENT ATMOSPHERE RTD'S W/ENVIRONMENTALLY QUALIFIED DEVICES. ALSO REPLACED 11 RTD'S W/O - 400 F.	/ /	05/31/89	/ /	O	O		O	/ /
8900319	S	Y	12RFC2900/E.02	0	INSTALL 25 EBERLINE AREA RADIATION MONITORS AND 1 DAM 4/A ERA-7600	/ /	03/14/89	/ /		O		O	/ /
8900935	R		12RFC2901	1	PROVIDE LOCAL INDICATION FOR HI AND LOW LEVELS OF THE UPPER OIL POT AND LOWER OIL POT FOR EACH REACTOR COOLANT PUMP	/ /	12/18/89	/ /					/ /
9000004	S	Y	12RFC2901/1.1-3	0	INSTALL A PA STATION AND A DOOR LOCK FORTHE MAIN CONTROL ROOM RESTROOM.	/ /	01/04/90	/ /	O			O	/ /
8800859	S	Y	12RFC2901/1.2-1		REARRANGE FW CONTROLS ON THE SG PANEL	/ /	08/03/88	/ /	C	C	O	O	/ /
9000021	R		12RFC2901/1.5-2	0	CONTROL ROOM LIGHTING	/ /	01/11/90	/ /					/ /
8900602	R		12RFC2901/2.1-4	0	PA SYSTEM MODIFICATIONS	/ /	06/15/89	/ /					/ /
8800862	S	Y	12RFC2901/3.1-21		REARRANGE ANNUNCIATORS ASSOCIATED WITH DCRDR SUBTASK 3.1-21	/ /	08/05/88	/ /	C	C	O	O	/ /
8900250	S	Y	12RFC2901/4.1-10	0	REARRANGE VARIOUS MOISTURE SEPARATOR REHEATER INDICATORS LOCATED ON THE "C" PANEL OF THE CONTROL ROOMS.	/ /	03/08/89	/ /	O	O		O	/ /
8900248	S	Y	12RFC2901/4.1-16	0	CONTROL SWITCHES REWIRE	/ /	03/08/89	/ /	O	C			/ /

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8900316	S	Y	12RFC2901/4.1-4	0	REMOVAL OF UNUSED DEVICES LOCATED ON THECONTROL ROOM PANELS.	/ /	03/14/89	/ /	C	C	O	O	/ /
8900249	S	Y	12RFC2901/4.1-8A	0	REMOVAL OF SEAL IN CIRCUITRY ON EAST & WEST COMPONENT COOLING ESW INLET SHUTOFFVALVES.	/ /	03/08/89	/ /	O	O		O	/ /
8900018	S	Y	12RFC2901/4.1-8B		CONTROL SWITCH REWIRE, FMO-211,212,221, 222, 231,232.	/ /	01/11/89	/ /	C	C	O	O	/ /
8900297	S	Y	12RFC2901/5.1-15	0	REFIT EXISTING CONTROL INDICATIONS WITH NEW NAMEPLATES AND SCALES.	/ /	03/14/89	/ /	O	O		O	/ /
8900159	S	Y	12RFC2901/5.1-26	0	INSTALL ZONE CODING ON ELECTRICAL METERS	/ /	02/16/89	/ /	C	C	O	O	/ /
8900151	S	Y	12RFC2901/5.1-3	0	TRANSMITTER RERANGE FOR CFA-450, 455, 456, 457, 459 & 460.	/ /	02/16/89	/ /	O	O		O	/ /
8900067	S	Y	12RFC2901/5.1-4	0	INSTALL LIVE ZERO CALIBRATION AND SCALES FOR CRITICAL INDICATORS.	/ /	02/03/89	/ /	C	C	O	O	/ /
8900175	S	Y	12RFC2901/6.1-23	0	INSTALL NEW ESCUTCHEON PLATES ON CONTROLSWITCHES (SB1) AND PUSH-BUTTON SWITCHES IN UNIT 1&2 CONTROL ROOM.	/ /	02/21/89	/ /	C	C	O	O	/ /
8900171	S	Y	12RFC2901/7.1-31	0	ADD P-250 COMPUTER FAILED ANNUNCIATOR ALARM AND A 6 DIGIT DISPLAY TO PANEL DTU	/ /	02/21/89	/ /	O	O		O	/ /
8900108	S	Y	12RFC2901/V1-16	0	REPLACE 3-PEN RECORDERS MR17, 18, 19 &20WITH 4-PEN RECORDERS.	/ /	02/09/89	/ /	C	C	O	O	/ /

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8900247	S	Y	12RFC2901/V1-24	0	INSTALL FEEDWATER ISOLATION ALARM IN BOTH UNITS.	/ /	03/08/89	/ /	O	O	O	O	/ /
8900066	S	Y	12RFC2901/V1-25	0	INSTALL LINEAR SCALES ON CONTROL ROOM DISPLAYS, WHICH IMPROVES ACCURACY OF LOWFLOW RATE READINGS.	/ /	02/03/89	/ /	C	C	O	O	/ /
8900172	S	Y	12RFC2901/V1-60	0	RELOCATE HUDROGEN RECOMBINER TEMP. SELECTOR & POWER ADJUSTMENT ON PANEL VS.	/ /	02/21/89	/ /	C	C	O	O	/ /
8900110	S	Y	12RFC2901/V2-03	0	IFI SQUARE ROOT EXTRACTORS AND INDICATING SCALES.	/ /	02/09/89	/ /	C	C	O	O	/ /
8900105	S	Y	12RFC2901/V2-17	0	INSTALL OPEN/CLOSE SWITCHES ON VALVES NRV-163 AND 164.	/ /	02/09/89	/ /	C	C	O	O	/ /
8900111	S	Y	12RFC2901/V2-20	0	RELOCATE QCR-300 CONTROL SWITCH ON "IV" PANEL TO PRESENT LOCATION ECR-33 CONTROLSWITCH.	/ /	02/09/89	/ /	C	C	O	O	/ /
8900163	S	Y	12RFC2901/V2-5	0	MOVE IRV-310 AND 320 FOXBORO STATIONS FROM SPY TO RHR PANEL.	/ /	02/21/89	/ /	C	C	O	O	/ /
8900246	R		12RFC2901/V2-6	0	INSTALL POSITION INDICATOR FOR STEAM GENERATOR RELIEF VALVES.	/ /	03/08/89	/ /	C	C			/ /
8800858	S	Y	12RFC2901/VI-16		REPLACE MR-17,18,19,20 WITH 4 PEN RECORDERS (ADD S/G PRESSURE)	/ /	08/03/88	/ /	C	C		O	/ /
9001332	R		12RFC2902	0	ACCUMULATOR NARROW RANGE LEVEL TRANSMIT-TER REPLACEMENT	/ /	04/04/90	/ /					/ /
8900251	S	Y	12RFC2904	0	ADD AN ALARM ON CONTROL PANEL PRZ.	06/16/89	03/08/89	08/01/91	O	O		O	/ /

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8900262	S	Y	12RFC2910	0	INSTALL 4 NEW CLASS IE 120V AC DISTRIBU-TION PANELS IN THE UNIT 1 AND UNIT 2 AB&CD DIESEL GENERATOR ROOM.	12/02/88	03/08/89	08/01/91	N	C	O	O	/ /
8900309	S	Y	12RFC2912	0	REMOVE AUX FEEDWATER PP. LOW SUCTION TRIP.	03/07/89	03/14/89	08/01/91		O		O	/ /
9000014	R		12RFC2944	0	REPLACE RCP BUS UNDERFREQUENCY RELAYS	/ /	01/12/90	/ /					/ /
9000287	R		12RFC2944	0	REPLACE 4 KV BUSES (1A,1B,1C, & 1D, AND 2A,2B,2C, AND 2D) WITH G.E. TYPE SFF31.	/ /	03/14/90	/ /					/ /
9000284	R		12RFC2948	0	CONVERT THE EMERGENCY DIESEL GENERATOR JACKET WATER PUMP FROM PACKED BOX TO MECHANICAL SEAL	/ /	03/14/90	/ /					/ /
8900299	S	Y	12RFC2950	0	UPGRADE TWO-WAY RADIO COMMUNICATIONS INSIDE THE PLANT.	/ /	03/14/89	/ /	O			O	/ /
9000281	R		12RFC2953	0	RADWASTE HANDLING BLDG - NEW CONSTRUC-TION TWL CANCELLED 7/17/89 PER W.T. MACRAE	/ /	03/14/90	/ /					/ /
9000125	R		12RFC2954	0	CANCELS RFC'S 1675,2538,AND 2865 AND RETURN DRAWINGS TO PRE-RFC CONDITION	/ /	02/25/90	/ /					/ /
8900245	R		12RFC2974	0	REPLACE CONTAINMENT WATER LEVEL INSTRU-MENTATION.	02/15/89	03/08/89	08/01/91					/ /
9000124	R		12RFC2976	0	REPLACE THE EXISTING AUXILIARY BUILDING CRANE RAIL WITH NEW RAIL.	/ /	02/25/90	/ /					/ /
8900458	S	Y	12RFC2980	0&1	REPLACE CLASS 1E 250 VDC BREAKER PANELS (UTILIZING HEINEMANN BREAKERS) WITH FUSEPANELS.	/ /	05/11/89	/ /	O	O		O	/ /

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8900874	R		12RFC2982	0	CHANGE POWER SOURCE OF THE CRID VOLTMETERS.	/ /	12/01/89	/ /					/ /
8801089	S	Y	12RFC2986		SUBSTITUTE STEAM FLOW SIGNAL TO FEED WATER DELTA P CONTROL & STEAM GEN. LEVELCONTROL SYS. DURING STARTUP W/DELTA T.	/ /	12/19/88	/ /	C	C	O	O	/ /
8801088	S	Y	12RFC2988		REPLACE FEEDPUMP RECORDER MR-24 WITH ONEHAVING ONE MORE PNEUMATIC INPUT.	02/23/89	12/19/88	08/01/91	C	C	O	O	/ /
9001331	S	Y	12RFC2996	0	UPGRADE PLANT PROCESS COMPUTER SYSTEM	/ /	04/04/90	/ /	O	O		O	/ /
8900872	R		12RFC3000	0	REMOVE LOW DEMAND FIRE LOGIC FOR THE NUKE FIRE PROTECTION SYS. AND ALTER SEQUENCE OF PUMPS.	/ /	12/01/89	/ /					/ /
8900840	R		12RFC3005	0	REPLACE THE EXISTING GE NGV UNDERVOLTAGERELAYS ON TECH. SPEC. RELATED BUSES WITHBBC ITE 27N UNDERVOLTAGE RELAYS.	/ /	11/28/89	/ /					/ /
9001329	R		12RFC3008	0	REVISED ELE. PROTECTIVE DEVICE SETTINGS & PROT. CIRCUITRY TO OPTIMIZE COORDINATION WITH OTHER DEVICES	/ /	04/04/90	/ /					/ /
9001575	R		12RFC3053	0	WIDE RANGE PRESSURE INDICATION DURING STATION BLACKOUT	/ /	06/26/90	/ /					/ /
9001574	R		12RFC3059	0	UPGRADE PERSONNEL CONTAMINATION MONITOR SYSTEMS	/ /	06/26/90	/ /					/ /
9000128	R		12RFC4032	1	INSTALLATION OF TRIP COUNTERS ON THE REACTOR TRIP BREAKERS	/ /	02/25/90	/ /					/ /

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9000220	R		12RFC4032	0	ADD TRIP COUNTERS TO THE UNDERVOLTAGE TRIP ATTACHMENT ON THE DB-50 BREAKERS	/ /	03/13/90	/ /					/ /
9000221	R		12RFC4032	1	ADD TRIP COUNTERS TO THE UNDERVOLTAGE TRIP ATTACHMENT ON THE DB-50 BREAKERS.	/ /	03/13/90	/ /					/ /
9000219	R		12RFC4033	0	MOVE U2 COMPUTER ROOM EXHAUST GRILLS FROM WEST WALL TO EAST END OF SOUTH WALL	/ /	03/13/90	/ /					/ /
9000217	S	Y	12RFC4035	0	CHANGE SETPOINT OF XPS-255, ADD PRESS. SWITCH BETWEEN AT-360 & AT361, INTERLOCKXPS-254 WITH CONTROL SWITCH DRV-350.	11/25/85	03/13/90	08/01/91		O		O	/ /
9000164	S	Y	12RFC4036	0	THIS RFC WILL ADD AREA RADIATION MONITORS TO MONITOR RADIOACTIVITY IN NINE FILTER CUBICLES.	/ /	03/01/90	/ /		O		O	/ /
9000216	R		12RFC4037	0	ADD STRUCTURAL BRACES TO FACE DAMPER.	/ /	03/13/90	/ /					/ /
8800863	S	Y	12RFC4042		ADDED QLC-451 VCT LEVEL INDICATION TO 'BA' PANEL	08/05/87	08/05/88	08/01/91	C	C	O	O	/ /
8800868	S	Y	12RFC4044		ADD A LOW FLOW ALARM (SET AT 2000 GPM) TO IFI-311,321 TO ANNUNCIATE IN THE CONTROL ROOM	11/12/87	08/07/88	08/01/91	C	C	O	O	/ /
9000120	R		12RFC4054	0	MODIFY ICM-129 EQUALIZINE LINE	/ /	02/25/90	/ /					/ /
9001568	S	Y	12RFC4058	1	HALF-LOOP AND REDUCED LEVEL INDICATION FOR THE REACTOR COOLANT SYSTEM.	/ /	06/08/90	/ /	O	O		O	/ /
9000188	R		12RFC4069	0	RELOCATE THE ELECTRIC STRIKE TO ACCEPT ARUSSWEN OR SARGENT LOCKSET.	/ /	03/13/90	/ /					/ /

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8900260	S	Y	12RFC4078	0	REMOVE MONITORS R25/R26, R33, AND NMC UNIT R31/R32 EXCEPT FOR SAMPLE SYSTEM.	/ /	03/08/89	/ /	C	O		O	/ /
9000178	R		12RFC4085	0	INSTALL SIGHT GLASS TUBING ON SIDE OF SPRAY ADDITIVE TANK.	/ /	03/13/90	/ /					/ /
9000176	R		12RFC4088	0	REVISE THE JACKET WATER SURGE FAN K AUTOMATIC FILL, FLOAT VALVE ASSEMBLY FOR U-1AB & CD EMERGENCY DIESEL GENERATORS.	/ /	03/13/90	/ /					/ /
9000177	R		12RFC4088	0	REVISE THE JACKET WATER SURGE FAN K AUTOMATIC FILL, FLOAT VALVE ASSEMBLY FOR U-1U-2 AB & CD EMERG. DIESEL GENERATORS.	/ /	03/13/90	/ /					/ /
9001326	R		12RFC4092	0	INSTALLATION OF PERMANENT REACTOR VESSELHEAD SHEILD	/ /	04/04/90	/ /					/ /

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8900785	S	Y	02PM0401	0	RELOCATED MOISTURE SEPERATOR LEVEL SWITCAND INSTALLED A 5 SECOND TIME DELAY IN THE HIGH LEVEL TRIP CIRCUIT.	/ /	10/09/89	/ /	N	O		O	/ /
8800802	S	Y	02PM046		CHANGED THE REQUIRED SETPOINTS FOR CDA-201 AND CDA-202 TO PREVENT CONTINUOUS ALARMING AT 100% FEED FLOW	/ /	08/01/88	/ /	N	C		O	/ /
8900263	S	Y	02PM0527	0	ADD PRESSURE SWITCH TO GIVE U2 ABILITY TO INITIATE A LOW DEMAND FIRE PUMP START& TO MAKE U2 LO HEADER PRESS. ANN WORK.	/ /	03/08/89	/ /	N	O		O	/ /
9000045	R		02PM1008	0	INSTALL MOD. ALLISON THERMISTOR STRING FIRE DETECTION CONTROL BOX ON UNIT 2 AUX. TRANSFORMER 201AB IN DELUG V. HOUSE	/ /	01/27/90	/ /					/ /
9000077	R		02PM1008	0	INSTAL NEW ALLISON CONTROL BOX FOR STARTUP TRANSFORMER #201AB-THERM STRING FIRE DET. DELUGE VALVE IN E. DELUGE VALVE HOU	/ /	02/01/90	/ /					/ /
9001065	S	Y	02PM1024	0	ADD VACUUM SWITCH TO E&W MFPT VACUUM TRIP SENSING LINE TO OPERATE LOW VACUUM ALARM. CHANGE ALARM TAGS.	/ /	04/01/90	/ /	O	O		O	/ /
8800804	R		02PM143		SETPOINT CHANGE INSTANT OVERCURRENT ON 2M CONDENSATE BOOSTER PUMP MOTOR BREAKER FROM 32A TO 34A.	/ /	08/01/88	/ /	N				/ /
9001521	R		02PM180	0	WIRING CHANGES TO UNIT 2 OSCILLOGRAPH CABINETS FOR GALVANOMETER GC8-11	/ /	04/19/90	/ /					/ /
8800805	S	Y	02PM206		SJAE HIGH FLOW ALARM DROP 50 AND LOW FLOW ALARM DROP 51 HIGH ALARM AT 15FT AND LOW ALARM AT 10 FT DP	/ /	08/01/88	/ /	N	O		O	/ /
9001509	R		02PM266	0	IMPROVE OPERATION OF GLAND STEAM CONDENSERS.	/ /	04/19/90	/ /					/ /

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9001499	S	Y	02PM279	0	DISCONNECT & REMOVE FAST SPEED PUSH-BUTTON FOR MAIN TURBINE OPERATING DEVICE.	01/06/83	04/19/90	08/01/91	O	O		O	/ /
8800806	S	Y	02PM286		INSTALLED LARGER IMPELLERS IN NORTH,SOUTH, AND MIDDLE HEATER DRAIN PUMPS	/ /	08/01/88	/ /	N	C		O	/ /
8800808	R		02PM304		MODIFY VOLTAGE REFERENCE CIRCUITS OF THE EXCITATION SYSTEM	/ /	08/01/88	/ /					/ /
9001476	S	Y	02PM313	0	REMOVE ALARM "BORIC ACID EVAP. ABNORMAL"ANNUNCIATOR 22/78	02/22/84	04/19/90	08/01/91	O	O		O	/ /
9001459	R		02PM344	0	CHANGE TRANSMITTER SENSOR & INSTALL NEW PRESSURE TAP FOR SPI-260.	09/17/84	04/19/90	08/01/91					/ /
8800810	S	Y	02PM377		RAISED FLOAT SWITCHES HLA-111,112,113 BY 12 INCHES. LOCATED ON LP HEATERS	/ /	08/01/88	/ /	N	O		O	/ /
9001438	R		02PM385	0	RESTORE POWER TO THE MAIN GEN. ROTOR OVERLOAD PROTECTION CIRC.	/ /	04/19/90	/ /					/ /
9001423	S	Y	02PM405	0	REMOVE BY-PASS CAPACITOR ON GN-15 RECORDER AND REMOVE CAPICATOR FROM RECORDER.	06/25/84	04/19/90	08/01/91	O			O	/ /
8800812	R		02PM408		DISABLE TURBINE AUTO RUNUP UNTIL RFC2271 DECISISON IS MADE.	/ /	08/01/88	/ /					/ /
9001420	R		02PM408	0	INSTALL JUMPER BETWEEN POINTS 48/62 & 48/63 IN TURBINE CONTROL PANEL DTV U2 CONTROL ROOM	06/23/84	04/19/90	08/01/91					/ /
9001419	R		02PM409	0	COMPENSATING LEAD FOR THE FOLLOWING RECORDERS MUST BE LIFTED: SG-07, SG-017,SG-020	06/26/84	04/19/90	08/01/91					/ /

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9001418	R		02PM410	0	CHANGE BREAKERS ON U2 EHC PUMP FROM 150 AMP TO 175 AMP.	05/15/87	04/19/90	08/01/91					/ /
8800813	S	Y	02PM413		TACW PUMP START SWITCHES CPS-603,604 AND LOW HEADER PRESSURE ALARM SWITCH CPA-600 SETPOINTS WERE REDUCED TO 160#	/ /	08/01/88	/ /	N	C		O	/ /
9001415	S	Y	02PM413	0	CHANGE SETPOINT ON CPA-600 TO 160 PSIG FROM 165 PSIG. ALSO CHANGE SETPOINT ON PRESSURE SWITCHES CPS-604 & 603.	01/24/85	04/19/90	08/01/91		O		O	/ /
9001402	R		02PM417	0	DISCONNECT FLOW TRANSMITTER 2-WFI-900, REMOVE TRANSMITTER 2-WFI-900 & RECONNECTIN EXISTING FLOW TRANSMITTER 2-WFI-901.	02/07/85	04/18/90	08/01/91					/ /
9001392	R		02PM434	0	INSTALL 3 ADDITIONAL THERMOCOUPLES IN EACH CROSSOVER PIPE OF THE MAIN TURBINE.	/ /	04/18/90	/ /					/ /
9001381	R		02PM446	0	REMOVE BBC DIFFERENTIAL ALARM UNIT AND INDICATOR AND REPLACE WITH VALVE MANIFOLD.	04/23/85	04/18/90	08/01/91					/ /
9001301	S	Y	02PM507	0	DISCONNECT THE BROWN BOVERI SUPPLIED LOWVACUUM TURBINE TRIP & REWIRE AS A LOW VACUUM ALARM .	02/23/89	04/04/90	08/01/91					02/23/89
8800815	S	Y	02PM536		CHANGE SETPOINT FOR THE ROD BANK D HIGH ALARM TO 230 STEPS	/ /	08/01/88	/ /	N	C		O	/ /
9001255	S	Y	02PM566	0	RAISE SETPOINT ON NPA-351 TO 10 PSIG	/ /	04/04/90	/ /		O			04/04/90
9001242	S	Y	02PM582	0	INSTALL NEW STYLE DIGITAL SPEED INDICATION FOR MAIN TURBINE	/ /	04/04/90	/ /					/ /
9001197	S	Y	02PM634	0	CHANGE HI & LOW SETPOINTS ON THE ACCUM. PRESSURE ALARMS FROM 644 PSI AND 599 PSITO 637 PSI AND 606 PSI	/ /	04/03/90	/ /		O			/ /

STATUS P - WAITING FOR PARTS W - WORKING ON C - COMPLETE O - OPEN N - NO CHANGE REQUIRED R - REVIEW

Simulator Configuration Status Report

SIMULATOR EVAL REQUEST #	S T A	C H G	DOCUMENT ID	REV	DOCUMENT TITLE	INSTALLED IN PLANT	DATE INITIATED	DATE DUE	H A R	S O F	T E S	D O C	DATE CLOSED
9001180	S	Y	02PM659	0	INSTALL A 1K52 10-TURN POTENTIOMETER ON CONTROL ROOM PANEL DTU, AS PER BBC FIELDSERVICE REPORT 830201	/ /	04/03/90	/ /		O			/ /
9001173	R		02PM668	0	INSTALL A BACKUP MAIN TURBINE VALVE TESTING CONTROLLER. THIS CONTROLLER WOULD BYPASS THE TURBOMAT & ACT DIRECT W/LIMIT	/ /	04/03/90	/ /					/ /
9001172	S	Y	02PM669	0	INSTALL UNIT ANNUNCIATOR NUMBERS 26, 27,28 & 29.	/ /	04/03/90	/ /		O		O	/ /
8900307	S	Y	12PM0401	1	INSTALL A TIME DELAY RELAY IN MLS-415 & MLS-416 LEVEL TRIP CIRCUITS.	/ /	03/14/89	/ /	N	O		O	/ /
8900114	S	Y	12PM0557	0	REMOVAL OF 1-MRV-405, 406, AND 2-MRV-426428. ALSO REMOVED AIR LINES ASSOCIATED WITH UNIT 2 VALVES.	/ /	02/09/89	/ /	C	O		O	/ /
8900295	S	Y	12PM0606	0	UPGRADED LITE BEAM OSCILLOGRAPH OF UNIT 2 WITH A DIGITAL VERSION.	/ /	03/14/89	/ /	C	C	O	O	/ /
8900115	S	Y	12PM0609	0	COMPLETED UPGRADE MODIFICATIONS TO THE UNIT 2 OPERATIONS SEQUENCE MONITOR.	/ /	02/09/89	/ /	C	C	O	O	/ /
8900265	S	Y	12PM0622	0	CHANGE U1 & U2 AB & CD DIESEL ROOMS.	/ /	03/08/89	/ /		O		O	/ /
8900161	S	Y	12PM0693	1	REPLACE AND RELOCATE XPA-1	/ /	02/21/89	/ /		O		O	/ /
8900093	S	Y	12PM0721		MADE WIRING CHANGE TO S/G LEVEL CONTROL CIRCUITRY (TIE-BACK SIGNAL)	/ /	02/08/89	/ /	N	O		O	/ /

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Simulator Configuration Status Report

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8900312	S	Y	12PM0748	0	REPLACE XPA-101	/ /	03/14/89	/ /		O		O	/ /
9001083	R		12PM1000	0	REVISE/UPGRADE THE YARD DRAINAGE SYSTEM	/ /	04/02/90	/ /					/ /
8900843	R		12PM1003	0	UPGRADE OF STEAM GENERATOR WIDE RANGE LEVEL INSTRUMENTATION	/ /	11/28/89	/ /					/ /
8900936	R		12PM1007	0	INSTALL FIBER OPTIC CABLE/EQUIP. FOR INFOR. MANAGEMENT SYSTEM. (IMS)	/ /	12/18/89	/ /					/ /
9001074	R		12PM1012	0	ADD AN AIR CAPACITY TANK TO 12-ZAC-437 AIR COMPRESSOR.	/ /	04/01/90	/ /					/ /
9001071	S	Y	12PM1015	0	CHANGE ANNUN. PANEL 101 ANNUNS. 29 & 41 AND U2 ANNUN. PANEL 201 ANNUNS. 29 & 41FROM SEAL-IN TO REFLASH TYPE ANNUNS.	/ /	04/01/90	/ /	O	O		O	/ /
8800818	R		12PM135		ADDED MANUAL ISOLATION VALVES UPSTREAM OF SMO-405,406,407	/ /	08/01/88	/ /					/ /
9001522	R		12PM177	0	ADD 2" DIODES INTO COMMON BUS WIRING FORLOCAL PANEL TRIP ANNUN. LIGHTS AND FOR VARIOUS DIESEL TRIP RELAYS.	/ /	04/19/90	/ /					/ /
9001517	S	Y	12PM211	0	CHANGE EXISTING TEMP. INDICATORS FOR REACTOR COOLANT PUMP MOTOR INDICATION TO 160 DEGREE C.	11/10/87	04/19/90	08/01/91		O		O	/ /
8800819	R		12PM216		REPLACED ALARM UNIT XPA-104 WITH ONE WITH A SMALLER DEADBAND	/ /	08/01/88	/ /					/ /
9001516	R		12PM223	0	INSTALL ALARM FUNCTION IN SECURITY COMPUTER TO SHOW LOSS OF POWER SOURCE TO TELEPHONE SYSTEM	01/06/87	04/19/90	08/01/91					/ /

STATUS P - WAITING FOR PARTS W - WORKING ON C - COMPLETE O - OPEN N - NO CHANGE REQUIRED R - REVIEW

Simulator Configuration Status Report

SIMULATOR EVAL REQUEST #	S T A =	C H G =	DOCUMENT ID	REV	DOCUMENT TITLE	INSTALLED IN PLANT	DATE INITIATED	DATE DUE	H A R =	S O F =	T E S =	D O C =	DATE CLOSED
9001505	R		12PM273	0	RELOCATE WIRE ON POSITION #2 OF RELAY 88X-CVH TO POSITION #4 OF SAME RELAY.	/ /	04/19/90	/ /					/ /
9001502	R		12PM276	0	RESPAN OR REPLACE DRF-700 WITH A FLOW METER W/0-8000 GPM RANGE ON TURBINE RM. SUMP PUMP FLOW METER	02/03/83	04/19/90	08/01/91					/ /
8800822	S	Y	12PM296		REPLACE CDA-201,202, FEED PUMP STRAINER PLUGGED ALARM, AND CHANGE SETPOINT TO 60 INCHES H2O	/ /	08/01/88	/ /	N	C		O	/ /
9001475	R		12PM316	0	REPLACE ALARM SWITCHES WPA-709, 710 & 711 WITH SWITCHES OF SMALLER DEADBAND.	06/06/84	04/19/90	08/01/91					/ /
8800825	S	Y	12PM320		ANN 16 DROPS 28,29,30,38,39,40 MADE HIGH LEVEL ALARMS FOR MSR DRAIN TANKS	/ /	08/01/88	/ /	C	C		O	/ /
9001472	R		12PM326	0	REMOVE AND REINSTALL KFI-714 & 715 TO INDICATE FLOW DURING ALL STATES OF REGENERATION	/ /	04/19/90	/ /					/ /
9001469	R		12PM329	0	REPLACE EXISTING MISC. SEAL & COOLING WATER PUMPS (PP-078) W/WORTHINGTON 4x3x8 D1131 PUMPS.	/ /	04/19/90	/ /					/ /
8800830	S	Y	12PM332		CTA-415,425 SETPOINTS CHANGED TO 60 DEGREES F (CCW FROM HX TEMP ALARMS)	/ /	08/01/88	/ /	N	O		O	/ /
9001468	S	Y	12PM334	0	REMOTE HEATER 1 A,B,C LEVEL HIGH ALARM INPUTS FROM THE OPERATION SEQUENCE MONITORS.	02/24/84	04/19/90	08/01/91		O		O	/ /
9001460	R		12PM343	0	DETERMINE NEW HIGH ALARM SET POINT FOR UNIT 1 & 2 CONTROL AIR COMPRESSOR DISCHARGE AIR TEMPERATURE.	/ /	04/19/90	/ /					/ /
8800831	S	Y	12PM352		PLANT AIR COMPPRESSOR SETPOINTS CHANGED FOR PTA-2=105,PTA-11=135,PTA-12=135	/ /	08/01/88	/ /	N	C		O	/ /

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8800832	S	Y	12PM365		SIS MONITOR PANEL DROP 13 LABEL CORRECTION	/ /	08/01/88	/ /	C				/ /
8800837	S	Y	12PM369		PRIMARY WATER SYSTEM ANN9 DROP44 AND ANN9 DROP 1 NOMENCLATURE CHANGE	/ /	08/01/88	/ /	C	C			/ /
9001425	S	Y	12PM403	0	REPLACE EXISTING PISTOL GRIP HANDLES W/OVAL HANDLES ON THE MAIN TURBINE & BOTH MAIN FEED WATER PPS. TRIP SWITCHES	06/28/84	04/19/90	08/01/91	O			O	/ /
9001422	R		12PM406	0	UPDATE THE ELECTRICAL AND WIRING PRINTS TO MAKE THE FIRE SIREN CUTOUT SWITCH A PERMANENT INSTALLATION.	/ /	04/19/90	/ /					/ /
9001416	S	Y	12PM412	0	MAKE ANNUNCIATOR 4 DROPS 9.59 & 69 SEAL IN ALARMS	02/20/85	04/19/90	08/01/91	O	O		O	/ /
9001394	R		12PM430	0	PROVIDE POSITIVE POSITION INDICATION FORWMO 30.	/ /	04/18/90	/ /					/ /
9001391	R		12PM435	0	SEPARATE LOW LEVEL AUDIO WIRES FROM 120 VAC CONTROL WIRES IN BEACH EVACUATION SYSTEM. ALSO CHANGE 120 V AC POWER SOUR	05/02/85	04/18/90	08/01/91					/ /
9001390	R		12PM436	0	ADD A PERMISSIVE SWITCH TO PHB CONTROL PANEL TO ALLOW THE ALARMS "COME IN" WHENTHE PHB IS OPERATING.	10/09/86	04/18/90	08/01/91					/ /
9001375	R		12PM454	0	MODIFY POSITION 5 ON THE TURBINE CONTROLPANEL TO CONTROL ROOM AIR TEMPERATURE.	01/26/85	04/18/90	08/01/91					/ /
8800843	S	Y	12PM505		SETPOINT FOR VTA-302,301 CHANGED TO 95 DEGRESS F	/ /	08/01/88	/ /	N	C		O	/ /

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Simulator Configuration Status Report

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8800842	S	Y	12PM506		RESET PROBLEM ALARMS FOR NESW,ESW, AND BORIC ACID STORAGE TANK	/ /	08/01/88	/ /	N				/ /
8800841	S	Y	12PM531		CHANGE RHR FLOW METER SCALES TO A NEW ACCURATE FLOW SCALE	/ /	08/01/88	/ /	C	C	O	O	/ /
9001282	R		12PM533	0	INSTALL A RELIEF VALVE ON THE # 2 & 3 WAREHOUSE DAY PILOT DELUGE FIRE PROT. SYSTEM	/ /	04/04/90	/ /					/ /
9001264	S	Y	12PM554	0	INSTALL CARPETING IN THE CONTROL ROOM	/ /	04/04/90	/ /					/ /
8900887	R		12PM576	1	HOTWELL PUMPS UPGRADED W/STAINLESS STEEL IMPELLERS, DISCHARGE HEAD FUEL XITALLIC GASKET AND SUCTION END SNUBBERS	/ /	12/01/89	/ /					/ /
9001244	S	Y	12PM580	0	CHANGE TIME OVERCURRENT FROM 5.5 AMPS TO6.0 AMPS FOR # 11,12,21,22,23,24 CIRC. WATER PUMPS	03/18/87	04/04/90	08/01/91					03/18/87
9001240	R		12PM584	0	PROVIDE INTERLOCK TO BUS DUCT COOLING FANS & REMOVE THE RODENT SHIELDS FROM 4KV BUSHINGS.	/ /	04/04/90	/ /					/ /
8900422	R		12PM622	0	CHANGED THE SET POINTS ON AUTOMATIC ACT-UATORS FOR SUPPLY & EXHAUST FANS IN THE AB & CD DIESEL GEN. ROOMS.	/ /	04/28/89	/ /					/ /
9001206	S	Y	12PM624	0	MAKE CHANGES IN THE FURNITURE ARRANGE-MENT IN THE PET AND COMMUNICATIONS ROOM	/ /	04/03/90	/ /					/ /
9001196	S	Y	12PM635	0	CHANGE ALARM SETPOINT FOR "CONT. FLUID FR. COOLER RECORDER TEMP. HIGH" AND 218DNOP #7 FROM 115 DEG. TO 125 DEG. F.	/ /	04/03/90	/ /		O			/ /
8900688	S		12PM637	0	INSTALLED NEW METEROLOGICAL MONITORING SYSTEM	/ /	08/11/89	/ /		O		O	/ /

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9000038	R		12PM655	0	CHANGED THE PAN OF VTI-10 & 20. ALSO CHANGED THE SETPOINTS OF VTA-10-20	/ /	01/27/90	/ /					/ /
9000094	R		12PM676		DISAVLED ESW/NESW FLAW MISMATCH "PROBLEM" ALARMS USED TO DETECT GROSS LEAKAGE	/ /	02/05/90	/ /					/ /
9000160	S	Y	12PM676	0	DISABLED INPUT TO DIVIDER UNIT WHICH FEEDS NEWS/SW FLOW MISMATCH ALARM BISTABLE	/ /	03/01/90	/ /	0	0		0	/ /
9001167	S	Y	12PM676	0	DEFEAT THE FOLLOWING ALARMS ON ANNUN. PANEL 204 & 104, DROP # 67, 57, 15, 16, & 6	/ /	04/03/90	/ /		0		0	/ /
9001162	S	Y	12PM682	0	MAKE ANNUNCIATOR DROPS 18-63 U1 AND 18-53 & 63 U2 SEAL IN ALARMS	/ /	04/03/90	/ /		0		0	/ /
8900886	R		12PM698	0	COMPLETED MODIFICATIONS TO AUX SUPP. FAN 2-HV-AS-1 AND ITS ASSOCIATED STEAM COILS.	/ /	12/01/89	/ /					/ /
9001146	S	Y	12PM709	0	PROVIDE NECESSARY CABLES TO CONNECT INSTALLED TEST TELEPHONE JACKS AT U1&U2 HOT SHUTDOWN PANELS	/ /	04/03/90	/ /	0				/ /
9001576	R		12PM709	0	PROVIDE TEST TELEPHONE RECEPTICALS AT THE U1 AND U2 HOT SHUTDOWN PANELS.	/ /	06/26/90	/ /					/ /
9001132	S	Y	12PM727	0	PROVIDE ALARM ANN. ON ALARM PANEL 118 FOR CLOSURE OF 1-CMO-630 & ON ALARM PANEL L18 FOR CLOSURE OF 2-CMO-630 & 635	/ /	04/02/90	/ /	0	0		0	/ /
9001125	S	Y	12PM736	0	INSTALL LOGIC TO OPEN THE U1 MOISTURE SEPARATOR DRAIN TANK ALTERNATE DRAINS TO THE CONDENSER (MRV-403, 404)	/ /	04/02/90	/ /		0			/ /
9001124	S	Y	12PM737	0	INSTALL A DIGITAL LOAD METER IN EACH UNIT CONTROL ROOM INDICATE FORWARD AND REVERSE POWER.	/ /	04/02/90	/ /	0	0			/ /
9000075	R		12PM740	0	REPLACED EXISTING RORRISEAL VALVE WITH A CENTERLINE ON VALVES 12-CCW-187N,	/ /	02/01/90	/ /					/ /

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					12-CCW-187M, AND 12-CCW-187S								
8900881	R		12PM740/.21	0	REPLACED EXISTING HANCOCK VALVE WITH A VOGT ON VALVE NUMBER 2-HCC-455-VI.	/ /	12/01/89	/ /					/ /
9001116	R		12PM751	0	INSTALL BASLER BE-32 RELAYS TO ALARM DURING REVERSE POWER (MOTORING) CONDI-TION	/ /	04/02/90	/ /					/ /
9001104	S	Y	12PM772	0	INSTALL AN INTERLOCK BETWEEN STEAM SUPPLY AND AIR OFF TAKE VALVE OF THE START UP AIR EJECTOR	/ /	04/02/90	/ /		O		O	/ /
9001094	R		12PM787	0	UPGRADE MAIN GENERATOR HYDROGEN SUPPLY	/ /	04/02/90	/ /					/ /
8900893	R		12PM793	1	REMOVED WELL H2O PUMPS #1 & #2, AND THE DRINKING H2O CHLORINATION BLDG. AND ASSOC. EQUIP./INSTRUM. FROM SERVICE.	/ /	12/06/89	/ /					/ /

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9001546	R		02MM066	0	REPLACEMENT OF RCP SEAL WATER D/P TRANSMITTERS.	/ /	04/19/90	/ /					/ /
9001537	R		02MM079	0	MODIFY STEAM GENERATOR STOP VALVE (MRV-210, 220, 230, 240) OPERATING PISTONS.	/ /	04/19/90	/ /					/ /
8900838	R		12MM037	0	CHANGE THE EAST & WEST MOTOR DRIVEN AUX.FEEDPUMP DISCHARGE PRESSURE TRANSMITTER.	11/28/89	11/28/89	08/01/91					/ /
8900780	R		12MM056	0		/ /	10/09/89	/ /					/ /
8900937	R		12MM056		REVISE LOAD CONSERVATION CIRCUIT RELAY CONTACTS FOR RELAYS 62A-LCTA/B AND 62AX-LCT A/B	/ /	12/18/89	/ /					/ /
9001550	S	Y	12MM058	0	REMOVE MONITOR LIGHT CORSS UNIT FLASHER INDICATION FOR ESW VALVE WMO-733, WMO-737. WMO-734 AND WMO-738	/ /	04/19/90	/ /		O		O	/ /
9001323	R		12MM072	0	CONTROL ROOM EMERGENCY LIGHTING	/ /	04/04/90	/ /					/ /
9001542	S	Y	12MM073	0	PLACE DIESEL ENGINE RUNNING RELAY (42-3)CONTACT IN SERIES WITH BEARING TEMP. TRIP CONTACT (38X-BT)	/ /	04/19/90	/ /		O		O	/ /
9001541	S	Y	12MM075	0	ADD A MAUAL FIELD FLASH CIRCUIT FOR SLOWSTARTING THE EMERGENCY DIESEL GENERATORS	/ /	04/19/90	/ /		O		O	/ /
8900894	R		12MM076		REPLACE Y-LATERALS IN LOW. CONTAINMENT AND UNIT VENT RADIATION SAMPLING SYSTEMS	/ /	12/06/89	/ /					/ /
8900947	R		12MM076	0	REPLACE Y-LATERALS IN LOWER CONTAINMENT AND UNIT VENT RADIATION SAMPLING SYSTEMS	/ /	12/21/89	/ /					/ /

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9001538	R		12MM078	0	CHANGE SPECIFIED RATING FOR REACTOR COOLANT, SEAL WATER INJECTION AND SEAL WATER RTN. FILTERS TO ALLOW MORE FILTERS	/ /	04/19/90	/ /					/ /
9001322	R		12MM083	0	INSTALLED FIRE DETECTORS ON BOTH TRAINS FOR U2 CD DIESEL ROOM CO2 SYSTEM	/ /	04/04/90	/ /					/ /
9001577	R		12MM088	0	REPLACEMENT OF RETAINING BLOCK STUDS IN VARIOUS CHECK VALVES, WHILE ADHERING TO SOER 86-03 CRITERIA.	/ /	06/26/90	/ /					/ /
9001578	R		12MM092	0	REPLACE THE ROD POSITION INDICATION (RPI) METER SCALES WITH NON LINEAR SCALES TO MATCH COIL CHARACTERISTICS.	/ /	06/26/90	/ /					/ /
9001579	R		12MM100	0	INSTALL BACKUP AIR COMPRESSOR ON U1 SWITCHGEAR ROOM ROOF. SUPPLEMENTAL PLANTAIR IS NEEDED TO SUPPORT ICE BED REPAIR.	/ /	06/26/90	/ /					/ /

COOK PLANT SIMULATOR

SIMULATOR TEST SCHEDULE

1990		1991				1992				1993			
3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
MALFUNCTION TESTS													
CC06	CS03	CV05	CV27	CV10	CV14	CV11	CS01	CV21	CV28	CV02	CV08	CV12	CV16
CW02	CV04	CV20	CW03	CV32	ED04	CV33	CV15	ED01	ED10	CV25	CV30	CW01	ED02
CC02	CH01	CC07	CH02	CC03	CS04	CC04	CC08	CV01	CV06	CC01	CC05	CC09	CS02
ED20	CV13	EG04	EG08	ED21	FP01	EG13	ED22	EG05	EG09	ED23	EG01	EG06	EG10
ED24	CV17	FW06	FW19	EG12	FW01	FW16	FP02	FW02	FW07	EG14	FP03	FW03	FW12
EG03	CV26	FW15	FW27	FW23	FW31	FW24	FW20	FW28	FW40	FW17	FW21	FW25	FW29
EG11	CV31	FW43	FW47	FW35	FW39	FW36	FW32	FW48	IA02	FW33	FW37	FW41	FW45
EG15	ED03	IA01	MS09	FW51	IA05	MS01	FW44	FW52	MS14	FW49	IA03	MS02	MS06
FP05	ED12	MS04	MS18	MS13	NI03	MS21	MS05	MS10	NI12	MS11	MS16	NI01	NI05
FW13	ED16	NI07	NI11	NI15	RC04	RC01	NI04	NI08	RC05	NI09	NI13	RC02	RC06
FW18	EG07	RC08	RC19	RC14	RC25	RC09	RC15	RC21	RC26	RC11	RC16	RC23	RC27
FW22	FW05	RD01	RD05	RD09	RD17	RD02	RD06	RD10	RD14	RD03	RD07	RD11	RD15
FW38	FW26	RH07	RM01	RD13	RH03	RM02	RD18	RH08	RH13	RH01	RH05	RH09	RH14
FW42	FW30	RH12	RP05	RP09	RP13	RP06	RH04	RP14	RP18	RP01	RP07	RP11	RP15
FW46	FW34	RP17	RX01	RX05	RX09	RX02	RP10	RX10	RX14	RP19	RX03	RX07	RX11
FW50	IA04	RX13	RX17	RX21	RX25	RX18	RX06	RX26	SI02	RX15	RX19	RX23	RX27
FW56	MS03	SW02	SW06	SI01	TC03	SW03	RX22	TC04	TC13	SI03	SW04	TC01	TC05
MS17	MS08	TC12	TP03	TU05	TC07	TU06	SW07	TC09	TP05	TC10	TP01	TU01	WD01
NI06	MS12												
RC03	NI02												
RC24	NI10												
RD04	NI14												
RD08	RC07												
RH02	RC13												
RH11	RC17												
RP03	RC28												
RP08	RD12												
RP12	RD16												
RP16	RH06												
RP20	RH15												
RX28	RP12												
SW01	RX04												
SW05	RX08												
TC06	RX12												
TU03	RX16												
	RX20												
	RX24												
	TC02												
	TC11												
	TP02												
COMPUTER TEST													
		CRT				CRT				CRT			

Table 1

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COOK PLANT SIMULATOR

SIMULATOR TEST SCHEDULE

1990		1991				1992				1993			
3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ANS 3.5 APPENDIX B TESTS													
		TRANS 1 TRANS 5 TRANS 9	TRANS 2 TRANS 6 TRANS 10	TRANS 3 TRANS 7	TRANS 4 TRANS 8	TRANS 1 TRANS 5 TRANS 9	TRANS 2 TRANS 6 TRANS 10	TRANS 3 TRANS 7	TRANS 4 TRANS 8	TRANS 1 TRANS 5 TRANS 9	TRANS 2 TRANS 6 TRANS 10	TRANS 3 TRANS 7	TRANS 4 TRANS 8
ANS 3.5 APPENDIX A TESTS													
		NPE-1	NPE-2 NPE-5	NPE-3 NPE-6	NPE-4 NPE-7	NPE-1	NPE-2 NPE-5	NPE-3 NPE-6	NPE-4 NPE-7	NPE-1	NPE-2 NPE-5	NPE-3 NPE-6	NPE-4 NPE-7
		SS-1	SS-2	SS-3	SS-4	SS-1	SS-2	SS-3	SS-4	SS-1	SS-2	SS-3	SS-4
		ST-1	ST-2	ST-3	ST-4	ST-1	ST-2	ST-3	ST-4	ST-1	ST-2	ST-3	ST-4

NPE-1 RCS FILL AND VENT
NPE-2 COLD SHUTDOWN TO HOT STBY
NPE-3 REACTOR STARTUP
NPE-4 PLANT STARTUP/POWER ESCALATION
NPE-5 POWER REDUCTION
NPE-6 PLANT COOLDOWN
NPE-7 RCS DRAIN

SS-1 STEADY STATE TEST #1
SS-2 STEADY STATE TEST #2
SS-3 STEADY STATE TEST #3
SS-4 STEADY STATE TEST #4

ST-1 SIMULATOR TRANSIENT #1
ST-2 SIMULATOR TRANSIENT #2
ST-3 SIMUALTOR TRANSIENT #3
ST-4 SIMULATOR TRANSIENT #4

COOK PLANT SIMULATOR

DIFFERENCES

I. Introduction

The Cook Plant Simulator Certification Submittal references two differences between the reference plant and the simulator specified as exceptions. They are:

1) Plant Process Computer

Presently the Cook Plant Simulator does not simulate the reference plant process computer system due to replacement of this equipment in the reference plant. Installation in the plant is scheduled for the 1991 refueling outage (last quarter of 1991).

The hardware is on site to replicate and simulate the plant process computer and is expected to implemented by the end of the last quarter of 1991.

2) Plant Hand Held Radio Communication System

Presently the Cook Plant Simulator does not simulate the reference plant hand held radio communication system due to replacement of this equipment in the reference plant.

Equipment to replicate and simulate reference plant equipment is on order and expected implementation date is by the end of the last quarter of 1990.