Consolidated Edison of N.Y. Ind. Pt. Unit 1

50-247

STARTUP PHYSICS TEST REPORT

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Startup Physics Test Report

Indian Point Unit No. 2 Reactor

Consolidated Edison Company of New York, Inc.

Nuclear & Emissions Control Engineering Department
Reactor Physics & Fuel Management Subsection

February, 1975

50-247

Rec'd w/ltr dtd 3-21-75

3213

ABSTRACT

This report summarizes the results of startup physics tests for the Indian Point Unit No. 2 reactor at Hot Zero Power conditions, and during reactor power level escalation. Results of these tests verified the nuclear design of the reactor core satisfied the Technical Specification and FSAR requirements and demonstrated adequate conservatism of design and analyses. Based upon the measured core power distributions, it is concluded that the ex-core instrumentation provide adequate response for the core protection system.

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I. Introduction

Indian Point Unit No. 2 reactor attained initial criticality on May 22, 1973. Subsequently, a series of physics tests described in the Indian Point Unit No. 2 FSAR (Final Facility Description and Safety Analysis Report), Reference 1, were carried out. These tests are listed in Table 1.1. The objectives of these tests were: (a) to demonstrate that the core performance during reactor operation would not exceed FSAR, Reference 1, and Technical Specification, Reference 2, limits; (b) to verify the nuclear design calculations; (c) to demonstrate the nuclear instrumentation responses to abnormal conditions, and (d) to provide the bases for the calibration of reactor instrumentation.

Sections 2 and 3 of this report deal with a brief description of reactor core and measurement methods, respectively. In Section 4, results from Hot Zero Power (HZP) physics tests are presented and in Section 5, physics tests during power ascension (including low power (~ 5%) tests) are described. Reactor instrumentation response and calibration are treated in Section 6. The test results of the measured parameters have been compared with the design results. The latter are from the Indian Point Unit No. 2 reactor design report, Reference 3. A summary of comparison is given in Section 7.

TABLE 1.1

List of Startup Tests

1. Nuclear Design Check Tests

   (a) Endpoint Boron Concentrations (HZP)
   (b) Isothermal Temperature Coefficients (HZP)
   (c) Core Power Distributions at Low Reactor Power (~ 5% Power)

2. RCC Control Group Calibration

   (a) RCC Bank Differential and Integral Worths
   (b) P/L Bank Differential and Integral Worths

3. Power Coefficient Measurements (0% to 100% of Full Power)

4. Minimum Shutdown Verification (HZP)

5. Pseudo-Rod Ejection Test (at 5% and 50% Power)

6. Static RCC Drop Tests (at 50% Power)

7. Power Range Instrumentation Calibration

8. P/L Group Operational Maneuvering

9. Power Redistribution Follow

2. Reactor Core Description

Indian Point Unit No. 2 core consists of 193 fuel assemblies of slightly enriched uranium dioxide. Each fuel assembly contains 204 fuel rods with zirconium alloy cladding, 20 rod cluster control (RCC) guide tubes for inserting control rods, and a central instrumentation thimble. Burnable poison rods, composed of borated Pyrex glass, are inserted in selected assemblies to provide negative moderator temperature coefficient during reactor operation, and to control excess reactivity early in life Cycle 1.

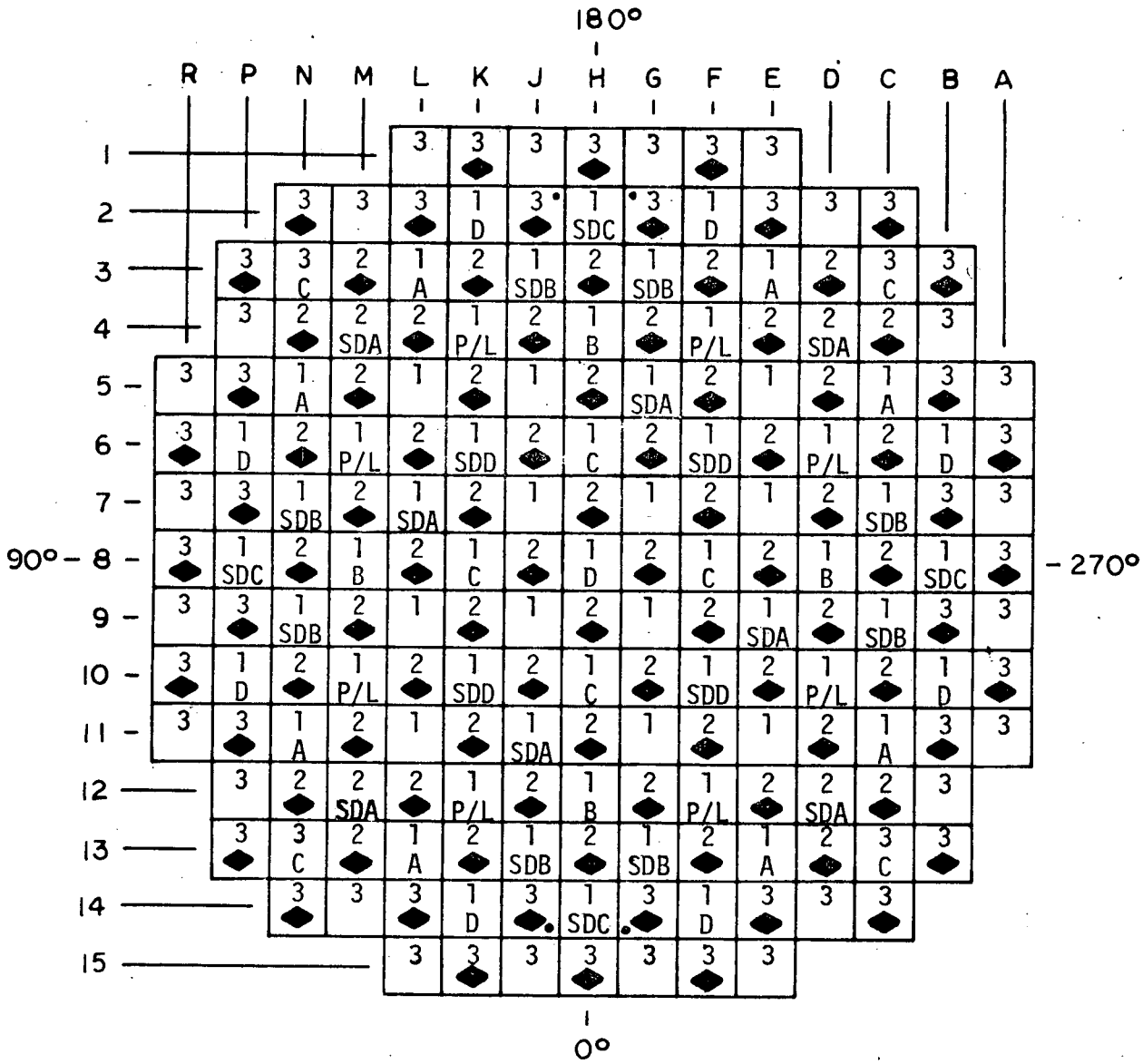
2.1 Reactor Core Control

In addition to the chemical shim control by boric acid dissolved in the coolant water, control and shutdown of the reactor is accomplished by 53 full-length Rod Cluster control Assemblies (RCCA's). The latter consist of four control and four shutdown banks. The core also contains eight part-length (P/L) rods to shape the axial power distribution during xenon transients. Figure 2.1 is an X-Y cross-section of reactor core containing RCC bank positions and the enrichment zones.

2.2 Reactor Core Instrumentation

The reactor core instrumentation consists of four ex-core detectors, six moveable in-core

detectors (M/D) capable of scanning up to 50 fuel assemblies through their central thimble guide tubes, 65 in-core thermocouples (T/C) to monitor exit coolant temperatures, and 32 fixed in-core detectors in eight assemblies. Figure 2.2 shows the in-core and ex-core instrumentation.



1 = 2.20 w/o U^{235}

2 = 2.80 w/o U^{235}

3 = 3.30 w/o U^{235}

D = Control Bank D RCCA

C = Control Bank C RCCA

B = Control Bank B RCCA

A = Control Bank A RCCA

• = Primary Source Location

◆ = Burnable Poison Cluster

SDD = Shutdown Bank D RCCA

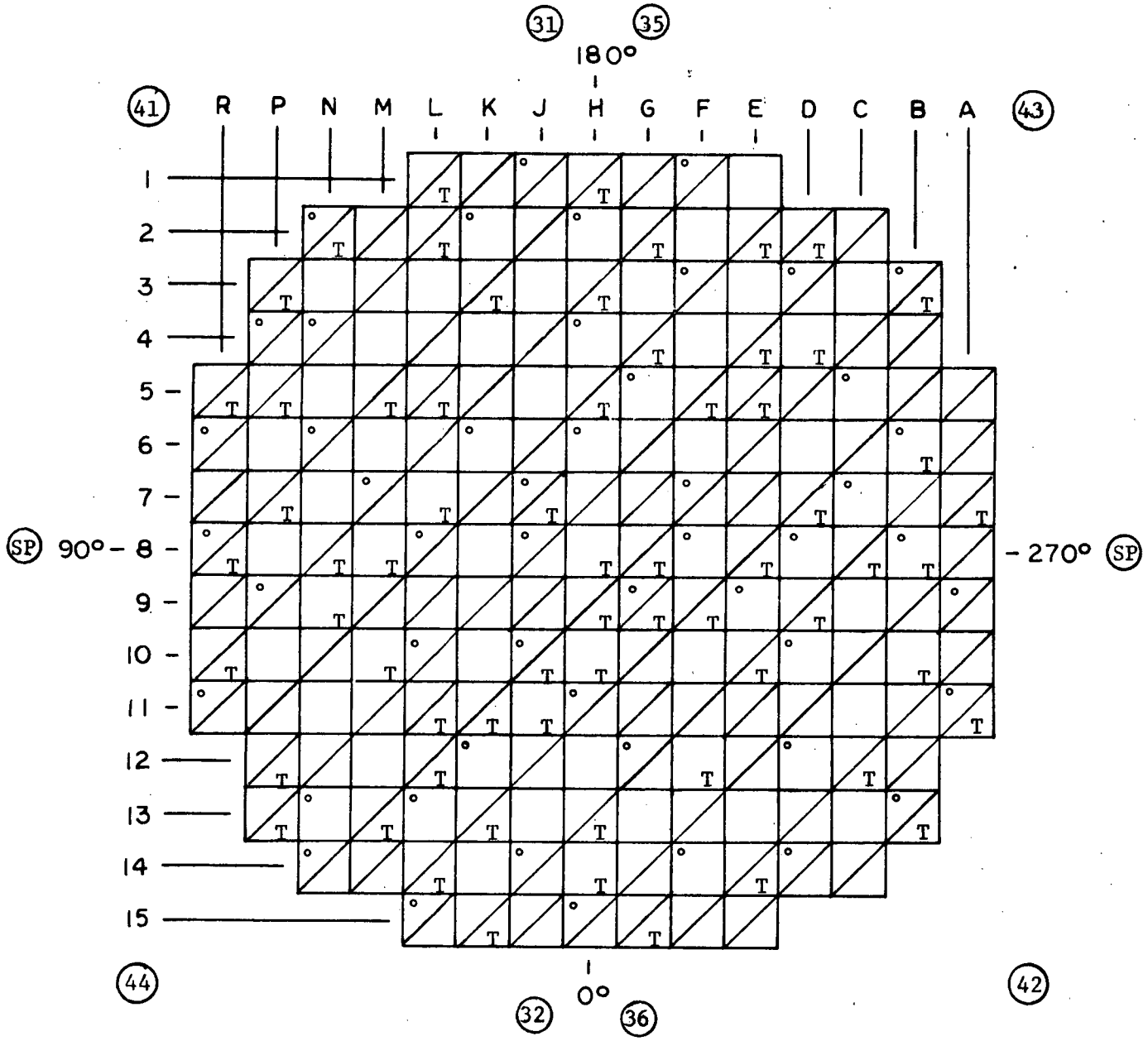
SDC = Shutdown Bank C RCCA

SDB = Shutdown Bank B RCCA

SDA = Shutdown Bank A RCCA

P/L = Part Length RCCA

Figure 2.1



Assembly with Flow Mixing Device

Assembly with M/D Thimble

Assembly with Thermocouple

31, 32 — Source Range Detectors

35, 36 — Intermediate Range Device

41, 42, 43, 44 — Power Range Detectors

SP — Spare Detector Wells

Figure 2.2

3. Measurement Methods

The reactor was kept within ±20 pcm of the critical state during the physics measurements and the reactor power was held constant via control rod/boron exchanges and/or control rod/coolant temperature exchanges. Small changes in core reactivity during the tests were indicated by the reactivity trace provided by the reactivity computer.

The axial power distribution in the instrumented assemblies were obtained using the moveable in-core detectors.

3.1 Reactivity Computer

The absolute measurement of small changes in reactivity was provided by the on-line solution of the point-reactor kinetics equations using an analog computer. The latter was checked out by comparing the reactivity obtained from the reactor period with that given directly by the reactivity computer. This comparison is shown in Table 3.1. A good agreement between reactivities obtained from two sources ensured the reliability of delayed neutron data, given in Table 3.2. This data was used as an input to the solution of neutron kinetics equations by the reactivity computer.

During HZP tests, an output signal from an ex-core detector N-Channel 43, as shown in Figure 3.1, was fed into the reactivity computer. However, during the power ascension tests, signals from the top and bottom sections of all four ex-core detectors were first summed and then fed into the reactivity computer, see Figure 3.1.

3.2 Moveable In-core Detectors

The axial core power distributions provided by the moveable in-core detectors were integrated over the Z-variable (axial) to obtain the radial or (X-Y) power distributions of the instrumented assemblies. The relative assembly power distributions in the core were finally obtained using an INCORE code, Reference 4. The analysis of the in-core flux maps also provided measured hot channel factors - $F^N_{\Delta H}$ and F^N_q.

TABLE 3.1 PERIOD TO REACTIVITY COMPARISON

Doubling Time (sec)	Reactor Period (sec)	Reactivity (pcm)	Reactivity Meas. (pcm)	Difference (M-P) (pcm)
265	383	20	20	0
113	163	43	42.5	-0.5
106	153	45	44.5	-0.5

TABLE 3.2 DELAYED NEUTRON DATA

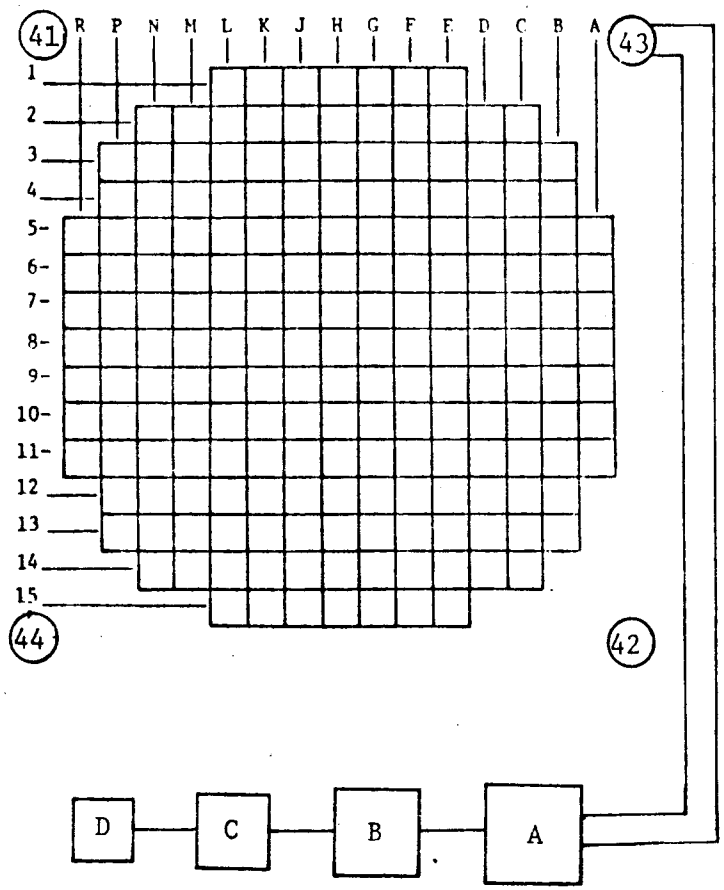
Group	$\bar{\beta}_{ieff}$	λ_i(sec)
1	0.00021	0.0125
2	0.00144	0.0310
3	0.00133	0.1150
4	0.00276	0.3110
5	0.00096	1.2370
6	0.00032	3.3750

$\Sigma\bar{\beta}_{ieff} = 0.00702$ $\qquad \bar{\bar{\beta}}_{ieff} = \bar{I}\,\bar{\beta}$

$\ell^* = 19.1\ \mu sec$

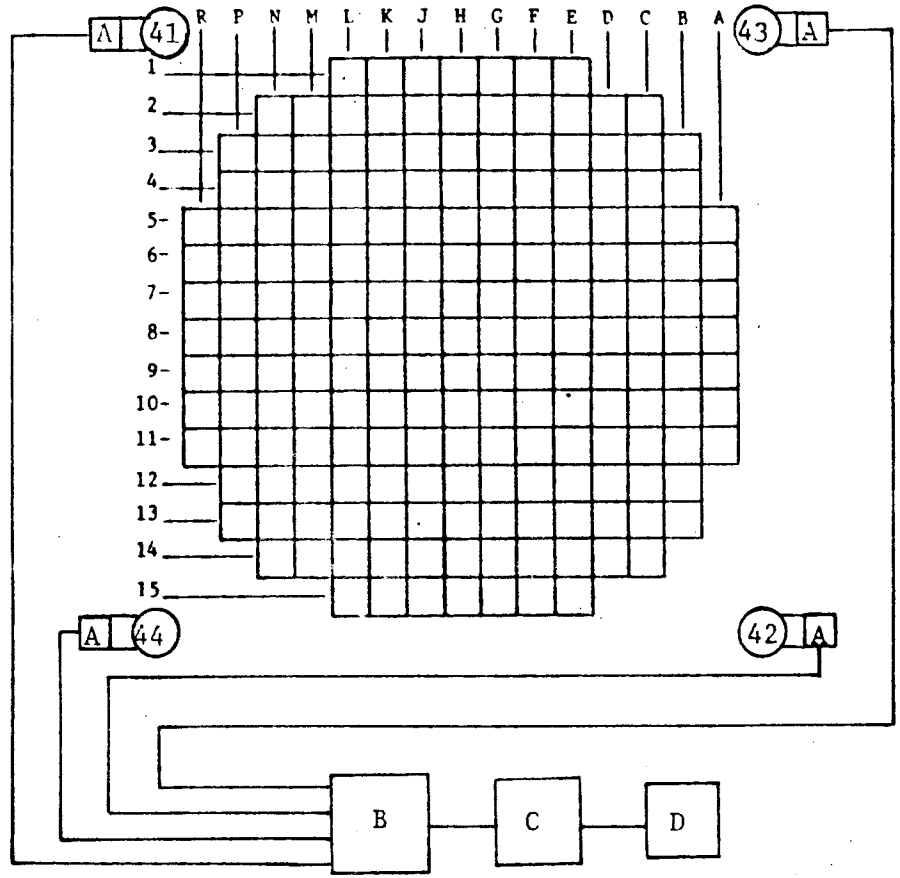
$\bar{I} = 0.970$

Zero Power Tests



A = Summing Junction
B = Picoammeter
C = Reactivity Computer
D = Strip Chart Recorder

At-Power Tests



A = Isolation Amplifier
B = Summing Junction
C = Reactivity Computer
D = Strip Chart Recorder

Figure 3.1 Process Instrumentation Arrangements for Reactivity Measurements

4. Hot Zero Power (HZP) Tests

The Indian Point Unit No. 2 reactor attained initial criticality on May 22, 1973. The criticality, at beginning of life (BOL) and HZP condition, was obtained by the sequential withdrawal of RCC shutdown and control bank and by subsequently diluting the borated reactor coolant. During the approach to criticality, an ICRR (Inverse Count Rate Ratio) plot versus time was kept. Measured critical boron concentration, at BOL, HZP and ARO (All Rods Out) core condition, was equal to 1340 ppm compared to the design result of 1314 ppm, Reference 3. The difference of 26 ppm between measured and design boron concentrations was less than 50 ppm, the acceptance limit for this measurement.

HZP physics tests included the following measurements: (a) endpoint boron concentrations for several configurations of RCC banks; (b) differential and integral worths of RCC banks during normal insertion/withdrawal sequence, for both with and without bank overlap cases; (c) isothermal temperature coefficients for different RCC bank configurations; and (d) minimum shutdown boron verification.

In addition to the above tests at HZP, core power distribution measurements at low reactor power (~ 5% power) for different RCCA bank configurations and during pseudo-rod ejection test were also made. These measurements are described in Section 5.

4.1 End-Point Boron Concentrations

In Table 4.1, measured end-point boron concentrations, for different control and shutdown RCC bank configurations, are presented. The corresponding design results, from Reference 3, are also listed. The maximum biased deviation, as shown in Table 4.1, is 82 ppm. However, the unbiased deviation, defined as the deviation in a specific rod configuration corrected to exclude the deviation associated with the previous configuration, is less than 50 ppm (the acceptance value of unbiased deviation for this test) in all cases as also shown in Table 4.1.

4.2 RCC Bank Differential and Integral Worths

Measurements of the differential and integral worth of individual RCC control and shutdown banks were carried out via boron/RCC exchange, with the reactor in the critical state. The reactivity computer trace provided the change in reactivity during insertion/withdrawal of a RCC bank. The differential worth of a bank, $\Delta\rho/\Delta h$, is defined as the amount of change in reactivity per unit step of bank position, about an average bank position. The integral control bank worth was obtained by summing the differential worths for the bank positions during the insertion or withdrawal of the RCC bank.

In Table 4.2, the integral worth of individual control and shutdown RCC banks are presented. The cumulative worths are also given in Table 4.2. Along with the measured worths, design results are also given. In Figures 4.1 through 4.7, differential and integral worths of four RCC control banks and three RCC shutdown banks are also shown. Due to the shutdown margin consideration, the insertion of shutdown Bank A was carried out by an exchange with the highest worth "stuck" rod RCCA B-6. It therefore provided only partial differential and integral worth curves for shutdown Bank A, as shown in Figure 4.8.

Figures 4.9 and 4.10 show differential and integral worths of RCC control banks, in overlap, for P/L rods out of core and P/L rods at 82 steps, respectively.

Measured integral worths in all cases are within $\pm 10\%$ of design results. The latter constitutes the acceptance criteria for the integral worths of RCC banks.

4.3 Part-Length Bank Differential and Integral Worths

Measured differential and integral worth curves of part-length bank (P/L rods), with all RCC banks fully withdrawn except RCC Control Bank D at 193 steps, are shown in Figure 4.11. The absorber section of the part-length is about one-fourth of the full length.

The insertion of P/L bank beyond one quarter of its length resulted in covering a portion of the core by the absorber section of P/L bank and another portion by the non-absorber section. This action, coupled with the effect of the axial power distribution, results in positive and negative differential worths of P/L bank durings its insertion into the core, as shown in Figure 4.11.

4.4 Minimum Shutdown Boron

Minimum shutdown boron is the boron concentration which would provide 1% shutdown margin reactivity, with all control rods in except the highest worth "stuck" rod out. Measured critical boron concentration, with all control rods in except "stuck" rod B-6 out was equal to 587 ppm (see Table 4.1). Based upon the measured boron worth equal to -10.66 pcm/ppm derived from the slope of the end-point boron concentration versus reactivity curve shown in Figure 4.12), minimum shutdown boron concentration was equal to 681 ppm. The corresponding value from the design calculation, Reference 3, was equal to 634 ppm (critical boron concentration for all rods in, except B-6 out, equal to 534 ppm, plus 100 ppm of boron equivalent to 1% in reactivity based upon the boron worth equal to -10.03 pcm/ppm). The difference between the measured and predicted minimum shutdown boron concentrations was less than 50 ppm. This satisfied acceptance criterion for this test.

4.5 Isothermal Temperature Coefficient

Isothermal temperature coefficient measurements were carried out for several RCC bank configurations. Measurements involved heatup and cooldown of the reactor coolant. In Table 4.3, measured as well as design values of isothermal temperature coefficients for five RCC bank configurations are presented. Measured values are from the analysis of reactivity versus temperature curves from a X-Y plot recorder and the design results from Reference 3. Measured isothermal temperature coefficients were more negative compared to the design values and acceptable.

Measured temperature coefficients from the measured values of isothermal temperature coefficient were obtained by subtracting hot zero power Doppler coefficient equal to -1.71 pcm/°F. The latter is the design value from Reference 3. For the all rods out (ARO) case, the moderator temperature coefficient at BOL and HZP reactor condition was positive using the Table 4.3 results. Operating limits were therefore imposed to maintain the moderator temperature coefficient negative by 1 pcm/°F in order to satisfy the Technical Specification requirements, Reference 2. This required limiting RCC Control Bank D withdrawal to 50 steps and RCC Control Bank C to 180 steps at HZP and BOL condition. This limit was equivalent to a maximum boron concentration of 1200 ppm.

TABLE 4.1

End-Point Boron Concentrations

Configuration	Measured (ppm)	Design (ppm)	Biased Deviation (ppm)	Unbiased* Deviation (ppm)
All Rods Out	1340	1314	26	-
C/D In	1230	1200	30	4
C/D and C/C In	1146	1103	43	13
C/D, C/C and C/B In	1064	1022	42	-1
C/D, C/C, C/B and C/A In	965	896	69	27
S/D Plus CG In**	885	827	58	-11
S/D, S/C Plus CG In	782	700	82	24
S/D, S/C, S/B Plus CG In	648	573	75	-7
All Rods In, RCCA B-6 Out	587	534	53	-22

* Unbiased deviation is the deviation in a specific rod configuration corrected to exclude the deviation associated with the previous configuration: Acceptance value of deviation is ±50 ppm.

** CG = All Control Groups

TABLE 4.2 CONTROL ROD BANK INTEGRAL WORTH SUMMARY

BANK	CONFIGURATION	PREDICTED WORTH (pcm)	MEASURED* WORTH (pcm)	PREDICTED TOTAL WORTH ± 10%	MEASURED* TOTAL WORTH
D		1120 ± 112	1043	1120 ± 112	1043
C	D in	980 ± 98	1022	2100 ± 210	2065
B	C,D in	820 ± 82	764	2920 ± 292	2829
A	B,C,D in	1270 ± 127	1300	4190 ± 419	4129
SD	A,B,C,D in	690 ± 69	723	4880 ± 488	4852
SC	SD,A,B,C,D in	1270 ± 127	1138	6150 ± 615	5990
SB	SC,SD,A,B,C,D in	1280 ± 128	1205	7430 ± 743	7195
ARI-B6	SA,SB,SC,SD,A,B, C,D in B6 out	-	757	7820 ± 782	7952

% Error on total worth (7952-7820)/7820 x 100% = 1.69%

*Note: All measurements were done at HZP with zero burnup in the core.

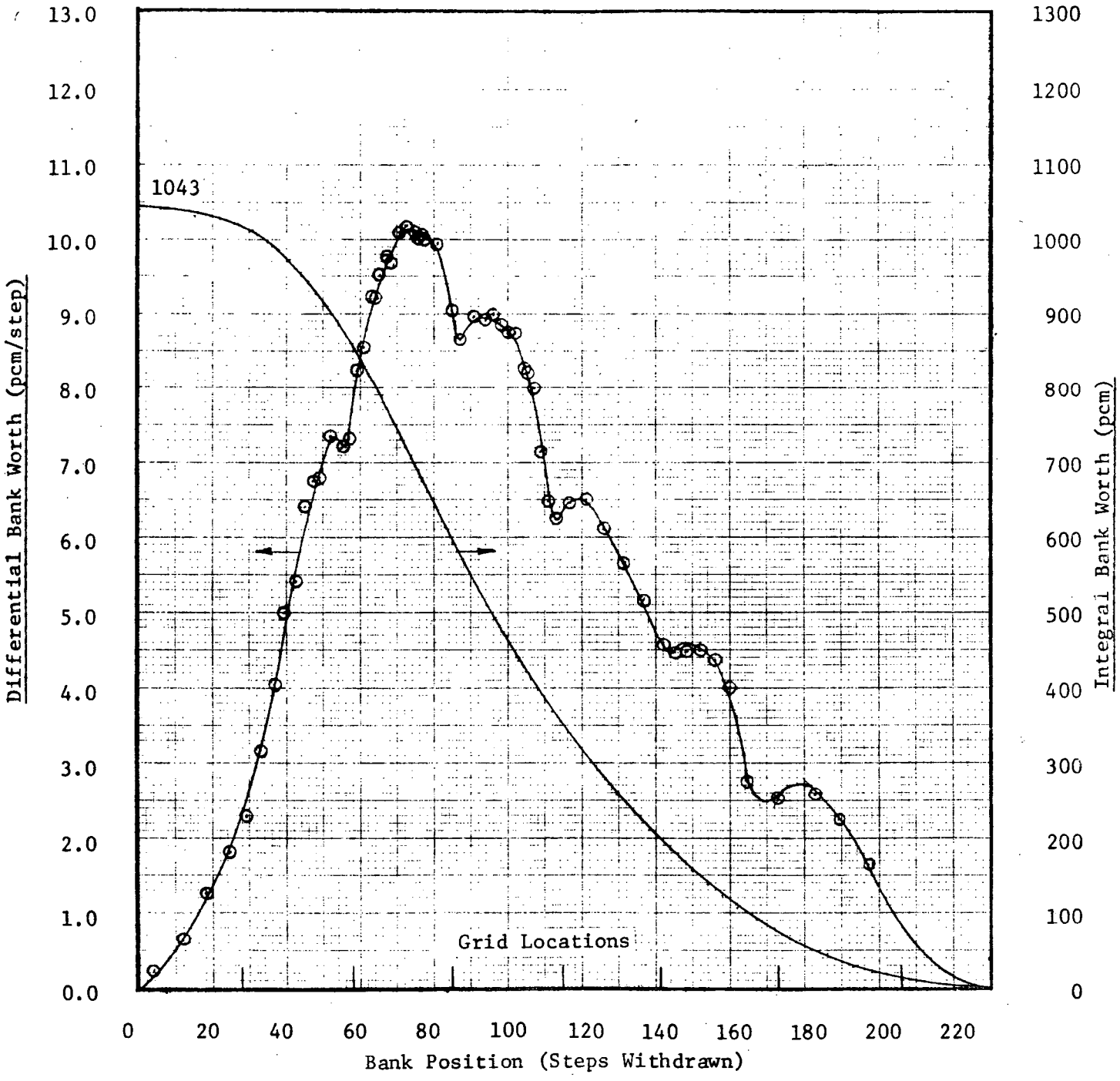
TABLE 4.3

ISOTHERMAL TEMPERATURE COEFFICIENT

Configuration	$\partial\rho/\partial T$ Measured pcm/°F	$\partial\rho/\partial T^*$ Predicted pcm/°F	Difference M-P pcm/°F
D @ 197	-1.14	-0.38	-0.76
D @ 0, C @ 208	-2.76	-1.63	-1.13
C, D @ 0	-4.35	-3.76	-0.59
B,C,D @ 0 A @ 188.5	-6.75	-6.68	-0.07
B,C,D @ 0 A @ 8.5	-9.48	-8.74	-0.74

*Prediction corrected for boron concentration difference between measured endpoint and predicted endpoint

Average Deviation = -0.66 pcm/°F



MEASUREMENT CONDITIONS

CA	228	Sh A	228
CB	228	Sh B	228
CC	228	Sh C	228
CD	moving	Sh D	228

P/L 228

RCC Unit - at -

RCS T_{avg} 547 °F

Core Power 0 MWt

Core Burnup 0 MWD/MTU

Date 5/28/73

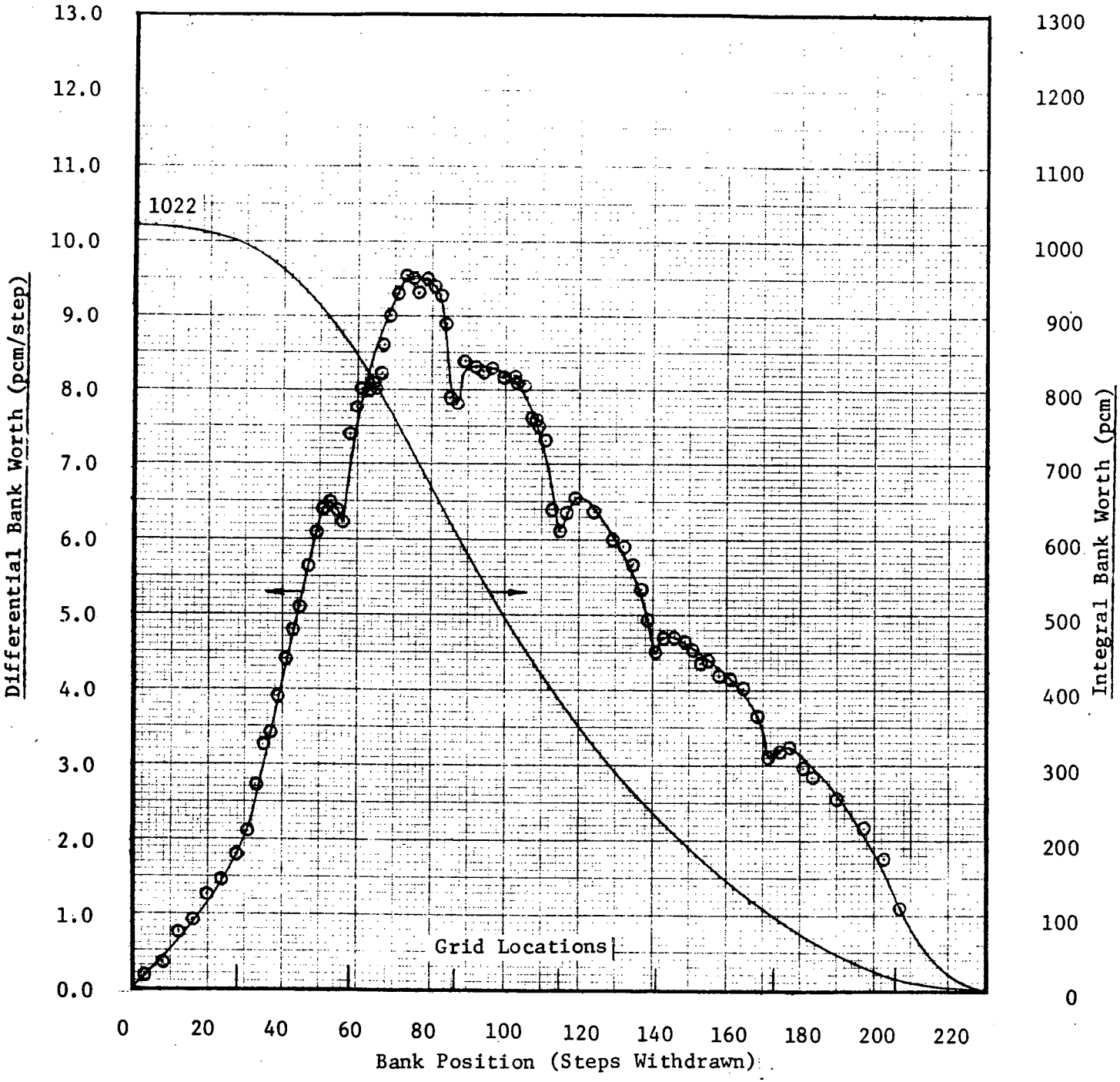
Differential and Integral Bank Worth

Control Bank D

Indian Point Nuclear Plant

Unit No. 2

Figure 4.1



MEASUREMENT CONDITIONS

CA 228 Sh A 228

CB 228 Sh B 228

CC moving Sh C 228

CD 0 Sh D 228

P/L 228

RCC Unit - at -

RCS T_{avg} 547 °F

Core Power 0 MWt

Core Burnup 0 MWD/MTU

Date 5/29/73

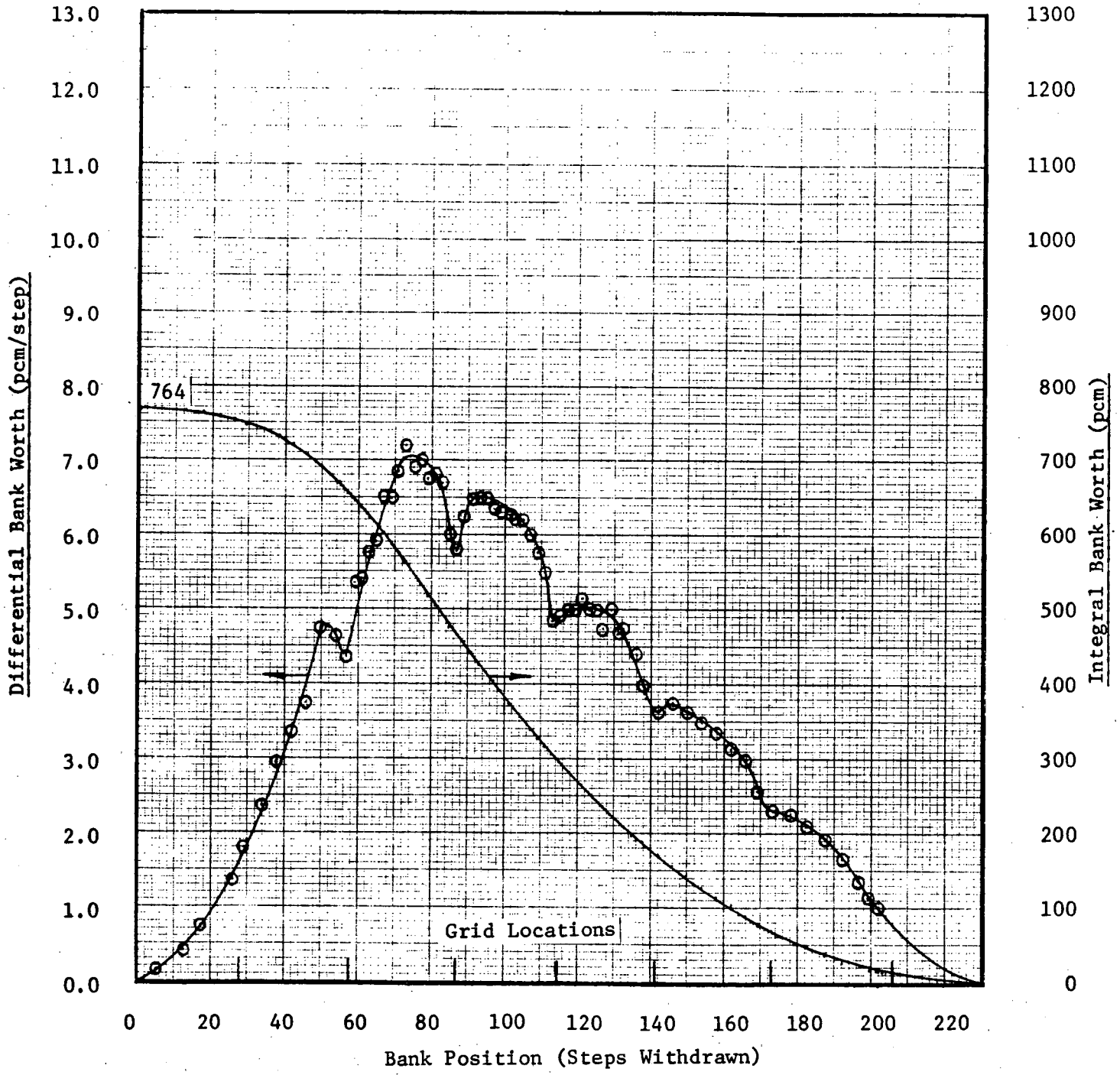
Differential and Integral Bank Worth

Control Bank C

Indian Point Nuclear Plant

Unit No. 2

Figure 4.2



MEASUREMENT CONDITIONS

CA 228 Sh A 228

CB moving Sh B 228

CC 0 Sh C 228

CD 0 Sh D 228

P/L 228

RCC Unit - at -

RCS T_{avg} 547 °F

Core Power 0 MWt

Core Burnup 0 MWD/MTU

Date 5/29/73

Differential and Integral

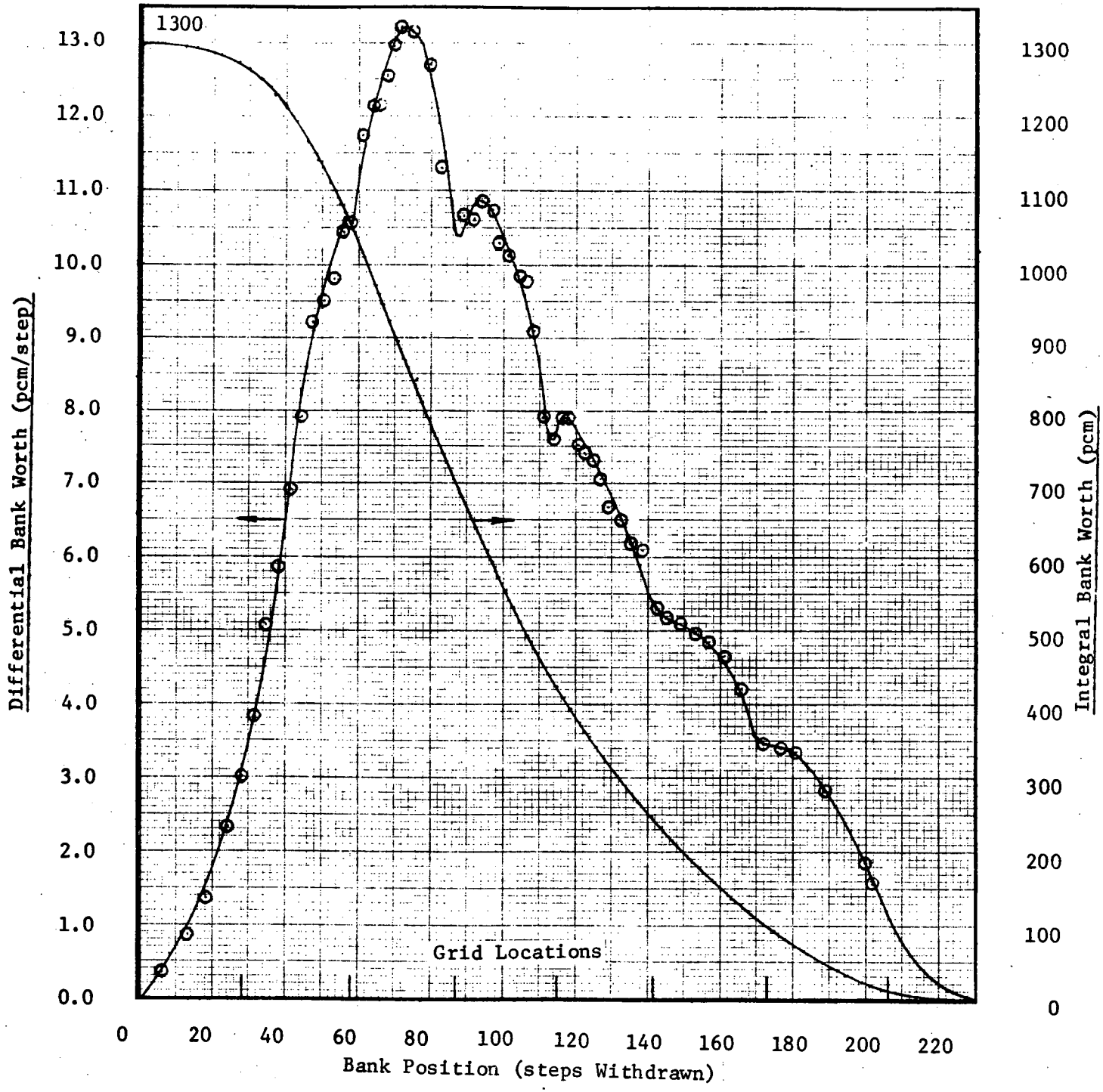
Bank Worth

Control Bank B

Indian Point Nuclear Plant

Unit No. 2

Figure 4.3



MEASUREMENT CONDITIONS

CA	moving	Sh A	228
CB	0	Sh B	228
CC	0	Sh C	228
CD	0	Sh D	228

P/L 228

RCC Unit - at -

RCS T_{avg} 547 °F

Core Power 0 MWt

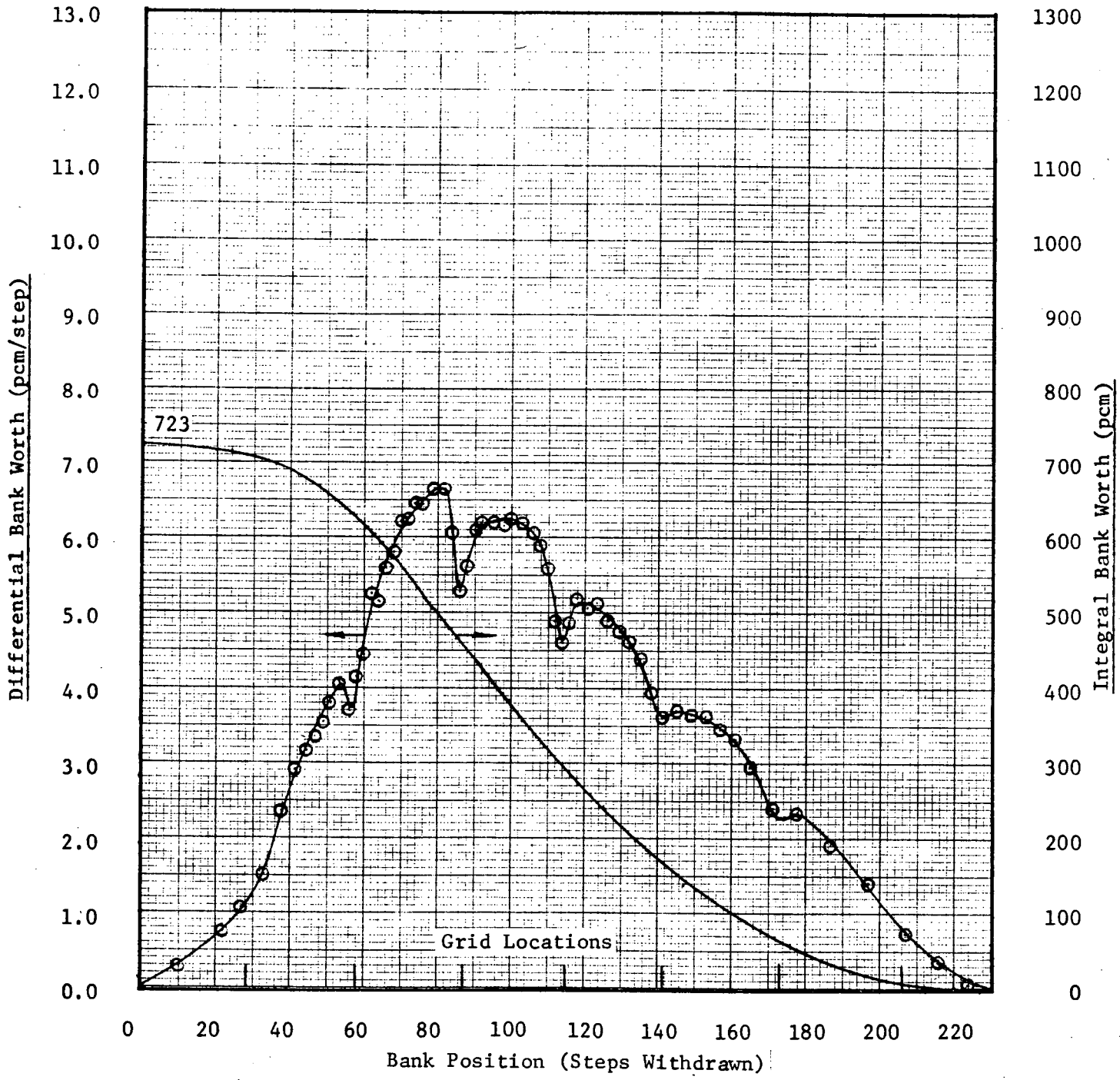
Core Burnup 0 MWD/MTU

Date 5/29/73

Differential and Integral Bank Worth
Control Bank A

Indian Point Nuclear Plant
Unit No. 2

Figure 4.4



MEASUREMENT CONDITIONS

CA	0	Sh A	228
CB	0	Sh B	228
CC	0	Sh C	228
CD	0	Sh D	moving

P/L 228

RCC Unit - at -

RCS T_{avg} 547 °F

Core Power 0 MWt

Core Burnup 0 MWD/MTU

Date 5/30/73

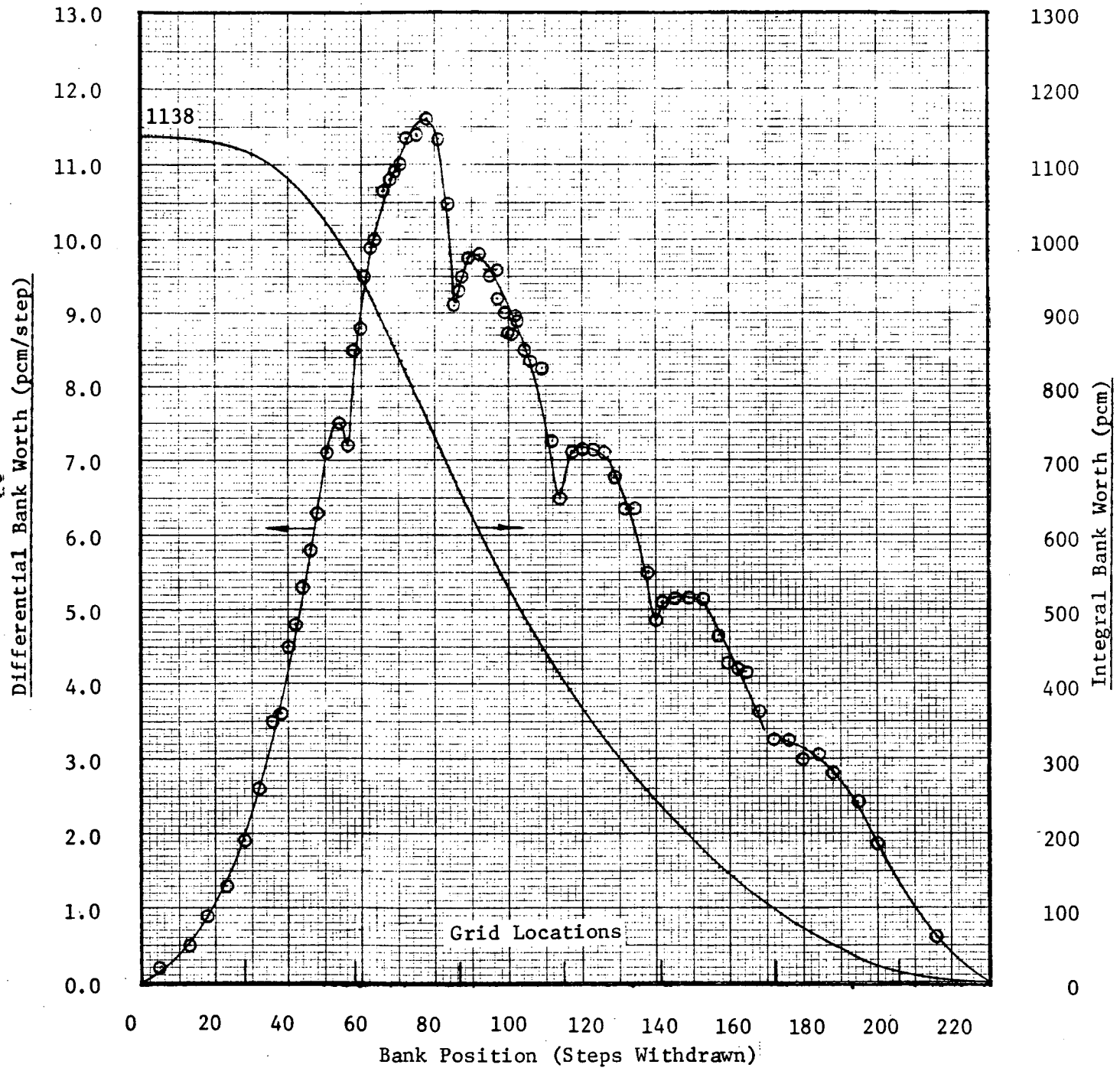
Differential and Integral Bank Worth

Shutdown Bank D

Indian Point Nuclear Plant

Unit No. 2

Figure 4.5



MEASUREMENT CONDITIONS

CA	0	Sh A	228
CB	0	Sh B	228
CC	0	Sh C	moving
CD	0	Sh D	0

P/L 228

RCC Unit - at -

RCS T_{avg} 547 °F

Core Power 0 MWt

Core Burnup 0 MWD/MTU

Date 5/30/73

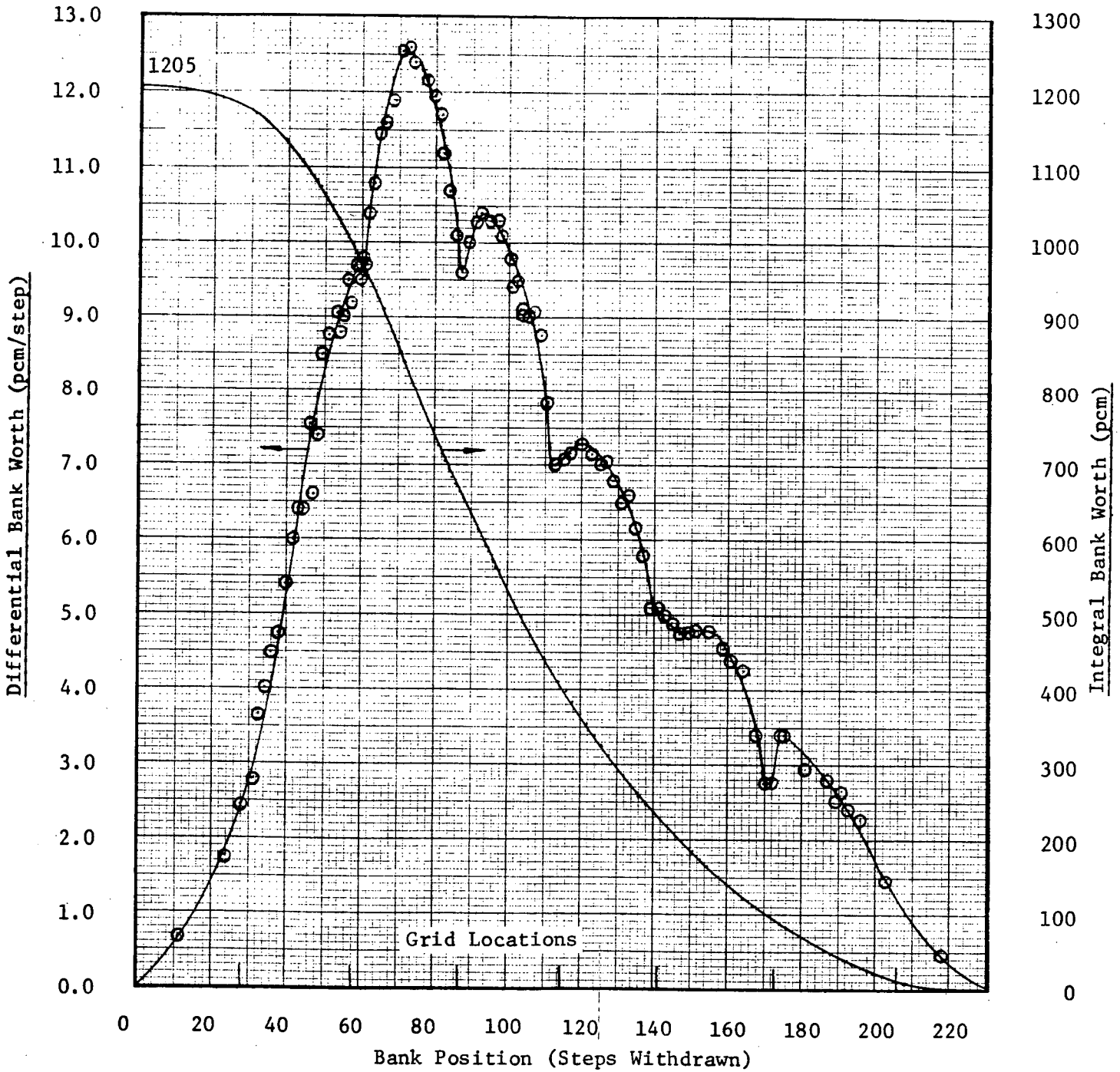
Differential and Integral Bank Worth

Shutdown Bank C

Indian Point Nuclear Plant

Unit No. 2

Figure 4.6



MEASUREMENT CONDITIONS

CA	0	Sh A	228
CB	0	Sh B	moving
CC	0	Sh C	0
CD	0	Sh D	0

P/L 228

RCC Unit - at -

RCS T_{avg} 547 °F

Core Power 0 MWt

Core Burnup 0 MWD/MTU

Date 5/30/73

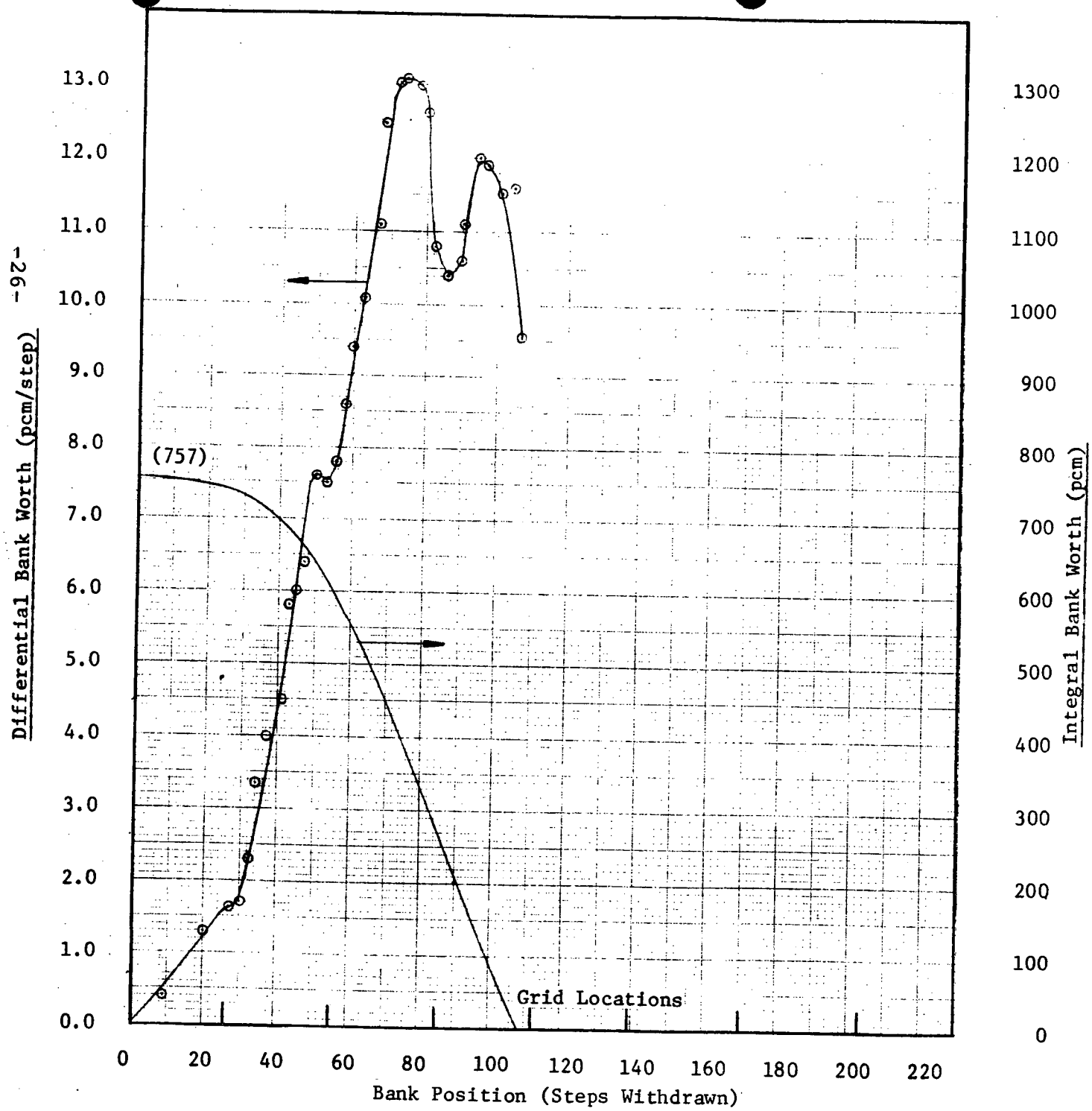
Differential and Integral Bank Worth

Shutdown Bank B

Indian Point Nuclear Plant

Unit No. 2

Figure 4.7



MEASUREMENT CONDITIONS

CA	0	Sh A	moving
CB	0	Sh B	0
CC	0	Sh C	0
CD	0	Sh D	0

P/L 228

RCC Unit B-6 at 228

RCS T_{avg} 547 °F

Core Power 0 MWt

Core Burnup 0 MWD/MTU

Date 5/30/73

Differential and Integral Bank Worth

Shutdown Bank A

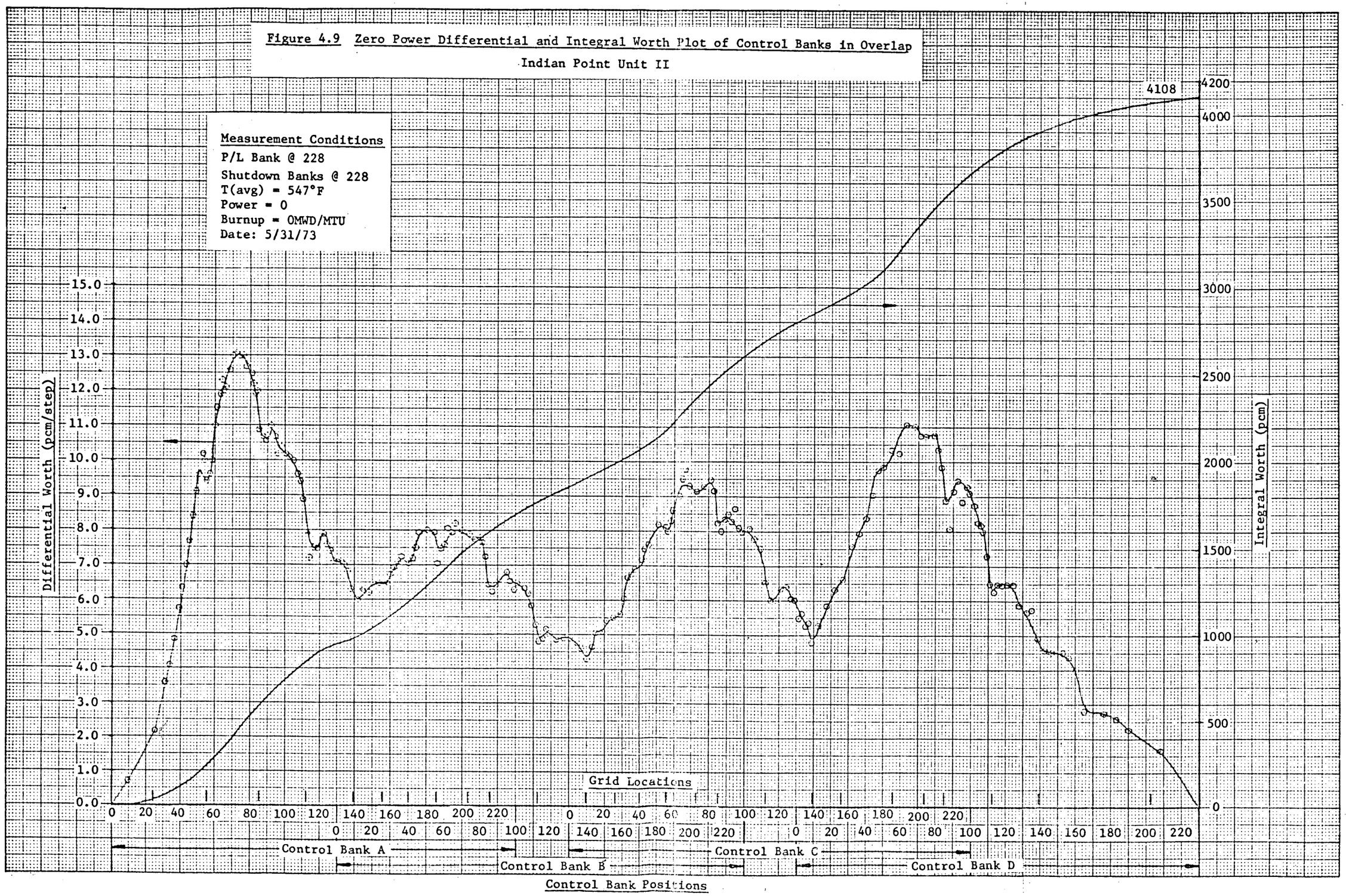
Indian Point Nuclear Plant

Unit No. 2

Figure 4.8

Figure 4.9 Zero Power Differential and Integral Worth Plot of Control Banks in Overlap

Indian Point Unit II



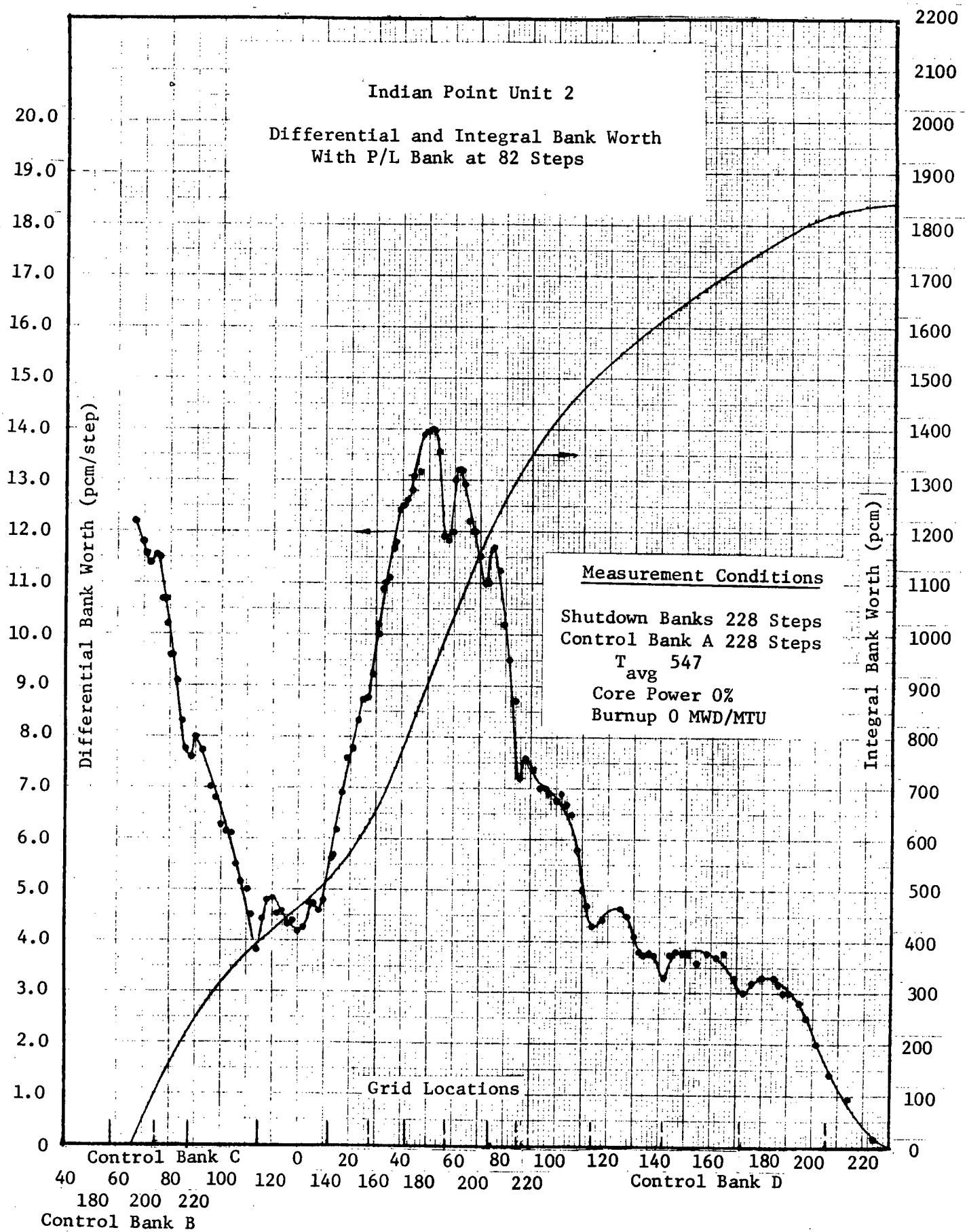

Indian Point Unit 2
Differential and Integral Bank Worth
With P/L Bank at 82 Steps
Measurement Conditions
Shutdown Banks 228 Steps
Control Bank A 228 Steps
T_{avg} 547
Core Power 0%
Burnup 0 MWD/MTU
Differential Bank Worth (pcm/step)
Integral Bank Worth (pcm)
Grid Locations
Control Bank C
Control Bank B
Control Bank D
Bank Position (Steps Withdrawn)

Figure 4.10

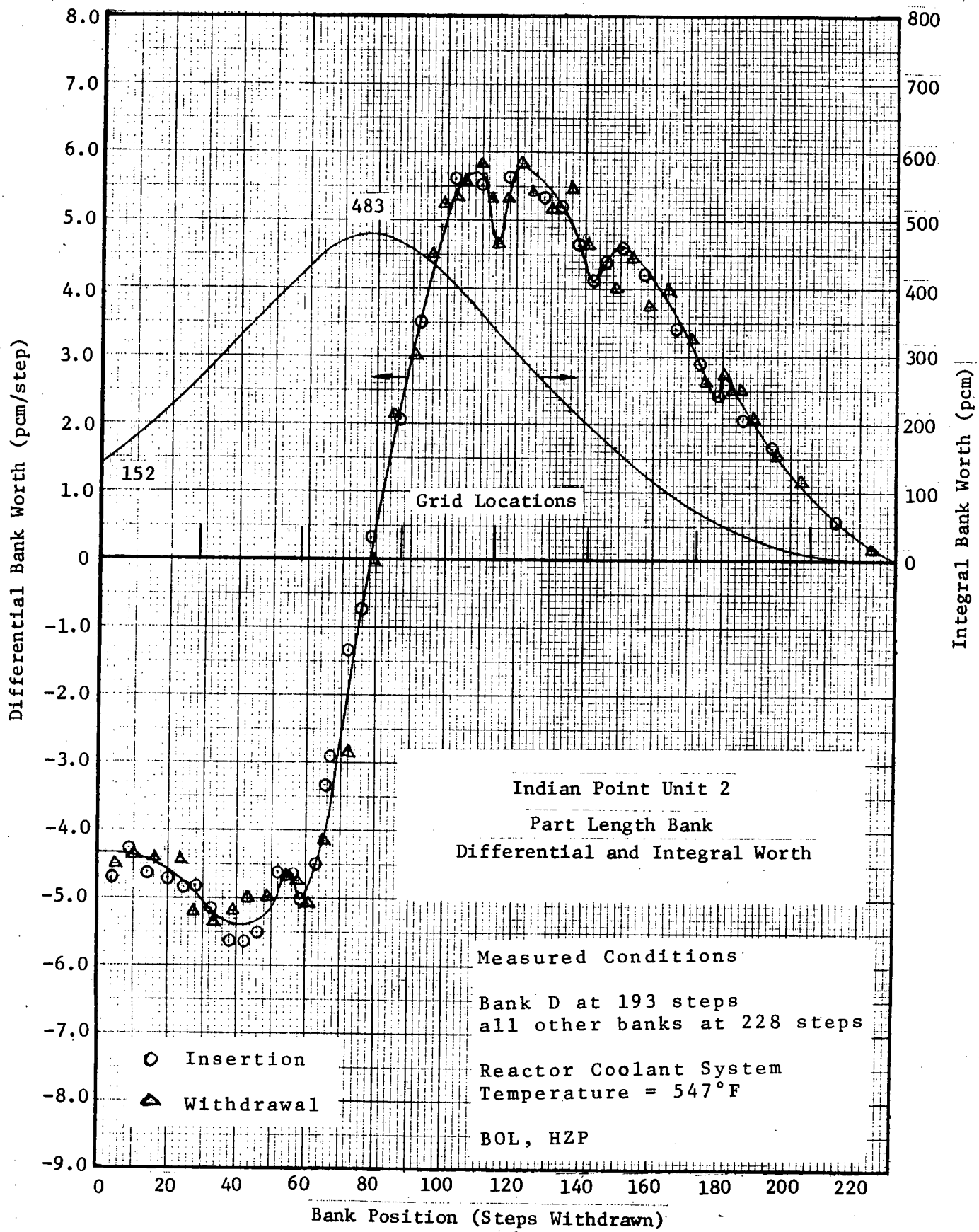

Differential Bank Worth (pcm/step)
Integral Bank Worth (pcm)
Bank Position (Steps Withdrawn)
483
152
Grid Locations
Indian Point Unit 2
Part Length Bank
Differential and Integral Worth
Measured Conditions
Bank D at 193 steps
all other banks at 228 steps
Reactor Coolant System
Temperature = 547°F
BOL, HZP
Insertion
Withdrawal

Figure 4.11

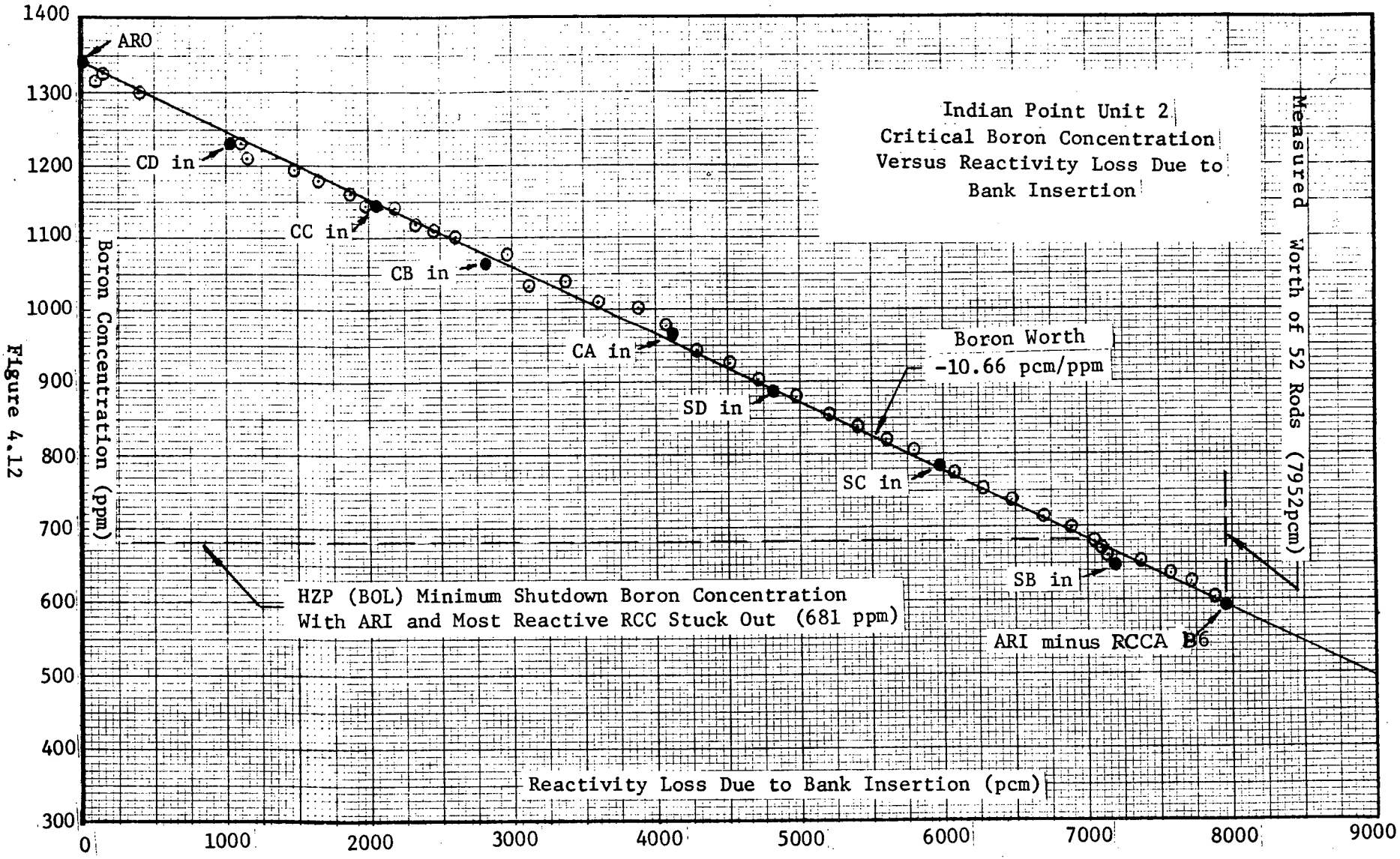

Indian Point Unit 2
Critical Boron Concentration
Versus Reactivity Loss Due to
Bank Insertion
Measured Worth of 52 Rods (7952pcm)
Boron Concentration (ppm)
Reactivity Loss Due to Bank Insertion (pcm)
ARO
CD in
CC in
CB in
CA in
SD in
SC in
SB in
ARI minus RCCA B6
Boron Worth
-10.66 pcm/ppm
HZP (BOL) Minimum Shutdown Boron Concentration
With ARI and Most Reactive RCC Stuck Out (681 ppm)
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
0
1000
2000
3000
4000
5000
6000
7000
8000
9000

Figure 4.12

5. Power Ascension Tests

Upon the completion of HZP physics tests, power ascension tests were initiated. These were as follows: (a) measurement of relative assembly power distributions from low power (~ 5%) through full power; (b) pseudo-rod ejection tests at low reactor power (~ 5%) and at 50% power; (c) static rod drop tests; (d) measurement of power coefficient versus reactor power; and (e) P/L group operational maneuvering. In addition to these tests, the power range nuclear instrumentation was calibrated. These are described in Section 6.

As required by the Atomic Energy Commission, a special report on the X-Y core xenon stability test, Reference 5, has already been submitted by Con Edison to the Commission (letter from Mr. Carl L. Newman, Vice President, Con Edison, to Mr. Edson G. Case, Acting Director, Directorate of Licensing, USAEC dated October 17, 1974).

5.1 Core Power Distributions

Measurements of the core power distributions were carried out with the moveable in-core detectors. The INCORE code, Reference 4, was employed to analyze the in-core flux maps to provide the relative assembly power and hot channel factors. The analysis required: (i) calculated ratios between the power and the fission reaction rate at the locations of the moveable in-core detectors, and

(ii) calculated (X-Y) power distributions for a number of RCC bank configurations. The latter were employed to obtain the power distribution of the partially rodded core by the synthesis method.

Results from the analyses of 39 in-core flux maps taken during the startup tests are presented in Table 5.1. Relative assembly power distributions derived from the analyses of in-core flux maps are presented in Appendix C. Out of 39 in-core flux maps, six maps were taken at low reactor power (~5%), 29 maps were taken at 50% during static rod drop tests and the rest above 75% power.

The variations of hot channel factor, F_q^N versus reactor power and also as a function of RCC Control Bank D position are shown in Figures 5.1 and 5.2, respectively. The plot of F_q versus in-core axial offset, along with the design flyspec curve is shown in Figure 5.3. In all cases, measured values of F_q^N were less than the design limit of 2.62, which also constituted the Technical Specification limits at the time of tests.

The percentage difference between measured and expected $F_{\Delta H}^N$ from low reactor power (~5%) measurements was less than 10%, which verified the nuclear design, as seen from the in-core Flux Maps given in Appendix C.

5.2 Pseudo-Rod Ejection Tests

Pseudo-rod ejection tests at low reactor power (~ 5%) and 50% power were carried out, with F-2 rod as the ejected RCCA. In-core flux maps for the base case as well as rod-ejection case were taken. Measured and predicted radial power distributions following RCCA F-2 ejection are presented in Figures 5.4 and 5.5 for low reactor power (~ 5%) and 50% power cases, respectively. The percentage difference between measured and predicted relative assembly peak power distributions was less than 10%, the acceptance criterion for the power distribution measurements.

In Table 5.2, results of ejected rod worth and hot channel factors from the measurements, along with the design values employed in the ejected rod safety analyses Reference 6, are listed. The design values of these parameters were higher than the corresponding measured values, thus demonstrating the conservatism of the safety analyses.

5.3 Static Rod Drop Tests

Static rod drop tests were carried out at 50% power by stepping a single RCCA into the core. In-core flux maps with the moveable in-core detectors were taken at the end of each RCCA insertion. Results from the analyses of the in-core flux maps for nine RCCA drop cases are presented in Table 5.1 and

Appendix C. The measured hot channel factors for all cases were lower than the Technical Specification limits at the time of measurements. Because in most cases, RCCA drops were performed one after another, each rod drop perturbed the core power distribution prior to the next RCCA drop. This resulted in some radial tilt in the base case as seen from the maps given in Appendix C.

The reactivity worth of individual RCCA during the drop test was measured using the reactivity computer trace. Results of these measurements are summarized in Table 5.3. In transient analyses of RCCA drop incidents reported in FSAR Reference 1, the maximum worth of dropped RCCA was 230 pcm higher than the measured worths of individual RCCAs dropped in the static rod drop tests.

Results from the in-core flux maps (8 through 28) given in Table 5.1 provided the percentage variation of hot channel factors $F_{\Delta H}$ and F_q, as a function of the percent variation of ex-core tilts. These plots are shown in Figures 5.6 and 5.7, respectively. $F_{\Delta H}$ and F_q are defined in Table 5.2. The percentage increase in hot channel factor per percent increase in ex-core tilt in all rod drop cases are bounded by a protection envelope of 2% increase in hot channel factor per percent increase in ex-core tilt (or a slope of 2:1).

5.4 Power Coefficient

The "differential" power coefficient, $(\Delta\rho/\Delta Q)_Q$ at a specific power level Q is defined as the change in reactivity, (ρ), per percent change in reactor power Q at that power level.

The measurement of power coefficient involved:

(a) Determination of reactivity compensation carried out during the increase and the decrease of reactor power at the control bank movement. This was obtained from the output of reactivity computer.

(b) Determination of reactor power level changes from the recording of secondary plant calorimetric data - steam pressure, feedwater temperatures, and feedwater flow rates. Steam pressure was obtained directly from the control panel data. Feedwater temperatures were obtained from the PRODAC computer output of duel element RTDs positioned at the exit of feedwater heaters, and the feedwater flow from Barton meters installed across the feedwater line venturis.

(c) Monitoring of ex-core detector currents

In addition to the above data, the analysis of power coefficient measurements required xenon reactivity defect during the measurements.

This was calculated using the reactor power history 48 hours prior to the start of the tests, and during the power coefficient measurements.

In Figure 5.8, total ex-core detector current versus reactor power is plotted. Least square fit betweeen total detector Current I and reactor power Q is as follows:

$$I = 30.46\ Q \qquad (5.1)$$

Differential and integral power defects were obtained from the following equations.

Differential Power Coefficient

$$(\Delta\rho/\Delta Q) = -1/\Delta Q \left[(\Delta\rho)_{CR} + (\Delta\rho)_{xe}\right] \qquad (5.2)$$

Integral Power Defect

$$\rho_{P.D} = \int_{P_o}^{P_F} \frac{\Delta\rho}{\Delta Q}\, dQ \qquad (5.3)$$

where

$(\Delta\rho)_{CR}$ = Reactivity Compensation due to Control Rod

$(\Delta\rho)_{xe}$ = Reactivity Defect due to Xenon Change

ΔQ = Change in Reactor Power

A plot of the measured power coefficient versus reactor power is shown in Figure 5.9. For comparison, the design curve from Reference 3 is also presented. An error band of $\pm 20\%$ on the measured power coefficient is allowed for the uncertainties in the measurements of reactor power and reactivity change. Agreement

between measured and design curves of differential power coefficient is satisfactory.

5.5 Shutdown Margin

Shutdown margin is the amount of reactivity by which the reactor would be subcritical with all control rods in except the highest worth "stuck" rod out. The design value of shutdown margin is equal to 1% reactivity at BOL, Reference 3. Based upon the information provided in Table 5.4, the shutdown margin from the rod worth measurements would be equal to 5309 pcm. This demonstrates the availability of adequate shutdown margin compared to the design value of 1000 pcm at BOL.

5.6 P/L Group Operational Maneuvering

At the core burnup of 5,000 MWD/MTU and power level of 80%, axial xenon transient test was carried out. With no P/L rods inserted, the uncontrolled axial xenon oscillation had a period of approximately 31 hours and a stability index of approximately $-0.039\ hr^{-1}$. With P/L rods at the midplane, the oscillation of uncontrolled xenon transient had a period of approximately 29 hours and a stability index of approximately $-0.004\ hr^{-1}$. During these tests, it was demonstrated that the core is stable with respect to axial xenon transients and that

these transients can be further suppressed using P/L rods or even RCC Control Bank D.

Figure 5.10 shows the uncontrolled xenon transient with the P/L rods at the core midplane and the suppression of the oscillations by the maneuvering of the P/L bank.

5.7 Power Redistribution Follow

In-core flux maps taken during the X-Y xenon transient test, Reference 5, verified that ex-core nuclear instrumentation adequately monitors changes in core power distribution under transient xenon conditions.

Table 5.1 Indian Point Unit 2 Summary of Incore Flux Maps

Date	Time	Map #	%Power	Control Bank Position (Steps) A	B	C	D	P/L	RCC	Avg. Core F_Z	A.O.	Incore Hot Channel Factors F_Q^N	F_Q^T /1	$F_Q^N S(Z)$	LOC F_Q	$F_{\Delta H}^N$	$F_{\Delta H}^T$ /2	LOC $F_{\Delta H}$	F_{xy} /3
6/3/73	5:15	1	~5	230	214	84	0	69	–	1.89	-32.8	3.14	3.23	3.25	M12JL	1.64	1.66	D4FD	1.67
6/3/73	18:55	2	~5	230	199	69	0	69	F2 @230	1.57	-17.2	5.46	5.62	5.87	G2AA	4.05	4.09	G2AO	4.29
6/4/73	6:21	3	~5	230	230	230	202	82	–	1.41	- 1.2	2.17	2.24	2.43	G1400	1.58	1.59	G140A	1.54
6/5/73	10:39	4	~5	230	230	230	208	228	–	1.53	- 4.1	2.22	2.29	2.42	B90A	1.45	1.47	M4FL	1.46
6/6/73	12:55	5	~5	230	230	205	0	228	–	1.53	- 4.7	2.57	2.65	2.80	D4FD	1.68	1.70	D4FD	1.69
6/7/73	19:55	6	~5	230	210	0	0	228	–	1.52	- 4.5	2.56	2.64	2.80	D4ED	1.69	1.70	D4ED	1.69
8/8/73	21:30	7	~50	230	230	230	164	228	–	1.47	-13.4	2.09	2.15	2.26	B7AA	1.43	1.45	M12LJ	1.42
8/9/73	14:05	8	~50	230	230	230	198	228	–	1.37	- 0.5	1.96	2.02	2.16	B7AA	1.43	1.45	B7AA	1.43
8/10/73	4:02	9	~50	230	230	230	196	228	D12 @ 0	1.39	- 8.4	2.31	2.38	2.50	J2AO	1.66	1.68	J2AO	1.66
8/19/73	12:37	10	48.4	230	230	230	190	228	–	1.40	- 6.6	1.99	2.05	2.16	B7AA	1.42	1.43	D4DF	1.42
8/19/73	19:33	11	~50	230	230	230	189	228	H4 @ 0	1.41	- 8.4	2.25	2.31	2.43	M12JL	1.60	1.61	M12JL	1.59
8/20/73	9:22	12	~50	230	230	230	183½	228	–	1.43	-10.0	2.18	2.25	2.35	G2AA	1.52	1.53	G2AA	1.53
8/20/73	17:17	13	~50	230	230	230	188½	228	K8 @ 0	1.40	- 6.8	2.26	2.32	2.44	B7AA	1.60	1.61	B7AA	1.61
8/20/73	20:21	14	~50	230	230	230	192	228	–	1.38	- 3.2	1.99	2.05	2.17	B7AA	1.45	1.46	D4DF	1.44
8/21/73	2:23	15	~50	230	230	230	191	228	H8 @ 0	1.39	- 5.3	2.09	2.15	2.26	M12LJ	1.51	1.52	M12LJ	1.51
8/21/73	9:13	16	~50	230	230	230	192	228	–	1.40	- 6.2	2.00	2.06	2.17	M12LJ	1.43	1.45	M12LJ	1.43
8/21/73	15:02	17	~50	230	230	230	190	228	H14 @ 0	1.41	- 8.0	2.28	2.35	2.41	G2AA	1.61	1.62	J2AO	1.62
8/21/73	19:46	18	~50	230	230	230	193	228	–	1.39	- 6.1	2.04	2.10	2.20	B7AA	1.46	1.48	D4DF	1.46
8/22/73	00:31	19	~50	230	230	230	189	228	F6 @ 0	1.41	- 8.7	2.32	2.39	2.50	J1400	1.63	1.64	J1400	1.64
8/22/73	12:20	20	~50	230	230	230	190½	228	–	1.40	- 6.8	2.10	2.16	2.27	B7AA	1.49	1.51	D4DF	1.50
8/22/73	19:22	21	~50	230	230	230	190	228	E9 @ 0	1.40	- 7.8	2.27	2.34	2.46	J2AO	1.61	1.63	J2AO	1.62
8/23/73	8:53	22	~50	230	230	230	186	228	–	1.42	- 9.8	2.12	2.18	2.29	B7AA	1.48	1.49	B7AA	1.49
8/23/73	18:22	23	~50	230	230	230	190½	228	–	1.40	- 6.6	2.00	2.06	2.16	B7AA	1.42	1.43	B7AA	1.43
8/23/73	23:00	24	~50	230	230	230	192	228	N9 @ 0	1.39	- 5.9	2.29	2.35	2.49	D4DF	1.68	1.70	D4DF	1.64
8/24/73	8:43	25	~50	230	230	230	191	228	–	1.41	- 7.5	2.05	2.11	2.22	P900	1.45	1.46	P900	1.46
8/24/73	15:41	26	~50	240	230	230	184	228	B10 @0	1.43	-11.6	2.34	2.41	2.52	P900	1.62	1.64	P900	1.63
8/28/73	9:54	27	~50	230	230	230	162	69	–	1.35	- 7.7	2.02	2.08	2.16	P7AO	1.46	1.48	D4LJ	1.63
8/28/73	13:54	28	~50	230	230	230	163½	69	F2 @ 230	1.35	- 5.3	2.08	2.15	2.33	E2AA	1.56	1.57	G2AA	1.59
8/30/74	03:00	29	50.4	230	230	230	198	228	–	1.59	+17.7	2.37	2.44	2.64	P900	1.46	1.47	P900	1.49
8/30/74	10:00	30	50.1	230	230	230	185	5	–	1.62	+20.1	2.33	2.40	2.60	P1100	1.45	1.46	P900	1.45
8/30/74	14:00	31	49.0	230	230	230	195	40	–	1.68	24.0	2.41	2.48	2.68	M4FL	1.45	1.47	P900	1.43
8/30/74	17:30	32/4	50.1	230	230	230	193	80	–	1.41	-10.6	2.37	2.44	2.61	C13KD	1.46	1.47	P7AO	2.05
8/31/74	11:00	33	48.8	230	230	230	202	120	–	1.65	-23.6	2.43	2.50	2.59	J1400	1.49	1.50	J1400	1.47
8/31/74	21:00	34	49.3	230	230	230	187	175	–	1.64	+ 2.33	2.39	2.46	2.63	P900	1.45	1.47	D4FD	1.45
4/1/74	01:30	35	49.6	230	230	230	165	228	–	1.54	+0.15	2.15	2.21	2.36	G2AA	1.43	1.44	D4DF	1.39

Date	Time	Incore Quadrant Tilt NW N44	NE N41	SW N42	SE N43	Incore Axial Offset NW N44	NE N41	SW N42	SE N43	Excore Axial Offset NW N44	NE N41	SW N42	SE N43
6/3/73	5:15	1.002	0.998	0.991	1.009	-33.0	-33.1	-32.1	-33.0	–	–	–	–
6/3/73	18:55	0.539	1.084	0.643	1.733	-21.7	-14.6	-19.6	-12.8	–	–	–	–
6/4/73	6:21	1.042	0.977	1.028	0.954	-0.9	-1.7	-0.9	-1.2	–	–	–	–
6/5/73	10:39	1.009	0.991	1.008	0.993	-4.2	-4.5	-3.6	-4.0	–	–	–	–
6/6/73	12:55	1.001	1.003	0.992	1.004	-4.6	-5.2	-4.1	-4.8	–	–	–	–
6/7/73	19:55	1.005	0.993	0.997	1.005	-4.7	-5.0	-4.1	-4.0	–	–	–	–
8/8/73	21:30	0.990	1.001	0.999	1.010	-13.1	-13.6	-13.4	-13.6	-9.13	-9.81	-8.05	-10.49
8/9/73	14:05	0.988	1.000	1.001	1.011	-0.3	-0.3	-0.2	-1.2	0.00	-0.81	+0.24	-1.68
8/10/73	4:02	1.043	1.164	0.740	1.053	-8.5	-9.0	-7.6	-8.6	-6.04	-6.99	-4.23	-7.29
8/19/73	12:37	0.988	1.003	1.000	1.009	-6.7	-7.1	-6.5	-6.3	-4.59	-5.46	-4.06	-6.05
8/19/73	19:33	1.110	0.875	1.130	0.885	-8.4	-8.2	-8.7	-8.3	-5.93	-6.34	-5.31	-7.45
8/20/73	9:22	0.949	1.043	0.957	1.052	-9.6	-10.3	-9.9	-10.3	-7.00	-7.49	-5.97	-8.31
8/20/73	17:17	0.903	0.929	1.075	1.093	-6.2	-7.1	-6.8	-7.1	-4.64	-5.48	-3.96	-5.96
8/20/73	20:21	0.981	0.981	1.021	1.017	-3.0	-2.9	-3.9	-2.9	-2.37	-2.59	-1.90	-3.72
8/21/73	2:23	1.029	1.008	0.996	0.967	-5.6	-5.1	-5.4	-5.0	-4.26	-4.23	-3.51	-4.98
8/21/73	9:13	1.011	1.016	0.984	0.990	-6.2	-6.0	-6.2	-6.3	-4.52	-5.15	-3.68	-5.79
8/21/73	15:02	0.870	1.119	0.885	1.126	-7.1	-8.9	-7.3	-8.7	-4.84	-6.57	-4.18	-7.33
8/21/73	19:46	0.963	1.010	0.992	1.035	-5.8	-6.1	-6.1	-6.3	-4.14	-5.03	-3.46	-6.05
8/22/73	00:31	1.126	0.985	1.078	0.812	-8.7	-8.5	-8.7	-8.9	-6.11	-6.66	-535	-7.51
8/22/73	12:20	0.949	0.998	0.998	1.055	-6.5	-6.8	-6.5	-7.5	-4.49	-5.35	-3.76	-5.99
8/22/73	19:22	1.037	1.140	0.820	1.003	-7.6	-7.9	-7.4	-8.3	-5.11	-6.42	-4.22	-6.66
8/23/73	8:53	0.979	0.958	1.050	1.013	-9.8	-9.3	-10.1	-9.9	-6.94	-7.25	-6.28	-7.99
8/23/73	18:22	0.988	1.003	1.001	1.008	-6.6	-6.5	-6.4	-6.8	-4.57	-5.43	-3.56	-6.05
8/23/73	23:00	0.811	0.955	1.091	1.144	-5.4	-6.1	-6.1	-6.1	-2.27	-4.42	-2.13	-5.18
8/24/73	8:43	1.034	1.032	0.968	0.966	-7.2	-7.3	-7.2	-8.5	-5.86	-6.09	-4.33	-6.40
8/24/73	15:41	1.104	1.133	0.819	0.943	-12.5	-12.1	-10.3	-11.4	-8.69	-9.44	-5.61	-9.47
8/28/73	9:54	1.003	1.006	0.995	0.996	-7.5	-7.9	-7.5	-8.0	-6.64	-7.37	-5.26	-7.41
8/28/73	13:54	0.974	1.008	0.971	1.046	-7.8	-5.8	-6.9	-0.6	-6.13	-3.24	-4.85	-1.32
8/30/74	03:00	1.003	1.002	0.994	1.000	+17.7	+17.6	+18.2	+17.2	+5.70	+8.69	+10.23	+8.35
8/30/74	10:00	1.007	1.009	0.993	0.991	+20.0	+19.8	+19.6	+20.8	+5.59	+8.58	+10.02	+8.45
8/30/74	14:00	1.008	1.006	0.992	0.993	+24.2	+24.6	+23.6	+23.6	+7.49	+10.51	+11.88	+10.05
8/30/74	17:30	1.019	0.989	0.983	1.010	-10.3	-11.6	-10.8	-9.6	-14.02	-12.14	-10.79	-13.31
8/31/74	11:00	1.017	1.005	0.996	0.982	-24.0	-23.8	-23.1	-23.4	-16.67	-15.60	-11.56	-16.42
8/31/74	21:00	1.008	1.003	0.992	0.998	+1.9	+2.6	+2.3	+2.6	-2.83	-1.38	+0.52	-1.77
4/1/74	01:30	1.012	1.005	0.988	0.996	+0.2	+0.4	+0.1	-0.4	-4.75	-3.04	-1.32	-3.49

Unnormalized Excore Detector Currents (μa)

Date	Time	N-41 Top	Bot.	Sum	N-42 Top	Bot.	Sum	N-43 Top	Bot.	Sum	N-44 Top	Bot.	Sum
6/3/73	5:15	–	–	–	–	–	–	–	–	–	–	–	–
6/3/73	18:55	–	–	–	–	–	–	–	–	–	–	–	–
6/4/73	6:21	–	–	–	–	–	–	–	–	–	–	–	–
6/5/73	10:39	–	–	–	–	–	–	–	–	–	–	–	–
6/6/73	12:55	–	–	–	–	–	–	–	–	–	–	–	–
6/7/73	19:55	–	–	–	–	–	–	–	–	–	–	–	–
8/8/73	21:30	170	207	377	200	235	435	192	237	429	204	245	449
8/9/73	14:05	183	186	369	212	211	423	205	212	417	220	220	440
8/10/73	4:02	193	222	415	102	111	213	197	228	425	210	237	447
8/19/73	12:37	173	193	366	201	218	419	194	219	413	208	228	436
8/19/73	19:33	155	176	331	232	258	490	174	202	376	238	268	506
8/20/73	9:22	173	201	374	181	204	385	193	228	421	186	214	400
8/20/73	17:17	164	183	347	218	236	454	213	240	453	195	214	409
8/20/73	20:21	169	178	347	206	214	420	194	209	403	206	216	422
8/21/73	2:23	181	197	378	206	221	427	191	211	402	225	245	470
8/21/73	9:13	175	194	369	196	211	407	187	210	397	210	231	441
8/21/73	15:02	192	219	411	172	187	359	215	249	464	177	195	372
8/21/73	19:46	170	188	358	195	209	404	194	219	413	197	214	411
8/22/73	00:31	168	192	360	221	246	467	154	179	333	238	269	507
8/22/73	12:20	177	197	374	205	221	426	212	239	451	202	221	423
8/22/73	19:22	204	232	436	170	185	355	203	232	435	223	242	465
8/23/73	8:53	160	185	345	209	237	446	190	223	413	201	231	432
8/23/73	18:22	174	194	368	203	218	421	194	219	413	209	229	438
8/23/73	23:00	173	189	362	230	240	470	229	254	483	172	180	352
8/24/73	8:43	185	209	394	199	217	416	190	216	406	225	253	478
8/24/73	15:41	187	226	413	143	160	303	172	208	380	226	269	495
8/28/73	9:54	176	204	380	207	230	437	200	232	432	211	241	452
8/28/73	13:54	164	175	339	196	216	412	225	231	456	199	225	424
8/30/74	03:00	192.7	161.9	354.6	214.9	175.0	389.9	212.9	180.1	393.0	197.6	176.3	373.9
8/30/74	10:00	199.3	167.8	367.1	221.3	181.0	402.3	219.5	185.3	404.8	205.0	183.3	388.3
8/30/74	14:00	203.9	165.1	369.0	226.5	178.4	404.9	224.5	183.5	408.0	209.5	180.3	389.3
8/30/74	17:30	157.1	200.4	357.4	177.3	220.2	397.5	174.3	227.8	402.1	166.2	220.4	386.6
8/31/74	11:00	148.4	203.3	351.7	169.4	213.7	383.1	166.2	231.5	397.7	160.2	224.3	384.5
8/31/74	21:00	172.0	176.8	348.8	194.3	192.3	386.6	192.0	198.9	390.9	183.4	194.1	377.5
4/1/74	01:30	165.8	176.2	342.0	186.5	191.5	378.0	185.2	198.6	383.8	175.5	193.0	368.5

/1 $F_Q^T = F_Q^N \times 1.03$ /2 $F_{\Delta H}^T = F_{\Delta H}^N \times 1.01$ /3 At Location of F_Q^N /4 Partial Map

Table 5.1 (continued)

				Control Bank Position (Steps)						Avg. Core		Incore Hot Channel Factors								Incore Quadrant Tilt				Incore Axial Offset				Excore Axial Offset				Unnormalized Excore Detector Currents (μa)											
																																N-41			N-42			N-43			N-44		
Date	Time Start	Map #	Power	A	B	C	D	P/L	RCC	F_Z	A.O.	F_q^N	F_q^T /1	$F_\partial^N S(Z)$	L_{Fq}^{oc}	$F_{\Delta H}^N$	$F_{\Delta H}^T$ /2	$L_{F\Delta H}^{oc}$	F_{xy} /3	NW N44	NE N41	SW N42	SE N43	NW N44	NE N41	SW N42	SE N43	NW N44	NE N41	SW N42	SE N43	Top	Bot	Sum	Top	Bot	Sum	Top	Bot	Sum	Top	Bot	Sum
4/2/74	17:40	36	75.85	230	230	230	190	228	-	1.43	- 8.7	2.06	2.12	2.23	M4FL	1.45	1.47	M4FL	1.44	1.014	1.006	0.985	0.995	- 9.0	- 8.7	- 9.1	- 8.1	- 9.6	- 3.2	- 6.4	- 9.1	237	280	517	269	306	575	265	318	583	253	306	559
4/17/74	16:30	37	83.30	230	230	230	217	228	-	1.40	- 5.5	2.02	2.0[illegible]	2.18	M4FL	1.44	1.45	M4FL	1.46	1.022	0.997	0.989	0.992	- 5.3	- 5.6	- 6.2	- 5.0	- 7.5	- 6.0	- 4.3	- 6.6	277	313	590	314	342	656	310	354	664	294	342	636
		38																																									
6/5/74	17:35	39	86.53	230	230	230	160	228	-	1.46	-13.6	2.07	2.14	2.24	M4FL	1.44	1.46	M4FL	1.42	1.016	1.003	0.991	0.990	-13.6	-13.1	-14.0	-13.6	-12.2	-10.2	- 9.6	-11.3	265	325	590	298	361	659	294	369	663	280	358	638
		40																																									
7/15/74	11:10	41	75.76	230	230	230	200	228	-	1.34	- 3.2	1.95	2.01	2.11	M4FL	1.44	1.46	M4FL	L.45	1.011	0.999	0.996	0.994	- 3.0	- 3.4	- 2.9	- 3.6	- 5.9	- 3.9	- 2.1	- 4.3	252.6	273.3	525.9	284.3	296.4	580.7	279.9	305.2	585.1	264.0	296.9	560.9
* 6/3/73	18:55	2	~5	230	199	69	0	69	F-2 @230	1.57	-17.1	5.48	5.64	5.86	GZAA	3.98	4.02	GZAO	4.10	0.536	1.085	0.649	1.730	-21.4	-14.5	-19.6	-12.8																
* 6/4/74	6:21	3	~5	230	230	230	202	82	-	1.41	- 1.2	2.17	2.24	2.42	G1400	1.56	1.58	G140A	1.54	1.025	0.982	1.036	0.957	- 0.9	- 1.7	- 1.9	- 1.2																

*THESE MAPS WERE CALCULATED WITH XENON CONSTANTS

TABLE 5.2 SUMMARY TABLE OF ROD EJECTION CASES (RCCA F2)

Power Level	Bank Configuration			Ejected Rod Reac. Worth (pcm)			F_q			$F_{\Delta H}^N$		
%	C	D	P/L	MEAS.	FSAR*	DIFF	MEAS.	FSAR*	DIFF. %	MEAS.	PRED.	DIFF. %
5.0	69	0	69	397	740	-343	6.34	15.30	-58.6	3.98	4.09	-2.6
50	228	163	69	58	270	-212	2.52	5.71	-55.9	1.56	1.72	-9.4

$F_q = F_q^N \times S(Z) \times 1.03 \times 1.05$

$F_{\Delta H} = F_{\Delta H}^N \times 1.01 \times 1.04$

*Fuel Dens./7

$\text{Diff.}(\%) = \frac{M-P}{P} \times 100$

Where: 1.03 = F_q Engineering Uncertainty Factor
1.05 = F_q Experimental Uncertainty Factor

1.01 = $F_{\Delta H}$ Engineering Uncertainty Factor
1.04 = $F_{\Delta H}$ Experimental Uncertainty Factor

S(Z) = Densification Spike Penalty Factor

TABLE 5.3

Reactivity Worths of RCCAs From Static Rod Drop Tests

Rod	Measured Worth (in pcm)
E9	149
N9	134
H4	131
F6	124
K8	117
B10	109
H14	106
D12	103
H8	86

TABLE 5.4 INDIAN POINT UNIT II SHUTDOWN MARGIN

ITEM	BOL VALUE (pcm)	
Available Bank Worth (Most Reactive Rod Stuck, No P/L)	7952	(a)
Measurement Uncertainty (4%)	±318	(b)
Bank Worth Less Measurement Uncertainty	7634	
Requirements:		
Power Defect	1245	(c)
Maneuvering Band and Bite	700	(d)
Void	80	(d)
Redistribution	300	(d)
Total Requirements	2325	
Shutdown Margin (Bank Worth Less Measurement Uncertainty - Total Requirements)	5309	
Technical Specification Requirements /2	1000	

(a) Measured Value
(b) Conservative Uncertainty of 4% Assumed
(c) Design Report Value Verified by Measurements (Reference 3)
(d) Design Report (Reference 3)

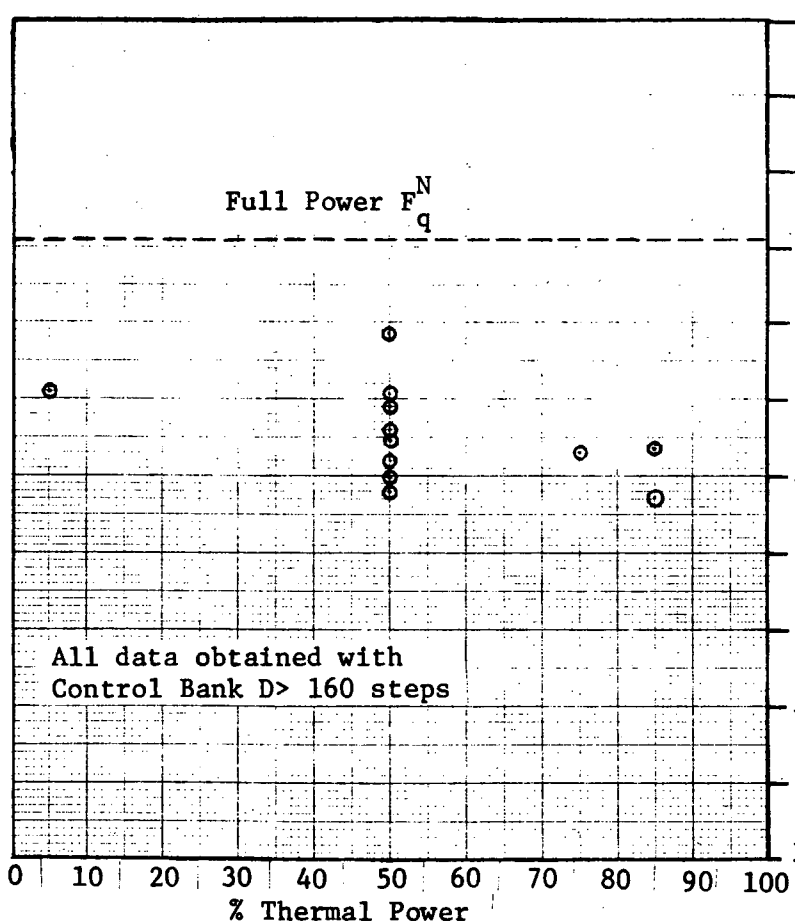


Figure 5.1 F_q^N vs % Thermal Power

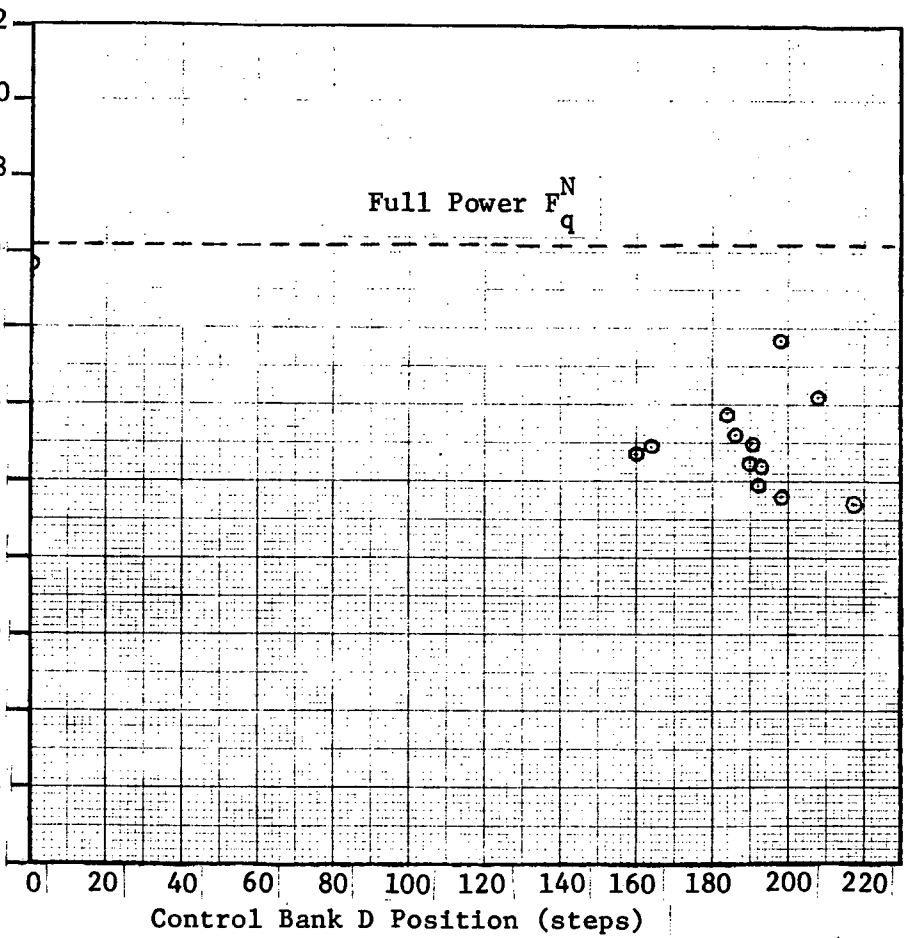


Figure 5.2 F_q^N vs Control Bank D Position (steps)

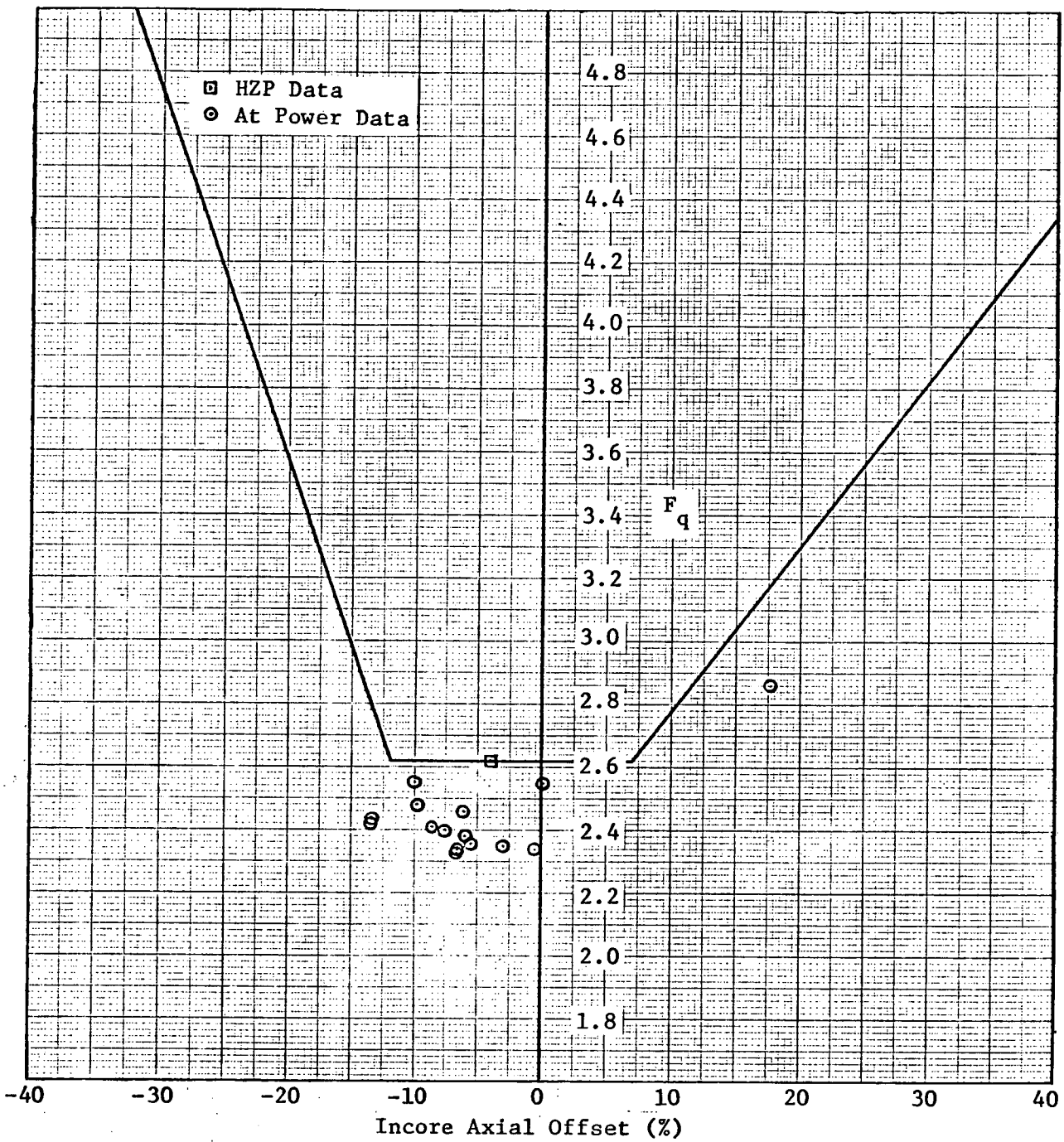


Figure 5.3 F_q vs Incore Axial Offset

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
R					.26 .26 +2.2			.54 .57 +4.8		.39 .41 +2.8					
P							.65 .67 +3.3					.70 .74 +6.0			
N			.39 .37 -7.2							.85 .83 -2.7		.84 .83 -0.8			
M									.95 .93 -1.9						
L	.22 .24 +7.5		.52 .54 +3.4			.71 .70 -1.6		.82 .82 +0.1							
K				.61 .56 -8.2						1.23 1.29 +4.9				.91 .82 -9.6	
J		.51 .52 +3.5				.58 .56 -3.6		.61 .60 -2.4	.87 .88 +0.5						1.87 1.81 -3.4
H	.40 .43 +5.9	.56 .58	.64 .64	.69 .69	.65 .64 -0.9	.51 .48	.54 .53	.41 .41	.81 .80	.97 .96 -1.0	1.75 1.77	2.38 2.36 -0.7	2.77 2.71	2.91 2.81 -3.5	2.30 2.22
G	.40 .40	.52 .51	.63 .61	.69 .67 -2.4	.71 .71	.63 .64	.67 .69 +2.5	.70 .71	1.02 1.01	1.32 1.34	1.99 2.02	2.49 2.50	3.17 3.11	3.51 3.38	2.85 2.71
F	.27 .26	.27 .25 -6.7	.58 .54	.67 .62	.75 .74	.80 .84	.78 .75	.73 .72 -1.1	1.12 1.11 -0.5	1.64 1.65	2.00 2.03	2.28 2.35	3.18 3.15 -1.2	3.27 3.16	2.46 2.34 -4.7
E	.24 .24	.44 .44	.59 .59	.67 .69	.80 .83	.86 .91	.97 1.04 +7.5	1.07 1.12	1.36 1.38	1.63 1.62	2.03 2.18	2.25 2.23	2.84 2.76	3.03 2.93	1.93 1.85
D		.44 .46 +4.5	.52 .54	.81 .85 +4.2	.73 .76	.83 .82 -1.7	1.02 1.08	1.22 1.27 +4.7	1.34 1.39	1.43 1.51	1.73 1.86	2.47 2.50	2.02 1.96 -3.2	2.17 2.08	
C		.24 .25	.46 .45	.56 .59	.70 .74	.79 .85	1.01 1.07	1.17 1.23	1.27 1.32 +3.8	1.30 1.34	1.52 1.62 +6.3	1.48 1.54	1.35 1.38	.93 .94	
B			.26 .27	.50 .53	.56 .59	.40 .42	.89 .94	1.05 1.12 +5.9	1.06 1.09	.62 .61 -1.5	1.14 1.16	1.20 1.26	.70 .73 +4.1		
A					.33 .35	.42 .45	.70 .74 +5.4	.77 .82	.81 .83	.61 .59	.61 .59				

Pred.
Meas.
% Diff.

INCORE Quadrant Tilts

NW .5360 NE 1.0847

SW .6492 SE 1.7301

EXCORE Quadrant Tilts

NW — NE —

SW — SE —

INCORE Axial Offset

NW -21.4 NE -14.5

SW -19.6 SE -12.8

EXCORE Axial Offset

NW — NE —

SW — SE —

Measurement I.D. 2

Date 6/3/73

Power (% of 2758) ~50

Burnup (MWD/MTU) 0

RCC Configuration

Bank D at 0 steps

Bank C at 67 steps

Bank B at 198 steps

Bank A at 228 steps

P/L Bank at 69 steps

RCC Unit F-2 at 228 steps

Figure 5.4

Max. Hot Channel Factors			
HCF	Value	Location	
		Assy	Coord
$F^N_{\Delta H}$	3.98	G-2	A0
F^N_Q	5.48	G-2	AA
F^*_Z	1.57	—	—

* Core Avg.

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
R					.55 .61 +11.4			.80 .83 +3.5		.66 .70 +6.8					
P							1.07 1.12 +4.8					.87 .92 +5.7			
N		.47 .52 +10.5	1.00 1.05 +5.0							1.07 1.08 +1.6		.90 .93 +4.1		.51 .56 +9.5	
M									1.04 1.02 -1.6						
L	.55 .60 +10.1		1.01 1.03 +2.2			.96 1.01 +5.0		1.06 1.07 +1.1							
K				.91 .90 -1.8						1.15 1.12 -2.7				1.00 1.00 +0.4	
J		1.05 1.08 +2.5				.95 .99 +4.3		1.04 1.01 -3.0	1.15 1.11 -3.9						.99 .97 -1.3
H	.79 .84 +6.8	1.08 1.14	1.06 1.10	1.13 1.17	1.03 1.06 +3.0	1.11 1.14	1.03 1.04	1.07 1.04	1.08 1.04	1.22 1.15 -5.5	1.19 1.08	1.36 1.20 -11.9	1.30 1.17	1.35 1.24 -7.7	.99 .94
G	.84 .87	1.06 1.09	1.12 1.15	1.01 1.05 +4.0	1.09 1.13	.96 .98	1.12 1.12 -0.2	1.06 1.03	1.18 1.13	1.07 1.00	1.29 1.15 -10.3	1.25 1.11	1.44 1.30	1.40 1.30	1.11 1.05
F	.65 .63	.94 .91 -3.3	1.03 1.06	.93 .96	.97 1.02	1.09 1.08	.98 .96	1.17 1.10 -5.9	1.04 1.01 -3.1	1.22 1.15	1.16 1.03	1.20 1.06	1.38 1.25 -9.0	1.34 1.26	.90 .86 -4.4
E	.55 .56	.93 .96	1.03 1.07	.89 .92	1.04 1.08	.99 .97	1.14 1.11 -2.6	1.11 1.07	1.20 1.15	1.11 1.07	1.24 1.16	1.13 1.04	1.35 1.25	1.26 1.18	.76 .72
D		.83 .89 +6.5	.85 .89	1.20 1.23 +3.2	.90 .94	.95 .93 -2.7	1.06 1.03	1.22 1.18 -2.8	1.11 1.05	1.07 1.00	1.06 1.00	1.47 1.39	1.08 1.02 -6.0	1.09 1.02	
C		.48 .52	1.02 1.09	.85 .90	1.04 1.07	1.06 1.09	1.17 1.14	1.13 1.08	1.22 1.13 -6.9	1.15 1.08	1.18 1.14 -3.9	1.02 .99	1.26 1.23	.61 .59	
B			.48 .53 +9.3	.84 .92	.94 1.03	.95 1.00	1.10 1.11	1.14 1.11 -3.0	1.12 1.06	.98 .98 -0.8	1.04 1.02	.98 .98	.58 .59 +1.1		
A					.56 .61 +8.5	.66 .70	.88 .91 +3.6	.84 .84	.89 .86	.69 .69	.60 .60				

Pred.
Meas.
% Diff.

INCORE Quadrant Tilts

NW .9744 NE 1.0081

SW .9712 SE 1.0464

EXCORE Quadrant Tilts

NW — NE —

SW — SE —

INCORE Axial Offset

NW -7.8 NE -5.8

SW -6.9 SE -0.6

EXCORE Axial Offset

NW -6.1 NE -3.2

SW -4.9 SE -1.3

Measurement I.D. 28

Date 8/28/73

Power (% of 2758) 50

Burnup (MWD/MTU) 0

RCC Configuration

Bank D at 163½ steps

Bank C at 228 steps

Bank B at 228 steps

Bank A at 228 steps

P/L Bank at 69 steps

RCC Unit F-2 at 228 steps

Figure 5.5

Max. Hot Channel Factors			
HCF	Value	Location	
		Assy	Coord
$F^N_{\Delta H}$	1.56	G-2	AA
F^N_Q	2.08	E-2	AA
F^*_Z	1.35	—	—

* Core Avg.

Figure 5.6

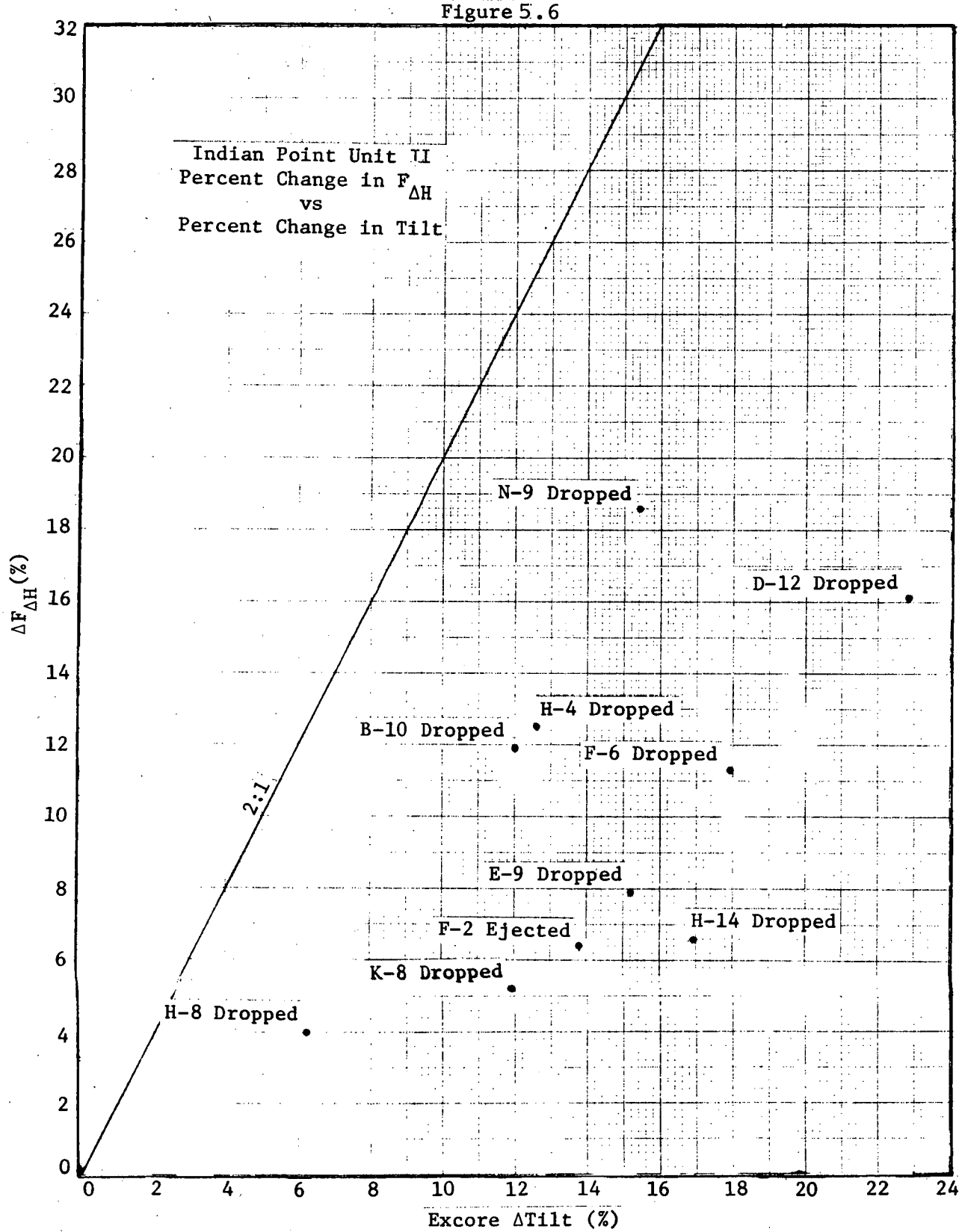

Indian Point Unit II
Percent Change in $F_{\Delta H}$
vs
Percent Change in Tilt
2:1
N-9 Dropped
D-12 Dropped
H-4 Dropped
B-10 Dropped
F-6 Dropped
E-9 Dropped
H-14 Dropped
F-2 Ejected
K-8 Dropped
H-8 Dropped
$\Delta F_{\Delta H}$ (%)
Excore ΔTilt (%)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32

Figure 5.7

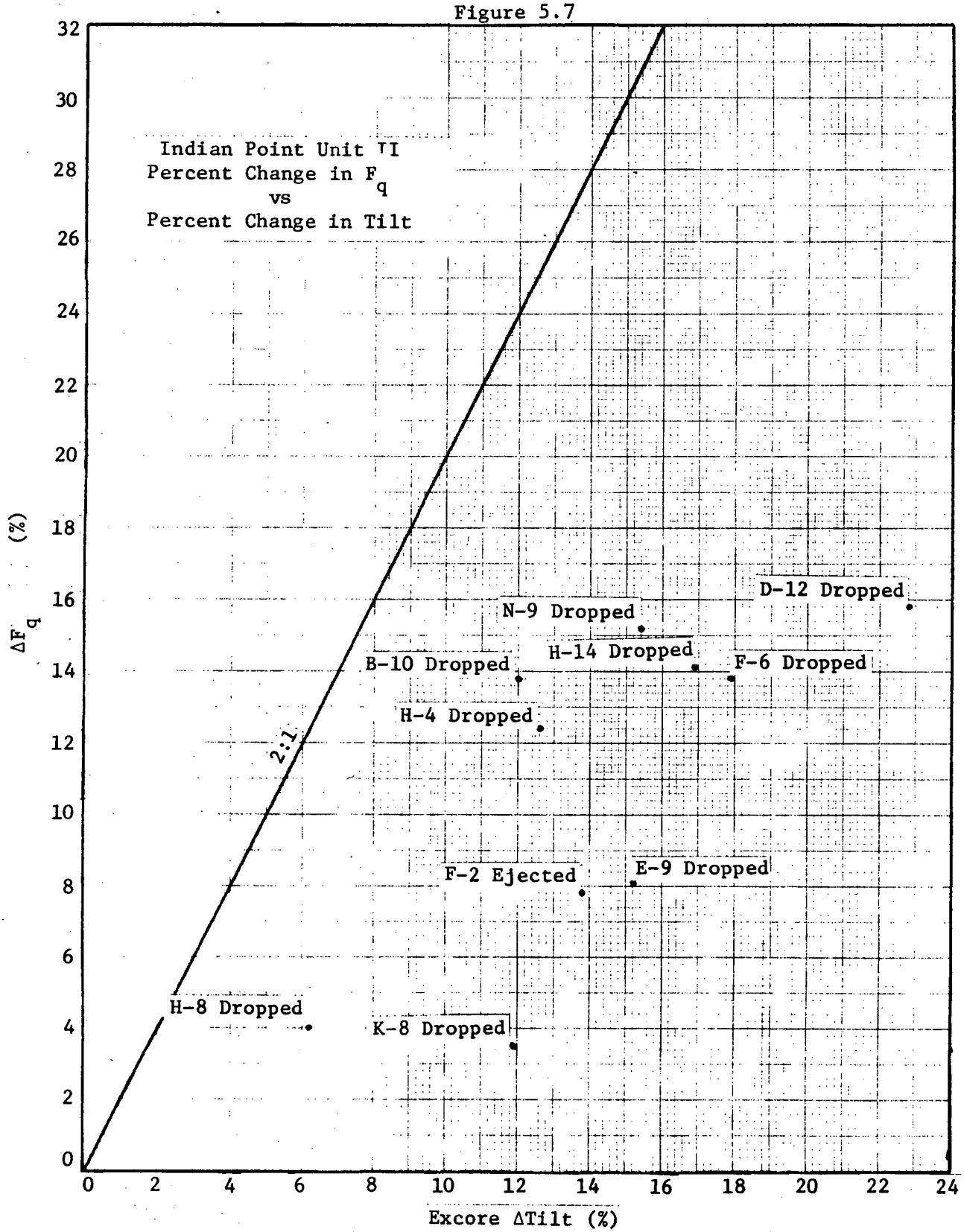
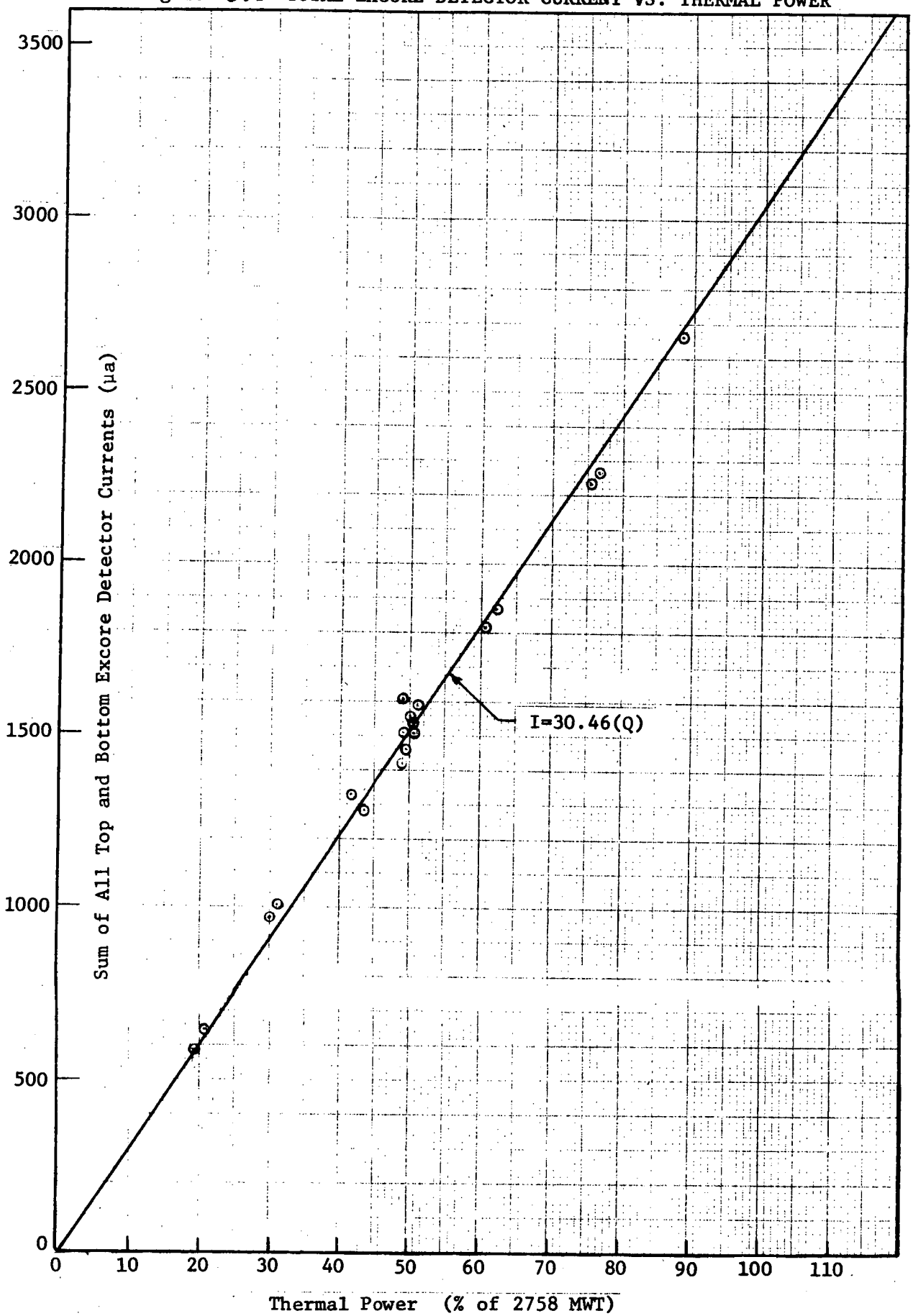

Indian Point Unit II
Percent Change in F_q
vs
Percent Change in Tilt
ΔF_q (%)
Excore ΔTilt (%)
2:1
H-8 Dropped
K-8 Dropped
F-2 Ejected
E-9 Dropped
B-10 Dropped
H-4 Dropped
N-9 Dropped
H-14 Dropped
F-6 Dropped
D-12 Dropped
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32

Figure 5.8 TOTAL EXCORE DETECTOR CURRENT VS. THERMAL POWER



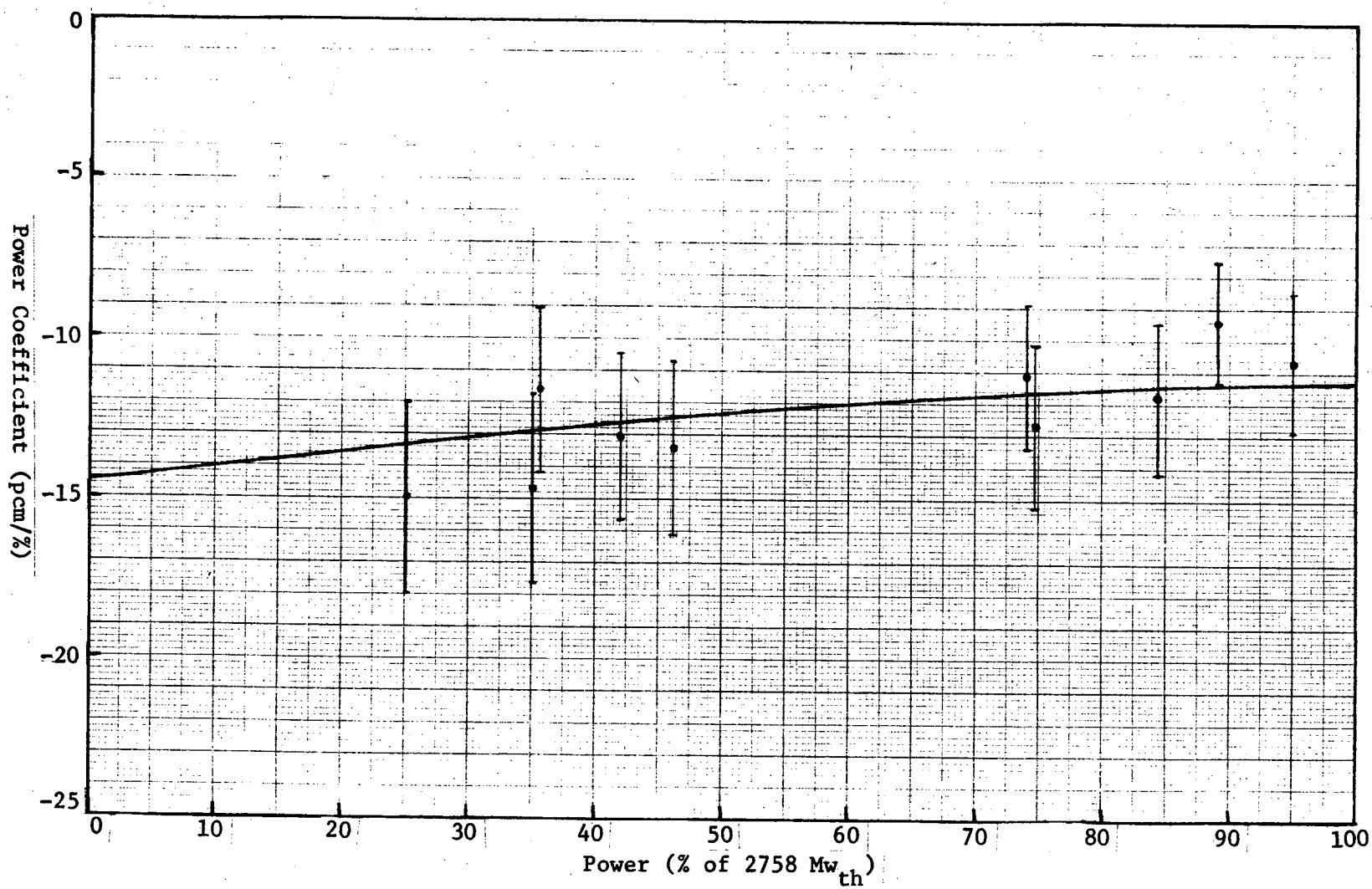
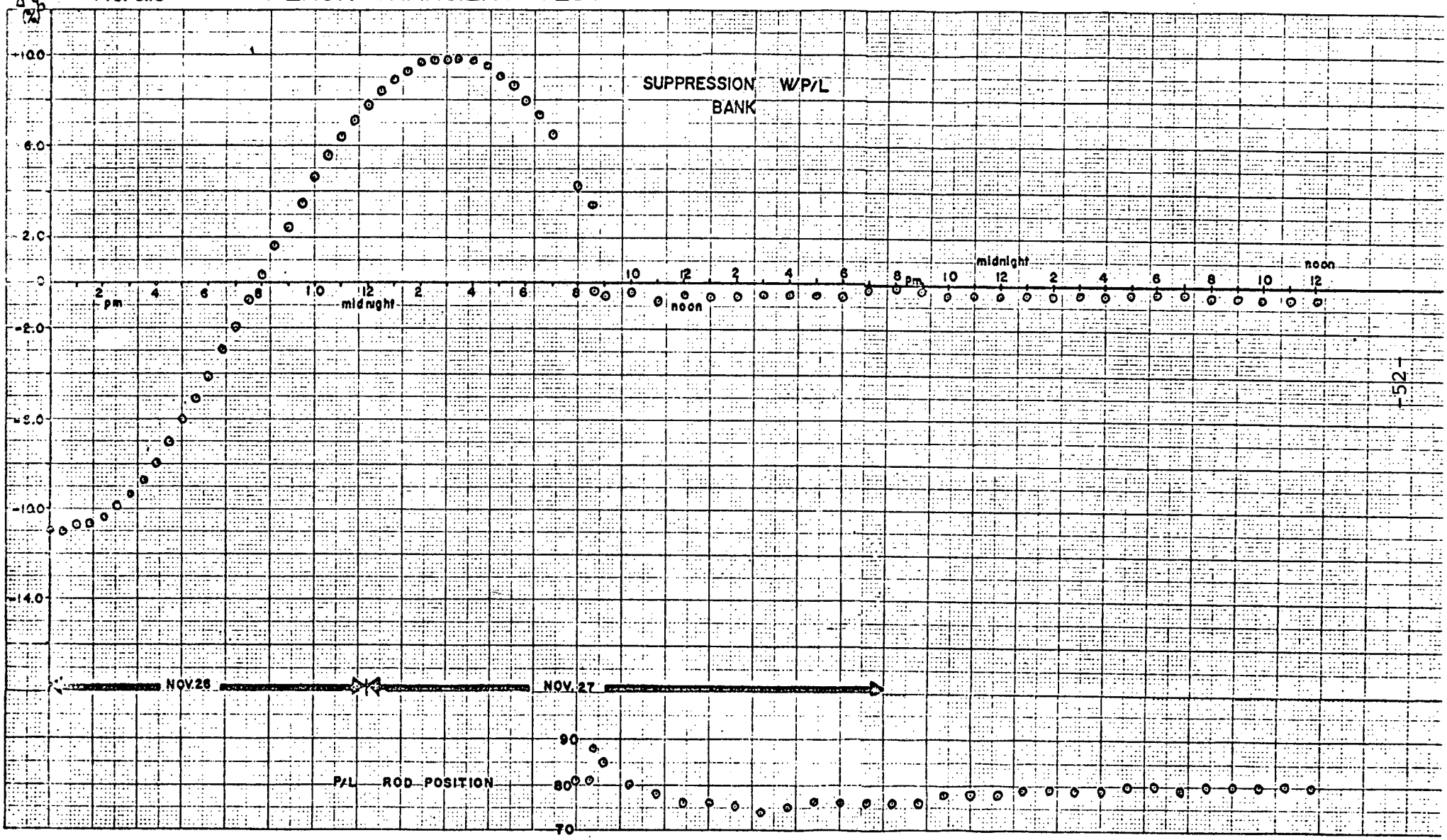


Figure 5.9 Measured and Predicted Power Coefficient vs Percent Thermal Power

FIG. 5.10 XENON TRANSIENT TEST



6. Reactor Instrumentation Calibration

The calibration of ex-core power range detectors, overpower and overtemperature ΔT setpoints and in-core thermocouples is presented in this section.

6.1 Ex-core Detector Calibration

The variation in total ex-core detector current (sum of currents for top and bottom detectors) versus reactor power for four ex-core detectors is presented in Figures 6.1 through 6.4. Extrapolated total current at 100% reactor power is also shown in each figure. Reactor power in these measurements was obtained from the plant calorimetric data.

The plots of in-core axial offsets versus ex-core axial offsets are shown in Figures 6.5 through 6.8. In-core axial offsets were obtained from the analysis of in-core flux maps with the INCORE Code, Reference 4. Ex-core axial-offsets were obtained by using the following formula, using top and bottom detector currents, T_{Top} and I_{Bot}, respectively.

$$\frac{I_{Top} - I_{Bot}}{I_{Top} + I_{Bot}} \times 100\% \qquad (6.1)$$

In Figures 6.9 and 6.10, variation in top and bottom detector currents versus in-core axial offsets are given. These data serve as the basis for ex-core NIS calibration.

6.2 ΔT Setpoint Calibration

The axial offset versus detector currents at 100% power for four ex-core detectors are shown in Figures 6.9 and 6.10. This information provided the current to voltage relationship required for f(ΔQ) circuit. The function, f(ΔQ), is defined to be that function for which no reactor power penalty is paid for full-power axial offset variations between -12% and +7%. Outside these limits, for every 1% of full power axial offset greater than +7%, a penalty of 2% power is assigned and for every 1% of full-power axial offset greater than -12%, a penalty of 4.5% is imposed, Reference 7. In Table 6.1, information for overpower and over-temperature ΔT setpoints is presented.

6.3 ΔT Versus Reactor Power

Plots of four reactor coolant loop ΔT's versus reactor power (obtained from plant calorimetric data) are presented in Figures 6.11 and 6.12. Extrapolated ΔT's for full power are also shown. Due to the flow stratification registered by the RTD of Loop 22 full power ΔT across this loop was higher (56.1°F) compared to ΔT's for the other three Loops 21, 23 and 24 (48.5°F, 50.4°F and 48.3°F), respectively. Measured average full power ΔT was equal to 50.8°F.

6.4 In-core Thermocouple Calibration

In-core thermocouple data provide a continuous on-line monitoring of radial assembly power distributions. However, this required calibration of in-core thermocouples by the moveable in-core detector data. The radial hot channel factor $F^N_{\Delta H_i}$ for Channel i is given by the following expression.

$$F^N_{\Delta H_i} = \frac{M_i \ \Delta H_i}{\frac{E_{out}-E_{in}}{1-B}} \qquad (6.2)$$

where, Δ_{H_i} is enthalpy rise in Channel i, $\frac{E_{out}-E_{in}}{1-B}$ is the core average enthalpy rise divided by 1-minus bypass flow B, and M_i is the normalization factor.

The bypass flow correction is required if the loop RTD's are used to measure outlet temperatures.

However, if the thermocouples are used to provide the outlet temperatures, then B is set equal to zero. The normalization factor, M_i, was provided by using Equation 6.2 and $F^N_{\Delta H_i}$ obtained from the moveable in-core detector data.

As shown in Figure 6.13, the percentage difference between relative assembly power distributions from the in-core flux maps and thermocouples was considerably reduced provided the latter were normalized. Without normalization, standard deviation was 8.4%, and with normalization, standard deviation was 1.2%.

The continuous monitoring of thermocouple system data by PRODAC (P-250) output provides a reliable on-line monitoring of relative radial core power distribution.

6.5 Instrument Response to RCCA Out-of-Bank

In Figures 14 through 16, response of four ex-core detectors and selected thermocouples to the insertion of two RCCAs B-10 and H-8 and to the ejection of RCCA F-2 are shown. These results demonstrate the adequate response of ex-core detectors and the thermocouples to the movement of the RCCA to the out-of-bank position.

Table 6.1 Indian Point Final F(ΔQ) Setpoints

EXCORE DETECTOR	INCORE AXIAL OFFSET	POWER LEVEL (MWT)	% FULL POWER	I TOP (μa)	I BOT (μa)	V-TOP (VOLTS)	V-BOT (VOLTS)	ΔV VOLTS	ΔT PENALTY (%)	I TOTAL (μa)	V/I SLOPE $(\frac{Top}{Bot})_{o_{ao}}$	FLUX INDICATOR (%)
Ch-41	0	2758	100%	337	358	8.33	8.33	0	0	695	0.02472	0
Ch-41	-12	2758	100%	314	381	7.76	8.87	-1.11	0			-12
Ch-41	+7	2758	100%	351	344	8.68	8.00	+0.68	0			+7
Ch-41	-17	2758	100%	304	391	7.52	9.10	-1.58	22.5		0.02327	-17
Ch-41	+17	2758	100%	371	324	9.17	7.54	+1.63	20.0			+17
Ch-42	0	2758	100%	385	395	8.33	8.33	0	0	780	0.02164	0
Ch-42	-12	2758	100%	359	421	7.77	8.88	-1.11	0			-12
Ch-42	+7	2758	100%	400	380	8.66	8.01	+0.65	0			+7
Ch-42	-17	2758	100%	348	432	7.53	9.11	-1.58	22.5		0.02109	-17
Ch-42	+17	2758	100%	422	358	9.13	7.55	+1.58	20.0			+17
Ch-43	0	2758	100%	379	406	8.33	8.33	0	0	785	0.02198	0
Ch-43	-12	2758	100%	351	434	7.72	8.91	-1.19	0			-12
Ch-43	+7	2758	100%	395	390	8.68	8.00	+0.68	0			+7
Ch-43	-17	2758	100%	340	445	7.47	9.13	-1.66	22.5		0.02052	-17
Ch-43	+17	2758	100%	418	367	9.19	7.53	+1.66	20.0			+17
Ch-44	0	2758	100%	360	395	8.33	8.33	0	0	755	0.02314	0
Ch-44	-12	2758	100%	336	419	7.78	8.84	-1.06	0			-12
Ch-44	+7	2758	100%	373	382	8.63	8.06	+0.57	0			+7
Ch-44	-17	2758	100%	326	429	7.54	9.05	-1.49	22.5		0.02109	-17
Ch-44	+17	2758	100%	393	362	9.09	7.64	+1.45	20.0			+17

Figure 6.1 Channel N41 Total Current vs % Thermal Power

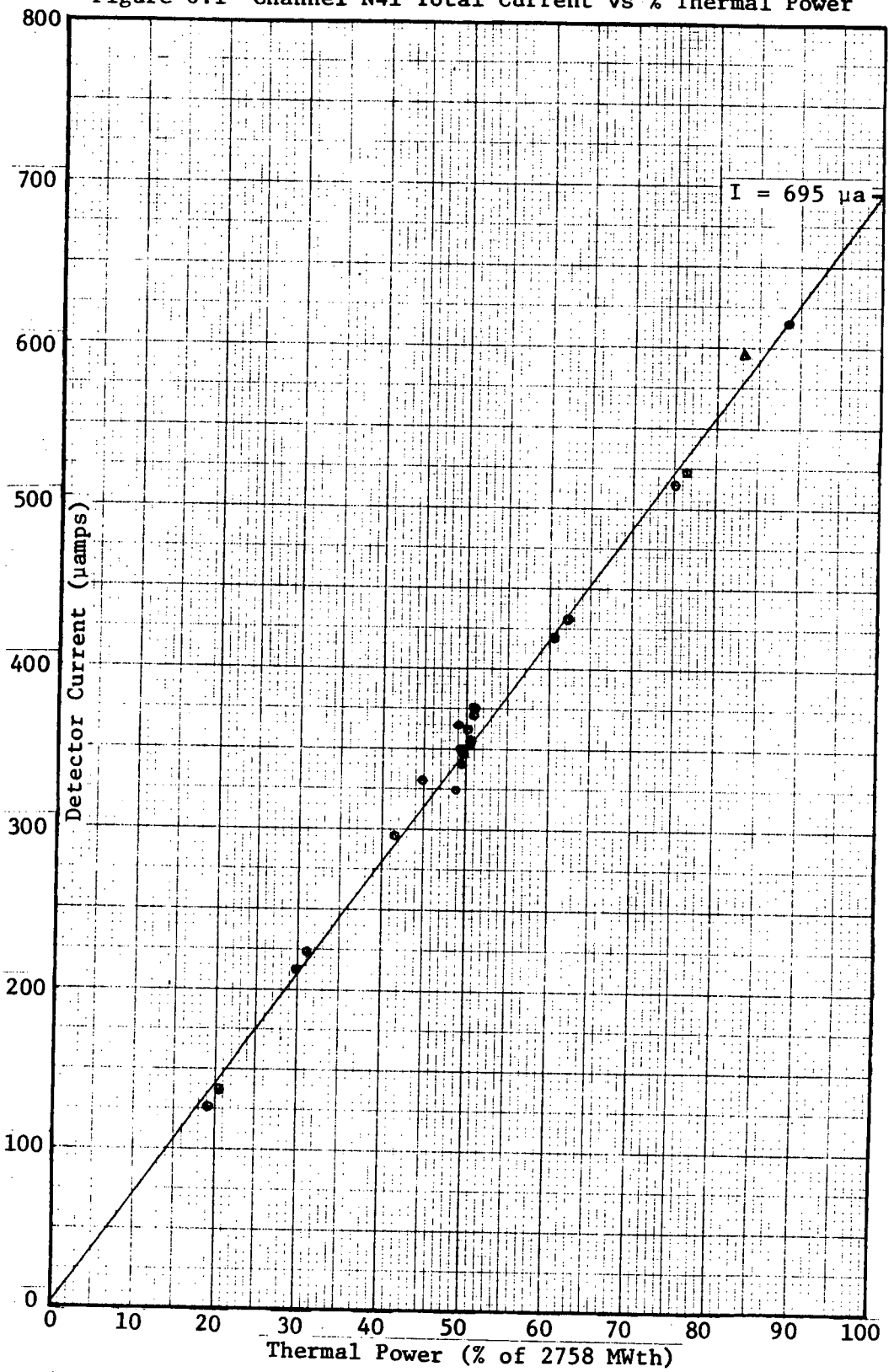


Figure 6.2 Channel N42 Total Current vs % Thermal Power

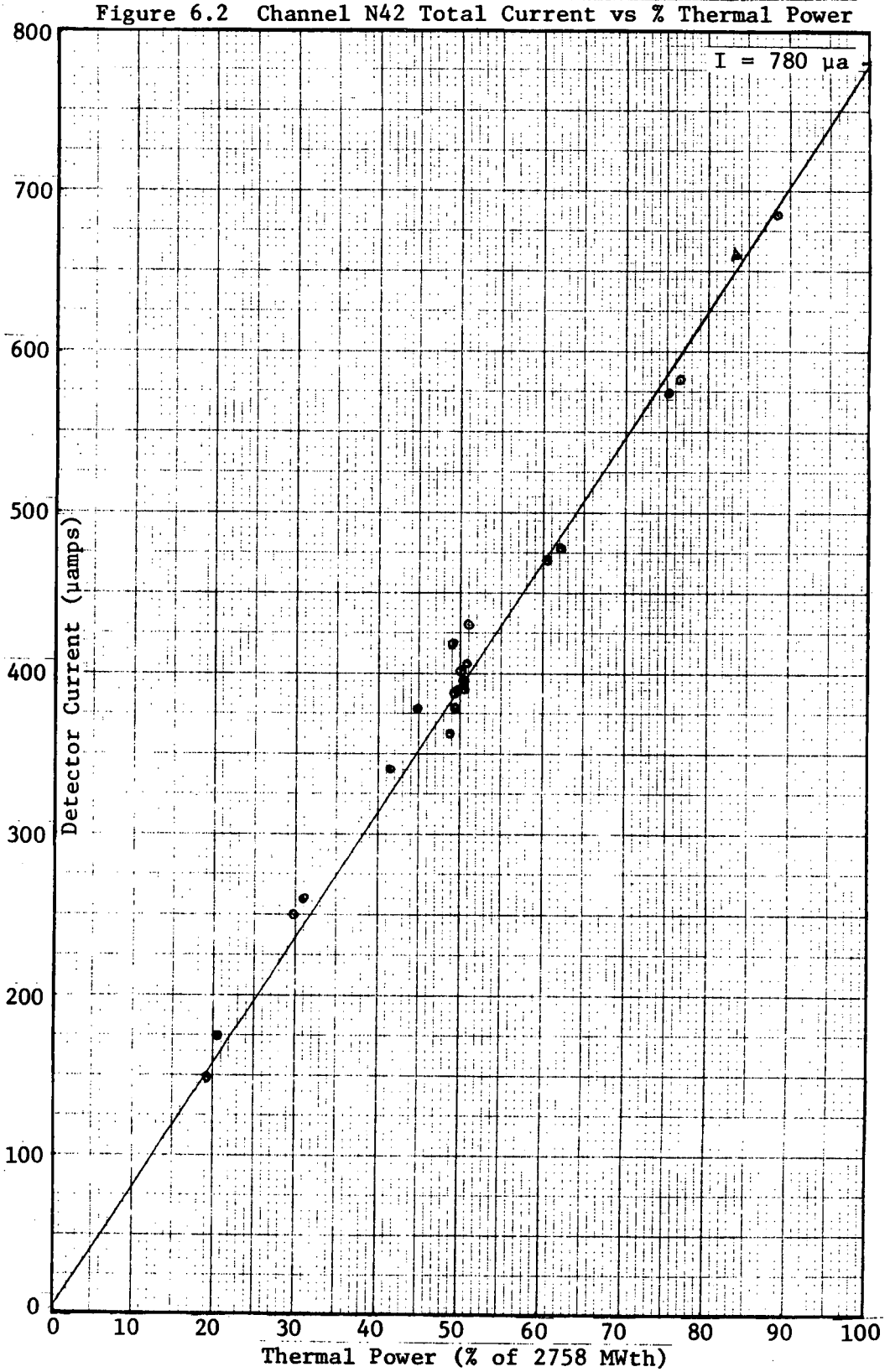


Figure 6.3 Channel N43 Total Current vs % Thermal Power

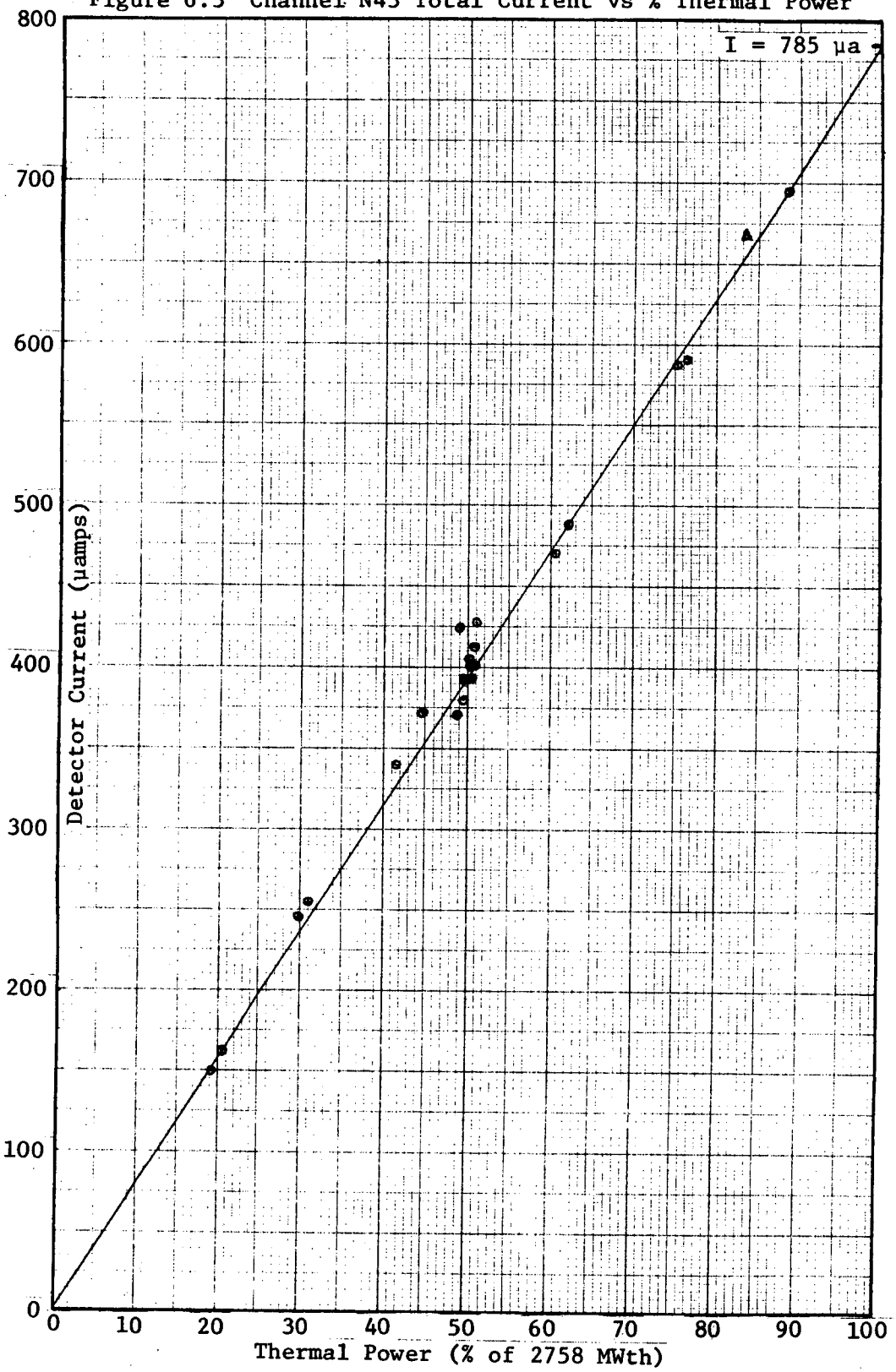


Figure 6.4 Channel N44 Total Current vs % Thermal Power

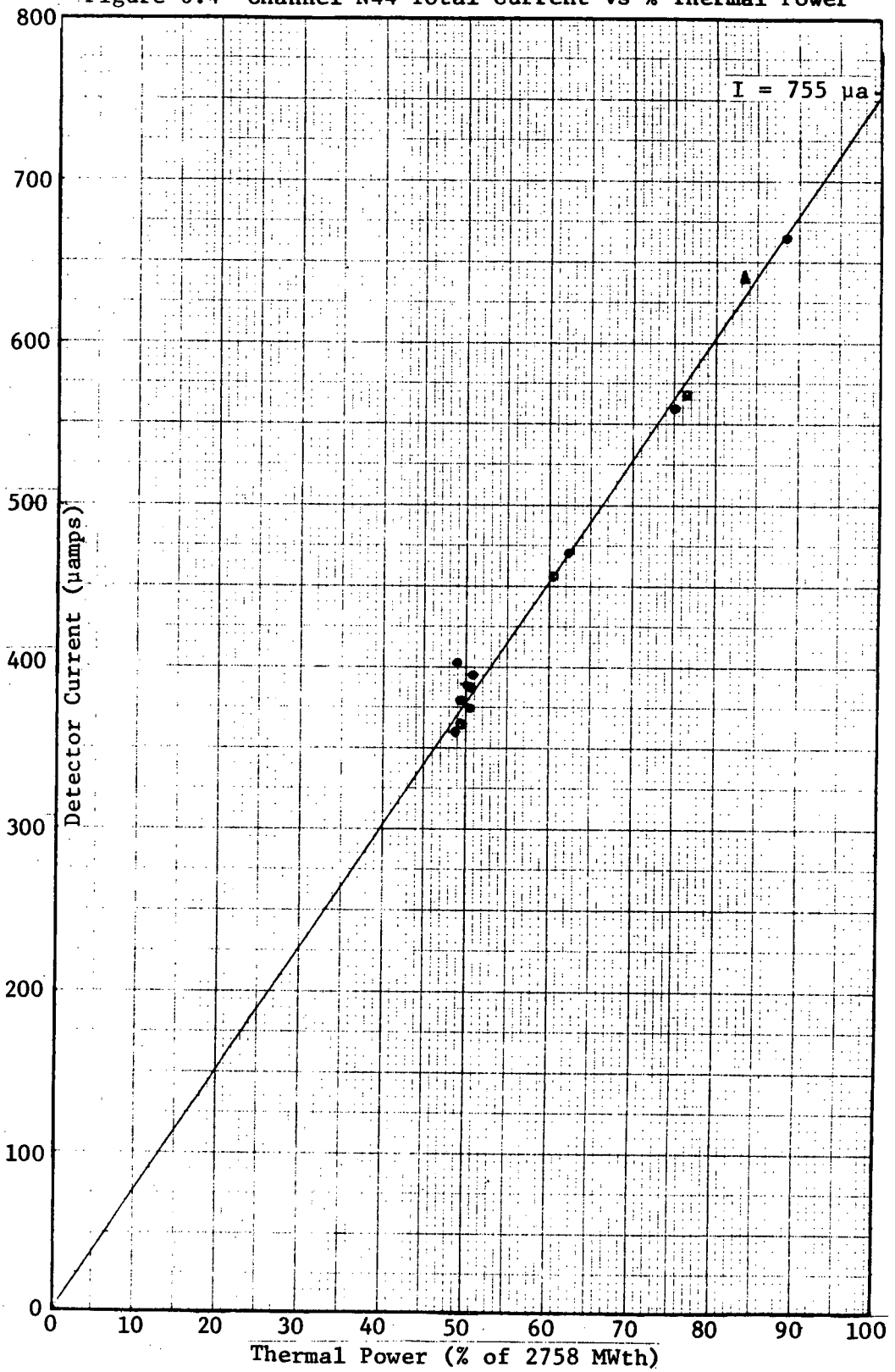


Figure 6.5

Channel N41 Incore Axial Offset vs Excore Axial Offset

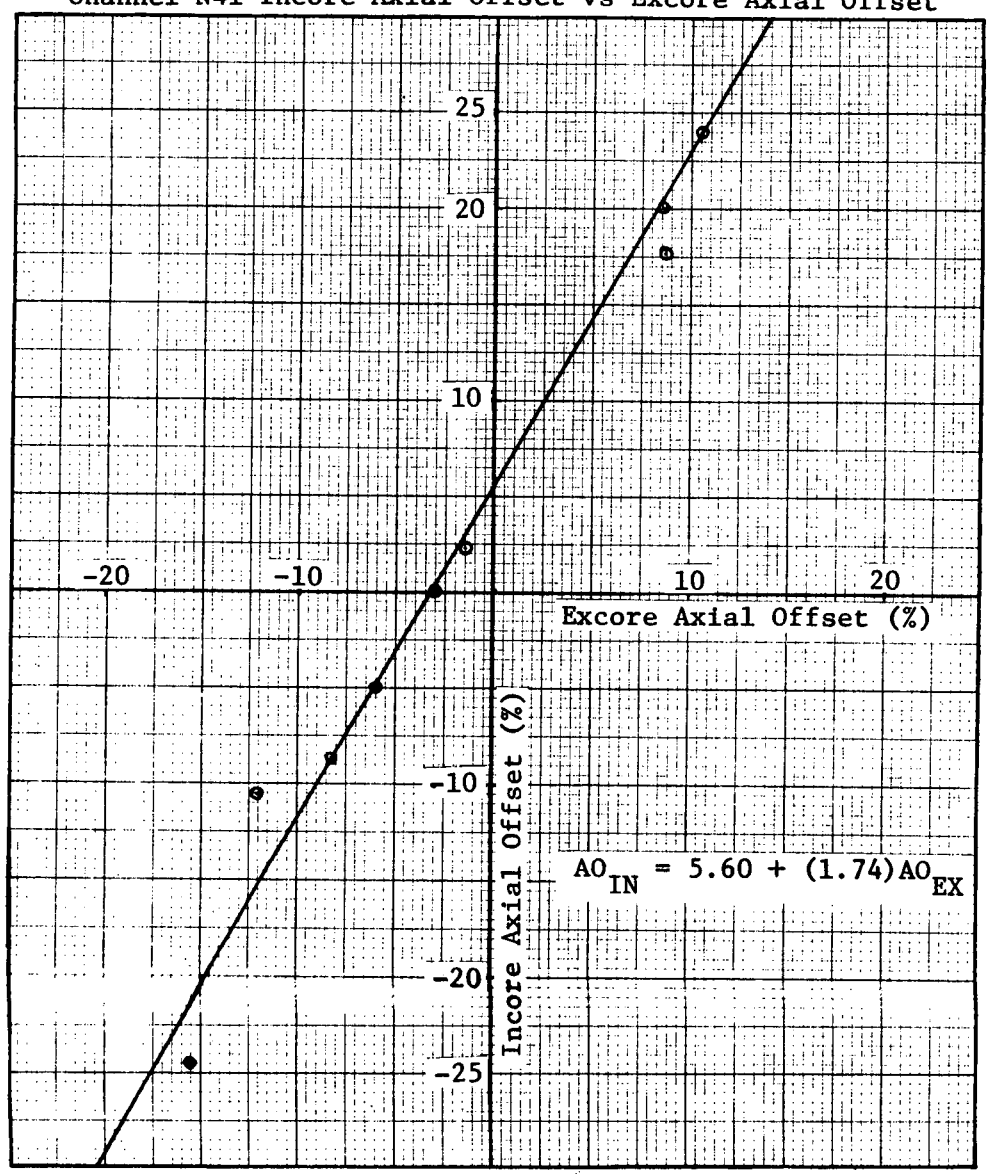


Figure 6.6
Channel N42 Incore Axial Offset vs Excore Axial Offset

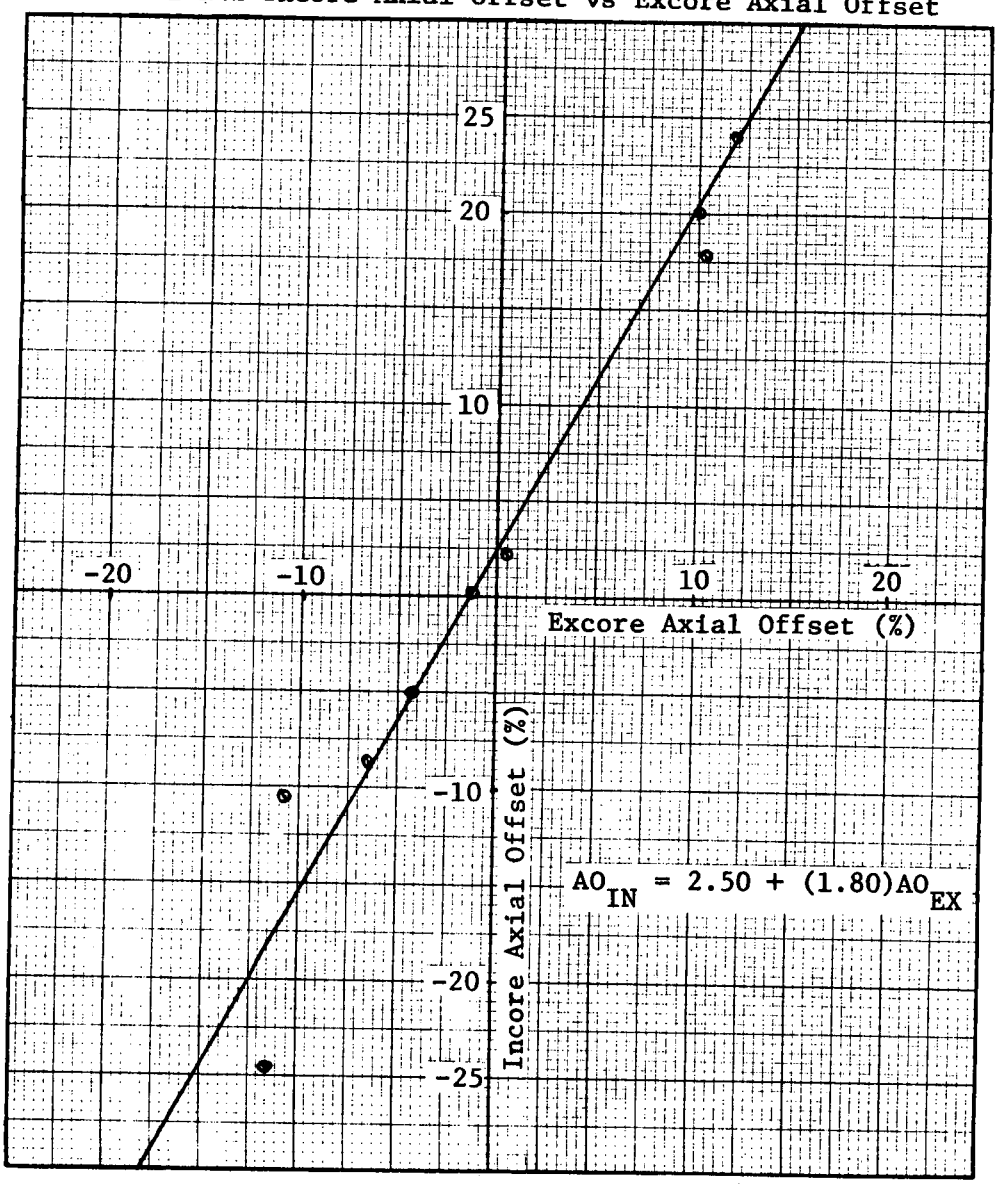


Figure 6.7

Channel N43 Incore Axial Offset vs Excore Axial Offset

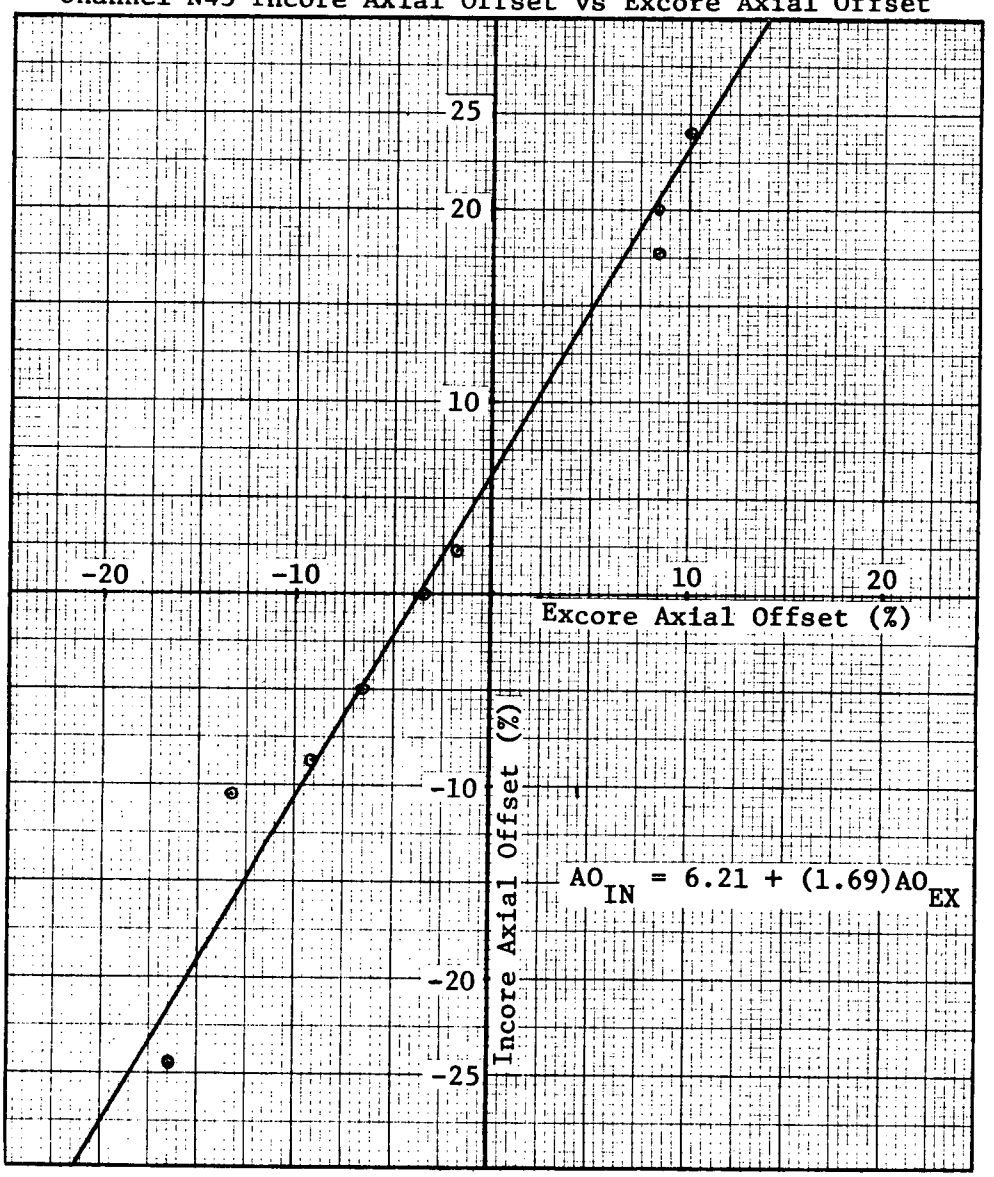


Figure 6.8
Channel N44 Incore Axial Offset vs Excore Axial Offset

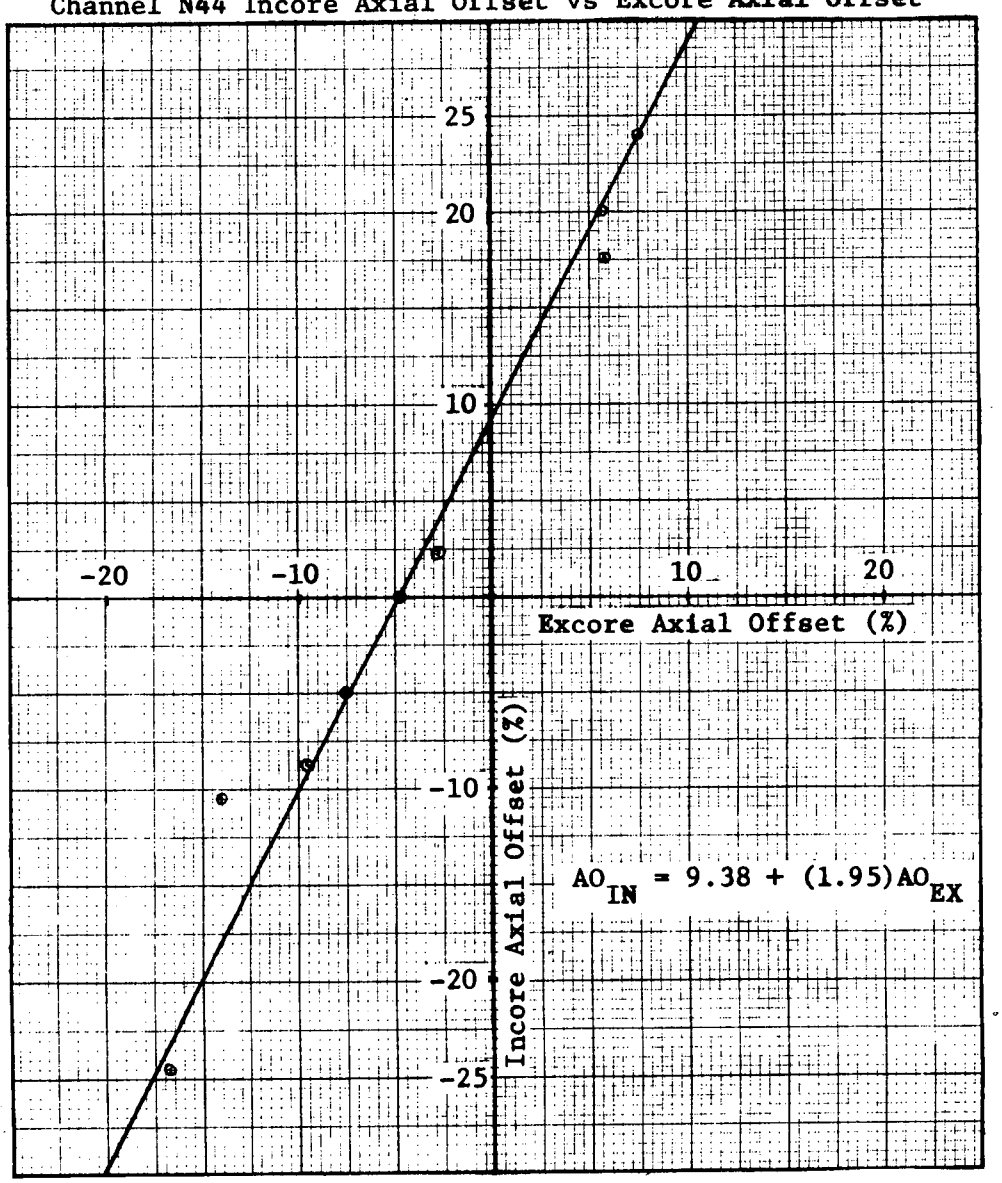
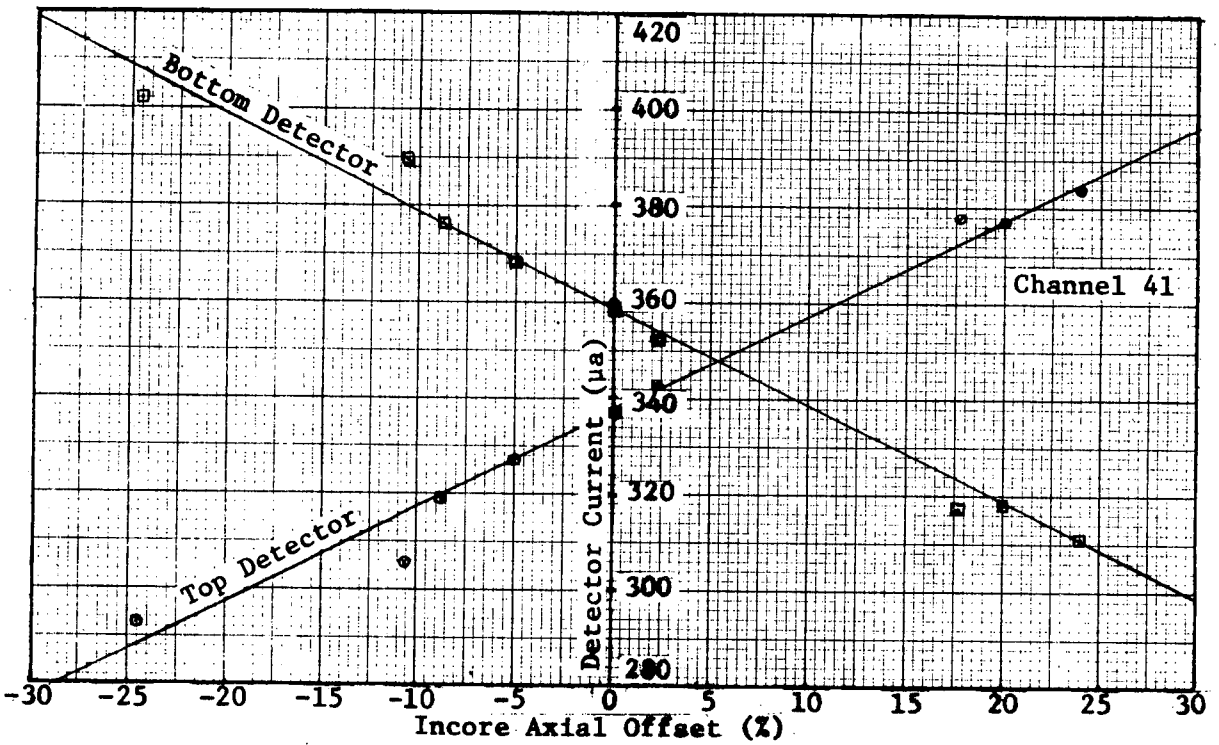


Figure 6.9 Channels N41 and N42

Top and Bottom Detector Current vs. Incore Axial Offset



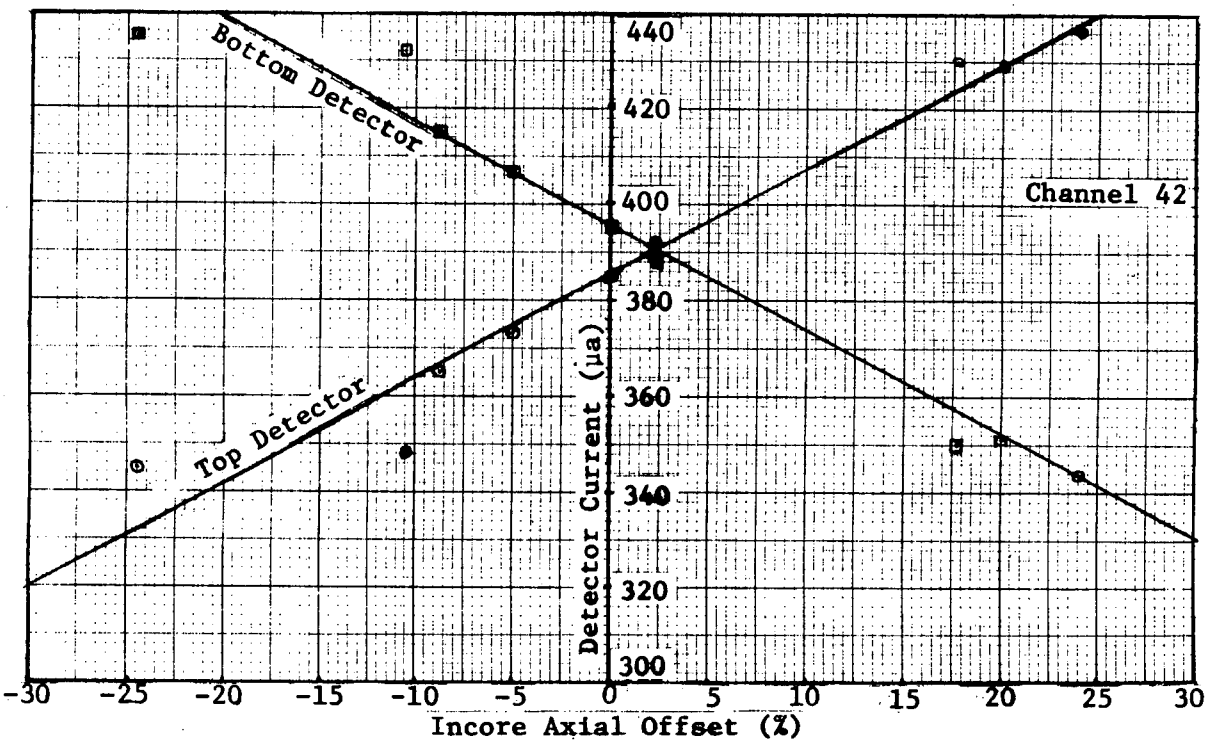
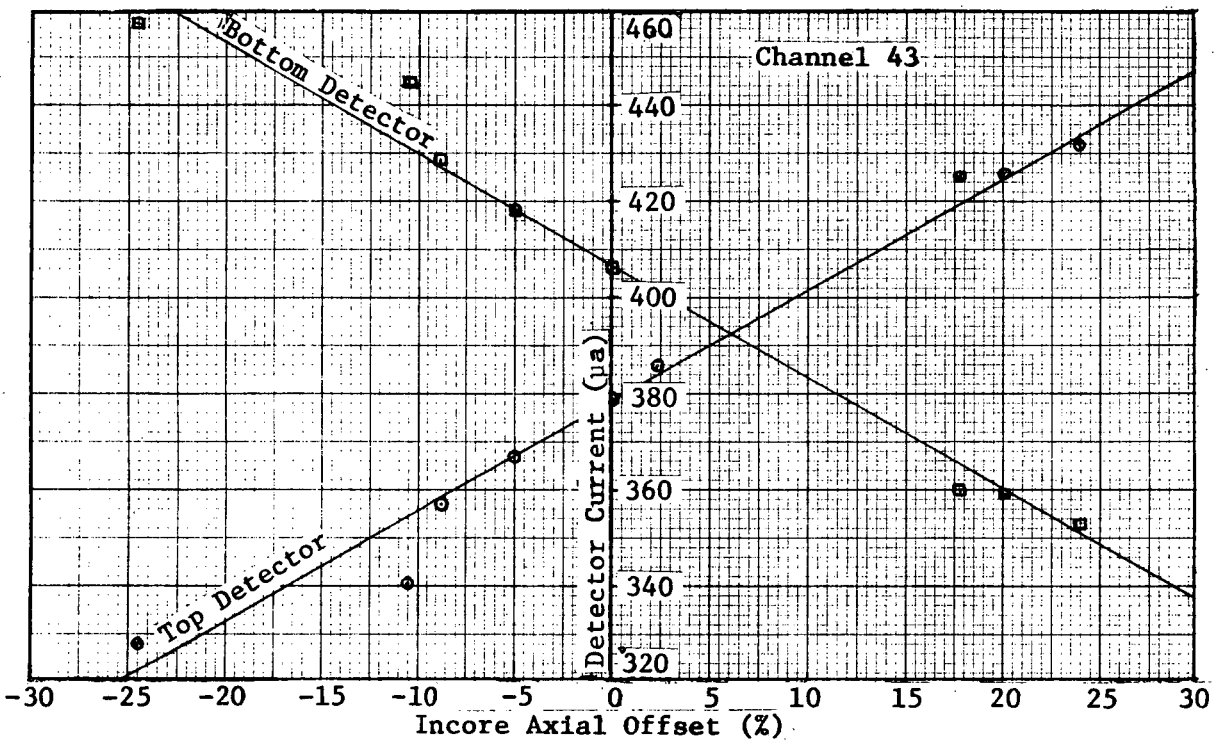


Figure 6.10 Channels N43 and N44

Top and Bottom Detector Current vs. Incore Axial Offset



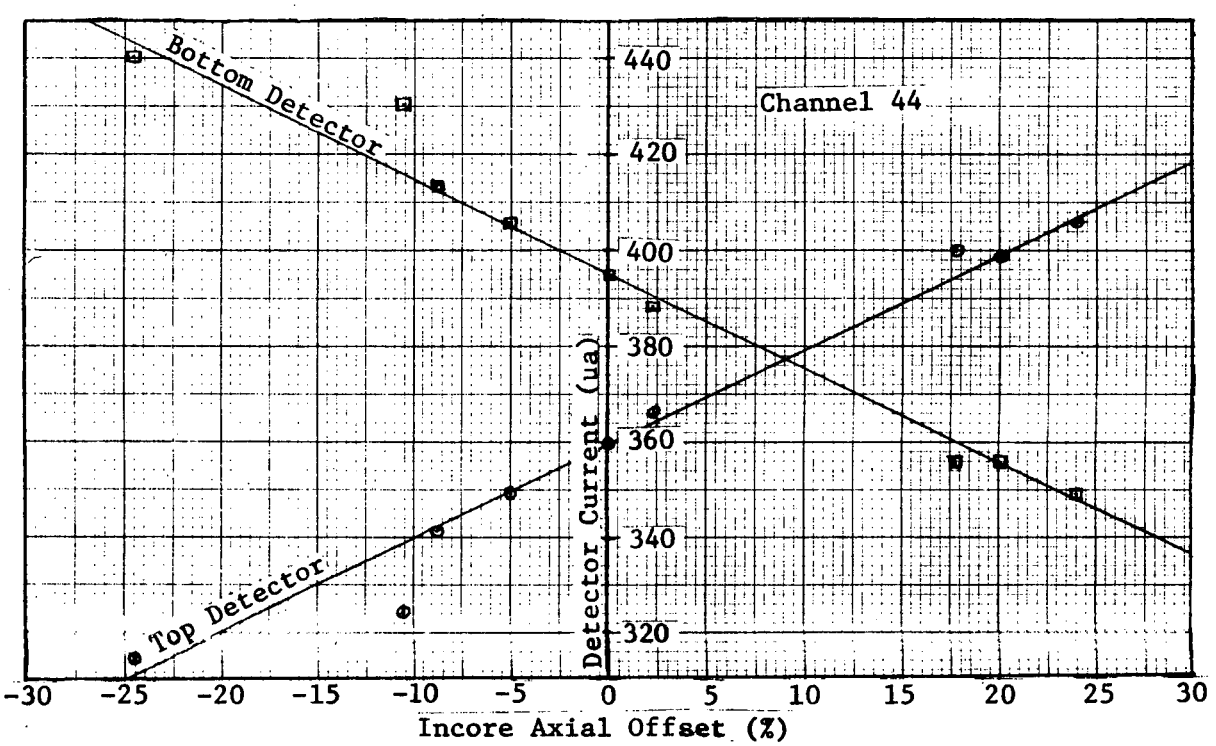
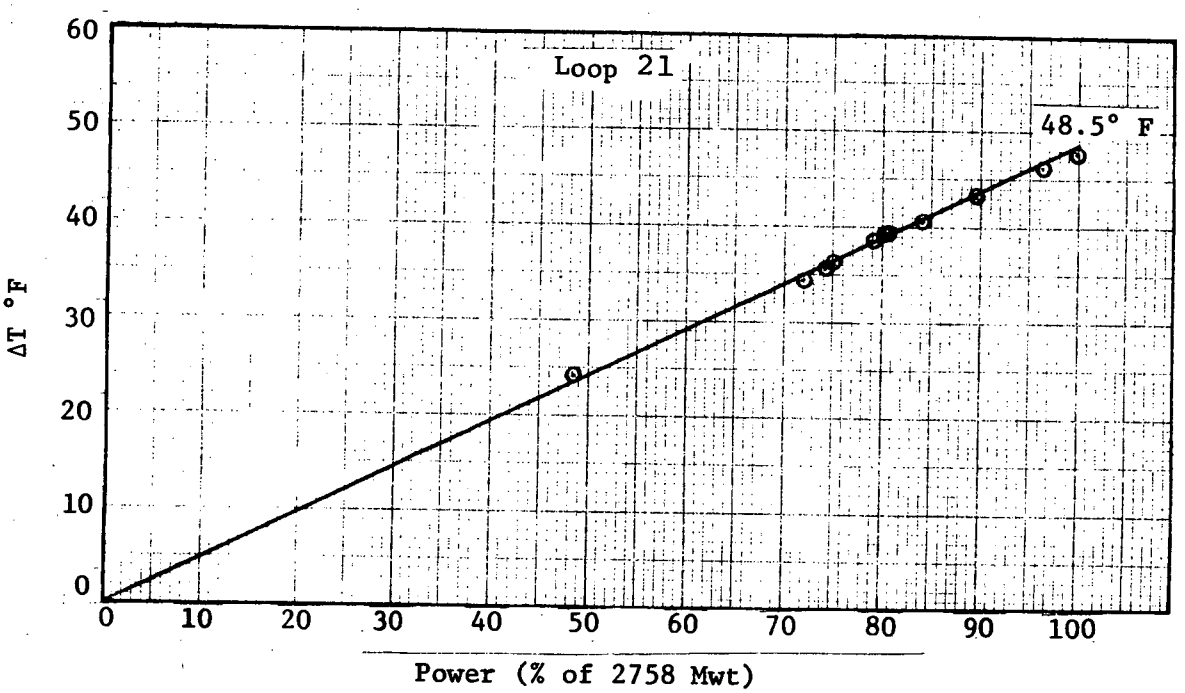


Figure 6.11

Reactor Coolant Loop ΔT vs. Percent Power



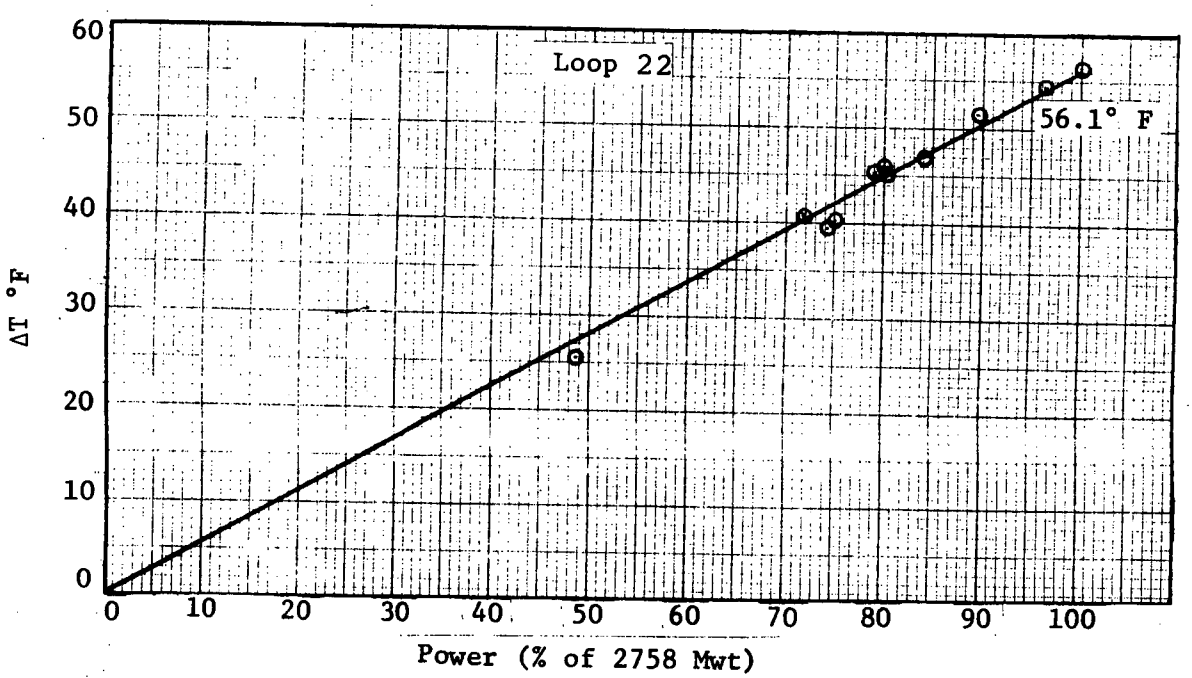
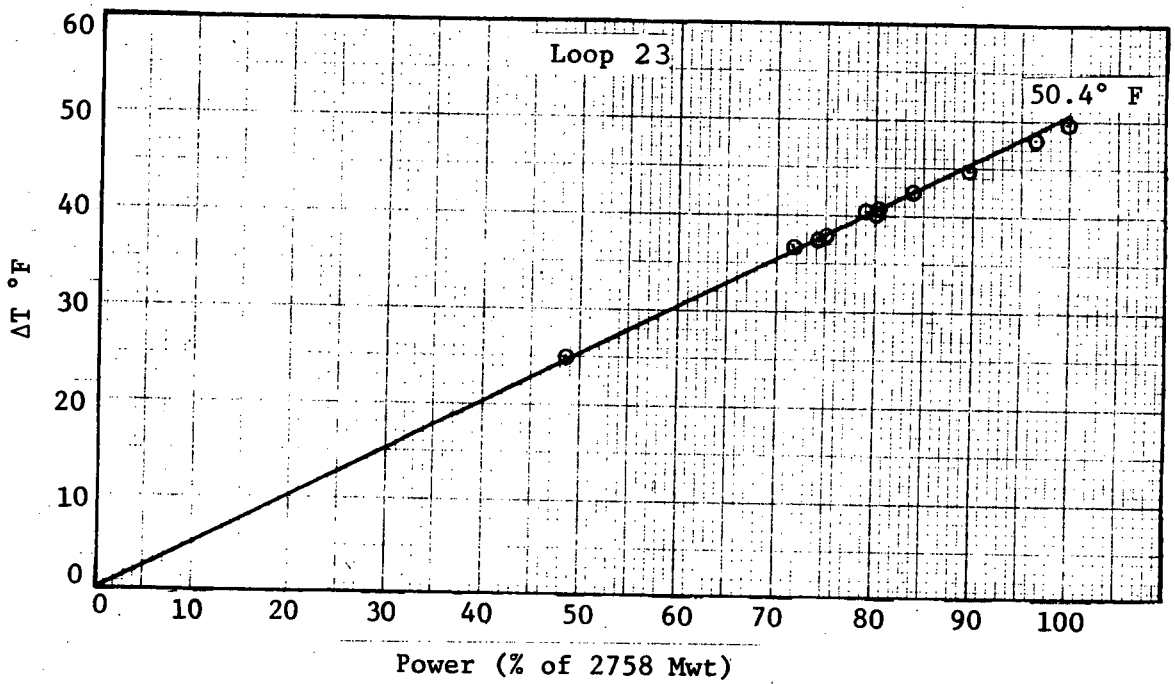
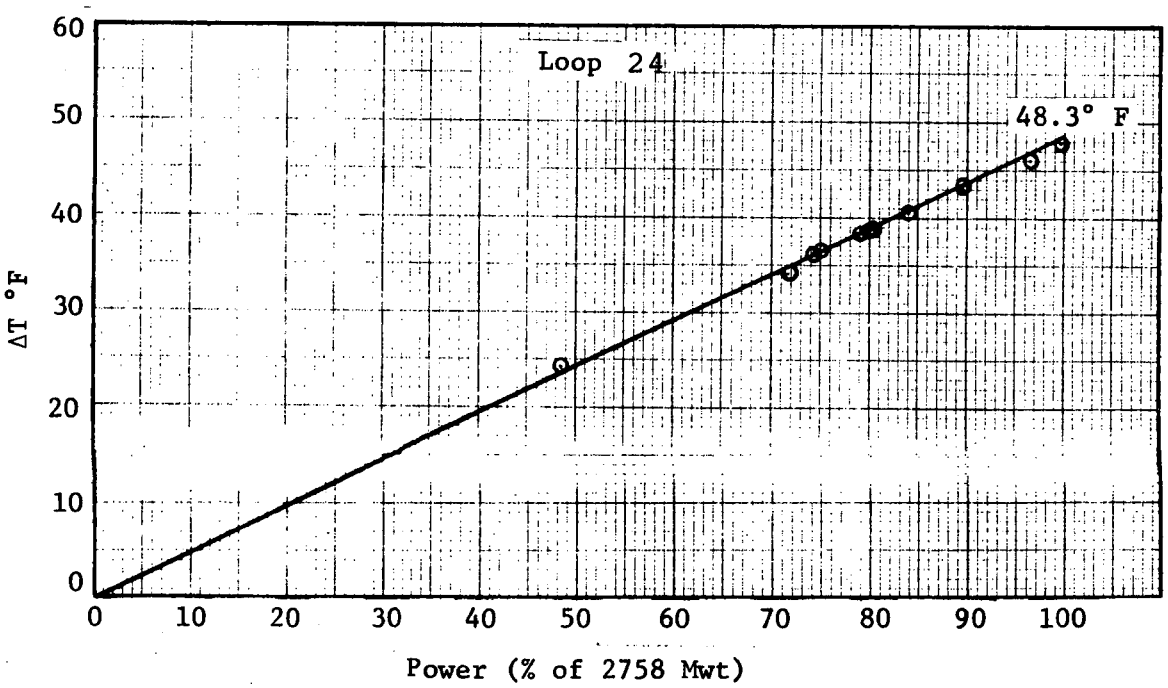


Figure 6.12

Reactor Coolant Loop ΔT vs. Percent Power





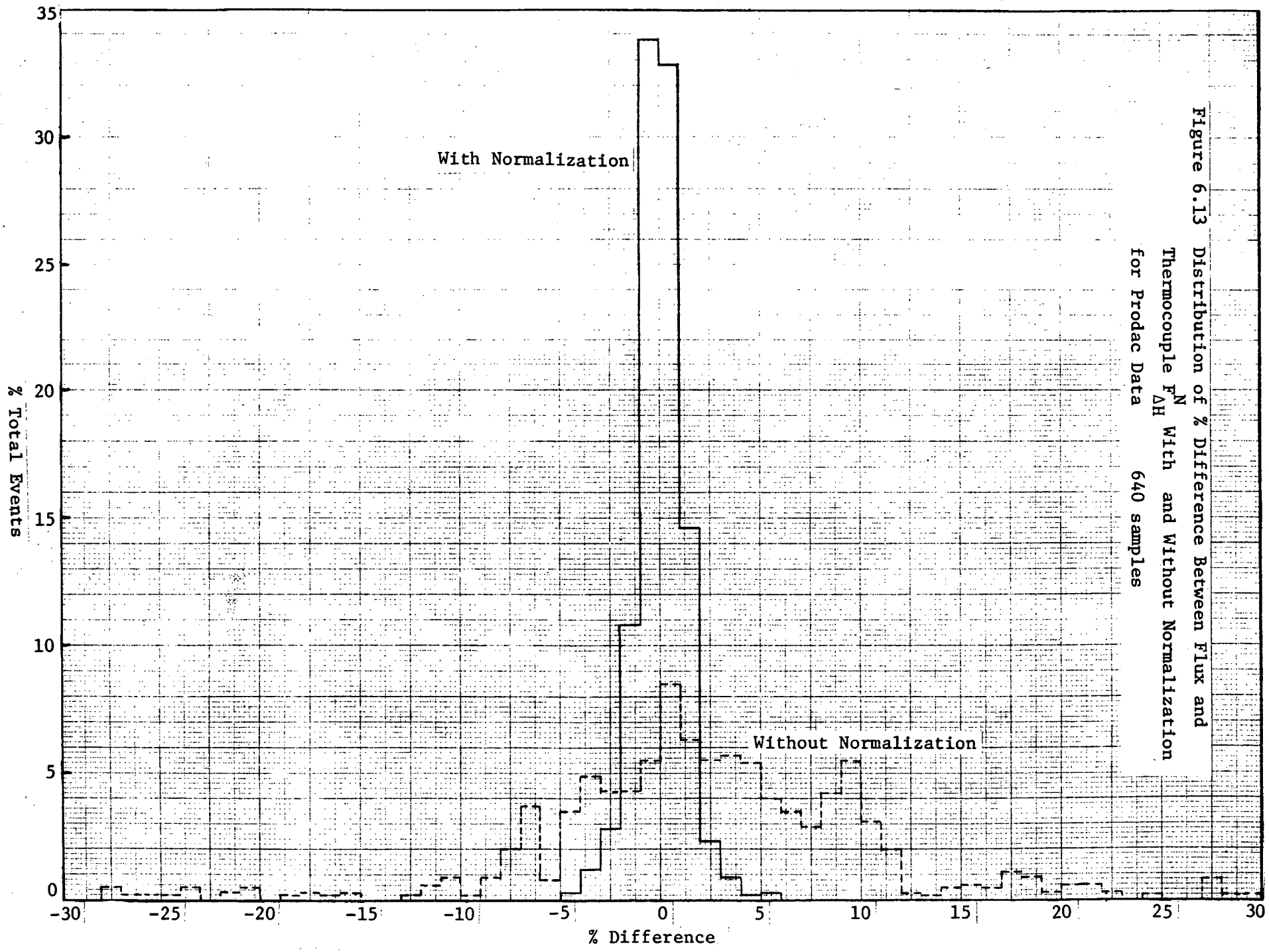


Figure 6.13 Distribution of % Difference Between Flux and Thermocouple $F^N_{\Delta H}$ With and Without Normalization for Prodac Data 640 samples

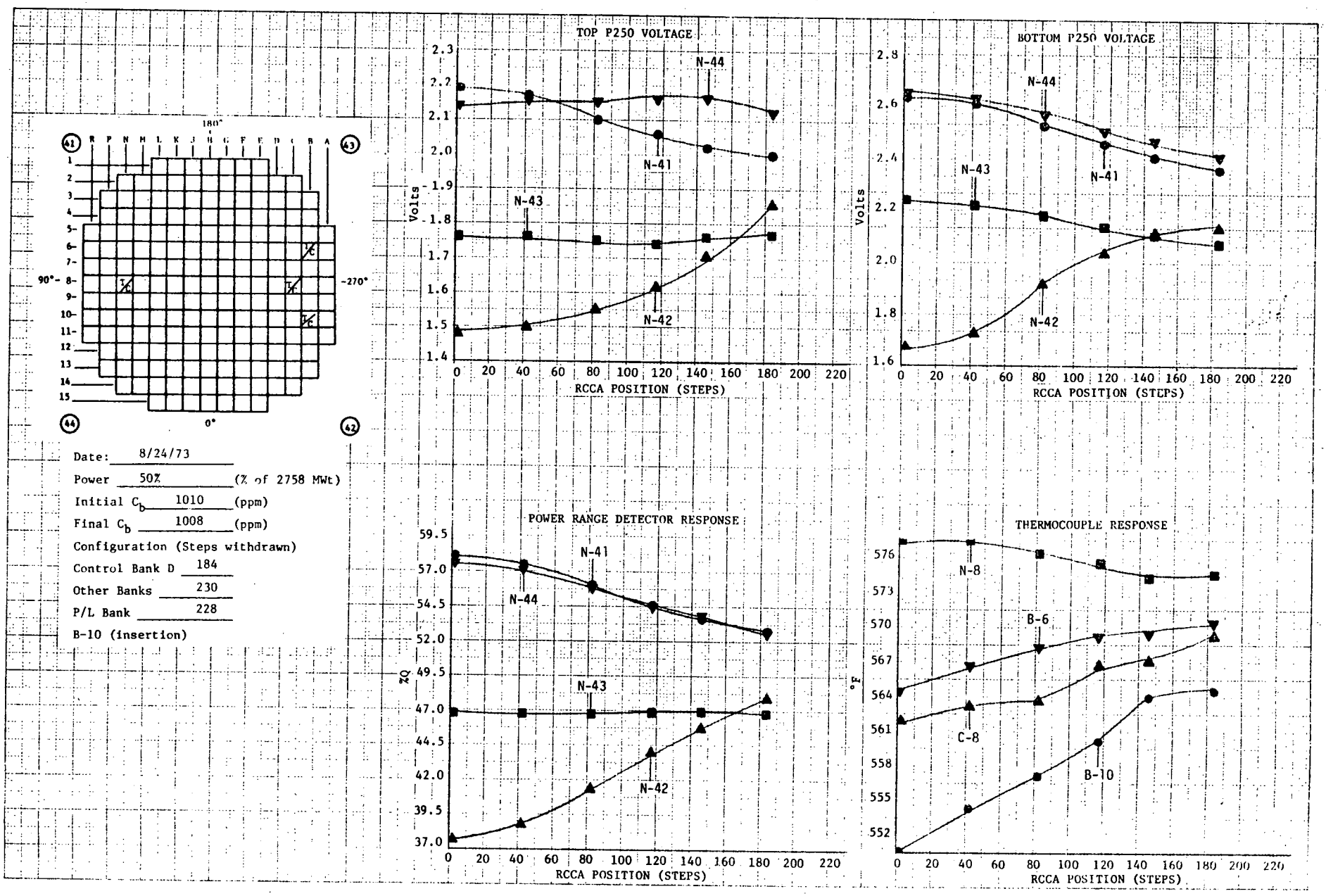


Figure 6-14 EXCORE AND THERMOCOUPLE RESPONSE TO RCCA B-10 INSERTION

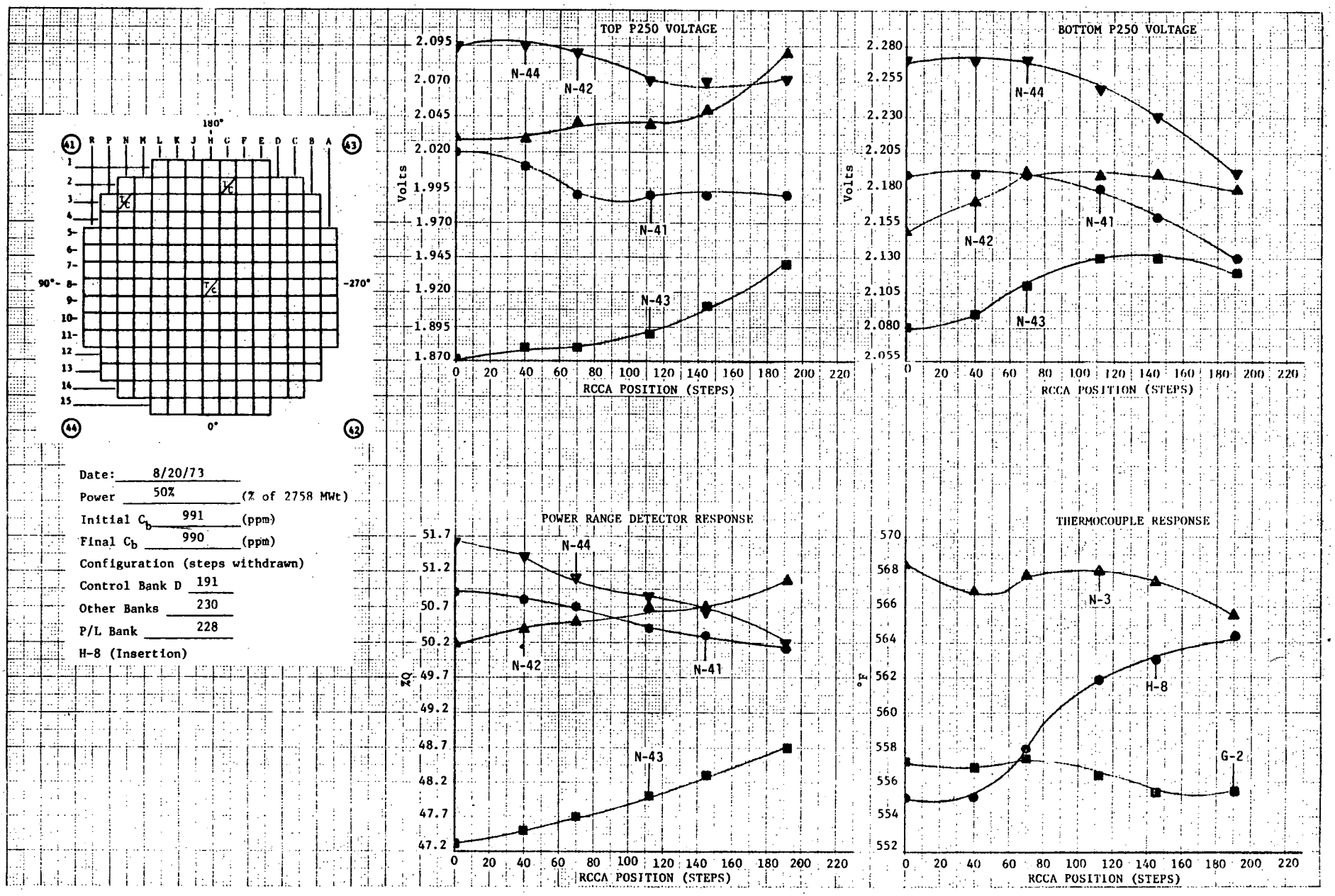


Figure 6.15 EXCORE AND THERMOCOUPLE RESPONSE TO RCCA H-8 INSERTION

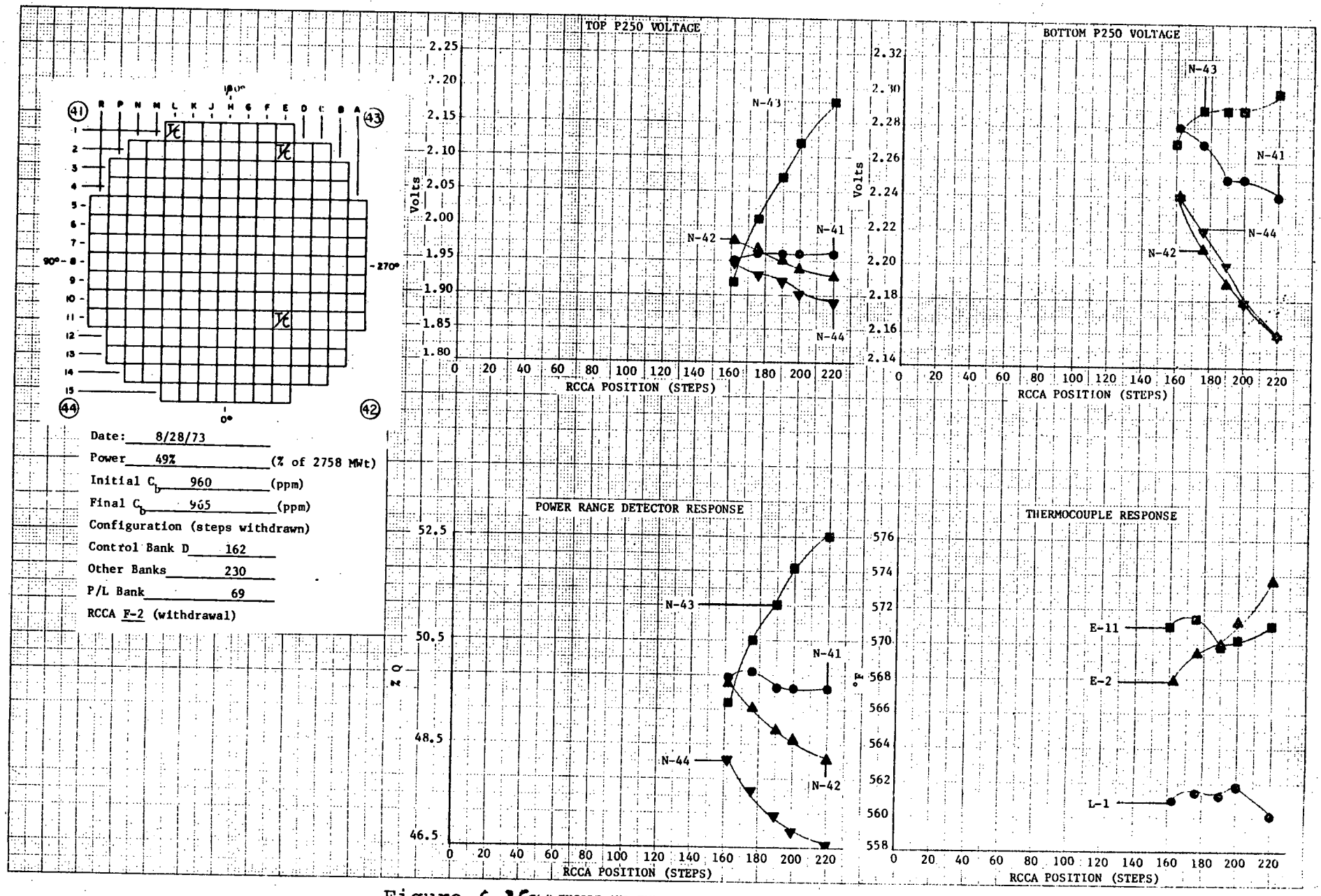


Figure 6.16 EXCORE AND THERMOCOUPLE RESPONSE TO RCCA F-2 EJECTION

7. Summary of Comparison Between Measured and Design Results

Comparison between measured results and design values of physics parameters have been presented throughout this report at the appropriate places. Table 7.1 summarizes the deviation between measured and design values of a set of physics parameters measured during these tests. Results presented here verified the nuclear design.

TABLE 7.1

Summary of Deviation Between Measured and Design Values of Physics Parameters

	Physics Parameters	Deviation Between Measured and Design Values	Acceptance Criterion Deviation Between Measured and Design Values
1.	Boron Endpoint Concentrations (HZP)	Less than ±50 ppm	±50 ppm
2.	Integral Worths of Individual RCC Banks (HZP)	Less than ±10%	±10%
3.	Minimum Shutdown Boron (HZP)	Less than ±50 ppm	±50 ppm
4.	Average Boron Worth (HZP)	Less than ±10%	±10%
5.	Isothermal Temperature Coefficients	Measured Values More Negative Than Design Values	Moderator Temperature Coefficient Negative
6.	*Maximum $F_{\Delta H}$ at (HZP)		Less than ±10%
	(i) All Rods Out	0.0%	"
	(ii) Bank D @0	1.20%	"
	(iii) Banks D and C @0	-0.59%	"
7.	Power Coefficient	Less than ±20%	±20%

* $F_{\Delta H}$ values are best estimate

8. References

1. Indian Point Unit No. 2 Reactor FSAR, "Final Facility Description and Safety Analysis Report", Including 15 Supplements, November 1970

2. "Consolidated Edison Company Indian Point Nuclear Generating Plant Unit II Technical Specifications and Bases", Including Revision 2, August 9, 1973.

3. "Core Physics Characteristics of the Indian Point Nuclear Plant Unit II", Cycle 1 - by P. J. Sipush and L. W. Stern, WCAP-8641 (June 1973)

4. "The INCORE Code" - By W. D. Leggett and L. D. Eisenhart, WCAP-7149 (December 1967).

5. "Indian Point Unit No. 2 Results of the X-Y Xenon Stability Test", Con Edison Report, October 1974, Transmitted via Letter from Mr. Carl L. Newman, Vice President, Con Edison to Mr. Edson G. Case, Acting Director, Directorate of Licensing, USAEC, dated October 17, 1974

6. Fuel Densification - Indian Point Nuclear Generating Station Unit No. II (January 1973)

7. Addendum to Fuel Densification - Indian Point Nuclear Generating Station Unit No. II (March 1973)

APPENDIX A CORE LOADING

The first source assembly (C-02) was installed in the reactor vessel at 19:45 on March 1, 1973, and the core loading was completed with the assembly C-41 at 6:08 on March 5, 1973. Total elapsed time for the core loading was 82.4 hours. Count rates from the plant source range detectors (NE31 and NE32) with the core fully loaded were 16.3 cps and 9.9 cps, respectively; well in excess of the 2 cps required by Technical Specifications. Table A1 presents a record of the data obtained during the core loading operation, and Figures A1 through A5 show the inverse count rate ratio (ICRR) plots generated from the data.

Reactor vessel water boron concentration was nominally 2180 ppm throughout the core loading process.

Fuel was loaded into and removed from the vessel on two previous occasions. Modifications to the RCC guide tubes and the fuel density and fill gas pressure were made following each unloading.

TABLE A-1 Count Rate Data Obtained During

Initial Core Loading - Indian Point Unit 2

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.)										ICRR				
					Det. A (Temporary)		Det. B (Temporary)		Det. C (Temporary)		Plant Channel NE-31		Plant Channel NE-32						
					Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	A	B	C	NE-31	NE-32
3/1/73	0a	-	D-2		.04	-													
	0b	-	M-2				.04	-											
	0c	-	C-2						.17	-	.10	-	.35	-					
	1	C-02	E-1	1945	1338	-	BKg	-	73.67	-	6.59	-	BKg	-					
	2	C-04	A-11	2013	1336	-	BKg	-	73.39	-	7.03	-	BKg	-					
	3	C-08	L-15	2027	1335	-	BKg	-	72.23	-	6.99	-	14.76	-					
	4	C-07	P-11	2050	1337	-	BKg	-	72.77	-	6.77	-	14.53	-					
	5	C-33	F-1	2230	1474	-	BKg	-	78.04	-	6.59	-							
	6	C-55	G-1	2245	1478	-	BKg	-	78.72	-	6.59	-							
	7	C-24	E-2	2300	2799	-	BKg	-	1120	-	6.59	-							
3/2/73	7a	C-07	R-11	0110	2794	-	BKg	-	1116	-	9.28	-	15.36	-					
	8	A-30	F-2	0143	3032	-	BKg	-	1198	-	9.26	-	14.53	-					
	9	A-28	E-3	0201	3110	-	BKg	-	1319	-	8.84	-	14.34	-					
	10	B-60	F-3	0216	3132	-	BKg	-	1326	-	9.17	-	14.46	-					
	11a	C-12	G-2	0231	3148	-	BKg	-	1333	-	9.74	-	15.23	-					
	11b	C-12	R-5	0246	3133	-	BKg	-	1320	-	9.89	-	12.97	-					
	11c	C-04	G-2	0255	3157	-	BKg	-	1342	-	9.45	-	15.04	-					
	11d	C-02	E-15	0312	82.19	-	.34	-	3.42	-	3.20	-	14.73	-					
	12	C-62	E-1	0324	242.6	242.6	.37	.37	7.71	7.71	3.23	3.23	29.85	29.85	1.00	1.00	1.00	1.00	1.00
	13	A-59	G-3	0459	256.3	"	.40	"	8.36	"	3.46	"	30.31	"	.946	.925	.922	.933	.984
	14	C-35	H-1	0524	278.2	"	.47	"	9.23	"	4.06	"	30.34	"	.872	.787	.835	.796	.984
	15	A-48	H-2	0540	311.6	"	.58	"	9.76	"	5.09	"	29.34	"	.778	.638	.790	.634	1.017
	16	B-24	H-3	0553	315.1	"	.55	"	10.06	"	5.23	"	29.69	"	.770	.673	.766	.618	1.005
	17a	C-54	J-1	0604	315.1	"	1.21	"	10.28	"	5.72	"	31.45	"	.770	.306	.750	.365	.949
	17b	C-12	J-2	0615	316.9	"	2.20	"	9.96	"	5.78	"	30.21	"	.766	.168	.774	.559	.988

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.) Det. A (Temporary) Value	Det. A (Temporary) Ref. Val.	Det. B (Temporary) Value	Det. B (Temporary) Ref. Val.	Det. C (Temporary) Value	Det. C (Temporary) Ref. Val.	Plant Channel NE-31 Value	Plant Channel NE-31 Ref. Val.	Plant Channel NE-32 Value	Plant Channel NE-32 Ref. Val.	ICRR A	ICRR B	ICRR C	ICRR NE-31	ICRR NE-32
3/2/73	17c	C-12	R-5	0627	314.8	242.6	1.14	.37	10.03	7.71	6.27	3.23	30.34	29.85	.771	.324	.769	.515	.984
	17d	C-07	J-2	0637	359.7	277.2	34.56	11.22	11.89	9.14	14.03	7.23	30.47	29.98	.771	.324	.769	.515	.984
	18	A-45	J-3	0653	360.3	"	35.91	"	11.94	"	14.57	"	30.08	"	.769	.312	.765	.496	.997
	19	C-09	K-1	0705	364.1	"	79.36	"	11.82	"	15.69	"	30.55	"	.761	.141	.773	.461	.981
	20	A-34	K-2	0719	365.7	"	139.5	"	11.89	"	16.80	"	29.58	"	.758	.080	.769	.430	1.014
	21	B-57	K-3	0840	364.1	"	154.9	"	11.69	"	17.41	"	29.29	"	.761	.072	.782	.415	1.024
	22	C-63	L-1	0900	365.3	"	923.6	"	11.74	"	17.10	"	30.34	"	.759	.012	.778	.423	.988
	23	C-18	L-2	0912	365.0	"	3442	"	12.17	"	17.89	"	30.51	"	.759	.003	.751	.404	.983
	24	A-14	L-3	0930	364.7	"	3672	"	12.04	"	15.90	"	29.70	"	.760	.003	.759	.455	1.009
	25	B-51	E-4	0945	365.2	"	3653	"	11.91	"	17.04	"	28.93	"	.759	.003	.767	.424	1.036
	26	A-55	F-4	1000	369.7	"	3644	"	12.10	"	17.29	"	30.22	"	.750	.003	.755	.418	.992
	27	B-07	G-4	1015	370.6	"	3635	"	12.06	"	16.65	"	30.21	"	.748	.003	.758	.434	.992
	28	A-04	H-4	1032	369.4	"	3631	"	12.10	"	17.06	"	29.94	"	.750	.003	.755	.424	1.001
	29	B-03	J-4	1040	372.4	"	3643	"	11.74	"	18.03	"	30.26	"	.744	.003	.778	.401	.991
	30	A-51	K-4	1100	372.8	"	3663	"	11.89	"	16.70	"	30.05	"	.744	.003	.769	.433	.998
	31	B-43	L-4	1310	372.0	"	3655	"	12.50	"	16.68	"	30.52	"	.745	.003	.731	.433	.982
	32	A-06	E-5	1325	372.7	"	3649	"	11.75	"	17.24	"	30.18	"	.744	.003	.778	.419	.993
	33	B-33	F-5	1339	373.0	"	3653	"	11.99	"	17.49	"	30.11	"	.743	.003	.762	.413	.996
	34	A-38	G-5	1420	369.9	"	3648	"	12.01	"	16.91	"	30.45	"	.749	.003	.761	.428	.984
	35	B-50	H-5	1436	372.1	"	3647	"	11.87	"	17.11	"	30.75	"	.745	.003	.770	.422	.975
	36	A-61	J-5	1450	371.2	"	3649	"	12.12	"	17.34	"	30.08	"	.747	.003	.754	.417	.997
	37	B-30	K-5	1505	372.7	"	3647	"	12.36	"	17.68	"	30.44	"	.744	.003	.739	.409	.984
	38	A-62	L-5	1520	371.1	"	3646	"	11.83	"	16.89	"	31.23	"	.747	.003	.773	.428	.960
	39	B-34	E-6	1534	371.3	"	3646	"	12.40	"	17.75	"	30.79	"	.746	.003	.737	.407	.974
	40	A-36	F-6	1550	373.9	"	3641	"	12.32	"	17.68	"	29.71	"	.741	.003	.742	.409	1.009

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.)										ICRR				
					Det. A (Temporary)		Det. B (Temporary)		Det. C (Temporary)		Plant Channel NE-31		Plant Channel NE-32						
					Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	A	B	C	NE-31	NE-32
3/2/73	41	B-13	G-6	1850	367.4	277.2	3608	11.22	11.80	9.14	17.05	7.23	29.87	29.98	.754	.003	.774	.424	1.004
	42	A-05	H-6	1906	366.8	"	3605	"	11.61	"	17.01	"	30.41	"	.756	.003	.787	.425	.986
	43	B-37	J-6	1920	365.5	"	3606	"	11.70	"	16.86	"	29.92	"	.758	.003	.781	.429	1.002
	44	A-19	K-6	1937	366.7	"	3600	"	11.84	"	17.05	"	29.93	"	.756	.003	.772	.424	1.002
	45	B-05	L-6	2116	368.4	"	3602	"	11.85	"	16.71	"	30.32	"	.752	.003	.771	.433	.989
	46	A-58	E-7	2132	366.7	"	3592	"	12.13	"	16.49	"	30.13	"	.756	.003	.754	.438	.995
	47	B-04	F-7	2146	364.2	"	3602	"	12.12	"	16.11	"	30.15	"	.761	.003	.755	.449	.994
	48	A-41	G-7	2159	367.7	"	3595	"	12.15	"	16.95	"	29.76	"	.754	.003	.752	.426	1.007
	49	B-39	H-7	2213	369.2	"	3596	"	11.79	"	16.79	"	29.18	"	.751	.003	.775	.431	1.027
	50	A-13	J-7	2226	368.5	"	3597	"	11.79	"	16.40	"	31.07	"	.752	.003	.775	.441	.965
	51	B-08	K-7	2240	368.4	"	3595	"	11.88	"	17.72	"	29.80	"	.752	.003	.769	.408	1.006
	52	A-15	L-7	2252	368.6	"	3594	"	12.36	"	16.65	"	30.14	"	.752	.003	.739	.434	.995
3/3/73	53	B-45	E-8	0223	356.4	"	3515	"	11.27	"	16.11	"	29.63	"	.778	.003	.811	.449	1.012
	54	A-29	F-8	0238	359.0	"	3517	"	11.60	"	15.74	"	28.71	"	.772	.003	.788	.459	1.044
	55	B-42	G-8	0250	358.5	"	3622	"	11.36	"	16.55	"	29.95	"	.773	.003	.804	.437	1.001
	56	A-44	H-8	0307	357.3	"	3513	"	11.66	"	17.01	"	29.73	"	.776	.003	.784	.425	1.008
	57	B-56	J-8	0320	359.4	"	3516	"	11.20	"	16.44	"	30.57	"	.771	.003	.816	.440	.981
	58	A-27	K-8	0334	360.4	"	3519	"	11.98	"	16.43	"	28.58	"	.769	.003	.762	.440	1.049
	59	B-59	L-8	0520	357.7	"	3506	"	11.50	"	16.91	"	31.32	"	.775	.003	.795	.428	.957
	60	A-31	E-9	0537	358.2	"	3511	"	11.65	"	16.72	"	29.21	"	.774	.003	.784	.432	1.026
	61	B-19	F-9	0553	359.5	"	3577	"	11.79	"	16.08	"	28.82	"	.771	.003	.775	.450	1.040
	62	A-53	G-9	0602	360.2	"	3503	"	11.75	"	16.49	"	29.29	"	.769	.003	.778	.438	1.024
	63	B-63	H-9	0622	358.6	"	3490	"	11.44	"	16.64	"	29.35	"	.773	.003	.799	.434	1.021
	64	A-18	J-9	0635	358.8	"	3421	"	11.57	"	16.08	"	28.91	"	.772	.003	.790	.450	1.037
	65	B-26	K-9	0647	361.6	"	3514	"	11.61	"	16.14	"	30.15	"	.766	.003	.787	.448	.994

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.) Det. A (Temporary) Value	Det. A (Temporary) Ref. Val.	Det. B (Temporary) Value	Det. B (Temporary) Ref. Val.	Det. C (Temporary) Value	Det. C (Temporary) Ref. Val.	Plant Channel NE-31 Value	Plant Channel NE-31 Ref. Val.	Plant Channel NE-32 Value	Plant Channel NE-32 Ref. Val.	ICRR A	ICRR B	ICRR C	ICRR NE-31	ICRR NE-32
3/3/73	66	A-56	L-9	0702	360.6	277.2	3519	11.22	11.76	9.14	16.92	7.23	29.46	29.98	.769	.003	.777	.428	1.018
	67	B-11	E-10	0900	359.7	"	3465	"	11.84	"	16.82	"	29.98	"	.771	"	.772	.430	1.000
	68	A-60	F-10	0915	360.3	"	3514	"	11.48	"	17.04	"	30.19	"	.769	"	.796	.425	.993
	69	B-10	G-10	0930	362.6	"	3518	"	11.72	"	16.37	"	29.92	"	.764	"	.780	.442	1.002
	70	A-25	H-10	0943	361.3	"	3496	"	11.52	"	17.04	"	28.99	"	.767	"	.793	.425	1.034
	71	B-09	J-10	1004	361.7	"	3404	"	11.59	"	17.16	"	29.40	"	.766	"	.789	.422	1.020
	72	A-40	K-10	1025	362.6	"	3518	"	11.69	"	16.47	"	30.43	"	.764	"	.782	.440	.985
	73	B-20	L-10	1036	361.2	"	3517	"	11.38	"	16.61	"	29.72	"	.767	"	.803	.436	1.009
	74	A-64	E-11	1050	361.7	"	3516	"	11.87	"	16.72	"	29.72	"	.766	"	.770	.433	1.009
	75	B-29	F-11	1243	360.4	"	3509	"	11.50	"	16.11	"	28.25	"	.769	"	.795	.449	1.061
	76	A-65	G-11	1303	358.7	"	3491	"	11.88	"	16.21	"	28.81	"	.773	"	.769	.447	1.041
	77	B-55	H-11	1318	357.4	"	3480	"	11.89	"	16.31	"	29.19	"	.776	"	.769	.444	1.027
	78	A-03	J-11	1330	356.2	"	3479	"	11.76	"	16.04	"	28.90	"	.778	"	.777	.451	1.037
	79	B-25	K-11	1343	353.3	"	3475	"	12.02	"	16.68	"	29.73	"	.785	"	.760	.434	1.008
	80	A-63	L-11	1355	353.6	"	3459	"	11.42	"	16.33	"	30.10	"	.784	"	.800	.443	.996
	81	B-47	E-12	1409	354.6	"	3462	"	11.36	"	16.08	"	28.96	"	.782	"	.804	.450	1.035
	82	A-11	F-12	1845	346.9	"	3411	"	11.18	"	15.89	"	28.96	"	.799	"	.817	.455	1.035
	83	B-38	G-12	1614	348.2	"	3426	"	11.37	"	15.70	"	28.68	"	.796	"	.790	.461	1.045
	84	A-16	H-12	1655	349.4	"	3174	"	11.35	"	15.93	"	28.08	"	.793	"	.805	.450	1.068
	85	B-44	J-12	1710	345.8	"	3411	"	11.08	"	15.03	"	28.58	"	.802	"	.825	.481	1.049
	86	A-50	K-12	1722	349.3	"	3418	"	11.02	"	15.38	"	28.44	"	.793	"	.829	.410	1.036
	87	B-15	L-12	1734	347.3	"	3421	"	11.13	"	15.33	"	29.28	"	.798	"	.821	.472	1.024
	88	A-35	E-13	1748	349.3	"	3414	"	10.95	"	15.93	"	29.55	"	.793	"	.835	.454	1.014
	89	B-54	F-13	1800	349.1	"	3415	"	11.71	"	15.53	"	28.26	"	.794	"	.780	.466	1.061
	90	A-32	G-13	1814	347.6	"	3419	"	10.98	"	15.49	"	29.12	"	.797	"	.832	.467	1.030

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.) Det. A (Temporary) Value	Det. A (Temporary) Ref. Val.	Det. B (Temporary) Value	Det. B (Temporary) Ref. Val.	Det. C (Temporary) Value	Det. C (Temporary) Ref. Val.	Plant Channel NE-31 Value	Plant Channel NE-31 Ref. Val.	Plant Channel NE-32 Value	Plant Channel NE-32 Ref. Val.	ICRR A	ICRR B	ICRR C	ICRR NE-31	ICRR NE-32
3/3/73	91	B-02	H-13	1827	349.8	277.2	3415	11.22	11.23	9.14	15.61	7.23	28.59	29.98	.792	.003	.814	.463	1.049
	92	A-32	J-13	1858	347.4	"	3406	"	11.37	"	15.04	"	28.46	"	.798	.003	.804	.481	1.053
	93	B-64	K-13	2008	345.8	"	3408	"	11.91	"	15.72	"	28.25	"	.802	.003	.767	.460	1.061
	94	A-23	L-13	2023	347.9	"	3408	"	11.34	"	15.34	"	28.21	"	.797	.003	.806	.471	1.063
	95	C-16	E-14	2036	349.3	"	3406	"	11.25	"	14.44	"	28.87	"	.794	.003	.812	.501	1.038
	96a	A-39	F-14	2050	351.7	"	3403	"	11.69	"	16.02	"	28.33	"	.788	.003	.782	.451	1.058
	96b	C-12	G-14	2100	349.9	"	3406	"	11.51	"	15.22	"	28.74	"	.792	.003	.794	.475	1.043
	96c	C-12	R-11	2108	348.3	"	3406	"	11.53	"	15.55	"	27.74	"	.796	.003	.793	.465	1.081
	96d	C-02	G-14	2120	349.1	277.8	3410	11.23	11.48	9.10	15.99	7.43	16.23	17.54	.796	.003	.793	.465	1.081
	96e	—	D-14	2128	348.2	277.1	3408	11.22	202.1	160.2	15.69	7.29	15.57	16.83	.796	.003	.793	.465	1.081
	97a	A-07	H-14	2135	347.5	"	3400	"	218.9	"	15.74	"	15.94	"	.797	.003	.732	.463	1.056
	97b	C-12	J-14	2144	349.9	"	3407	"	218.9	"	16.31	"	16.15	"	.792	.003	.732	.447	1.042
	97c	C-12	R-11	2152	349.1	"	3400	"	219.5	"	16.06	"	15.99	"	.794	.003	.730	.454	1.052
	97d	C-08	J-14	2202	350.8	278.4	3404	11.23	231.5	169.0	16.10	7.31	2.97	3.13	.794	.003	.730	.454	1.052
	98	A-10	K-14	2221	350.1	"	3396	"	230.3	"	15.73	"	3.08	"	.795	.003	.734	.465	1.016
	99	C-15	L-14	2233	351.1	"	3406	"	230.7	"	15.72	"	3.46	"	.793	.003	.732	.465	.905
	100	C-58	E-15	2247	349.9	"	3400	"	301.3	"	16.13	"	3.25	"	.796	.003	.561	.453	.963
	101	C-37	F-15	2259	348.0	"	3399	"	478.4	"	15.84	"	3.21	"	.800	.003	.353	.461	.975
	102	C-59	G-15	2310	352.5	"	3398	"	849.6	"	15.40	"	5.14	"	.790	.003	.199	.475	.609
3/4/73	103	C-29	H-15	0043	351.2	"	3394	"	958.2	"	15.67	"	6.19	"	.793	.003	.176	.466	.506
	104	C-60	J-15	0058	351.6	"	3392	"	996.8	"	15.36	"	8.04	"	.792	.003	.169	.476	.389
	105	C-32	K-15	0110	349.1	"	3387	"	997.8	"	16.00	"	9.44	"	.797	.003	.169	.457	.332
	106	C-61	L-15	0122	351.5	"	3389	"	998.6	"	15.14	"	10.23	"	.792	.003	.169	.483	.306
	107	B-28	D-9	0134	352.2	"	3378	"	999.6	"	15.68	"	9.97	"	.790	.003	.169	.466	.314
	108	A-02	D-8	0145	352.4	"	3381	"	999.7	"	16.49	"	9.38	"	.790	.003	.169	.443	.334

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.) Det. A (Temporary) Value	Det. A Ref. Val.	Det. B (Temporary) Value	Det. B Ref. Val.	Det. C (Temporary) Value	Det. C Ref. Val.	Plant Channel NE-31 Value	Plant Channel NE-31 Ref. Val.	Plant Channel NE-32 Value	Plant Channel NE-32 Ref. Val.	ICRR A	ICRR B	ICRR C	ICRR NE-31	ICRR NE-32
3/4/73	109	B-06	D-7	0158	351.1	278.4	3214	11.23	996.4	169.0	15.94	7.31	9.30	3.13	.793	.003	.170	.458	.336
	110	A-01	C-9	0211	352.0	"	3375	"	996.3	"	16.23	"	9.86	"	.791	.003	.170	.456	.317
	111	B-21	C-8	0224	351.2	"	3274	"	1002	"	15.52	"	9.64	"	.793	.003	.169	.471	.325
	112a	A-37	C-7	0236	351.4	"	3384	"	1001	"	15.69	"	9.05	"	.792	.003	.169	.466	.346
	112b	C-12	B-9	0248	351.9	"	3386	"	998.3	"	15.23	"	9.15	"	.791	.003	.169	.480	.342
	113	A-22	B-8	0202	353.4	"	3381	"	996.0	"	15.85	"	10.40	"	.788	.003	.170	.461	.301
	114	C-10	B-7	0313	348.9	"	3391	"	994.6	"	16.20	"	9.72	"	.798	.003	.170	.451	.322
	115	C-51	A-9	0325	352.4	"	3384	"	1003	"	15.84	"	9.59	"	.790	.003	.169	.461	.326
	116a	C-45	A-7	0500	351.0	"	3390	"	1000	"	16.04	"	9.43	"	.793	.003	.169	.456	.332
	116b	-	A-8	0517	2.08	1.65	-	"	-	"	-	"	-	"	.793	-	-	-	-
	116c	-	A-44	0517	-	"	-	"	993.6	167.9	-	"	-	"	-	-	.169	-	-
	117	A-54	D-6	0531	2.07	"	3386	"	994.4	"	15.86	"	9.65	"	.797	.003	.169	.461	.324
	118	B-27	C-6	0542	2.20	"	3383	"	992.7	"	17.27	"	10.10	"	.750	.003	.169	.423	.310
	119	B-35R	D-5	0554	2.16	"	3385	"	993.4	"	16.27	"	9.35	"	.764	.003	.169	.449	.335
	120	B-46	D-4	0609	2.23	"	3384	"	992.4	"	16.35	"	10.01	"	.740	.003	.169	.447	.313
	121	A-43	C-5	0619	2.12	"	3390	"	994.6	"	15.98	"	9.42	"	.778	.003	.169	.457	.332
	122	A-17	B-6	0632	2.39	"	3387	"	993.5	"	16.31	"	9.49	"	.690	.003	.169	.448	.330
	123	C-31	A-6	0643	2.58	"	3386	"	990.8	"	15.96	"	10.06	"	.640	.003	.169	.458	.311
	124	C-17	B-5	0656	2.36	"	3385	"	996.2	"	15.82	"	9.53	"	.699	.003	.168	.462	.328
	125	B-41	C-4	0830	2.37	"	3376	"	988.6	"	15.40	"	9.54	"	.696	.003	.170	.475	.328
	126	B-53	D-3	0847	2.31	"	3372	"	990.6	"	15.84	"	9.91	"	.714	.003	.169	.461	.316
	127	C-47	A-5	0905	2.62	"	3370	"	991.9	"	16.23	"	10.39	"	.630	.003	.169	.450	.301
	128	C-53	B-4	0920	2.62	"	3370	"	990.4	"	15.32	"	9.74	"	.630	.003	.169	.477	.321
	129	C-23	C-3	0936	2.63	"	3374	"	997.8	"	16.40	"	10.24	"	.627	.003	.168	.446	.306
	130	C-56	D-2	1015	2.50	"	3370	"	991.1	"	16.57	"	9.82	"	.660	.003	.169	.441	.319

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.)										ICRR				
					Det. A (Temporary)		Det. B (Temporary)		Det. C (Temporary)		Plant Channel NE-31		Plant Channel NE-32						
					Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	Value	Ref. Val.	A	B	C	NE-31	NE-32
	131	C-26	B-3	1040	2.28	1.65	3372	11.23	995.2	167.9	15.45	7.31	9.30	3.13	.724	.003	.169	.473	.336
	132	C-34	C-2	1053	2.47	"	3376	"	992.8	"	16.24	"	9.92	"	.668	.003	.169	.450	.316
	133	A-47	D-10	1245	2.60	"	3312	"	988.0	"	16.08	"	9.78	"	.635	.003	.170	.455	.320
	134	B-18	C-10	1255	2.65	"	3362	"	994.1	"	15.67	"	10.12	"	.623	.003	.169	.466	.309
	135	B-61	D-11	1306	2.63	"	3342	"	993.3	"	16.10	"	9.38	"	.627	.003	.169	.454	.334
	136	B-12	D-12	1320	2.85	"	3298	"	991.3	"	15.81	"	9.81	"	.579	.003	.169	.462	.319
	137	A-42	C-11	1335	2.75	"	3080	"	990.7	"	15.55	"	9.55	"	.600	.004	.169	.470	.328
	138	A-09	B-10	1347	2.71	"	3169	"	990.5	"	16.53	"	9.76	"	.609	.004	.169	.442	.321
	139	C-27	A-10	1401	3.10	"	3404	"	990.4	"	16.07	"	10.06	"	.532	.003	.169	.455	.311
	140	C-21	B-11	1413	3.02	"	3312	"	989.9	"	15.74	"	9.86	"	.546	.003	.170	.464	.317
	141	B-58	C-12	1425	3.05	"	3057	"	987.4	"	15.76	"	9.85	"	.541	.004	.170	.464	.318
	142	B-62	D-13	1437	3.23	"	3325	"	988.9	"	16.31	"	9.67	"	.511	.003	.170	.448	.324
	143	C-57	A-11	1450	3.10	"	3328	"	989.4	"	16.54	"	10.01	"	.532	.003	.170	.442	.313
	144	C-64	B-12	1500	3.12	"	3331	"	990.0	"	16.43	"	9.95	"	.529	.003	.170	.445	.314
	145	C-01	C-13	1513	3.08	"	3327	"	988.5	"	15.67	"	10.29	"	.536	.003	.170	.466	.304
	146	C-49	D-14	1525	3.40	"	3320	"	989.9	"	16.12	"	9.65	"	.485	.003	.170	.453	.334
	147	C-28	B-13	1630	3.24	"	3314	"	991.3	"	15.54	"	9.46	"	.509	.003	.169	.470	.331
	148	C-38	C-14	1645	3.30	"	3322	"	989.4	"	15.61	"	9.47	"	.500	.003	.170	.468	.330
	149	B-22	M-9	16.58	3.36	"	3321	"	990.7	"	16.85	"	10.01	"	.491	.003	.169	.424	.313
	150	A-08	M-8	1710	3.47	"	3313	"	987.4	"	15.86	"	10.35	"	.476	.003	.170	.461	.302
	151	B-14	M-7	1723	3.23	"	3306	"	988.5	"	15.86	"	9.96	"	.511	.003	.170	.461	.314
	152	A-12	N-9	1737	3.99	"	3186	"	988.2	"	16.00	"	10.27	"	.473	.004	.170	.457	.305
	153	B-32	N-8	1753	3.16	"	3322	"	987.9	"	16.46	"	9.57	"	.522	.003	.170	.444	.327
	154	A-57	N-7	1808	3.34	"	3320	"	986.6	"	16.47	"	10.06	"	.494	.003	.170	.444	.311
	155	C-03	P-9	1820	3.34	"	3318	"	987.8	"	15.80	"	9.63	"	.494	.003	.170	.463	.325

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.) Det. A (Temporary) Value	Det. A (Temporary) Ref. Val.	Det. B (Temporary) Value	Det. B (Temporary) Ref. Val.	Det. C (Temporary) Value	Det. C (Temporary) Ref. Val.	Plant Channel NE-31 Value	Plant Channel NE-31 Ref. Val.	Plant Channel NE-32 Value	Plant Channel NE-32 Ref. Val.	ICRR A	ICRR B	ICRR C	ICRR NE-31	ICRR NE-32
3/4/73	156	A-20	P-8	1835	3.43	1.65	3321	11.23	986.2	167.9	15.67	7.31	9.65	3.13	.481	.003	.170	.466	.324
	157	C-11	P-7	1850	3.46	"	3322	"	984.8	"	16.39	"	9.13	"	.477	.003	.170	.446	.343
	158	C-40	R-9	1902	3.31	"	3319	"	986.9	"	15.99	"	9.61	"	.498	.003	.170	.457	.326
	159a	C-42	R-7	1913	3.26	"	3312	"	985.2	"	15.44	"	9.30	"	.506	.003	.170	.473	.336
	159b	-	R-8	1928	3.40	1.72	3.82	.013	394.1	67.16	-	"	-	"	.506	.003	.170	-	-
	160	A-24	M-6	1940	3.43	"	3.58	"	393.7	"	15.76	"	9.63	"	.501	.004	.170	.464	.325
	161	B-23	N-6	2058	3.38	"	3.74	"	396.9	"	15.84	"	9.41	"	.509	.003	.169	.461	.333
	162	B-36	M-5	2113	3.50	"	3.62	"	395.8	"	16.29	"	9.67	"	.491	.004	.169	.449	.324
	163	B-40	N-4	2125	3.26	"	3.54	"	395.5	"	16.43	"	9.69	"	.528	.004	.169	.445	.323
	164	A-46	N-5	2137	3.40	"	3.64	"	394.9	"	15.59	"	9.30	"	.506	.004	.170	.469	.336
	165	A-26	P-6	2150	3.32	"	3.42	"	397.4	"	15.50	"	9.49	"	.518	.004	.169	.472	.330
	166	C-19	R-6	2202	3.37	"	3.69	"	397.2	"	16.05	"	9.39	"	.510	.004	.169	.455	.333
	167	C-20	P-5	2213	3.51	"	3.87	"	395.7	"	16.09	"	9.14	"	.490	.003	.169	454	.342
	168	B-46	N-4	2225	3.53	"	3.90	"	396.2	"	15.56	"	10.27	"	.487	.003	.169	.470	.305
	169	B-49	M-3	2238	3.30	"	3.84	"	397.8	"	16.25	"	9.60	"	.521	.003	.169	.450	.326
	170	C-50	R-5	2251	3.72	"	4.07	"	394.9	"	15.93	"	9.18	"	.462	.003	170	.459	.341
	171	C-48	P-4	2303	3.36	"	3.60	"	398.2	"	15.99	"	9.69	"	.512	.004	.169	.457	.323
3/5/73	172	C-05	N-3	0025	3.89	"	3.45	"	3984	"	15.88	"	9.28	"	.442	.004	.169	.460	.337
	173	C-39	M-2	0041	3.71	"	3.46	"	389.0	"	16.06	"	10.14	"	.464	.004	.173	.455	.309
	174	C-22	P-3	0053	3.46	"	3.41	"	390.2	"	15.12	"	9.90	"	.497	.004	.172	.483	.316
	175	C-30	N-2	0106	3.53	"	3.64	"	392.1	"	16.07	"	10.13	"	.487	.004	.171	.455	.309
	176	A-49	M-10	0119	3.66	"	3.45	"	392.8	"	15.97	"	9.64	"	.470	.004	.171	.458	.325
	177	B-01	N-10	0131	3.71	"	3.78	"	394.0	"	15.63	"	9.19	"	.464	.003	.170	.468	.340
	178	B-31	M-11	0146	3.46	"	3.76	"	392.4	"	15.02	"	9.77	"	.497	.003	.171	.497	.320
	179	B-17	M-12	0158	3.65	"	3.59	"	389.2	"	15.78	"	9.98	"	.471	.004	.173	.463	.314

TABLE A-1 (continued)

Date	Step	Assm I.D.	Core Pos.	Time	Count Rates (Counts/sec.) Det. A (Temporary) Value	Det. A (Temporary) Ref. Val.	Det. B (Temporary) Value	Det. B (Temporary) Ref. Val.	Det. C (Temporary) Value	Det. C (Temporary) Ref. Val.	Plant Channel NE-31 Value	Plant Channel NE-31 Ref. Val.	Plant Channel NE-32 Value	Plant Channel NE-32 Ref. Val.	ICRR A	ICRR B	ICRR C	ICRR NE-31	ICRR NE-32
3/5/73	180	A-21	N-11	0210	3.64	1.65	3.67	.013	398.3	67.16	15.49	7.31	9.80	3.13	.453	.004	.169	.472	.319
	181	A-33	P-10	0223	3.57	"	3.98	"	396.8	"	15.99	"	9.82	"	.462	.003	.169	.457	.319
	182	C-14	R-10	0235	3.49	"	4.27	"	400.0	"	16.60	"	9.45	"	.473	.003	.168	.440	.331
	183	C-13	P-11	0245	3.56	"	4.92	"	397.8	"	15.67	"	9.85	"	.463	.003	.169	.466	.318
	184	B-48	N-12	0258	3.53	"	4.87	"	390.0	"	16.97	"	9.79	"	.467	.003	.172	.431	.320
	185	B-52	M-13	0309	3.52	"	4.83	"	399.0	"	15.50	"	9.09	"	.469	.003	.168	.463	.344
	186	C-43	R-11	0319	3.60	"	4.94	"	397.4	"	15.37	"	9.91	"	.458	.003	.169	.476	.316
	187	C-44	P-12	0453	3.46	"	15.58	"	432.1	"	15.60	"	9.08	"	.477	.001	.155	.468	.345
	188	C-06	N-13	0510	3.30	"	10.87	"	438.3	"	15.50	"	9.72	"	.500	.001	.153	.472	.322
	189	C-25	P-13	0521	3.42	"	6.74	"	3501	536.4	15.81	"	9.38	"	.482	.002	.153	.462	.334
	190a	C-36	N-14	0532	3.52	"	6.64	"	3549	"	16.21	"	10.13	"	.469	.002	.151	.451	.309
	191a	C-52	M-14	0545	1.69	"	10.07	"	–	–	15.66	"	9.98	"	.976	.001	–	.467	.314
	192a	C-46	R-8	0557	–	–	–	–	–	–	15.51	"	9.83	"	–	–	–	.471	.318
	193a	C-41	A-8	0608	–	–	–	–	–	–	16.31	"	9.94	"	–	–	–	.448	.315

Figure A-1

Inverse Count Rate Ratio During Initial Core Loading

Detector: Plant Channel NE-31

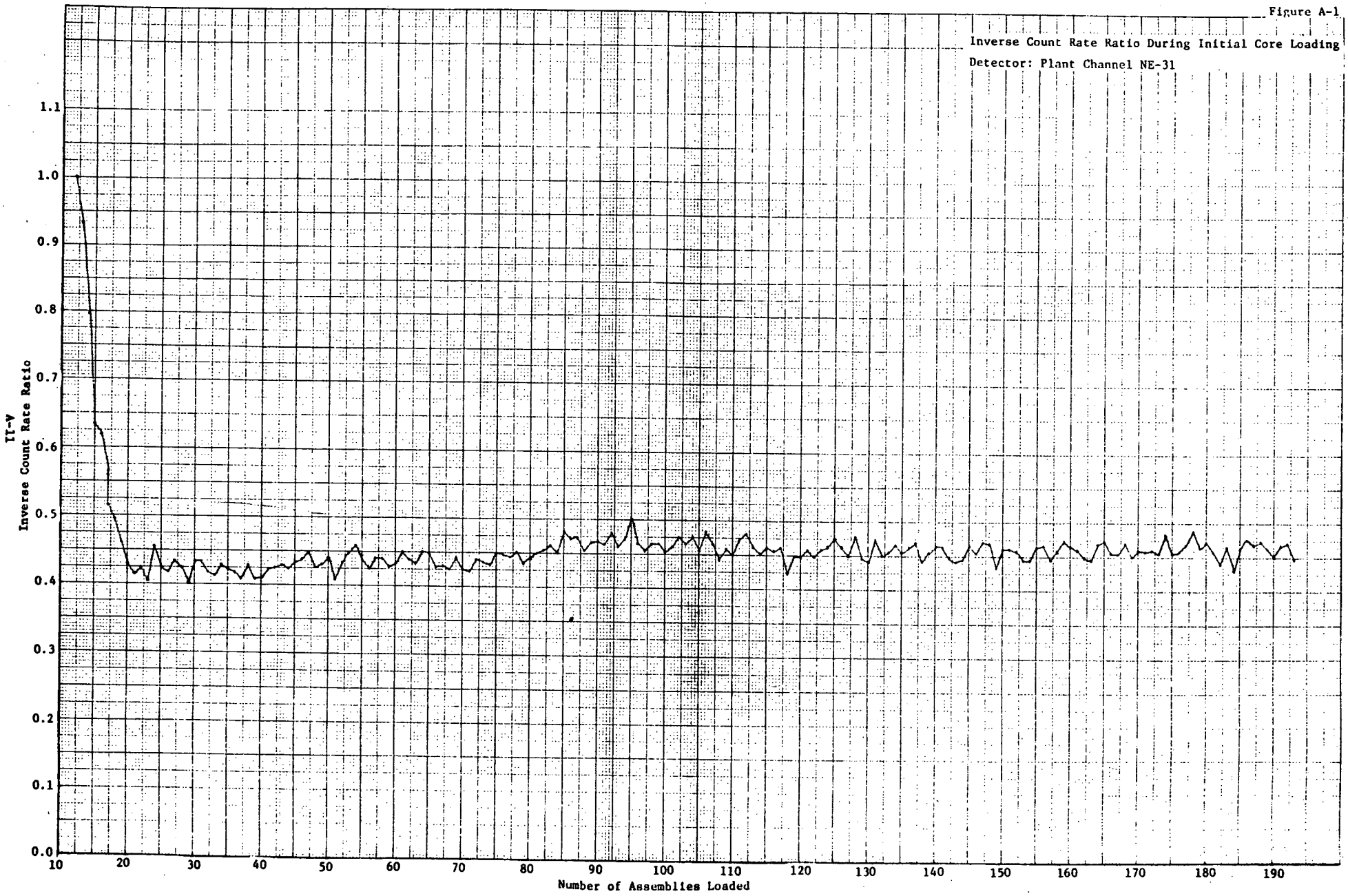


Figure A-2

Inverse Count Rate Ratio During Initial Core Loading

Detector: Plant Channel NE-32

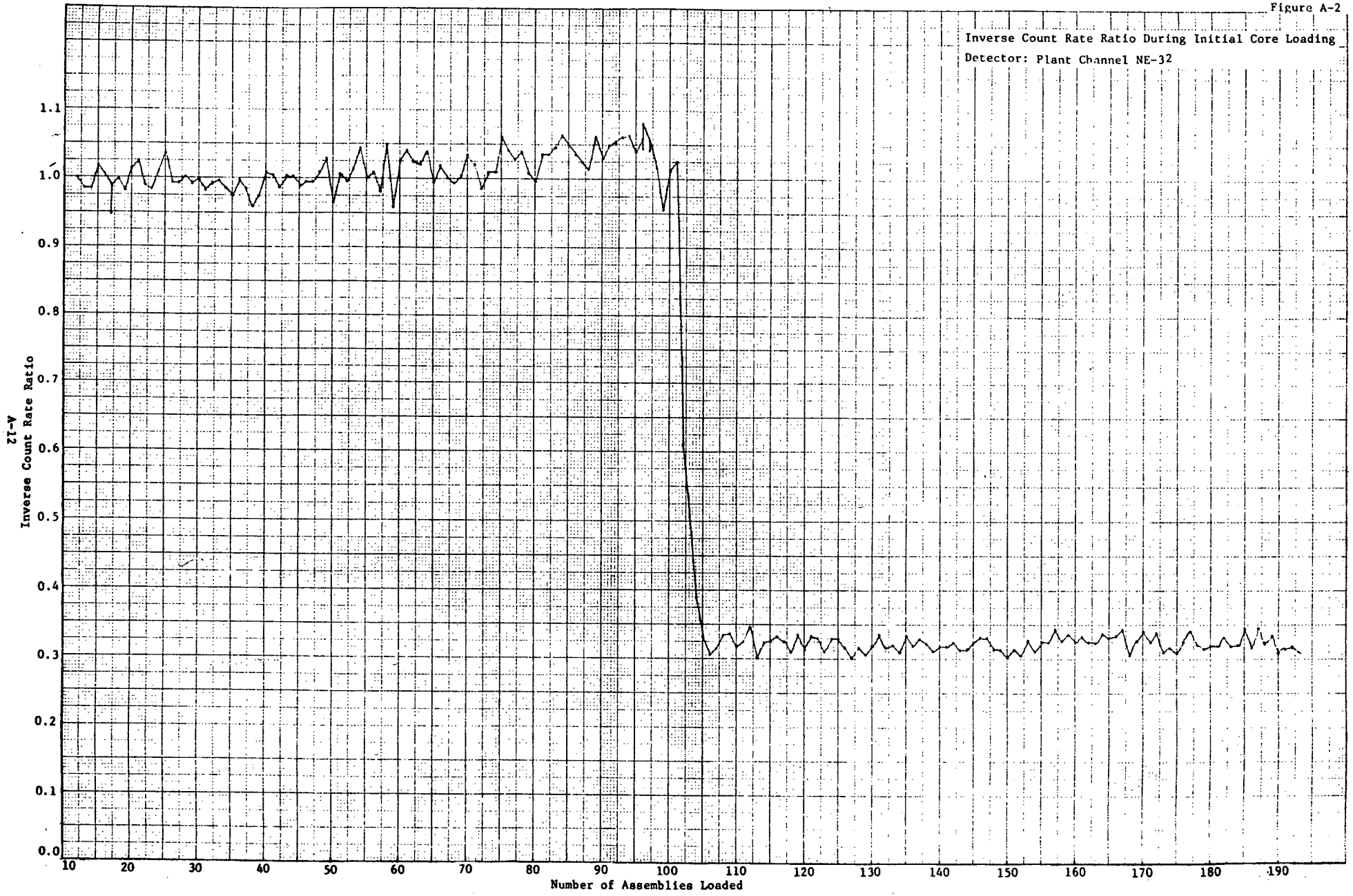


Figure A-3

Inverse Count Rate Ratio During Initial Core Loading

Detector: Temporary -A-

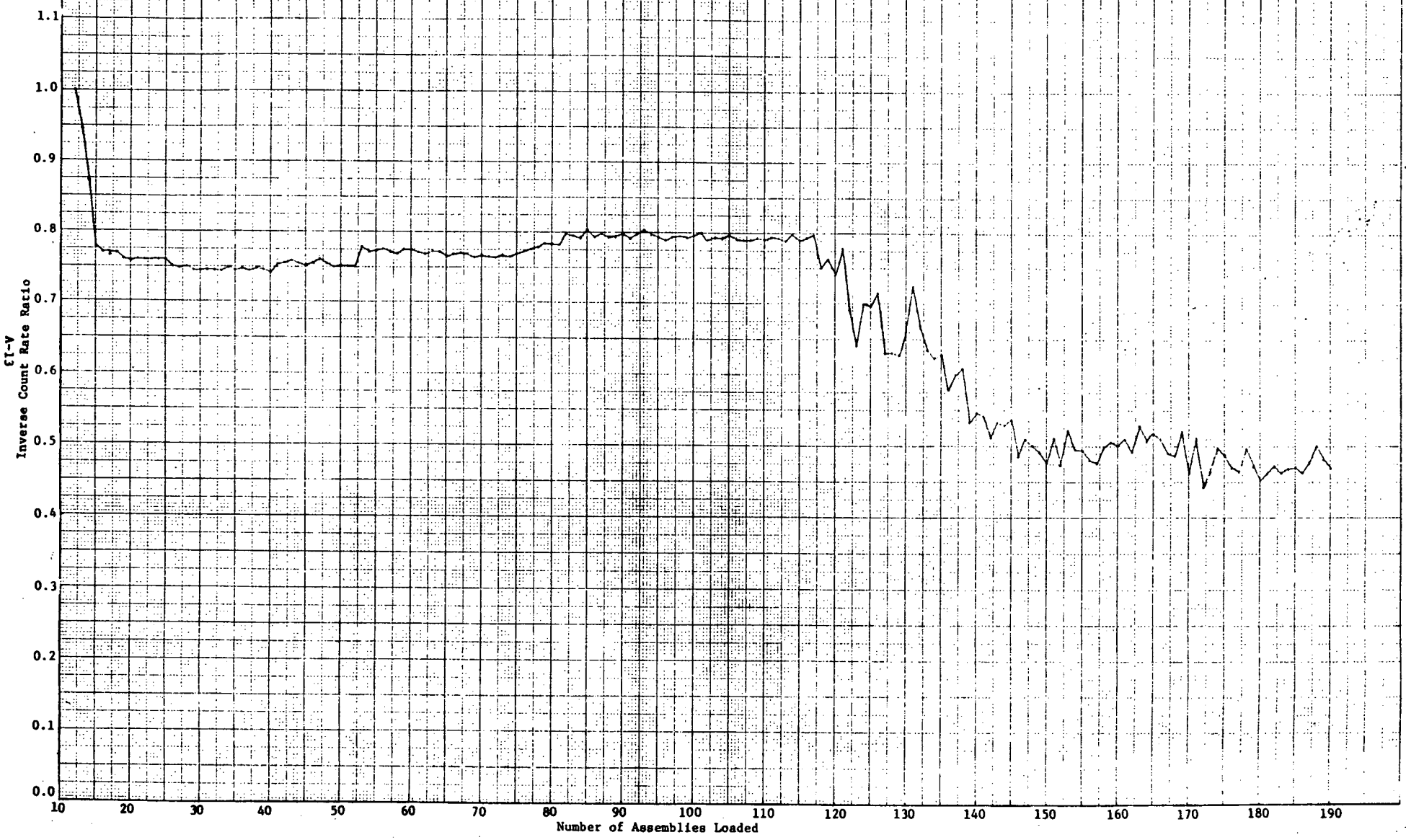


Figure A-4

Inverse Count Rate Ratio During Initial Core Loading

Detector: Temporary -B-

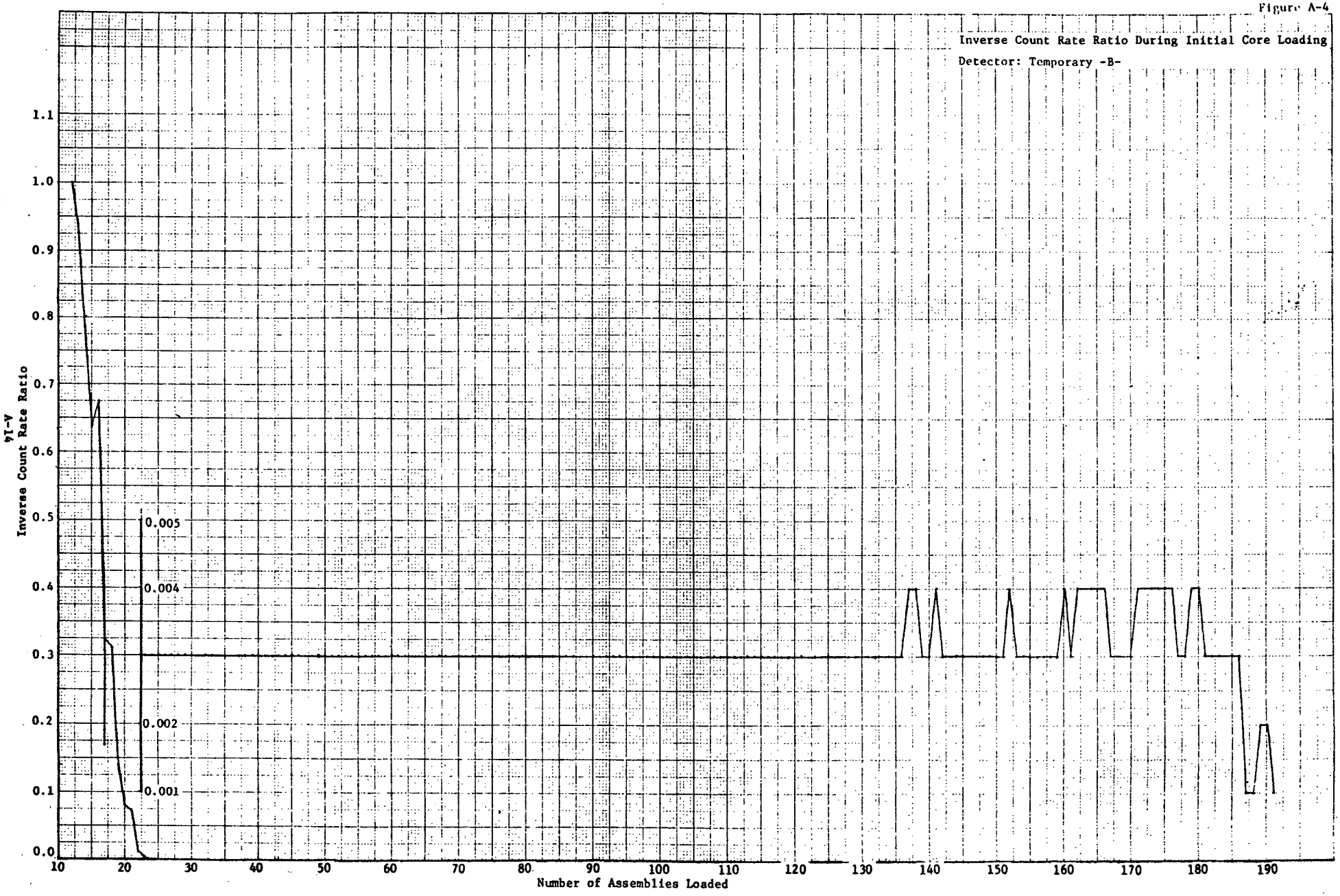
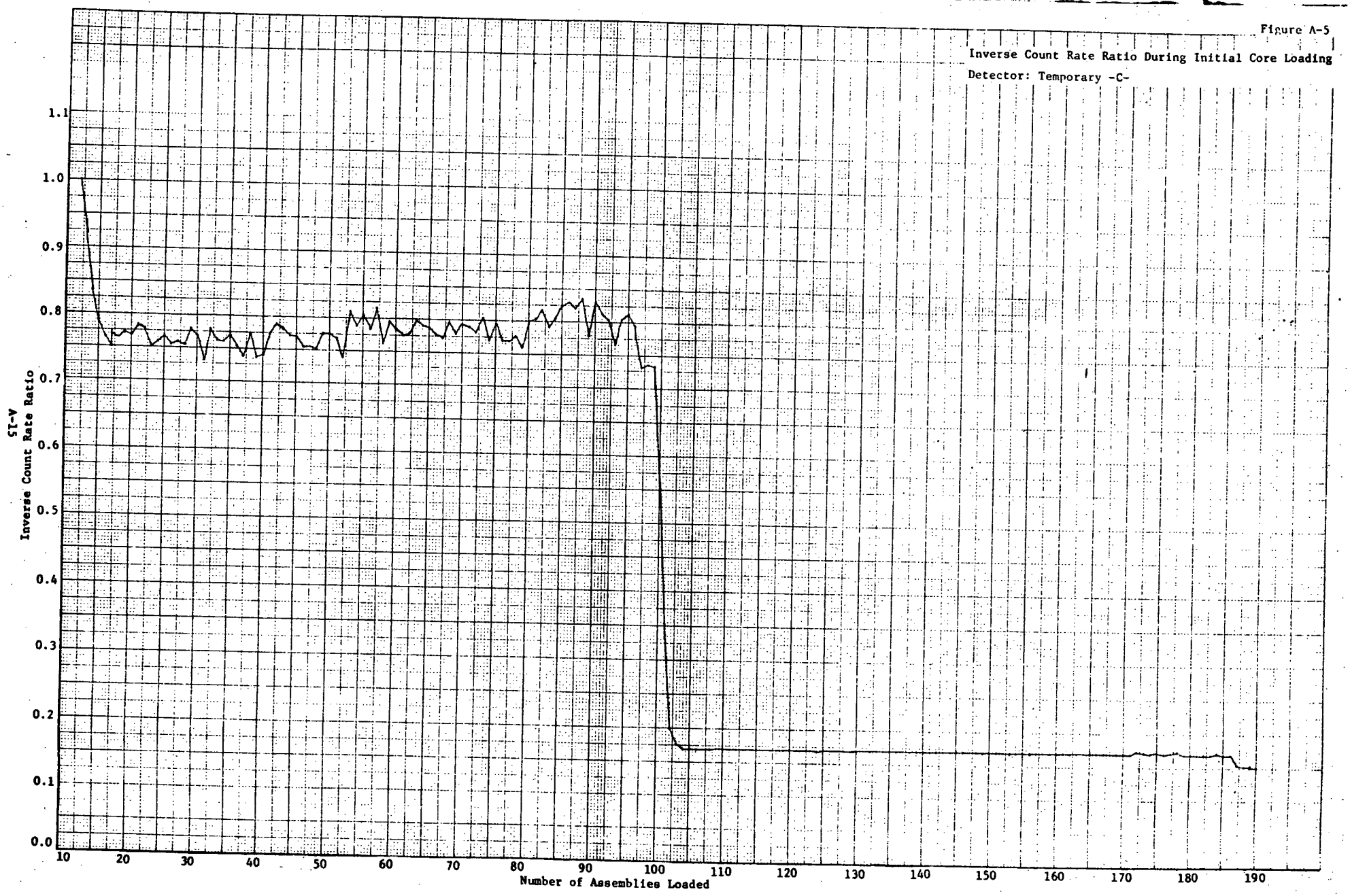


Figure A-5

Inverse Count Rate Ratio During Initial Core Loading

Detector: Temporary -C-



APPENDIX B - MILESTONES

The following is a list of significant events and the dates on which they first occurred.

Core Loading (final)	March 5, 1973
Initial Criticality	May 22, 1973
Initial Power Generation	June 26, 1973
50% Power	August 16, 1973
75% Power	April 9, 1974
100% Power	April 17, 1974

APPENDIX C

Power Distributions

Figures C-1 through C-35 compare predicted and measured power distributions, with percent differences shown in instrumented assemblies. These figures do not include those power distributions previously shown in Chapter 5 for the ejected rod distributions. In general, for those figures in which all RCC units are in banks, the agreement between prediction and measurement is excellent with the best agreement occurring in those measurements with the least number of axial regions. Other information pertaining to these maps is included in the flux map summary table, Table 5.1.

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 1 HZP BOL B AT 214 C AT 94 D AT 3 PL AT 69 JUNE 3 1973

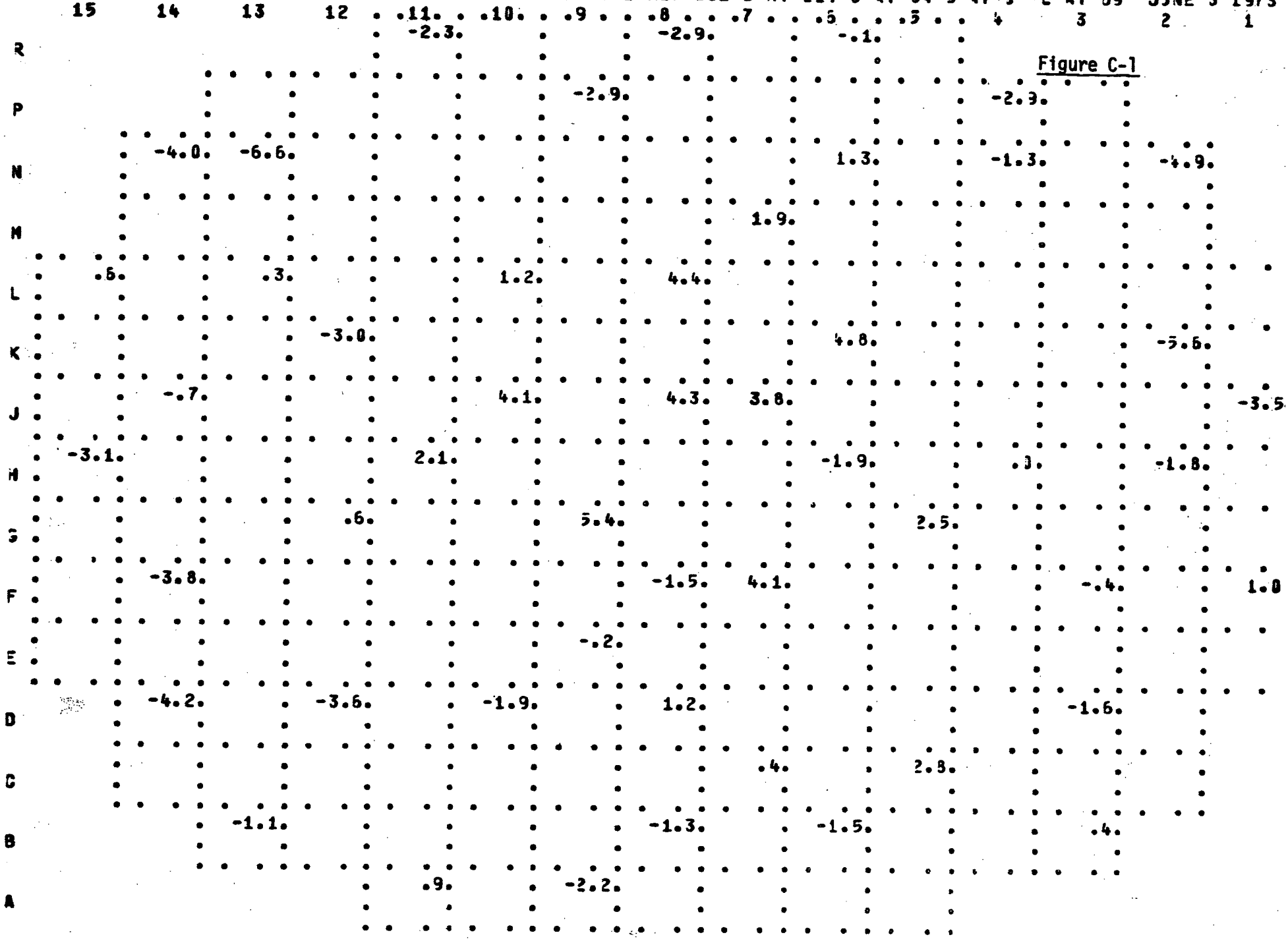


Figure C-1

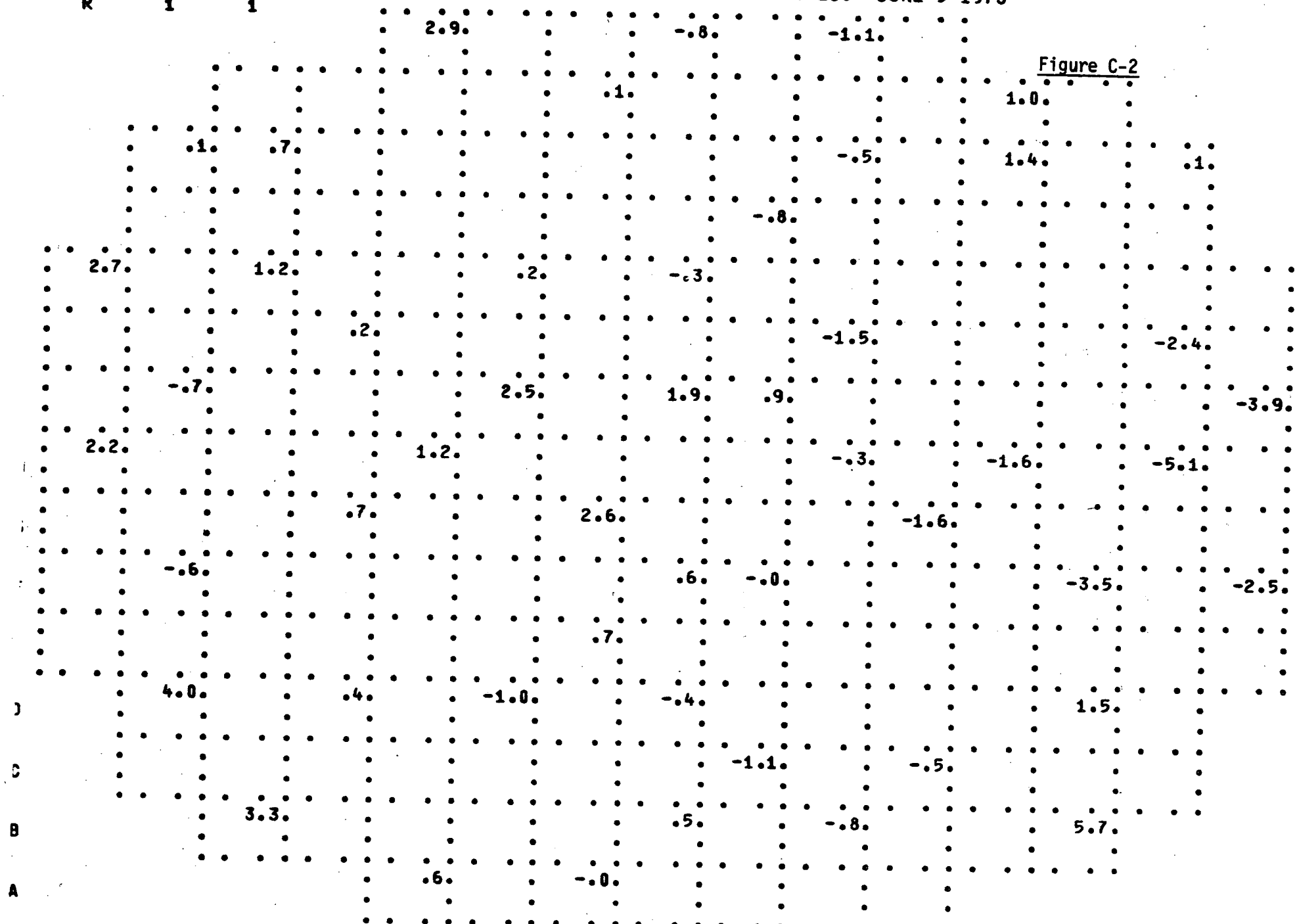
MEASURED AND EXPECTED FDHN IPP2 MD 1 HZP BOL B AT 214 C AT 84 D AT 0 P. AT 59 JUNE 3 1973

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
R					.486.	.531.	.859.	.886.	.872.	.546.	.494.				
					.498.	.546.	.886.	.913.	.886.	.546.	.498.				
P			.465.	.880.	.858.	.503.	1.057.	1.219.	1.087.	.521.	.872.	.859.	.457.		
			.484.	.895.	.876.	.515.	1.089.	1.253.	1.089.	.515.	.876.	.895.	.484.		
N		.465.	.868.	.912.	1.109.	1.060.	1.258.	1.282.	1.310.	1.093.	1.124.	.928.	.892.	.460.	
		.484.	.930.	.941.	1.128.	1.079.	1.289.	1.286.	1.289.	1.079.	1.128.	.941.	.930.	.484.	
M		.887.	.931.	1.452.	1.121.	1.153.	1.237.	1.451.	1.272.	1.165.	1.111.	1.438.	.916.	.858.	
		.895.	.941.	1.448.	1.106.	1.157.	1.248.	1.406.	1.248.	1.157.	1.106.	1.448.	.941.	.895.	
L	.501.	.882.	1.131.	1.108.	1.337.	1.228.	1.333.	1.228.	1.339.	1.254.	1.381.	1.131.	1.070.	.828.	.469.
	.498.	.876.	1.128.	1.107.	1.320.	1.213.	1.293.	1.176.	1.293.	1.213.	1.320.	1.107.	1.128.	.876.	.498.
K	.547.	.518.	1.085.	1.122.	1.250.	1.303.	1.025.	.940.	1.031.	1.323.	1.258.	1.106.	1.021.	.487.	.521.
	.546.	.516.	1.079.	1.157.	1.213.	1.262.	.985.	.910.	.985.	1.262.	1.213.	1.157.	1.079.	.516.	.546.
J	.868.	1.082.	1.293.	1.273.	1.337.	1.026.	1.021.	.828.	1.013.	1.028.	1.323.	1.243.	1.259.	1.058.	.855.
	.887.	1.089.	1.289.	1.248.	1.293.	.985.	.977.	.794.	.977.	.985.	1.293.	1.248.	1.289.	1.089.	.887.
H	.885.	1.231.	1.292.	1.424.	1.202.	.937.	.831.	.491.	.823.	.893.	1.193.	1.436.	1.277.	1.231.	.888.
	.913.	1.254.	1.286.	1.406.	1.176.	.910.	.794.	.470.	.794.	.910.	1.176.	1.406.	1.286.	1.254.	.913.
G	.855.	1.051.	1.276.	1.256.	1.309.	1.027.	1.030.	.830.	1.014.	1.017.	1.326.	1.250.	1.283.	1.084.	.883.
	.887.	1.089.	1.289.	1.248.	1.293.	.985.	.977.	.794.	.977.	.985.	1.293.	1.248.	1.289.	1.089.	.887.
F	.524.	.496.	1.059.	1.154.	1.218.	1.299.	1.011.	.897.	1.026.	1.312.	1.245.	1.159.	1.075.	.519.	.552.
	.546.	.516.	1.079.	1.157.	1.213.	1.262.	.985.	.910.	.985.	1.262.	1.213.	1.157.	1.079.	.516.	.546.
E	.480.	.844.	1.089.	1.067.	1.273.	1.206.	1.290.	1.194.	1.337.	1.270.	1.362.	1.093.	1.121.	.880.	.506.
	.498.	.876.	1.128.	1.107.	1.320.	1.213.	1.293.	1.176.	1.293.	1.213.	1.320.	1.107.	1.128.	.876.	.498.
D		.858.	.903.	1.396.	1.066.	1.134.	1.255.	1.422.	1.262.	1.179.	1.142.	1.455.	.925.	.882.	
		.895.	.941.	1.448.	1.106.	1.157.	1.248.	1.406.	1.248.	1.157.	1.106.	1.448.	.941.	.895.	
C		.468.	.891.	.921.	1.090.	1.044.	1.235.	1.292.	1.294.	1.087.	1.160.	.935.	.910.	.479.	
		.484.	.930.	.941.	1.128.	1.079.	1.289.	1.286.	1.289.	1.079.	1.128.	.941.	.930.	.484.	
B			.479.	.903.	.886.	.515.	1.073.	1.237.	1.076.	.508.	.883.	.913.	.486.		
			.484.	.895.	.876.	.515.	1.089.	1.253.	1.089.	.515.	.876.	.895.	.484.		
A					.502.	.543.	.857.	.894.	.855.	.531.	.487.				
					.498.	.546.	.886.	.913.	.886.	.546.	.498.				

MEAS
EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 4 HZP BOL D AT 208 JUNE 5 1973
R 1 1

Figure C-2



EASURED AND EXPECTED FDHN IPP2 MD 4 HZP BOL D AT 208 JUNE 5 1973

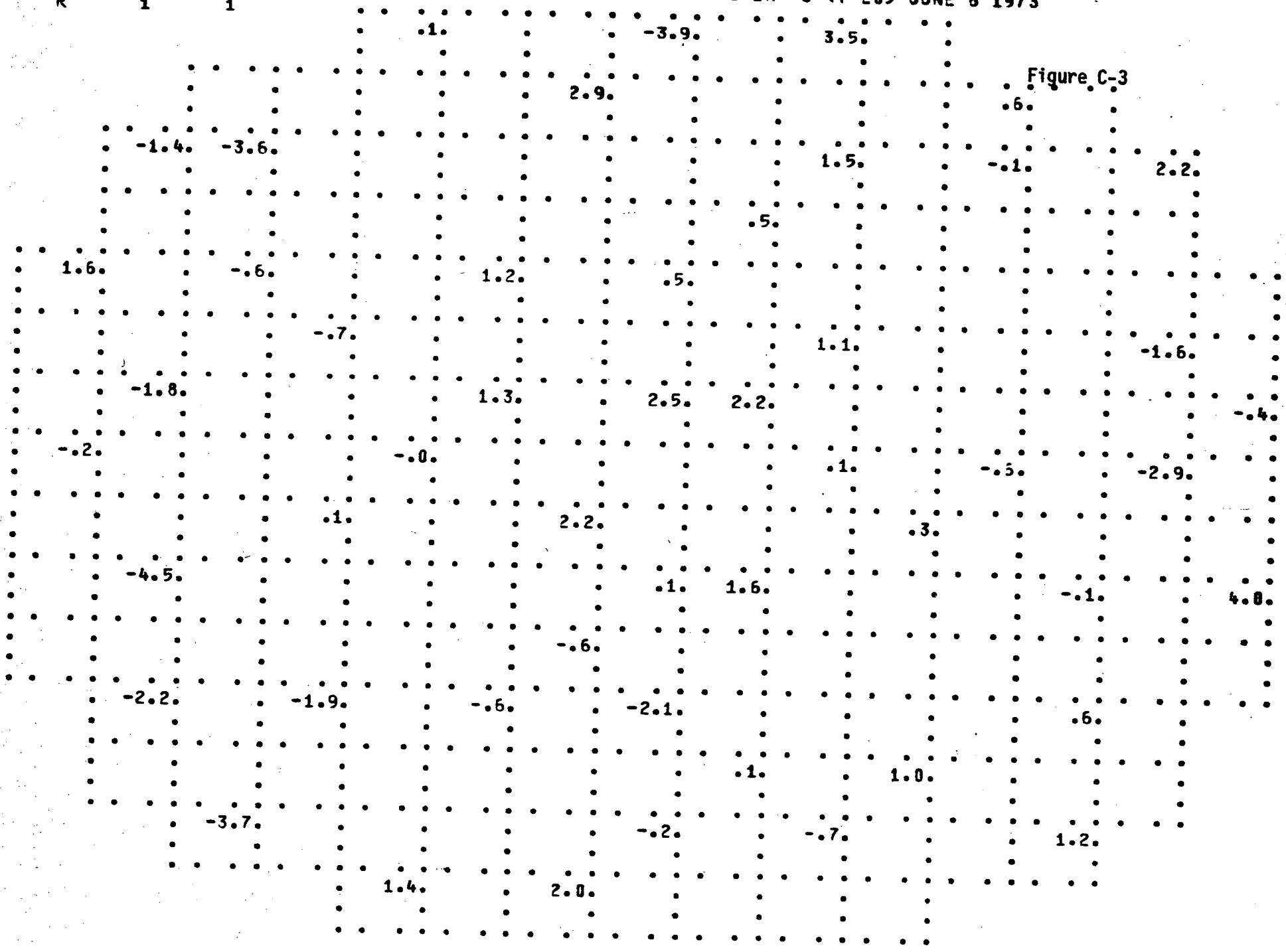
R 1 1

							.636.	.742.	.929.	.854.	.923.	.720.	.617.				
							.618.	.729.	.932.	.860.	.932.	.729.	.618.				
					.519.	.938.	1.081.	1.098.	1.165.	1.151.	1.154.	1.076.	1.054.	.930.	.521.		
					.517.	.921.	1.051.	1.086.	1.164.	1.154.	1.164.	1.086.	1.051.	.921.	.517.		
			.517.	1.120.	.935.	1.173.	1.182.	1.214.	1.110.	1.201.	1.172.	1.147.	.941.	1.121.	.517.		
			.517.	1.112.	.928.	1.140.	1.178.	1.209.	1.113.	1.209.	1.178.	1.140.	.928.	1.112.	.517.		
			.931.	.936.	1.322.	.999.	1.153.	1.072.	1.144.	1.064.	1.143.	1.002.	1.327.	.935.	.922.		
			.921.	.928.	1.308.	.997.	1.151.	1.072.	1.150.	1.072.	1.151.	.997.	1.308.	.928.	.921.		
	.635.	1.072.	1.154.	1.004.	1.109.	1.014.	1.072.	.993.	1.063.	.998.	1.088.	1.011.	1.115.	1.027.	.605.		
	.619.	1.051.	1.140.	.997.	1.108.	1.012.	1.073.	.996.	1.073.	1.012.	1.108.	.997.	1.140.	1.051.	.619.		
	.736.	1.092.	1.182.	1.153.	1.021.	1.043.	.884.	1.005.	.875.	1.013.	.994.	1.125.	1.152.	1.060.	.706.		
	.729.	1.086.	1.178.	1.151.	1.012.	1.029.	.874.	.995.	.874.	1.029.	1.012.	1.151.	1.178.	1.086.	.729.		
	.938.	1.155.	1.203.	1.077.	1.088.	.896.	.994.	.925.	.980.	.871.	1.059.	1.055.	1.172.	1.120.	.896.		
	.932.	1.164.	1.209.	1.072.	1.073.	.874.	.971.	.907.	.971.	.874.	1.073.	1.072.	1.209.	1.164.	.932.		
	.879.	1.163.	1.112.	1.160.	1.008.	1.016.	.930.	.990.	.915.	.993.	.984.	1.131.	1.075.	1.095.	.821.		
	.860.	1.154.	1.113.	1.150.	.996.	.995.	.907.	.970.	.907.	.995.	.996.	1.150.	1.113.	1.154.	.860.		
	.945.	1.173.	1.213.	1.080.	1.082.	.892.	.996.	.918.	.971.	.867.	1.056.	1.050.	1.167.	1.118.	.899.		
	.932.	1.164.	1.209.	1.072.	1.073.	.874.	.971.	.907.	.971.	.874.	1.073.	1.072.	1.209.	1.164.	.932.		
	.726.	1.080.	1.180.	1.159.	1.019.	1.049.	.887.	1.002.	.874.	1.021.	.995.	1.120.	1.137.	1.051.	.710.		
	.729.	1.086.	1.178.	1.151.	1.012.	1.029.	.874.	.995.	.874.	1.029.	1.012.	1.151.	1.178.	1.086.	.729.		
	.630.	1.070.	1.156.	1.001.	1.103.	1.012.	1.081.	.999.	1.072.	1.011.	1.104.	.988.	1.129.	1.035.	.604.		
	.619.	1.051.	1.140.	.997.	1.108.	1.012.	1.073.	.996.	1.073.	1.012.	1.108.	.997.	1.140.	1.051.	.619.		
		.958.	.949.	1.313.	.992.	1.139.	1.070.	1.145.	1.062.	1.140.	.993.	1.319.	.942.	.935.			
		.921.	.928.	1.308.	.997.	1.151.	1.072.	1.150.	1.072.	1.151.	.997.	1.308.	.928.	.921.			
		.536.	1.142.	.942.	1.135.	1.163.	1.205.	1.109.	1.196.	1.167.	1.135.	.946.	1.153.	.536.			
		.517.	1.112.	.928.	1.140.	1.178.	1.209.	1.113.	1.209.	1.178.	1.140.	.928.	1.112.	.517.			
			.534.	.942.	1.058.	1.087.	1.168.	1.160.	1.158.	1.078.	1.044.	.951.	.546.				
			.517.	.921.	1.051.	1.086.	1.164.	1.154.	1.164.	1.086.	1.051.	.921.	.517.				
					.622.	.730.	.932.	.863.	.931.	.723.	.613.						
					.618.	.729.	.932.	.860.	.932.	.729.	.618.						

MEAS
EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 5 HZP BOL D IN C AT 205 JUNE 6 1973
R 1 1

Figure C-3



EASURED AND EXPECTED FDHN IPP2 MD 5 HZP BOL D IN C AT 205 JUNE 6 1973

R 1 1

				.442	.453	.582	.670	.681	.462	.453				
				.442	.446	.685	.697	.685	.446	.442				
		.558	.913	.829	.462	.915	.998	.890	.463	.840	.936	.579		
		.574	.931	.829	.452	.889	1.003	.889	.452	.829	.931	.574		
	.566	1.207	.973	1.122	1.084	1.198	1.140	1.166	1.060	1.129	1.012	1.263	.587	
	.574	1.252	1.013	1.121	1.044	1.155	1.116	1.155	1.044	1.121	1.013	1.252	.574	
	.922	.994	1.467	1.157	1.322	1.240	1.340	1.235	1.319	1.151	1.498	1.023	.953	
	.931	1.013	1.501	1.143	1.306	1.229	1.334	1.229	1.306	1.143	1.501	1.013	.931	
.449	.833	1.114	1.135	1.369	1.285	1.361	1.255	1.357	1.278	1.374	1.140	1.103	.815	.434
.442	.829	1.121	1.143	1.362	1.270	1.349	1.249	1.349	1.270	1.362	1.143	1.121	.829	.442
.447	.449	1.034	1.297	1.276	1.344	1.119	1.253	1.122	1.340	1.281	1.284	1.026	.445	.442
.446	.452	1.044	1.306	1.270	1.326	1.104	1.233	1.104	1.326	1.270	1.305	1.044	.452	.446
.678	.873	1.137	1.223	1.354	1.118	1.148	.971	1.151	1.116	1.349	1.220	1.133	.875	.683
.635	.889	1.155	1.229	1.349	1.104	1.126	.948	1.126	1.104	1.349	1.229	1.155	.889	.685
.696	.993	1.106	1.334	1.249	1.245	.969	.561	.962	1.234	1.248	1.326	1.095	.974	.686
.697	1.003	1.117	1.334	1.249	1.233	.948	.547	.948	1.233	1.249	1.334	1.117	1.003	.697
.673	.865	1.135	1.231	1.349	1.120	1.150	.960	1.133	1.110	1.353	1.228	1.141	.887	.693
.685	.889	1.155	1.229	1.349	1.104	1.126	.948	1.126	1.104	1.349	1.229	1.155	.889	.685
.426	.431	1.016	1.308	1.271	1.341	1.110	1.234	1.121	1.344	1.275	1.307	1.043	.460	.464
.446	.452	1.044	1.306	1.270	1.326	1.104	1.233	1.104	1.326	1.270	1.305	1.044	.452	.446
.427	.801	1.089	1.121	1.345	1.264	1.342	1.243	1.350	1.296	1.379	1.146	1.125	.841	.460
.442	.829	1.121	1.143	1.362	1.270	1.349	1.249	1.349	1.270	1.362	1.143	1.121	.829	.442
	.910	.992	1.473	1.129	1.299	1.215	1.307	1.218	1.319	1.157	1.515	1.019	.937	
	.931	1.013	1.501	1.143	1.306	1.229	1.334	1.229	1.306	1.143	1.501	1.013	.931	
	.558	1.217	.986	1.108	1.038	1.140	1.107	1.156	1.047	1.133	1.024	1.262	.579	
	.574	1.252	1.013	1.121	1.044	1.155	1.116	1.155	1.044	1.121	1.013	1.252	.574	
		.553	.915	.840	.460	.897	1.001	.886	.448	.829	.943	.581		
		.574	.931	.829	.452	.889	1.003	.889	.452	.829	.931	.574		
				.448	.455	.599	.703	.679	.441	.437				
				.442	.446	.685	.697	.685	.446	.442				

MEAS
EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 6 HZP BOL D,C IN B AT 210 JUNE 7 1973

R 1 1

Figure C-4

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
R					.8			-3.6		-.9					
P							-.6					.9			
N		.8	-1.7							.4		-.3		1.1	
M									-.1						
L	2.1		.5			2.1		3.4							
K				-2.0						.3				-3.4	
J		-2.0				3.3		5.4	2.6						-2.0
H	.2				3.1					-.1		-2.0		-3.1	
G				.6			3.0				1.4				
F		-4.5						.8	2.4				2.1		-1.3
E							2.2								
D		-.4		.4		-1.2		-1.0					1.6		
C									-.3		1.3				
B			1.2					-2.1		-1.2			3.4		
A					-.2		-2.6								

MEASURED AND EXPECTED FDHN IPP2 MD 6 HZP BOL D,C IN B AT 210 JUNE 7 1973

R 1 1

						.494.	.568.	.918.	.933.	.914.	.560.	.490.						
R						.491.	.565.	.937.	.968.	.937.	.565.	.491.						
				.319.	.757.	.867.	.547.	1.164.	1.316.	1.154.	.545.	.862.	.769.	.324.				
P				.321.	.762.	.860.	.546.	1.171.	1.344.	1.171.	.546.	.860.	.762.	.321.				
		.324.	.457.	.793.	1.173.	1.214.	1.419.	1.386.	1.423.	1.222.	1.167.	.809.	.467.	.325.				
N		.322.	.465.	.811.	1.164.	1.216.	1.423.	1.392.	1.423.	1.216.	1.164.	.811.	.465.	.322.				
		.767.	.809.	1.400.	1.238.	1.492.	1.418.	1.502.	1.376.	1.461.	1.212.	1.403.	.814.	.771.				
M		.763.	.811.	1.410.	1.212.	1.461.	1.377.	1.480.	1.377.	1.461.	1.212.	1.410.	.811.	.763.				
	.501.	.873.	1.169.	1.202.	1.467.	1.351.	1.329.	1.125.	1.307.	1.320.	1.462.	1.206.	1.121.	.829.	.473.			
L	.491.	.861.	1.164.	1.212.	1.462.	1.323.	1.291.	1.088.	1.291.	1.323.	1.462.	1.212.	1.164.	.861.	.491.			
	.567.	.545.	1.203.	1.431.	1.330.	1.276.	.864.	.512.	.856.	1.246.	1.323.	1.408.	1.173.	.528.	.550.			
K	.565.	.546.	1.217.	1.461.	1.323.	1.242.	.833.	.490.	.833.	1.242.	1.323.	1.461.	1.217.	.546.	.565.			
	.929.	1.148.	1.390.	1.377.	1.316.	.861.	.775.	.580.	.760.	.839.	1.278.	1.345.	1.379.	1.138.	.919.			
J	.938.	1.172.	1.423.	1.378.	1.291.	.833.	.741.	.551.	.741.	.833.	1.291.	1.378.	1.423.	1.172.	.938.			
	.970.	1.332.	1.378.	1.505.	1.121.	.507.	.573.	.350.	.563.	.490.	1.084.	1.451.	1.353.	1.303.	.944.			
H	.968.	1.345.	1.393.	1.480.	1.088.	.491.	.551.	.336.	.551.	.491.	1.088.	1.480.	1.393.	1.345.	.968.			
	.924.	1.142.	1.400.	1.385.	1.315.	.861.	.763.	.561.	.748.	.843.	1.309.	1.383.	1.413.	1.157.	.918.			
G	.938.	1.172.	1.423.	1.378.	1.291.	.833.	.741.	.551.	.741.	.833.	1.291.	1.378.	1.423.	1.172.	.938.			
	.540.	.522.	1.185.	1.465.	1.327.	1.283.	.851.	.494.	.853.	1.273.	1.350.	1.492.	1.243.	.549.	.558.			
F	.565.	.546.	1.217.	1.461.	1.323.	1.242.	.833.	.490.	.833.	1.242.	1.323.	1.461.	1.217.	.546.	.565.			
	.478.	.839.	1.146.	1.217.	1.452.	1.333.	1.318.	1.098.	1.300.	1.360.	1.486.	1.235.	1.186.	.868.	.484.			
E	.491.	.861.	1.164.	1.212.	1.462.	1.323.	1.291.	1.088.	1.291.	1.323.	1.462.	1.212.	1.164.	.861.	.491.			
		.759.	.811.	1.415.	1.204.	1.443.	1.377.	1.465.	1.368.	1.475.	1.232.	1.433.	.824.	.775.				
D		.763.	.811.	1.410.	1.212.	1.461.	1.377.	1.480.	1.377.	1.461.	1.212.	1.410.	.811.	.763.				
		.322.	.467.	.817.	1.156.	1.196.	1.396.	1.375.	1.418.	1.217.	1.179.	.828.	.476.	.330.				
C		.322.	.465.	.811.	1.164.	1.216.	1.423.	1.392.	1.423.	1.216.	1.164.	.811.	.465.	.322.				
			.325.	.767.	.859.	.539.	1.142.	1.315.	1.156.	.539.	.860.	.783.	.332.					
B			.321.	.762.	.860.	.546.	1.171.	1.344.	1.171.	.546.	.860.	.762.	.321.					
					.490.	.557.	.913.	.944.	.918.	.555.	.482.							MEAS
A					.491.	.565.	.937.	.968.	.937.	.565.	.491.							EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 7 BOL 50PC D 164 8AUG73

R 1 1

Figure C-5

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
R					-2.9			-3.9		-4.5					
P							-3.5					-2.0			
N		-3.6	-3.1									-1.3		-.8	
M									-1.3						
L			3.2			-1.7		.2							
K				3.3						4.2				.0	
J		-4.9				-.0		2.3	5.3						-4.[illegible]
H	-2.0				.7					5.3		4.2			
G				-2.2			5.9				2.8				
F		.4						5.0	.2				-3.4		-4.[illegible]
E							3.4								
D		-3.2		-3.7		3.2							-.6		
C									2.6		3.8				
B			-2.5					2.8		1.5					
A					-3.2		-3.5								

MEASURED AND EXPECTED FDHN IPP2 MD 7 BOL 50PC D 164 8AUG73

R 1 1

R						.582.	.680.	.855.	.809.	.852.	.672.	.579.						
						.600.	.704.	.888.	.841.	.888.	.704.	.600.						
P				.508.	.866.	.981.	.943.	1.084.	1.065.	1.077.	.933.	.985.	.874.	.518.				
				.525.	.892.	1.010.	.980.	1.123.	1.104.	1.123.	.980.	1.010.	.892.	.525.				
N		.506.	1.038.	.910.	1.068.	1.122.	1.136.	1.102.	1.155.	1.144.	1.081.	.927.	1.059.	.521.				
		.525.	1.072.	.939.	1.098.	1.160.	1.173.	1.127.	1.173.	1.160.	1.098.	.939.	1.072.	.525.				
M		.878.	.931.	1.282.	1.012.	1.130.	1.110.	1.156.	1.102.	1.131.	1.018.	1.266.	.930.	.885.				
		.892.	.939.	1.280.	1.029.	1.149.	1.117.	1.152.	1.117.	1.149.	1.029.	1.280.	.939.	.892.				
L	.618.	1.041.	1.133.	1.063.	1.124.	1.059.	1.106.	1.075.	1.120.	1.098.	1.167.	1.017.	1.109.	1.019.	.605			
	.599.	1.009.	1.097.	1.029.	1.121.	1.078.	1.113.	1.073.	1.113.	1.078.	1.121.	1.029.	1.097.	1.009.	.599			
K	.665.	.956.	1.175.	1.187.	1.087.	1.069.	.964.	1.078.	.997.	1.125.	1.121.	1.162.	1.171.	.981.	.689			
	.704.	.980.	1.160.	1.149.	1.078.	1.079.	.964.	1.055.	.964.	1.079.	1.078.	1.149.	1.160.	.980.	.704			
J	.857.	1.068.	1.153.	1.144.	1.126.	.964.	1.036.	1.007.	1.082.	1.014.	1.165.	1.166.	1.205.	1.100.	.849			
	.888.	1.123.	1.172.	1.117.	1.113.	.964.	1.028.	.984.	1.028.	.964.	1.113.	1.117.	1.172.	1.123.	.888			
H	.825.	1.067.	1.085.	1.154.	1.080.	1.074.	1.015.	1.006.	1.032.	1.111.	1.116.	1.211.	1.178.	1.050.	.800.			
	.841.	1.104.	1.127.	1.162.	1.073.	1.055.	.984.	.964.	.984.	1.055.	1.073.	1.162.	1.127.	1.104.	.841.			
G	.881.	1.119.	1.156.	1.092.	1.106.	1.003.	1.089.	1.028.	1.060.	.991.	1.144.	1.137.	1.169.	1.082.	.855.			
	.888.	1.123.	1.172.	1.117.	1.113.	.964.	1.028.	.984.	1.028.	.964.	1.113.	1.117.	1.172.	1.123.	.888.			
F	.707.	.984.	1.152.	1.119.	1.050.	1.128.	1.013.	1.108.	.967.	1.084.	1.102.	1.138.	1.120.	.939.	.675.			
	.704.	.980.	1.160.	1.149.	1.078.	1.079.	.964.	1.055.	.964.	1.079.	1.078.	1.149.	1.160.	.980.	.704.			
E	.591.	.995.	1.074.	.991.	1.118.	1.111.	1.151.	1.108.	1.135.	1.070.	1.164.	1.010.	1.076.	.984.	.577.			
	.599.	1.009.	1.097.	1.029.	1.121.	1.078.	1.113.	1.073.	1.113.	1.078.	1.121.	1.029.	1.097.	1.009.	.599.			
D		.863.	.907.	1.233.	1.026.	1.185.	1.152.	1.196.	1.147.	1.187.	1.069.	1.295.	.934.	.887.				
		.892.	.939.	1.280.	1.029.	1.149.	1.117.	1.162.	1.117.	1.149.	1.029.	1.280.	.939.	.892.				
C		.510.	1.040.	.909.	1.096.	1.199.	1.213.	1.163.	1.203.	1.193.	1.139.	.959.	1.066.	.522.				
		.525.	1.072.	.939.	1.098.	1.160.	1.173.	1.127.	1.173.	1.160.	1.098.	.939.	1.072.	.525.				
B			.512.	.868.	.978.	.938.	1.119.	1.135.	1.152.	.996.	1.040.	.927.	.522.					
			.525.	.892.	1.010.	.980.	1.123.	1.104.	1.123.	.980.	1.010.	.892.	.525.					
A					.580.	.676.	.857.	.839.	.911.	.714.	.610.							
					.600.	.704.	.888.	.841.	.888.	.704.	.600.							

MEAS
EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 8 BOL 50PC D 198 9AUG73

Figure C-6

	R	1	1																
R					-1.7			-3.2		-3.8									
P							-3.0					-2.9							
N		-3.1	-3.1							-2.8		-2.1			-1.4				
M									-1.9										
L	-1.2		3.0			-2.9		-.7											
K				3.4						3.1					1.0				
J		-5.0				-.8		2.1	4.4								-3.5		
H	-1.5				-.4					3.9		3.5			1.9				
G				-2.7			5.8				1.8								
F		3.3						4.9	-.5					-4.0			-3.2		
E							3.0												
D		-3.5		-4.6		2.9		6.3						-1.8					
C									3.1		3.7								
B			-3.5					2.6		2.5				-.2					
A					-2.6		-3.3												

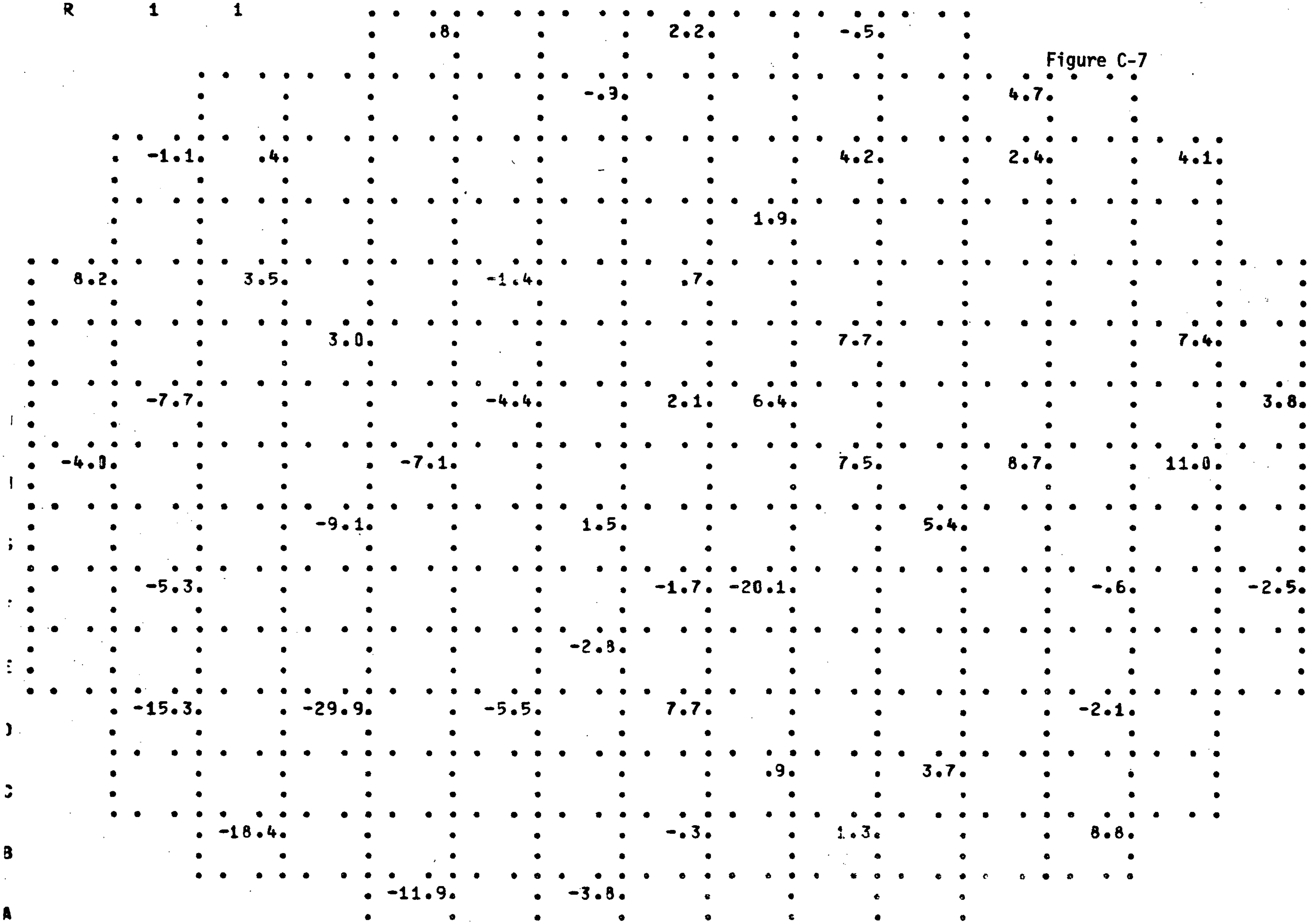
MEASURED AND EXPECTED FDHN IPP2 MD 8 BOL 50PC D 198 9AUG73

	R	1	1														
R					.600.	.704.	.873.	.823.	.871.	.694.	.590.						
					.610.	.721.	.902.	.850.	.902.	.721.	.610.						
P				.506.	.873.	1.008.	.988.	1.105.	1.078.	1.101.	.981.	.994.	.865.	.510.			
				.522.	.891.	1.023.	1.018.	1.139.	1.112.	1.139.	1.018.	1.023.	.891.	.522.			
N			.505.	1.031.	.906.	1.086.	1.135.	1.143.	1.101.	1.148.	1.136.	1.071.	.915.	1.043.	.515.		
			.522.	1.064.	.934.	1.099.	1.168.	1.175.	1.127.	1.175.	1.168.	1.099.	.934.	1.064.	.522.		
M			.880.	.926.	1.269.	.992.	1.108.	1.089.	1.137.	1.086.	1.113.	.997.	1.245.	.919.	.879.		
			.891.	.934.	1.270.	1.020.	1.140.	1.107.	1.151.	1.107.	1.140.	1.020.	1.270.	.934.	.891.		
L	.603.	1.032.	1.131.	1.053.	1.103.	1.032.	1.078.	1.050.	1.095.	1.073.	1.140.	1.001.	1.131.	1.049.	.625.		
	.610.	1.023.	1.098.	1.020.	1.107.	1.063.	1.097.	1.057.	1.097.	1.063.	1.107.	1.020.	1.098.	1.023.	.610.		
K	.699.	.995.	1.181.	1.179.	1.067.	1.042.	.943.	1.057.	.975.	1.095.	1.094.	1.178.	1.200.	1.028.	.711.		
	.721.	1.018.	1.168.	1.140.	1.063.	1.062.	.950.	1.041.	.950.	1.062.	1.063.	1.140.	1.168.	1.018.	.721.		
J	.872.	1.082.	1.155.	1.131.	1.103.	.942.	1.023.	1.003.	1.064.	.988.	1.136.	1.148.	1.213.	1.139.	.870.		
	.902.	1.139.	1.175.	1.107.	1.097.	.950.	1.020.	.983.	1.020.	.950.	1.097.	1.107.	1.175.	1.139.	.902.		
H	.837.	1.076.	1.081.	1.134.	1.053.	1.052.	1.010.	1.031.	1.021.	1.082.	1.089.	1.191.	1.164.	1.133.	.841.		
	.850.	1.112.	1.126.	1.151.	1.057.	1.041.	.983.	.991.	.983.	1.041.	1.057.	1.151.	1.126.	1.112.	.850.		
G	.911.	1.165.	1.178.	1.077.	1.080.	.984.	1.079.	1.025.	1.043.	.966.	1.117.	1.118.	1.176.	1.129.	.895.		
	.902.	1.139.	1.175.	1.107.	1.097.	.950.	1.020.	.983.	1.020.	.950.	1.097.	1.107.	1.175.	1.139.	.902.		
F	.750.	1.052.	1.190.	1.105.	1.030.	1.105.	.995.	1.092.	.946.	1.057.	1.077.	1.118.	1.121.	.981.	.698.		
	.721.	1.018.	1.168.	1.140.	1.063.	1.062.	.950.	1.041.	.950.	1.062.	1.063.	1.140.	1.168.	1.018.	.721.		
E	.613.	1.029.	1.089.	.974.	1.097.	1.090.	1.131.	1.100.	1.131.	1.046.	1.149.	.989.	1.067.	.994.	.592.		
	.610.	1.023.	1.098.	1.020.	1.107.	1.063.	1.097.	1.057.	1.097.	1.063.	1.107.	1.020.	1.098.	1.023.	.610.		
D		.860.	.896.	1.211.	1.012.	1.173.	1.153.	1.223.	1.161.	1.176.	1.059.	1.274.	.917.	.876.			
		.891.	.934.	1.270.	1.020.	1.140.	1.107.	1.151.	1.107.	1.140.	1.020.	1.270.	.934.	.891.			
C		.504.	1.024.	.895.	1.091.	1.204.	1.228.	1.176.	1.212.	1.205.	1.139.	.944.	1.053.	.517.			
		.522.	1.064.	.934.	1.099.	1.168.	1.175.	1.127.	1.175.	1.168.	1.099.	.934.	1.064.	.522.			
B			.504.	.864.	.997.	.980.	1.134.	1.140.	1.172.	1.044.	1.057.	.903.	.521.				
			.522.	.891.	1.023.	1.018.	1.139.	1.112.	1.139.	1.018.	1.023.	.891.	.522.				
A					.594.	.696.	.873.	.847.	.929.	.740.	.628.						
					.610.	.721.	.902.	.850.	.902.	.721.	.610.						

MEAS
EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN   IPP2 MD 9 BOL 50PC D 196   D120R   10AJ673
R 1 1

Figure C-7



EASURED AND EXPECTED FDHN IPP2 MD 9 BOL 50PC D 196 D12DR 10AUG73

R 1 1

				.673.	.813.	.988.	.940.	1.001.	.824.	.696.						
				.668.	.815.	.982.	.919.	.989.	.828.	.683.						
			.560.	.955.	1.120.	1.110.	1.246.	1.214.	1.297.	1.159.	1.173.	1.023.	.607.			
			.561.	.945.	1.110.	1.121.	1.257.	1.204.	1.268.	1.141.	1.138.	.977.	.584.			
	.547.	1.108.	1.023.	1.194.	1.263.	1.270.	1.254.	1.336.	1.358.	1.262.	1.083.	1.199.	.608.			
	.553.	1.104.	1.015.	1.179.	1.276.	1.282.	1.248.	1.295.	1.302.	1.216.	1.057.	1.157.	.584.			
	.936.	1.009.	1.360.	1.100.	1.210.	1.213.	1.271.	1.259.	1.301.	1.198.	1.425.	1.089.	1.017.			
	.914.	.997.	1.331.	1.116.	1.227.	1.218.	1.256.	1.235.	1.259.	1.159.	1.398.	1.057.	.977.			
.673.	1.108.	1.167.	1.123.	1.165.	1.133.	1.175.	1.176.	1.235.	1.253.	1.317.	1.181.	1.323.	1.235.	.741.		
.522.	1.046.	1.128.	1.087.	1.162.	1.149.	1.180.	1.167.	1.201.	1.188.	1.221.	1.158.	1.215.	1.137.	.683.		
.752.	1.021.	1.189.	1.193.	1.109.	1.081.	1.028.	1.149.	1.115.	1.254.	1.282.	1.373.	1.416.	1.225.	.870.		
.740.	1.026.	1.184.	1.158.	1.112.	1.111.	1.037.	1.122.	1.063.	1.164.	1.188.	1.259.	1.302.	1.140.	.827.		
.812.	1.025.	1.101.	1.094.	1.057.	.952.	1.051.	1.089.	1.172.	1.143.	1.301.	1.347.	1.424.	1.363.	1.026.		
.863.	1.111.	1.144.	1.105.	1.096.	.996.	1.065.	1.066.	1.101.	1.063.	1.201.	1.234.	1.294.	1.267.	.988.		
.741.	.954.	.965.	.990.	.955.	.985.	1.017.	1.081.	1.129.	1.205.	1.251.	1.364.	1.380.	1.336.	.985.		
.771.	1.013.	1.057.	1.079.	1.028.	1.026.	1.018.	1.050.	1.065.	1.121.	1.166.	1.255.	1.248.	1.203.	.918.		
.748.	.951.	.939.	.895.	.906.	.897.	1.016.	.973.	.984.	1.026.	1.243.	1.281.	1.353.	1.310.	1.013.		
.781.	.997.	1.018.	.984.	.988.	.916.	1.001.	1.018.	1.064.	1.037.	1.179.	1.217.	1.280.	1.256.	.981.		
.573.	.773.	.857.	.812.	.805.	.920.	.913.	1.008.	.795.	.970.	1.202.	1.247.	1.267.	1.098.	.795.		
.605.	.816.	.921.	.896.	.888.	.935.	.916.	1.026.	.995.	1.110.	1.148.	1.226.	1.275.	1.120.	.815.		
.415.	.659.	.617.	.484.	.668.	.842.	.960.	1.005.	1.019.	.845.	1.207.	1.100.	1.163.	1.090.	.652.		
.460.	.731.	.727.	.552.	.793.	.888.	.988.	1.028.	1.095.	1.110.	1.161.	1.114.	1.178.	1.108.	.668.		
	.471.	.404.	.319.	.548.	.846.	.984.	1.150.	1.158.	1.179.	1.129.	1.333.	.993.	.924.			
	.556.	.513.	.455.	.652.	.895.	.983.	1.077.	1.103.	1.157.	1.086.	1.330.	1.014.	.943.			
	.256.	.456.	.393.	.615.	.872.	1.034.	1.091.	1.153.	1.203.	1.168.	1.031.	1.139.	.579.			
	.308.	.573.	.512.	.727.	.920.	1.017.	1.056.	1.142.	1.182.	1.126.	.996.	1.102.	.560.			
		.251.	.469.	.644.	.750.	.976.	1.008.	1.114.	1.038.	1.073.	.976.	.601.				
		.308.	.556.	.731.	.815.	.996.	1.011.	1.109.	1.025.	1.046.	.913.	.552.				
			.405.	.556.	.751.	.754.	.869.	.750.	.631.							MEAS
			.460.	.604.	.781.	.770.	.862.	.739.	.621.							EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 10, 50PC, BOL, BASE H04, D AT 191, 8-19-73

Figure C-8

	R	1	1																			
R						-5.1				-4.6				-4.3								
P									-3.4								-2.4					
N		-2.7	-2.8											-2.2			-2.7			-.6		
M												-1.1										
L	-3.8			1.5				-.9			1.2											
K					2.6									5.9						-.5		
J		-5.1						1.5			3.9		6.1									-4.7
H	-2.3					1.4								6.4			4.7			1.0		
G					-.6				6.8							2.6						
F		-.4									6.1		2.1						-4.3			-4.2
E									4.2													
D		-5.3			-3.4			3.6			4.9											
C												2.0				3.4						
B			-2.2								.6			.7					-.4			
A						-4.0			-4.3													

MEASURED AND EXPECTED FDHN IPP2 MD 10, 50PC, BOL, BASE M04, D AT 191, 8-19-73

R 1 1

					.583.	.695.	.871.	.814.	.867.	.697.	.593.					
					.614.	.728.	.908.	.854.	.908.	.728.	.614.					
			.506.	.856.	.976.	.989.	1.106.	1.071.	1.102.	.998.	.999.	.869.	.518.			
			.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.			
		.506.	1.031.	.906.	1.043.	1.134.	1.139.	1.102.	1.156.	1.146.	1.072.	.907.	1.041.	.517.		
I		.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.		
		.873.	.920.	1.256.	1.009.	1.127.	1.107.	1.149.	1.091.	1.116.	.991.	1.230.	.916.	.886.		
		.891.	.932.	1.265.	1.017.	1.137.	1.103.	1.147.	1.103.	1.137.	1.017.	1.265.	.932.	.891.		
	.591.	1.016.	1.115.	1.037.	1.107.	1.048.	1.095.	1.065.	1.108.	1.089.	1.166.	.989.	1.103.	1.031.	.616.	
	.614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.001.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.	
	.695.	1.000.	1.174.	1.166.	1.071.	1.059.	.958.	1.071.	.989.	1.118.	1.119.	1.141.	1.175.	1.027.	.706.	
K	.728.	1.033.	1.171.	1.136.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.136.	1.171.	1.033.	.728.	
	.874.	1.087.	1.152.	1.129.	1.111.	.959.	1.042.	1.020.	1.078.	1.006.	1.156.	1.159.	1.204.	1.130.	.865.	
J	.907.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.907.	
	.834.	1.074.	1.092.	1.152.	1.066.	1.065.	1.025.	1.056.	1.041.	1.102.	1.100.	1.201.	1.164.	1.126.	.836.	
H	.854.	1.115.	1.126.	1.147.	1.052.	1.036.	.982.	1.002.	.982.	1.036.	1.052.	1.147.	1.126.	1.115.	.854.	
	.896.	1.134.	1.178.	1.097.	1.096.	.990.	1.085.	1.037.	1.063.	.979.	1.120.	1.121.	1.177.	1.126.	.891.	
G	.907.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.907.	
	.725.	1.028.	1.166.	1.127.	1.048.	1.112.	1.001.	1.099.	.965.	1.072.	1.077.	1.117.	1.121.	.986.	.697.	
F	.728.	1.033.	1.171.	1.136.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.136.	1.171.	1.033.	.728.	
	.598.	1.000.	1.067.	.983.	1.102.	1.096.	1.137.	1.101.	1.135.	1.070.	1.143.	.975.	1.053.	.985.	.589.	
E	.614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.091.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.	
		.844.	.891.	1.223.	1.018.	1.177.	1.150.	1.202.	1.143.	1.168.	1.055.	1.313.	.893.	.857.		
D		.891.	.932.	1.265.	1.017.	1.137.	1.103.	1.147.	1.103.	1.137.	1.017.	1.265.	.932.	.891.		
		.499.	1.025.	.985.	1.100.	1.213.	1.216.	1.158.	1.199.	1.194.	1.136.	.952.	1.057.	.519.		
C		.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.		
			.509.	.865.	.987.	.985.	1.123.	1.122.	1.157.	1.040.	1.049.	.902.	.518.			
B			.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.			
					.590.	.695.	.869.	.838.	.914.	.730.	.617.					MEAS
A					.614.	.728.	.908.	.854.	.908.	.728.	.614.					EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 11 53 PCT H-4 AT 0 D AT 189 8/19/73

Figure C-9

	R	1	1																
										-1.3.		-6.3.							
								-1.6.						-3.0.					
		1.1.	2.1.									-3.2.				-4.6.			
											-2.3.								
	.5.		5.5.				-.2.			.1.									
					6.5.							3.2.				-5.3.			
		-.8.					1.0.			1.4.								-10.8.	
	3.7.					3.0.						2.3.		-23.3.		-4.6.			
					1.7.			8.1.											
		3.7.								6.3.	-.7.				-11.0.			-12.1.	
								6.2.											
					.9.		6.8.			6.9.									
											3.5.		3.4.						
			.5.									1.5.			-2.6.				
						-.3.		-1.1.											

D

C

B

A

EASURED AND EXPECTED FDHN IPP FLUX MAP 11 53 PCT H-4 AT 0 D AT 189 8/19/73

P 1 1

						.659.	.794.	.945.	.872.	.898.	.718.	.591.				
						.671.	.809.	.959.	.884.	.933.	.766.	.621.				
				.591.	.988.	1.101.	1.092.	1.209.	1.139.	1.148.	.996.	.983.	.832.	.483.		
				.580.	.966.	1.120.	1.116.	1.229.	1.155.	1.191.	1.049.	1.023.	.858.	.501.		
			.590.	1.176.	1.071.	1.225.	1.254.	1.236.	1.172.	1.173.	1.146.	1.042.	.882.	.936.	.459.	
			.583.	1.152.	1.048.	1.198.	1.274.	1.254.	1.195.	1.208.	1.184.	1.075.	.909.	.975.	.481.	
			1.000.	1.088.	1.442.	1.141.	1.230.	1.196.	1.184.	1.113.	1.091.	.965.	1.131.	.819.	.742.	
			.978.	1.055.	1.389.	1.144.	1.233.	1.196.	1.197.	1.140.	1.123.	.996.	1.167.	.858.	.778.	
	.690.	1.177.	1.284.	1.224.	1.240.	1.164.	1.163.	1.108.	1.092.	1.040.	1.038.	.870.	.889.	.821.	.485.	
	.687.	1.143.	1.217.	1.155.	1.210.	1.166.	1.162.	1.107.	1.092.	1.029.	1.005.	.916.	.935.	.862.	.509.	
	.831.	1.158.	1.364.	1.342.	1.218.	1.150.	1.036.	1.072.	.969.	.999.	.942.	.864.	.883.	.770.	.544.	
	.835.	1.151.	1.309.	1.260.	1.182.	1.147.	1.031.	1.063.	.950.	.968.	.913.	.910.	.928.	.813.	.594.	
	1.015.	1.271.	1.331.	1.308.	1.240.	1.064.	1.086.	1.028.	.995.	.869.	.785.	.591.	.747.	.800.	.614.	
	1.001.	1.282.	1.306.	1.242.	1.202.	1.053.	1.075.	1.014.	.973.	.845.	.826.	.741.	.825.	.859.	.688.	
	.969.	1.241.	1.269.	1.302.	1.212.	1.163.	1.098.	1.056.	.967.	.899.	.661.	.359.	.631.	.760.	.582.	
	.934.	1.222.	1.267.	1.271.	1.176.	1.123.	1.054.	1.016.	.946.	.879.	.728.	.468.	.718.	.797.	.632.	
	1.043.	1.335.	1.340.	1.263.	1.231.	1.119.	1.162.	1.070.	.992.	.851.	.752.	.616.	.730.	.791.	.628.	
	1.001.	1.282.	1.306.	1.242.	1.201.	1.053.	1.075.	1.014.	.973.	.846.	.826.	.741.	.825.	.860.	.688.	
	.868.	1.193.	1.350.	1.280.	1.200.	1.226.	1.104.	1.129.	.942.	.946.	.892.	.808.	.826.	.722.	.523.	
	.835.	1.150.	1.309.	1.260.	1.181.	1.146.	1.030.	1.062.	.949.	.968.	.913.	.910.	.928.	.814.	.594.	
	.715.	1.189.	1.249.	1.165.	1.256.	1.240.	1.233.	1.166.	1.128.	1.007.	1.043.	.813.	.832.	.763.	.448.	
	.687.	1.142.	1.217.	1.154.	1.209.	1.165.	1.161.	1.107.	1.092.	1.029.	1.005.	.915.	.935.	.862.	.510.	
D		.986.	1.064.	1.401.	1.188.	1.315.	1.275.	1.278.	1.200.	1.162.	1.033.	1.209.	.764.	.684.		
		.977.	1.054.	1.388.	1.144.	1.232.	1.195.	1.196.	1.139.	1.122.	.996.	1.166.	.858.	.778.		
C		.585.	1.158.	1.054.	1.244.	1.360.	1.343.	1.258.	1.250.	1.215.	1.111.	.920.	.949.	.469.		
		.582.	1.151.	1.047.	1.197.	1.273.	1.253.	1.194.	1.207.	1.183.	1.074.	.909.	.974.	.481.		
B			.582.	.969.	1.116.	1.103.	1.215.	1.169.	1.217.	1.063.	1.047.	.856.	.487.			
			.580.	.966.	1.119.	1.115.	1.228.	1.154.	1.190.	1.047.	1.022.	.857.	.500.			
A				.668.	.801.	.948.	.875.	.943.	.774.	.627.						
				.670.	.808.	.958.	.883.	.932.	.765.	.620.						

MEAS
EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 12, 50PC, BOL, BASE K08, D AT 184, 8-20-73

R 1 1

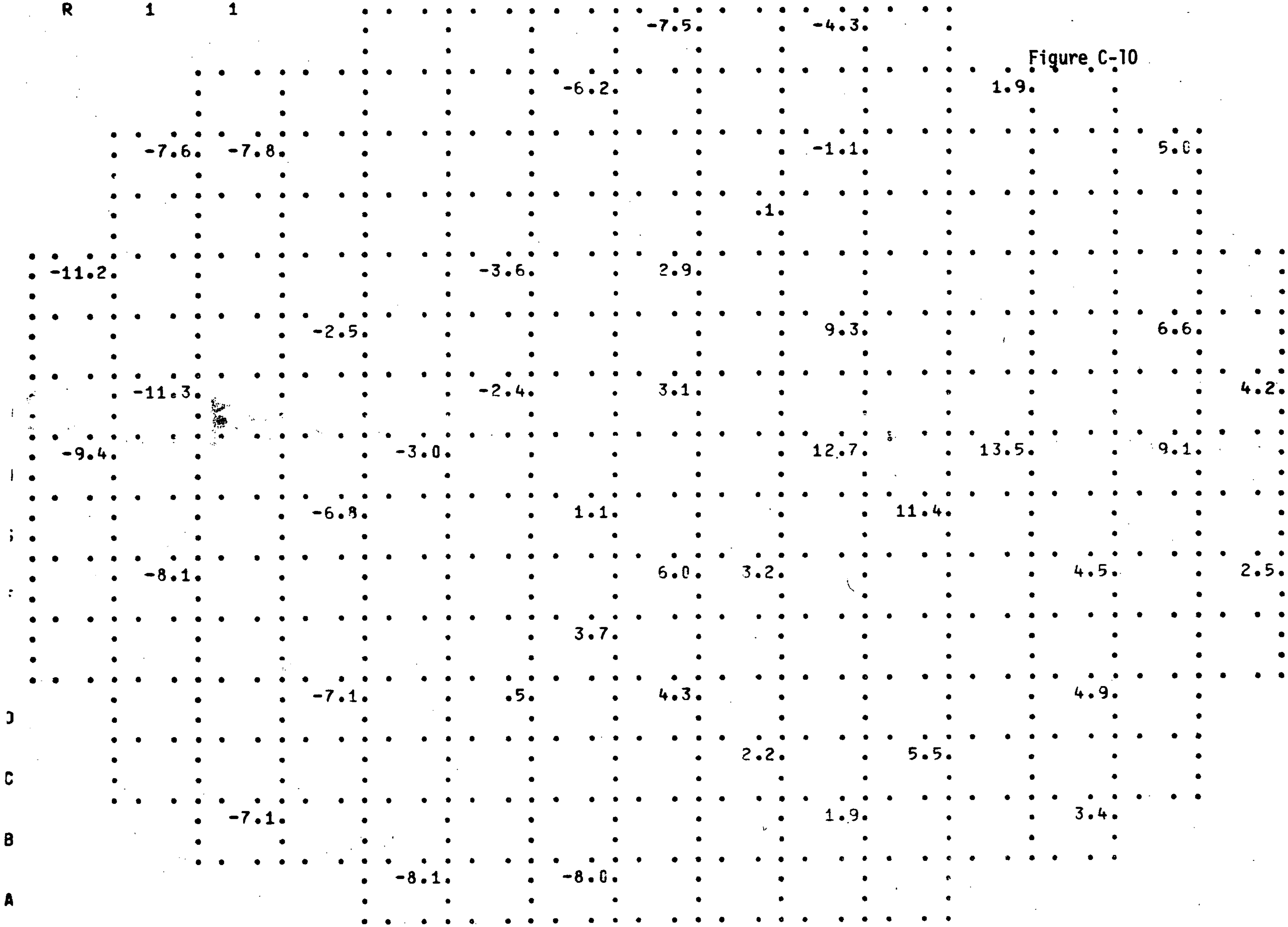


Figure C-10

:ASURED AND EXPECTED FDHN   IPP2 MD 12, 50PC, BOL, BASE K08, D AT 184, 8-20-73

R 1 1

					.578.	.685.	.846.	.790.	.854.	.698.	.604.				
					.615.	.729.	.909.	.854.	.909.	.729.	.615.				
			.480.	.821.	.968.	.971.	1.076.	1.040.	1.096.	1.005.	1.022.	.908.	.536.		
			.520.	.891.	1.029.	1.036.	1.146.	1.115.	1.146.	1.036.	1.029.	.891.	.520.		
		.481.	.977.	.859.	1.013.	1.103.	1.108.	1.093.	1.169.	1.158.	1.099.	.950.	1.100.	.546.	
		.520.	1.060.	.932.	1.099.	1.172.	1.176.	1.126.	1.176.	1.172.	1.099.	.932.	1.060.	.520.	
		.814.	.859.	1.165.	.980.	1.095.	1.101.	1.164.	1.104.	1.129.	1.005.	1.289.	.978.	.935.	
		.891.	.932.	1.265.	1.016.	1.136.	1.103.	1.146.	1.103.	1.136.	1.016.	1.265.	.932.	.891.	
	.546.	.915.	1.072.	.991.	1.065.	1.018.	1.088.	1.081.	1.128.	1.115.	1.202.	1.088.	1.176.	1.101.	.658.
	.615.	1.029.	1.099.	1.016.	1.100.	1.056.	1.090.	1.050.	1.090.	1.056.	1.100.	1.016.	1.099.	1.029.	.615.
	.646.	.915.	1.101.	1.107.	1.026.	1.023.	.945.	1.067.	.999.	1.152.	1.153.	1.216.	1.254.	1.104.	.766.
	.729.	1.035.	1.171.	1.136.	1.056.	1.055.	.944.	1.035.	.944.	1.055.	1.056.	1.136.	1.171.	1.035.	.729.
	.814.	1.017.	1.084.	1.075.	1.063.	.922.	1.020.	1.013.	1.093.	1.049.	1.221.	1.255.	1.296.	1.223.	.947.
	.908.	1.146.	1.176.	1.103.	1.090.	.944.	1.016.	.982.	1.016.	.944.	1.090.	1.103.	1.176.	1.146.	.908.
	.774.	1.000.	1.021.	1.090.	1.019.	1.017.	.986.	1.026.	1.071.	1.166.	1.182.	1.301.	1.259.	1.217.	.910.
	.854.	1.115.	1.126.	1.146.	1.050.	1.035.	.982.	1.004.	.982.	1.035.	1.050.	1.146.	1.126.	1.115.	.854.
	.829.	1.049.	1.088.	1.028.	1.037.	.937.	1.027.	1.018.	1.086.	1.035.	1.214.	1.218.	1.278.	1.218.	.958.
	.908.	1.146.	1.176.	1.103.	1.090.	.944.	1.016.	.982.	1.016.	.944.	1.090.	1.103.	1.176.	1.146.	.908.
	.670.	.951.	1.081.	1.054.	.980.	1.076.	.980.	1.097.	.975.	1.116.	1.171.	1.216.	1.224.	1.070.	.747.
	.729.	1.035.	1.171.	1.136.	1.056.	1.055.	.944.	1.035.	.944.	1.055.	1.056.	1.136.	1.171.	1.035.	.729.
	.566.	.946.	1.016.	.944.	1.062.	1.075.	1.130.	1.100.	1.139.	1.082.	1.166.	1.064.	1.151.	1.071.	.631.
	.615.	1.029.	1.099.	1.016.	1.100.	1.056.	1.090.	1.050.	1.090.	1.056.	1.100.	1.016.	1.099.	1.029.	.615.
		.828.	.865.	1.175.	.981.	1.141.	1.133.	1.195.	1.139.	1.181.	1.077.	1.332.	.977.	.935.	
)		.891.	.932.	1.265.	1.016.	1.136.	1.103.	1.146.	1.103.	1.136.	1.016.	1.265.	.932.	.891.	
		.483.	.985.	.865.	1.061.	1.174.	1.235.	1.164.	1.203.	1.209.	1.159.	.977.	1.104.	.542.	
:		.520.	1.060.	.932.	1.099.	1.172.	1.176.	1.126.	1.176.	1.172.	1.099.	.932.	1.060.	.520.	
			.483.	.824.	.947.	.950.	1.055.	1.083.	1.166.	1.055.	1.067.	.930.	.538.		
3			.520.	.891.	1.029.	1.036.	1.146.	1.115.	1.146.	1.036.	1.029.	.891.	.520.		
					.566.	.670.	.836.	.787.	.922.	.740.	.624.				
A					.615.	.729.	.909.	.854.	.909.	.729.	.615.				

MEAS
EXP

:RCENT. DIFF. OF EXPECT. AND ME/S. FDHN IPP FLUX MAP 13 50 PCT K-8 AT 0 D AT 188 8/20/73

R 1 1

Figure C-11

								-7.3		-11.3						
						-8.3						-3.6				
	-5.7	-4.5								-6.9				-3.1		
									-8.0							
-4.3					-7.1			-7.4								
				1.0						1.5				1.5		
	-4.9				-4.7			-4.1	-.5						-.6	
.1				-1.3						5.2		6.7		6.4		
			-2.2				4.8									
	.6							6.7	.5				.0		-3.6	
							7.1									
			.2		6.9			9.0					.6			
									6.5		8.5					
		.0						8.0		5.3			2.4			
				-.7			1.0									

EASURED AND EXPECTED FDHN IPP FLUX MAP 13 50 PCT K-8 AT 0 D AT 188 8/20/73

	R	1	1													
						.540.	.649.	.780.	.730.	.769.	.630.	.540.				
						.589.	.709.	.847.	.788.	.847.	.709.	.588.				
				.491.	.818.	.900.	.888.	.987.	.943.	.985.	.883.	.917.	.824.	.498.		
				.516.	.855.	.982.	.972.	1.076.	1.023.	1.076.	.972.	.982.	.855.	.515.		
			.492.	.981.	.887.	1.003.	1.008.	.988.	.949.	.996.	1.023.	.988.	.892.	.993.	.506.	
I			.522.	1.028.	.927.	1.047.	1.100.	1.077.	1.034.	1.077.	1.100.	1.046.	.926.	1.027.	.522.	
			.837.	.896.	1.176.	.922.	.967.	.915.	.907.	.903.	.961.	.924.	1.183.	.913.	.853.	
I			.880.	.943.	1.228.	.991.	1.040.	.982.	.982.	.981.	1.039.	.991.	1.227.	.943.	.880.	
	.596.	.990.	1.104.	1.031.	.999.	.887.	.814.	.721.	.829.	.934.	1.058.	1.036.	1.109.	1.050.	.634.	
	.623.	1.033.	1.092.	1.021.	1.040.	.955.	.877.	.779.	.877.	.955.	1.039.	1.020.	1.092.	1.032.	.623.	
	.725.	.989.	1.164.	1.131.	.988.	.872.	.668.	.440.	.696.	.943.	1.037.	1.137.	1.200.	1.060.	.762.	
C	.762.	1.045.	1.182.	1.121.	1.019.	.930.	.712.	.470.	.712.	.930.	1.018.	1.120.	1.181.	1.044.	.762.	
	.899.	1.120.	1.157.	1.120.	1.034.	.842.	.790.	.706.	.827.	.903.	1.105.	1.193.	1.253.	1.204.	.915.	
J	.921.	1.177.	1.191.	1.117.	1.056.	.883.	.831.	.737.	.831.	.882.	1.055.	1.117.	1.190.	1.176.	.920.	
	.867.	1.107.	1.124.	1.144.	1.046.	.980.	.907.	.890.	.923.	1.043.	1.127.	1.240.	1.250.	1.205.	.891.	
H	.867.	1.133.	1.168.	1.162.	1.060.	.991.	.913.	.893.	.913.	.991.	1.060.	1.161.	1.167.	1.132.	.867.	
	.943.	1.208.	1.207.	1.131.	1.096.	.995.	1.046.	1.016.	1.034.	1.003.	1.182.	1.204.	1.269.	1.224.	.944.	
G	.937.	1.199.	1.219.	1.156.	1.113.	.972.	.997.	.971.	.997.	.971.	1.112.	1.155.	1.219.	1.198.	.936.	
	.793.	1.091.	1.231.	1.163.	1.094.	1.153.	1.060.	1.129.	1.001.	1.083.	1.110.	1.193.	1.235.	1.061.	.758.	
F	.787.	1.084.	1.236.	1.190.	1.119.	1.092.	.996.	1.058.	.996.	1.091.	1.118.	1.190.	1.235.	1.083.	.786.	
	.656.	1.096.	1.167.	1.107.	1.205.	1.210.	1.229.	1.195.	1.201.	1.124.	1.268.	1.109.	1.163.	1.075.	.629.	
E	.651.	1.086.	1.161.	1.105.	1.164.	1.132.	1.147.	1.122.	1.147.	1.132.	1.164.	1.105.	1.160.	1.085.	.651.	
		.938.	1.016.	1.345.	1.153.	1.296.	1.285.	1.328.	1.286.	1.303.	1.213.	1.394.	1.019.	.941.		
D		.937.	1.014.	1.343.	1.114.	1.212.	1.193.	1.219.	1.193.	1.212.	1.114.	1.342.	1.014.	.936.		
		.562.	1.116.	1.021.	1.216.	1.348.	1.366.	1.320.	1.339.	1.345.	1.275.	1.067.	1.131.	.570.		
C		.562.	1.115.	1.020.	1.175.	1.261.	1.258.	1.219.	1.258.	1.261.	1.175.	1.019.	1.115.	.562.		
			.564.	.943.	1.096.	1.102.	1.292.	1.273.	1.318.	1.167.	1.180.	.991.	.577.			
B			.563.	.945.	1.103.	1.109.	1.235.	1.179.	1.235.	1.109.	1.102.	.944.	.563.			
				.658.	.802.	.976.	.943.	1.034.	.847.	.697.						
A				.663.	.806.	.966.	.901.	.966.	.806.	.663.						

MEAS
EXP

:RCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 14 50 PCT BASE H-8 D AT 194 8/20/73

R 1 1

Figure C-12

							-8.6		-5.8					
					-5.2						-4.8			
	-3.1	-4.1							-5.6				-3.9	
								-4.9						
-1.0		2.1			-3.0		-2.1							
			1.9						1.3				-.6	
	-2.5				-.5		1.1	2.6						-4.3
.1				1.0					4.4		3.7		.7	
			.3			4.5								
	3.3						5.3	.8				-4.4		-3.6
						5.2								
			-.4		5.9		6.3							
								3.9		5.7				
		.1					2.5		5.0			1.1		
				.3		-1.1								

ASURED AND EXPECTED FDHN IPP FLUX MAP 14 50 PCT BASE H-8 D AT 194 8/20/73

R 1 1

				.581.	.686.	.841.	.778.	.837.	.680.	.579.					
				.611.	.722.	.903.	.851.	.903.	.722.	.611.					
			.502.	.853.	.976.	.965.	1.081.	1.037.	1.063.	.958.	.970.	.849.	.498.		
			.521.	.891.	1.024.	1.021.	1.140.	1.112.	1.140.	1.021.	1.024.	.891.	.521.		
	.505.	1.020.	.894.	1.052.	1.116.	1.124.	1.073.	1.113.	1.103.	1.041.	.889.	1.019.	.501.		
	.522.	1.063.	.934.	1.099.	1.169.	1.175.	1.126.	1.175.	1.169.	1.099.	.934.	1.063.	.522.		
	.877.	.919.	1.255.	.990.	1.106.	1.081.	1.111.	1.052.	1.079.	.964.	1.209.	.897.	.856.		
	.891.	.934.	1.269.	1.020.	1.139.	1.106.	1.150.	1.106.	1.139.	1.020.	1.269.	.934.	.891.		
.605.	1.031.	1.122.	1.040.	1.094.	1.030.	1.070.	1.034.	1.071.	1.048.	1.119.	1.026.	1.104.	1.027.	.612.	
.611.	1.024.	1.099.	1.020.	1.106.	1.062.	1.096.	1.056.	1.096.	1.062.	1.106.	1.020.	1.099.	1.024.	.611.	
.708.	1.009.	1.180.	1.161.	1.059.	1.041.	.938.	1.044.	.959.	1.075.	1.074.	1.146.	1.173.	1.015.	.702.	
.722.	1.021.	1.168.	1.139.	1.062.	1.061.	.950.	1.040.	.950.	1.061.	1.062.	1.139.	1.168.	1.021.	.722.	
.892.	1.112.	1.167.	1.125.	1.104.	.945.	1.020.	.993.	1.045.	.977.	1.131.	1.147.	1.197.	1.126.	.864.	
.903.	1.140.	1.175.	1.106.	1.096.	.950.	1.019.	.983.	1.019.	.950.	1.096.	1.106.	1.175.	1.140.	.903.	
.851.	1.100.	1.114.	1.159.	1.067.	1.053.	1.002.	1.019.	1.013.	1.086.	1.100.	1.193.	1.155.	1.120.	.834.	
.851.	1.112.	1.126.	1.150.	1.056.	1.040.	.983.	.993.	.983.	1.040.	1.056.	1.150.	1.126.	1.112.	.851.	
.917.	1.166.	1.194.	1.110.	1.105.	.978.	1.065.	1.023.	1.051.	.975.	1.141.	1.113.	1.170.	1.122.	.890.	
.903.	1.140.	1.175.	1.106.	1.096.	.950.	1.019.	.983.	1.019.	.950.	1.096.	1.106.	1.175.	1.140.	.903.	
.747.	1.055.	1.195.	1.142.	1.064.	1.108.	.998.	1.096.	.957.	1.059.	1.059.	1.091.	1.117.	.976.	.696.	
.722.	1.021.	1.168.	1.139.	1.062.	1.061.	.950.	1.040.	.950.	1.061.	1.062.	1.139.	1.168.	1.021.	.722.	
.633.	1.061.	1.117.	1.015.	1.136.	1.118.	1.153.	1.108.	1.136.	1.059.	1.167.	.976.	1.051.	.984.	.590.	
.611.	1.024.	1.099.	1.020.	1.106.	1.062.	1.096.	1.056.	1.096.	1.062.	1.106.	1.020.	1.099.	1.024.	.611.	
	.888.	.930.	1.263.	1.048.	1.206.	1.172.	1.223.	1.163.	1.191.	1.076.	1.339.	.893.	.866.		
	.891.	.934.	1.269.	1.020.	1.139.	1.106.	1.150.	1.106.	1.139.	1.020.	1.269.	.934.	.891.		
	.522.	1.062.	.932.	1.131.	1.242.	1.239.	1.177.	1.222.	1.228.	1.161.	.969.	1.075.	.527.		
	.522.	1.063.	.934.	1.099.	1.169.	1.175.	1.126.	1.175.	1.169.	1.099.	.934.	1.063.	.522.		
		.522.	.894.	1.027.	1.010.	1.147.	1.140.	1.187.	1.071.	1.084.	.916.	.527.			
		.521.	.891.	1.024.	1.021.	1.140.	1.112.	1.140.	1.021.	1.024.	.891.	.521.			
				.613.	.717.	.893.	.857.	.943.	.764.	.648.					MEAS
				.611.	.722.	.903.	.851.	.903.	.722.	.611.					EXP

PERCENT DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 15 50 PCT H-8 AT 0 D AT 191 8/21/73

Figure C-13

	R	1	1															
R										2.0.		-2.8.						
P									1.8.						.6.			
N			1.8.	3.8.								.5.					-1.5.	
M											1.4.							
L	2.1.			7.1.				1.7.		3.4.								
K					8.0.							5.4.					-1.3.	
J			-1.0.				.4.			1.9.	3.6.							-4.9.
H	2.5.					1.5.						2.7.			2.4.		-.2.	
G					-.8.				2.9.									
F			3.3.							1.0.	-5.2.					-7.8.		-10.3.
E									.2.									
D					-3.6.			2.0.		1.6.								
C											-1.2.		-.0.					
B				-3.4.						-.4.		-3.0.				-6.2.		
A						-5.1.			-5.5.									

MEASURED AND EXPECTED FDHN IPP FLUX MAP 15 50 PCT H-8 AT 0 D AT 191 8/21/73

	R	1	1														
					.647.	.783.	.940.	.878.	.920.	.749.	.626.						
R					.636.	.771.	.923.	.851.	.923.	.771.	.635.						
				.562.	.950.	1.077.	1.073.	1.200.	1.147.	1.178.	1.042.	1.054.	.915.	.543.			
P				.545.	.910.	1.058.	1.058.	1.180.	1.125.	1.180.	1.058.	1.058.	.910.	.545.			
		.554.	1.120.	1.025.	1.175.	1.225.	1.220.	1.177.	1.206.	1.208.	1.131.	.987.	1.071.	.537.			
N		.545.	1.078.	.982.	1.126.	1.203.	1.196.	1.158.	1.196.	1.203.	1.125.	.982.	1.078.	.545.			
		.942.	1.028.	1.367.	1.084.	1.170.	1.154.	1.173.	1.139.	1.160.	1.070.	1.300.	.967.	.896.			
M		.910.	.982.	1.294.	1.065.	1.149.	1.123.	1.145.	1.123.	1.149.	1.065.	1.293.	.982.	.909.			
	.648.	1.107.	1.207.	1.146.	1.156.	1.081.	1.089.	1.064.	1.094.	1.104.	1.171.	1.061.	1.121.	1.052.	.631.		
L	.635.	1.058.	1.126.	1.065.	1.109.	1.063.	1.061.	1.029.	1.060.	1.063.	1.109.	1.064.	1.125.	1.057.	.635.		
	.775.	1.077.	1.268.	1.242.	1.106.	1.016.	.902.	.949.	.921.	1.062.	1.122.	1.147.	1.197.	1.043.	.743		
K	.771.	1.058.	1.203.	1.149.	1.063.	1.008.	.886.	.923.	.886.	1.008.	1.063.	1.149.	1.202.	1.057.	.770		
	.930.	1.168.	1.225.	1.187.	1.090.	.889.	.837.	.748.	.859.	.921.	1.097.	1.149.	1.204.	1.155.	.877		
J	.923.	1.180.	1.195.	1.123.	1.060.	.885.	.829.	.734.	.829.	.885.	1.060.	1.123.	1.194.	1.179.	.922		
	.883.	1.135.	1.143.	1.150.	1.044.	.937.	.747.	.449.	.755.	.947.	1.054.	1.171.	1.172.	1.122.	.837		
H	.861.	1.125.	1.157.	1.145.	1.029.	.923.	.734.	.437.	.734.	.922.	1.028.	1.144.	1.156.	1.124.	.860		
	.952.	1.218.	1.204.	1.113.	1.065.	.908.	.854.	.737.	.817.	.877.	1.086.	1.105.	1.164.	1.121.	.867		
G	.923.	1.180.	1.195.	1.123.	1.060.	.885.	.829.	.734.	.829.	.885.	1.060.	1.123.	1.194.	1.179.	.922		
	.797.	1.092.	1.223.	1.136.	1.051.	1.021.	.901.	.932.	.840.	.944.	.994.	1.060.	1.109.	.959.	.690		
F	.771.	1.057.	1.203.	1.149.	1.063.	1.008.	.886.	.923.	.885.	1.008.	1.062.	1.148.	1.202.	1.057.	.770		
	.657.	1.094.	1.126.	1.026.	1.100.	1.072.	1.063.	1.029.	1.044.	.994.	1.112.	.982.	1.037.	.962.	.570		
E	.635.	1.057.	1.125.	1.064.	1.108.	1.063.	1.060.	1.029.	1.060.	1.062.	1.108.	1.064.	1.124.	1.056.	.635		
		.877.	.946.	1.246.	1.057.	1.173.	1.138.	1.152.	1.126.	1.142.	1.068.	1.298.	.906.	.820.			
D		.909.	.982.	1.293.	1.064.	1.149.	1.123.	1.144.	1.123.	1.148.	1.064.	1.293.	.982.	.909.			
		.525.	1.041.	.947.	1.119.	1.231.	1.214.	1.150.	1.180.	1.184.	1.124.	.960.	1.011.	.510.			
C		.544.	1.078.	.982.	1.125.	1.202.	1.194.	1.156.	1.194.	1.202.	1.124.	.982.	1.077.	.544.			
			.525.	.873.	1.004.	.993.	1.143.	1.120.	1.161.	1.026.	1.041.	.877.	.510.				
B			.544.	.909.	1.057.	1.057.	1.179.	1.124.	1.179.	1.057.	1.056.	.909.	.544.				
				.603.	.725.	.870.	.835.	.909.	.744.	.614.						MEAS	
A				.635.	.770.	.922.	.860.	.922.	.770.	.635.						EXP	

:RCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 16 50 PCT BASE H14 D AT 191 8/21/73

R 1 1

Figure C-14

								-2.6		-3.5						
						-1.0						-1.3				
	-1.9	-1.6								.4				-1.2		
									1.9							
-2.9		4.8				2.4		6.4								
			4.6							7.5				-.7		
	-4.8					3.3		6.2	9.9							-4.6
-2.6				2.9						8.6		4.0		-.7		
			-2.0				4.6									
	-.9							5.4	.8				-3.8			-7.9
							2.9									
			-6.3			.9		2.6								
									-.9		-.8					
		-5.3						-.3		-2.1			-5.6			
				-7.7			-7.7									

ASURED AND EXPECTED FDHN IPP FLUX MAP 16 50 PCT BASE H14 D AT 191 8/21/73

R 1 1

					.609.	.721.	.890.	.831.	.879.	.702.	.599.				
					.614.	.728.	.907.	.854.	.907.	.728.	.614.				
			.511.	.877.	1.020.	1.021.	1.133.	1.095.	1.122.	1.013.	1.013.	.880.	.514.		
			.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.		
	.511.	1.044.	.917.	1.082.	1.163.	1.169.	1.132.	1.187.	1.175.	1.096.	.920.	1.048.	.514.		
	.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.		
	.886.	.939.	1.286.	1.042.	1.164.	1.155.	1.196.	1.125.	1.148.	1.021.	1.250.	.921.	.881.		
	.891.	.932.	1.266.	1.017.	1.137.	1.103.	1.147.	1.103.	1.137.	1.017.	1.266.	.932.	.891.		
.596.	1.038.	1.151.	1.065.	1.137.	1.082.	1.142.	1.119.	1.145.	1.109.	1.181.	1.023.	1.104.	1.031.	.616.	
.614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.091.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.	
.699.	1.013.	1.199.	1.189.	1.095.	1.086.	.987.	1.112.	1.020.	1.136.	1.133.	1.144.	1.175.	1.025.	.707.	
.727.	1.032.	1.171.	1.137.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.137.	1.171.	1.032.	.727.	
.874.	1.090.	1.162.	1.149.	1.131.	.976.	1.060.	1.043.	1.117.	1.029.	1.162.	1.148.	1.193.	1.124.	.866.	
.907.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.907.	
.832.	1.074.	1.084.	1.152.	1.082.	1.073.	1.025.	1.072.	1.068.	1.125.	1.117.	1.193.	1.148.	1.107.	.829.	
.854.	1.115.	1.126.	1.147.	1.052.	1.036.	.982.	1.002.	.982.	1.036.	1.052.	1.147.	1.126.	1.115.	.854.	
.892.	1.130.	1.156.	1.081.	1.096.	.983.	1.063.	1.024.	1.059.	.992.	1.159.	1.114.	1.170.	1.107.	.864.	
.907.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.907.	
.722.	1.023.	1.156.	1.107.	1.029.	1.093.	.989.	1.092.	.953.	1.054.	1.055.	1.094.	1.126.	.970.	.670.	
.727.	1.032.	1.171.	1.137.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.137.	1.171.	1.032.	.727.	
.610.	1.022.	1.063.	.953.	1.070.	1.074.	1.123.	1.087.	1.121.	1.055.	1.094.	.979.	1.057.	.969.	.567.	
.614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.091.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.	
	.835.	.874.	1.186.	.989.	1.147.	1.127.	1.177.	1.113.	1.125.	1.010.	1.257.	.897.	.825.		
	.891.	.932.	1.266.	1.017.	1.137.	1.103.	1.147.	1.103.	1.137.	1.017.	1.266.	.932.	.891.		
	.493.	1.000.	.877.	1.069.	1.180.	1.194.	1.135.	1.166.	1.155.	1.090.	.908.	1.001.	.491.		
	.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.		
		.493.	.836.	.950.	.944.	1.100.	1.111.	1.134.	1.011.	1.014.	.858.	.491.			
		.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.			
					.567.	.667.	.837.	.820.	.901.	.712.	.601.				MEAS
					.614.	.728.	.907.	.854.	.907.	.728.	.614.				EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLJX MAP 17 50 PCT H-14 AT 0 D AT 191 8/21/73

R 2 1 1

Figure C-15

R								-3.1.		-5.4.						
P							-3.7.					1.0.				
N		-8.2.	-6.2.							-1.3.		-1.2.		1.2.		
M									-.5.							
L	-10.4.					-3.2.		1.1.								
K				-2.4.						8.0.				4.2.		
J		-15.8.				-3.3.		4.3.	8.0.							.4.
H	-12.5.				-4.7.					9.9.		9.2.		5.4.		
G				-8.0.			6.4.				8.6.					
F		-5.1.						7.1.	1.0.				-1.2.		-4.2.	
E							4.1.									
D				-5.5.		1.9.		5.4.					-.0.			
C									4.2.		5.9.					
B			-7.1.							3.5.			.7.			
A					-5.3.		-3.5.									

MEASURED AND EXPECTED FDHN IPP FLUX MAP 17 50 PCT H-14 AT C D AT 191 8/21/73

R 1 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
R					.597.	.735.	.900.	.854.	.916.	.761.	.648.				
					.621.	.766.	.932.	.882.	.956.	.804.	.666.				
P			.464.	.809.	.987.	1.005.	1.147.	1.115.	1.186.	1.070.	1.097.	.968.	.578.		
			.498.	.857.	1.025.	1.050.	1.192.	1.154.	1.225.	1.110.	1.112.	.959.	.575.		
N		.435.	.907.	.858.	1.019.	1.147.	1.169.	1.172.	1.240.	1.253.	1.181.	1.027.	1.143.	.584.	
		.474.	.967.	.910.	1.080.	1.190.	1.213.	1.197.	1.252.	1.269.	1.190.	1.039.	1.140.	.577.	
M		.693.	.792.	1.105.	.978.	1.104.	1.141.	1.208.	1.191.	1.218.	1.120.	1.355.	1.042.	.978.	
		.756.	.850.	1.172.	1.010.	1.139.	1.152.	1.204.	1.197.	1.229.	1.137.	1.378.	1.045.	.967.	
L	.417.	.731.	.901.	.911.	1.009.	1.027.	1.105.	1.134.	1.194.	1.219.	1.298.	1.127.	1.271.	1.189.	.714.
	.465.	.816.	.921.	.932.	1.039.	1.060.	1.117.	1.122.	1.168.	1.165.	1.203.	1.146.	1.205.	1.130.	.679.
K	.441.	.531.	.841.	.940.	.955.	.993.	.983.	1.129.	1.102.	1.239.	1.271.	1.322.	1.366.	1.185.	.842.
	.503.	.728.	.910.	.963.	.983.	1.026.	.985.	1.086.	1.040.	1.148.	1.178.	1.251.	1.296.	1.137.	.826.
J	.435.	.556.	.722.	.871.	.938.	.900.	1.029.	1.090.	1.177.	1.151.	1.308.	1.348.	1.384.	1.312.	.993.
	.504.	.561.	.811.	.901.	.972.	.930.	1.026.	1.045.	1.090.	1.057.	1.198.	1.234.	1.294.	1.268.	.990.
H	.345.	.321.	.622.	.840.	.897.	.974.	1.034.	1.109.	1.156.	1.238.	1.282.	1.378.	1.351.	1.275.	.948.
	.395.	.383.	.712.	.898.	.941.	.987.	1.005.	1.050.	1.070.	1.127.	1.173.	1.261.	1.254.	1.209.	.923.
G	.455.	.605.	.748.	.828.	.910.	.949.	1.092.	1.103.	1.146.	1.130.	1.301.	1.312.	1.343.	1.283.	.989.
	.504.	.561.	.811.	.901.	.972.	.930.	1.026.	1.045.	1.089.	1.057.	1.197.	1.233.	1.293.	1.268.	.989.
F	.471.	.583.	.844.	.883.	.901.	1.075.	1.046.	1.151.	1.050.	1.183.	1.276.	1.284.	1.280.	1.104.	.791.
	.503.	.728.	.910.	.963.	.983.	1.025.	.985.	1.085.	1.040.	1.148.	1.177.	1.250.	1.295.	1.137.	.825.
E	.435.	.763.	.860.	.871.	1.012.	1.088.	1.152.	1.177.	1.214.	1.160.	1.279.	1.140.	1.198.	1.111.	.651.
	.465.	.816.	.920.	.931.	1.038.	1.060.	1.115.	1.122.	1.168.	1.165.	1.203.	1.146.	1.205.	1.130.	.678.
D		.706.	.794.	1.095.	.985.	1.160.	1.194.	1.258.	1.255.	1.292.	1.207.	1.410.	1.043.	.967.	
		.755.	.849.	1.171.	1.009.	1.138.	1.151.	1.203.	1.196.	1.228.	1.136.	1.377.	1.044.	.967.	
C		.440.	.901.	.849.	1.054.	1.210.	1.257.	1.254.	1.304.	1.325.	1.259.	1.068.	1.144.	.579.	
		.474.	.967.	.910.	1.079.	1.189.	1.212.	1.196.	1.251.	1.267.	1.189.	1.038.	1.140.	.577.	
B			.463.	.803.	.970.	.999.	1.150.	1.158.	1.271.	1.148.	1.165.	.985.	.578.		
			.498.	.856.	1.024.	1.050.	1.191.	1.153.	1.224.	1.109.	1.111.	.958.	.574.		
A					.587.	.730.	.898.	.851.	.989.	.831.	.689.				
					.620.	.765.	.931.	.881.	.955.	.803.	.665.				

MEAS
EXP

RCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 18 50 PCT BASE F-5) AT 194 8/21/73
R 1 1

Figure C-16

							-7.7.		-5.4.					
						-5.6.					-1.4.			
	-6.4.	-7.1.							-3.6.		-1.9.		-1.3.	
								-1.9.						
-8.5.					-1.8.		2.6.							
			-2.0.						5.9.				3.0.	
	-6.8.				-.4.		4.4.							-1.0.
-6.6.				.5.					10.0.		5.8.		3.1.	
			-3.0.			3.7.								
	-4.6.						7.3.	3.4.				-.1.		-1.9.
						5.3.								
			-2.6.		3.3.		6.0.							
								3.9.		5.6.				
		-2.8.							4.6.			.6.		
				-3.8.		-4.0.								

ASURED AND EXPECTED FDHN IPP FLUX MAP 18 50 PCT BASE F-6 D AT 194 8/21/73

R 1 1

					.581.	.687.	.847.	.788.	.847.	.588.	.592.					
					.614.	.727.	.907.	.853.	.907.	.727.	.514.					
			.485.	.826.	.973.	.973.	1.081.	1.041.	1.080.	.982.	.998.	.878.	.512.			
			.520.	.891.	1.028.	1.032.	1.145.	1.114.	1.145.	1.032.	1.028.	.891.	.520.			
		.487.	.985.	.864.	1.019.	1.110.	1.116.	1.085.	1.141.	1.128.	1.071.	.914.	1.044.	.514.		
		.521.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.521.		
		.828.	.868.	1.173.	1.000.	1.117.	1.112.	1.153.	1.083.	1.103.	.988.	1.240.	.916.	.879.		
		.891.	.932.	1.266.	1.017.	1.137.	1.104.	1.147.	1.104.	1.137.	1.017.	1.266.	.932.	.891.		
.562.	.941.	1.077.	.996.	1.081.	1.039.	1.099.	1.080.	1.111.	1.086.	1.168.	.995.	1.144.	1.068.	.538.		
.614.	1.028.	1.099.	1.017.	1.102.	1.057.	1.092.	1.052.	1.092.	1.057.	1.102.	1.017.	1.099.	1.028.	.614.		
.669.	.951.	1.126.	1.113.	1.041.	1.044.	.958.	1.075.	.990.	1.119.	1.120.	1.184.	1.218.	1.063.	.733.		
.727.	1.032.	1.171.	1.137.	1.057.	1.056.	.946.	1.036.	.946.	1.056.	1.057.	1.137.	1.171.	1.032.	.727.		
.846.	1.066.	1.119.	1.094.	1.088.	.942.	1.036.	1.025.	1.082.	1.021.	1.174.	1.179.	1.234.	1.165.	.898.		
.907.	1.144.	1.176.	1.103.	1.092.	.945.	1.017.	.982.	1.017.	.945.	1.092.	1.103.	1.176.	1.144.	.907.		
.798.	1.041.	1.069.	1.134.	1.057.	1.046.	1.007.	1.042.	1.059.	1.139.	1.140.	1.225.	1.185.	1.149.	.860.		
.853.	1.114.	1.126.	1.147.	1.052.	1.036.	.982.	1.001.	.982.	1.036.	1.052.	1.147.	1.126.	1.114.	.853.		
.855.	1.085.	1.132.	1.071.	1.079.	.967.	1.054.	1.033.	1.082.	1.012.	1.183.	1.150.	1.211.	1.156.	.910.		
.907.	1.144.	1.176.	1.103.	1.092.	.945.	1.017.	.982.	1.017.	.945.	1.092.	1.103.	1.176.	1.144.	.907.		
.695.	.984.	1.125.	1.098.	1.021.	1.106.	1.003.	1.112.	.978.	1.082.	1.083.	1.137.	1.170.	1.019.	.713.		
.727.	1.032.	1.171.	1.137.	1.057.	1.056.	.946.	1.036.	.946.	1.056.	1.057.	1.137.	1.171.	1.032.	.727.		
.537.	.984.	1.062.	.990.	1.103.	1.106.	1.160.	1.118.	1.149.	1.083.	1.176.	1.018.	1.099.	1.018.	.603.		
.614.	1.028.	1.099.	1.017.	1.102.	1.057.	1.092.	1.052.	1.092.	1.057.	1.102.	1.017.	1.099.	1.028.	.514.		
		.868.	.908.	1.232.	1.019.	1.174.	1.161.	1.216.	1.158.	1.195.	1.086.	1.352.	.932.	.878.		
		.891.	.932.	1.266.	1.017.	1.137.	1.104.	1.147.	1.104.	1.137.	1.017.	1.266.	.932.	.891.		
		.506.	1.032.	.907.	1.101.	1.206.	1.232.	1.182.	1.222.	1.230.	1.171.	.973.	1.068.	.524.		
		.521.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.521.		
			.506.	.863.	.989.	.988.	1.099.	1.113.	1.192.	1.080.	1.087.	.918.	.524.			
			.520.	.891.	1.028.	1.032.	1.145.	1.114.	1.145.	1.032.	1.028.	.891.	.520.			
					.591.	.698.	.871.	.820.	.950.	.761.	.543.					MEAS
					.614.	.727.	.907.	.853.	.907.	.727.	.514.					EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 19 50 PCT F-6 AT 0 D AT 190 8/22/73

R 1 1

Figure C-17

								-2.9.		-8.3.						
						-2.9.						-4.7.				
	4.1.	4.7.								-5.4.				-7.3.		
									-3.5.							
5.0.					1.6.			1.8.								
			10.6.							1.3.				-6.4.		
	7.9.				3.7.			1.8.								-10.9.
12.1.				8.2.						.6.		-3.0.		-5.9.		
			6.4.			7.9.										
	10.6.							3.8.	-5.2.				-14.5.			-15.4.
						4.5.										
			4.1.		6.3.			2.8.								
									-1.3.		-5.0.					
		3.3.								-3.8.			-9.3.			
				-1.2.		-3.8.										

EASURED AND EXPECTED FDHN IPP FLUX MAP 19 50 PCT F-6 AT 0 D AT 190 8/22/73

R 1 1

					.653.	.790.	.945.	.878.	.912.	.736.	.613.				
					.673.	.815.	.974.	.905.	.965.	.802.	.658.				
			.602.	1.009.	1.089.	1.087.	1.212.	1.151.	1.166.	1.022.	1.027.	.887.	.521.		
			.576.	.962.	1.121.	1.124.	1.247.	1.184.	1.235.	1.103.	1.091.	.930.	.552.		
		.599.	1.193.	1.091.	1.253.	1.245.	1.238.	1.185.	1.196.	1.184.	1.099.	.954.	1.020.	.506.	
		.576.	1.139.	1.040.	1.196.	1.279.	1.270.	1.225.	1.256.	1.252.	1.159.	1.000.	1.088.	.546.	
		1.007.	1.087.	1.442.	1.155.	1.253.	1.232.	1.217.	1.148.	1.144.	1.034.	1.249.	.912.	.839.	
		.962.	1.040.	1.375.	1.137.	1.234.	1.208.	1.226.	1.190.	1.200.	1.093.	1.309.	.984.	.905.	
	.705.	1.177.	1.322.	1.258.	1.257.	1.178.	1.191.	1.152.	1.140.	1.106.	1.148.	1.009.	1.054.	.983.	.586.
	.672.	1.120.	1.196.	1.137.	1.196.	1.160.	1.168.	1.132.	1.143.	1.114.	1.133.	1.067.	1.115.	1.040.	.621.
	.862.	1.192.	1.399.	1.365.	1.228.	1.156.	1.048.	1.097.	1.008.	1.078.	1.089.	1.073.	1.108.	.961.	.677.
	.815.	1.124.	1.279.	1.234.	1.160.	1.130.	1.025.	1.074.	.991.	1.065.	1.075.	1.135.	1.173.	1.026.	.744.
	1.071.	1.345.	1.381.	1.328.	1.252.	1.063.	1.075.	1.021.	1.006.	.941.	1.040.	1.047.	1.088.	1.036.	.781.
	.974.	1.246.	1.270.	1.208.	1.168.	1.025.	1.049.	1.002.	.992.	.931.	1.044.	1.078.	1.139.	1.121.	.876.
	1.014.	1.303.	1.307.	1.319.	1.224.	1.145.	1.052.	1.005.	.920.	.918.	.941.	1.020.	1.026.	.983.	.733.
	.905.	1.184.	1.224.	1.226.	1.131.	1.074.	1.002.	.961.	.908.	.913.	.952.	1.051.	1.069.	1.045.	.802.
	1.080.	1.377.	1.357.	1.266.	1.230.	1.075.	1.070.	.942.	.816.	.688.	.856.	.899.	.975.	.955.	.747.
	.965.	1.235.	1.256.	1.190.	1.143.	.991.	.992.	.908.	.826.	.706.	.868.	.973.	1.067.	1.068.	.842.
	.889.	1.220.	1.365.	1.272.	1.183.	1.131.	.986.	.946.	.668.	.428.	.709.	.812.	.894.	.799.	.584.
	.802.	1.103.	1.252.	1.199.	1.114.	1.065.	.931.	.912.	.705.	.470.	.762.	.952.	1.046.	.938.	.690.
	.729.	1.211.	1.246.	1.137.	1.193.	1.133.	1.091.	.974.	.862.	.709.	.801.	.750.	.827.	.789.	.475.
	.658.	1.091.	1.159.	1.093.	1.133.	1.075.	1.044.	.952.	.868.	.762.	.848.	.879.	.968.	.927.	.561.
		.968.	1.040.	1.362.	1.124.	1.205.	1.129.	1.081.	.980.	.919.	.833.	1.035.	.721.	.673.	
)		.930.	.999.	1.309.	1.067.	1.134.	1.078.	1.051.	.972.	.952.	.879.	1.093.	.844.	.792.	
		.570.	1.127.	1.020.	1.174.	1.250.	1.195.	1.078.	1.053.	1.009.	.920.	.787.	.846.	.428.	
C		.552.	1.088.	.983.	1.115.	1.172.	1.139.	1.069.	1.067.	1.046.	.968.	.844.	.933.	.472.	
			.563.	.919.	1.027.	.998.	1.079.	1.018.	1.039.	.903.	.886.	.732.	.428.		
B			.546.	.905.	1.039.	1.026.	1.121.	1.045.	1.068.	.938.	.927.	.792.	.472.		
					.613.	.724.	.843.	.772.	.808.	.662.	.539.				
A					.621.	.744.	.876.	.802.	.842.	.690.	.561.				

MEAS
EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 23 50 PCT BASE E-9 D AT 193 8/22/73

Figure C-18

	2	1	1																	
R										-10.2			-8.8						
P							-9.1								-3.8				
N		-8.6	-8.7										-5.0					-2.1	
M											-3.6								
L	-8.4					-2.9			-1.5										
K				-.4									5.0					1.8	
J		-9.8				-1.1			3.0										-1.7
H	-4.9				-1.2								10.9		9.0			3.4	
G				-3.8			5.9												
F		-1.8							9.0		5.4					1.9			-.2
E							5.9												
D				-3.5		4.5			8.3										
C											6.9			9.0					
B			-4.0										7.0			4.0			
A					-3.6		-3.5												

MEASURED AND EXPECTED FDHN IPP FLUX MAP 20 50 PCT BASE E-9 D AT 193 8/22/73

R 1 1

						.559.	.561.	.820.	.757.	.821.	.664.	.573.				
R						.615.	.728.	.908.	.854.	.908.	.728.	.615.				
			.475.	.813.	.936.	.937.	1.041.	1.008.	1.048.	.953.	.968.	.857.	.504.			
P			.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.			
	.476.	.968.	.851.	1.004.	1.068.	1.073.	1.057.	1.119.	1.101.	1.041.	.897.	1.032.	.510.			
N	.520.	1.061.	.932.	1.099.	1.171.	1.175.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.			
	.815.	.851.	1.155.	.988.	1.104.	1.080.	1.118.	1.063.	1.081.	.955.	1.218.	.913.	.873.			
M	.891.	.932.	1.265.	1.017.	1.136.	1.103.	1.147.	1.103.	1.136.	1.017.	1.265.	.932.	.891.			
.563.	.943.	1.095.	1.013.	1.080.	1.026.	1.068.	1.035.	1.084.	1.074.	1.156.	1.046.	1.129.	1.055.	.630.		
L .614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.091.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.		
.661.	.932.	1.121.	1.132.	1.043.	1.034.	.939.	1.044.	.970.	1.108.	1.109.	1.169.	1.203.	1.052.	.726.		
K .728.	1.033.	1.171.	1.136.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.136.	1.171.	1.033.	.728.		
.840.	1.033.	1.101.	1.096.	1.081.	.935.	1.025.	1.012.	1.076.	1.020.	1.182.	1.202.	1.238.	1.160.	.892.		
J .908.	1.145.	1.176.	1.103.	1.091.	.945.	1.015.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.908.		
.811.	1.033.	1.045.	1.118.	1.038.	1.044.	1.015.	1.049.	1.060.	1.149.	1.156.	1.250.	1.200.	1.152.	.859.		
H .854.	1.115.	1.126.	1.147.	1.051.	1.036.	.982.	1.002.	.982.	1.036.	1.051.	1.147.	1.126.	1.115.	.854.		
.878.	1.115.	1.141.	1.062.	1.064.	.979.	1.087.	1.057.	1.098.	1.024.	1.200.	1.172.	1.229.	1.171.	.922.		
G .908.	1.145.	1.176.	1.103.	1.091.	.945.	1.015.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.908.		
.715.	1.015.	1.142.	1.090.	1.014.	1.125.	1.019.	1.129.	.996.	1.103.	1.104.	1.158.	1.193.	1.041.	.726.		
F .728.	1.033.	1.171.	1.136.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.136.	1.171.	1.033.	.728.		
.605.	1.013.	1.072.	.981.	1.105.	1.114.	1.167.	1.134.	1.171.	1.104.	1.201.	1.037.	1.120.	1.038.	.614.		
E .614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.091.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.		
.860.	.899.	1.221.	1.021.	1.188.	1.176.	1.242.	1.188.	1.226.	1.109.	1.380.	.950.	.892.				
D .891.	.932.	1.265.	1.017.	1.136.	1.103.	1.147.	1.103.	1.136.	1.017.	1.265.	.932.	.891.				
.500.	1.021.	.897.	1.104.	1.222.	1.254.	1.213.	1.257.	1.261.	1.198.	.998.	1.103.	.541.				
C .520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.				
	.500.	.857.	.991.	.993.	1.106.	1.133.	1.223.	1.106.	1.112.	.944.	.541.					
B	.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.					
		.592.	.701.	.875.	.825.	.971.	.778.	.657.							MEAS	
A		.615.	.728.	.908.	.854.	.908.	.728.	.615.							EXP	

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 21 50 PCT E-9 AT 0 D AT 190 8/22/73

R 1 1

Figure C-19

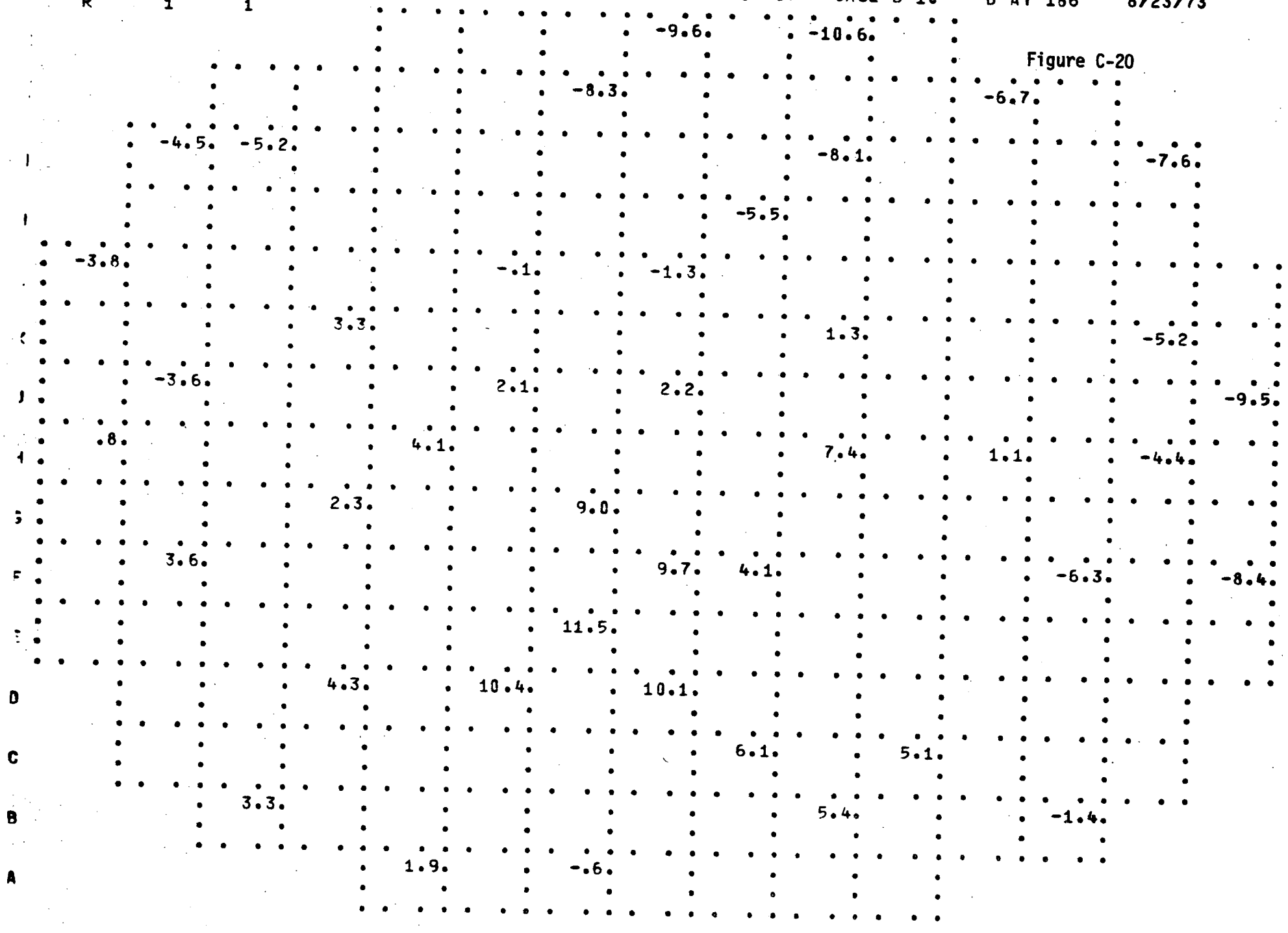
R									1.2.		-3.3.							
P								-1.6.						2.2.				
N			-4.5.	-3.5.							.9.					4.9.		
M										.5.								
L	-6.5.						-3.9.		4.3.									
K					-.4.						9.3.					6.6.		
J			-7.1.				-3.8.		1.5.									5.0.
H	-5.0.					-3.3.					9.3.			11.5.		9.6.		
G					-7.7.			2.5.										
F			-4.8.						1.4.	-.4.					3.0.			-.7.
E								-14.6.										
D					-11.4.		-4.4.		1.0.									
C										1.0.			5.6.					
B				-10.3.							1.1.				3.4.			
A						-8.8.		-9.0.										

MEASURED AND EXPECTED FDHN IPP FLUX MAP 21 50 PCT E-9 AT 0 D AT 190 8/22/73

	R	1	1													
				.660.	.801.	.982.	.931.	.980.	.798.	.672.						
R				.674.	.820.	.985.	.920.	.988.	.825.	.679.						
			.548.	.926.	1.098.	1.100.	1.239.	1.203.	1.262.	1.118.	1.135.	.991.	.598.			
P			.570.	.958.	1.120.	1.129.	1.260.	1.204.	1.265.	1.136.	1.131.	.970.	.579.			
		.541.	1.086.	.998.	1.152.	1.261.	1.262.	1.236.	1.294.	1.306.	1.225.	1.070.	1.190.	.606.		
N		.566.	1.125.	1.031.	1.192.	1.284.	1.284.	1.247.	1.288.	1.294.	1.206.	1.047.	1.145.	.578.		
		.896.	.982.	1.310.	1.085.	1.186.	1.223.	1.278.	1.231.	1.254.	1.160.	1.412.	1.094.	1.011.		
M		.941.	1.021.	1.355.	1.129.	1.234.	1.218.	1.249.	1.225.	1.246.	1.146.	1.380.	1.043.	.963.		
	.608.	1.017.	1.160.	1.109.	1.148.	1.108.	1.181.	1.204.	1.233.	1.236.	1.314.	1.226.	1.285.	1.200.	.719	
L	.650.	1.086.	1.163.	1.113.	1.178.	1.153.	1.175.	1.155.	1.185.	1.170.	1.201.	1.139.	1.195.	1.119.	.671	
	.727.	.999.	1.195.	1.187.	1.101.	1.068.	1.021.	1.134.	1.098.	1.243.	1.269.	1.325.	1.370.	1.191.	.855	
K	.782.	1.079.	1.233.	1.192.	1.129.	1.112.	1.025.	1.099.	1.037.	1.137.	1.161.	1.231.	1.275.	1.117.	.811	
	.869.	1.101.	1.153.	1.135.	1.087.	.951.	1.023.	1.042.	1.121.	1.119.	1.279.	1.337.	1.383.	1.325.	1.013	
J	.925.	1.185.	1.208.	1.149.	1.116.	.989.	1.035.	1.026.	1.058.	1.024.	1.162.	1.199.	1.261.	1.236.	.965	
	.807.	1.044.	1.056.	1.079.	1.015.	.984.	.968.	1.001.	1.062.	1.161.	1.232.	1.348.	1.340.	1.281.	.958	
H	.850.	1.111.	1.145.	1.141.	1.050.	1.004.	.963.	.980.	.999.	1.062.	1.116.	1.209.	1.209.	1.169.	.893	
	.852.	1.088.	1.074.	.994.	.962.	.872.	.915.	.922.	.996.	1.013.	1.231.	1.258.	1.323.	1.275.	.985	
G	.894.	1.140.	1.151.	1.078.	1.018.	.869.	.893.	.901.	.964.	.963.	1.115.	1.164.	1.232.	1.214.	.950	
	.698.	.952.	1.058.	.967.	.861.	.777.	.669.	.836.	.861.	.998.	1.060.	1.198.	1.256.	1.086.	.779	
F	.732.	1.000.	1.124.	1.054.	.939.	.833.	.593.	.824.	.864.	1.010.	1.071.	1.163.	1.220.	1.077.	.785	
	.566.	.934.	.944.	.832.	.851.	.676.	.406.	.732.	.944.	.988.	1.140.	1.081.	1.155.	1.074.	.637	
E	.593.	.978.	1.023.	.938.	.918.	.749.	.475.	.754.	.932.	.999.	1.076.	1.049.	1.122.	1.061.	.640	
	.731.	.773.	.989.	.806.	.815.	.726.	.883.	.977.	1.080.	1.065.	1.324.	.991.	.898.			
D	.823.	.872.	1.116.	.868.	.853.	.767.	.875.	.958.	1.045.	1.005.	1.249.	.962.	.899.			
	.433.	.842.	.746.	.862.	.931.	.941.	.959.	1.037.	1.107.	1.102.	.980.	1.077.	.548.			
C	.483.	.944.	.838.	.926.	.954.	.938.	.940.	1.026.	1.080.	1.044.	.933.	1.041.	.530.			
		.422.	.597.	.800.	.786.	.879.	.904.	1.029.	.955.	1.004.	.893.	.538.				
B		.471.	.771.	.877.	.863.	.966.	.942.	1.021.	.944.	.971.	.855.	.520.				
			.482.	.580.	.699.	.664.	.807.	.690.	.580.							MEAS
A			.528.	.637.	.768.	.730.	.802.	.686.	.577.							EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 22 50 PCT BASE B-10 D AT 186 8/23/73
R 1 1

Figure C-20



MEASURED AND EXPECTED FDHN IPP FLUX MAP 22 50 PCT BASE B-10 D AT 186 8/23/73

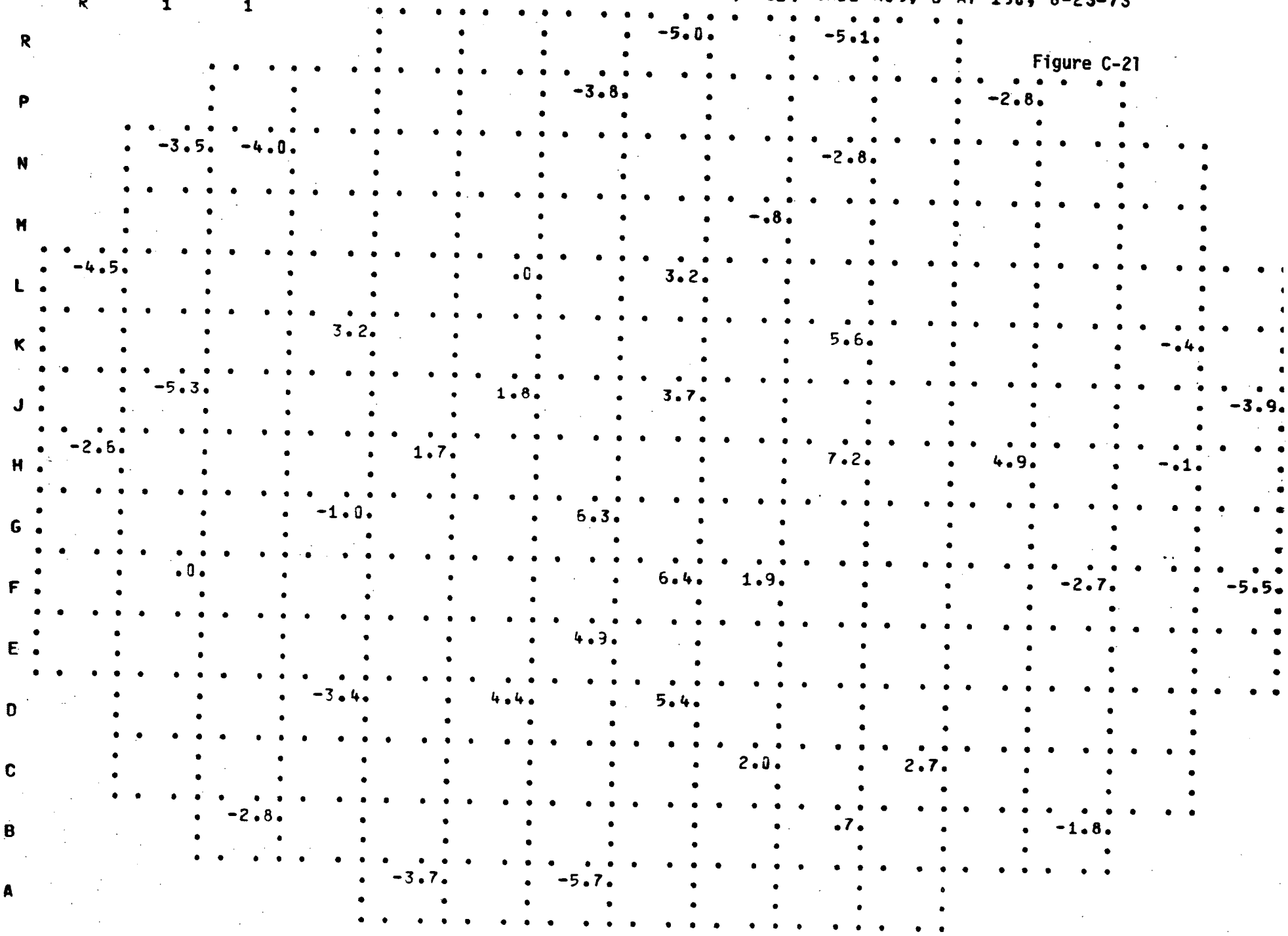
	R	1	1													
					.563.	.665.	.825.	.771.	.814.	.648.	.558.					
					.613.	.726.	.906.	.853.	.906.	.726.	.613.					
				.495.	.844.	.943.	.940.	1.048.	1.015.	1.034.	.928.	.942.	.831.	.484.		
				.521.	.891.	1.026.	1.028.	1.143.	1.114.	1.143.	1.028.	1.026.	.891.	.521.		
			.497.	1.007.	.883.	1.041.	1.076.	1.083.	1.050.	1.094.	1.076.	1.015.	.870.	.985.	.481.	
			.521.	1.062.	.933.	1.099.	1.170.	1.176.	1.126.	1.176.	1.170.	1.099.	.933.	1.062.	.521.	
			.852.	.887.	1.199.	1.018.	1.137.	1.100.	1.111.	1.044.	1.058.	.935.	1.182.	.862.	.823.	
			.891.	.933.	1.267.	1.018.	1.138.	1.105.	1.148.	1.105.	1.138.	1.018.	1.267.	.933.	.891.	
	.590.	.988.	1.135.	1.051.	1.117.	1.058.	1.088.	1.040.	1.070.	1.043.	1.118.	.977.	1.053.	.982.	.586.	
	.613.	1.026.	1.099.	1.018.	1.103.	1.059.	1.093.	1.054.	1.093.	1.059.	1.103.	1.018.	1.099.	1.026.	.613.	
	.696.	.985.	1.175.	1.175.	1.079.	1.067.	.954.	1.044.	.956.	1.072.	1.073.	1.092.	1.121.	.974.	.670.	
	.725.	1.028.	1.170.	1.138.	1.059.	1.058.	.947.	1.038.	.947.	1.058.	1.059.	1.138.	1.170.	1.028.	.725.	
	.892.	1.101.	1.162.	1.147.	1.129.	.967.	1.038.	1.004.	1.052.	.988.	1.129.	1.117.	1.149.	1.071.	.819.	
	.906.	1.143.	1.176.	1.104.	1.093.	.947.	1.018.	.982.	1.018.	.947.	1.093.	1.104.	1.176.	1.143.	.906.	
	.859.	1.098.	1.114.	1.187.	1.097.	1.085.	1.032.	1.049.	1.035.	1.114.	1.098.	1.161.	1.112.	1.064.	.791.	
	.853.	1.114.	1.126.	1.148.	1.054.	1.038.	.982.	.999.	.982.	1.038.	1.054.	1.148.	1.126.	1.114.	.853.	
	.926.	1.175.	1.208.	1.129.	1.130.	1.015.	1.109.	1.063.	1.083.	1.000.	1.139.	1.085.	1.135.	1.077.	.847.	
	.906.	1.143.	1.176.	1.104.	1.093.	.947.	1.018.	.982.	1.018.	.947.	1.093.	1.104.	1.176.	1.143.	.906.	
	.752.	1.065.	1.207.	1.160.	1.080.	1.167.	1.046.	1.138.	.986.	1.089.	1.090.	1.066.	1.096.	.950.	.664.	
	.725.	1.028.	1.170.	1.138.	1.059.	1.058.	.947.	1.038.	.947.	1.058.	1.059.	1.138.	1.170.	1.028.	.725.	
	.636.	1.066.	1.144.	1.062.	1.183.	1.175.	1.219.	1.154.	1.172.	1.090.	1.159.	.954.	1.029.	.951.	.562.	
	.613.	1.026.	1.099.	1.018.	1.103.	1.059.	1.093.	1.054.	1.093.	1.059.	1.103.	1.018.	1.099.	1.026.	.613.	
D		.929.	.973.	1.321.	1.092.	1.256.	1.224.	1.264.	1.193.	1.199.	1.070.	1.331.	.874.	.819.		
		.891.	.933.	1.267.	1.018.	1.138.	1.105.	1.148.	1.105.	1.138.	1.018.	1.267.	.933.	.891.		
C		.538.	1.101.	.969.	1.179.	1.291.	1.297.	1.217.	1.247.	1.234.	1.155.	.956.	1.047.	.514.		
		.521.	1.062.	.933.	1.099.	1.170.	1.176.	1.126.	1.176.	1.170.	1.099.	.933.	1.062.	.521.		
B			.538.	.917.	1.047.	1.033.	1.136.	1.142.	1.208.	1.084.	1.082.	.902.	.514.			
			.521.	.891.	1.026.	1.028.	1.143.	1.114.	1.143.	1.028.	1.026.	.891.	.521.			
A				.625.	.730.	.900.	.848.	.958.	.766.	.648.						
				.613.	.726.	.906.	.853.	.906.	.726.	.613.						

MEAS
EXP

PERCENT DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 23, 50PC, BOL, BASE N09, D AT 190, 8-23-73

R 1 1

Figure C-21

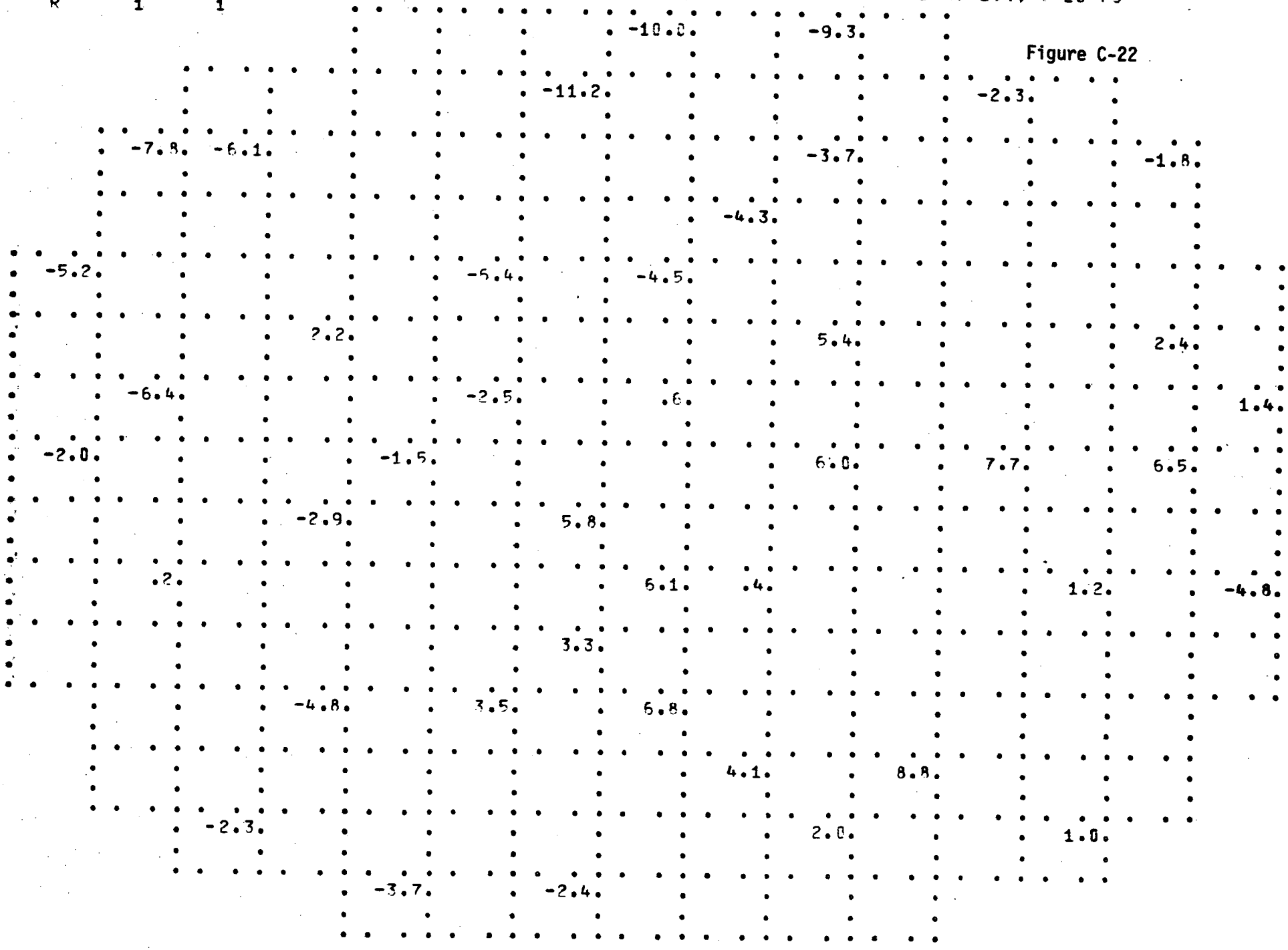


MEASURED AND EXPECTED FDHN IPP2 MD 23, 50PC, BOL, BASE N09, D AT 190, 8-23-73

	R	1	1														
					.591.	.700.	.867.	.811.	.862.	.690.	.589.						
R					.614.	.728.	.907.	.854.	.907.	.728.	.614.						
			.501.	.855.	.990.	.991.	1.101.	1.066.	1.095.	.989.	.993.	.866.	.506.				
P			.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.				
		.502.	1.019.	.894.	1.054.	1.129.	1.135.	1.100.	1.153.	1.139.	1.068.	.906.	1.032.	.506.			
N		.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.			
		.857.	.897.	1.214.	1.018.	1.137.	1.125.	1.162.	1.094.	1.114.	.989.	1.231.	.939.	.897.			
M		.891.	.932.	1.266.	1.017.	1.137.	1.103.	1.147.	1.103.	1.137.	1.017.	1.266.	.932.	.891.			
	.587.	.983.	1.135.	1.050.	1.115.	1.057.	1.112.	1.086.	1.117.	1.088.	1.163.	1.025.	1.106.	1.033.	.617.		
L	.614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.091.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.		
	.691.	.977.	1.168.	1.173.	1.077.	1.065.	.967.	1.074.	.988.	1.115.	1.116.	1.146.	1.178.	1.028.	.711.		
K	.728.	1.032.	1.171.	1.136.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.136.	1.171.	1.032.	.728.		
	.871.	1.084.	1.151.	1.134.	1.115.	.962.	1.044.	1.018.	1.069.	1.005.	1.155.	1.157.	1.199.	1.129.	.871.		
J	.907.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.907.		
	.831.	1.071.	1.087.	1.151.	1.069.	1.066.	1.024.	1.051.	1.040.	1.110.	1.115.	1.203.	1.156.	1.114.	.835.		
H	.854.	1.115.	1.126.	1.147.	1.052.	1.036.	.982.	1.002.	.982.	1.036.	1.052.	1.147.	1.126.	1.115.	.854.		
	.895.	1.136.	1.168.	1.093.	1.095.	.987.	1.080.	1.036.	1.064.	.990.	1.157.	1.124.	1.180.	1.121.	.879.		
G	.907.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.907.		
	.728.	1.032.	1.167.	1.122.	1.043.	1.112.	1.003.	1.102.	.963.	1.066.	1.067.	1.105.	1.139.	.989.	.687.		
F	.728.	1.032.	1.171.	1.136.	1.057.	1.056.	.945.	1.036.	.945.	1.056.	1.057.	1.136.	1.171.	1.032.	.728.		
	.615.	1.030.	1.082.	.983.	1.107.	1.104.	1.145.	1.105.	1.137.	1.067.	1.135.	.989.	1.069.	.986.	.581.		
E	.614.	1.028.	1.099.	1.017.	1.101.	1.057.	1.091.	1.052.	1.091.	1.057.	1.101.	1.017.	1.099.	1.028.	.614.		
		.861.	.900.	1.223.	1.022.	1.187.	1.158.	1.209.	1.145.	1.163.	1.048.	1.304.	.906.	.845.			
D		.891.	.932.	1.266.	1.017.	1.137.	1.103.	1.147.	1.103.	1.137.	1.017.	1.266.	.932.	.891.			
		.506.	1.029.	.903.	1.105.	1.224.	1.238.	1.170.	1.200.	1.191.	1.129.	.942.	1.041.	.511.			
C		.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.			
			.506.	.864.	.991.	.981.	1.080.	1.093.	1.158.	1.040.	1.046.	.891.	.511.				
B			.520.	.891.	1.028.	1.033.	1.145.	1.115.	1.145.	1.033.	1.028.	.891.	.520.				
				.592.	.693.	.856.	.806.	.913.	.731.	.618.						MEAS	
A				.614.	.728.	.907.	.854.	.907.	.728.	.614.						EXP	

ERCENT. DIFF. OF EXPECT. AND MEAS. FOHN IPP2 MO 24, 50PC, BOL, N09 AT C, D AT 194, 8-23-73
R 1 1

Figure C-22



EASURED AND EXPECTED FDHN   IPP2 MD 24, 50PC, BOL, N09 AT 0, D AT 194, 8-23-73

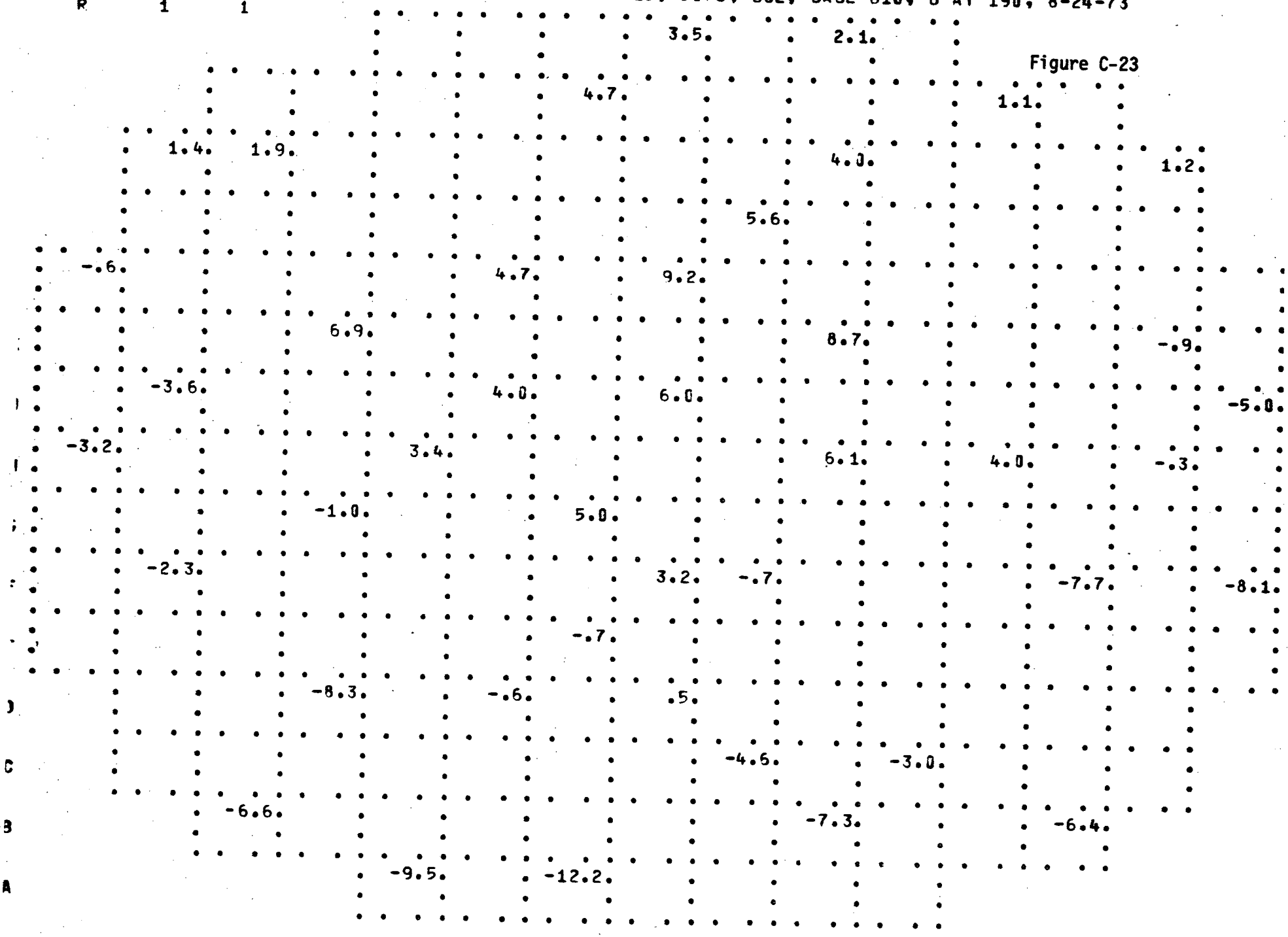
R   1   1

				.366.	.412.	.487.	.495.	.596.	.541.	.489.				
				.409.	.460.	.543.	.550.	.658.	.597.	.523.				
		.402.	.634.	.628.	.546.	.549.	.618.	.783.	.782.	.854.	.791.	.491.		
		.431.	.672.	.703.	.605.	.619.	.692.	.847.	.834.	.895.	.810.	.501.		
	.427.	.836.	.720.	.745.	.613.	.374.	.642.	.856.	.953.	.955.	.877.	.994.	.511.	
	.464.	.890.	.763.	.790.	.692.	.433.	.699.	.891.	.989.	.985.	.898.	1.014.	.520.	
	.757.	.793.	1.013.	.771.	.747.	.676.	.786.	.871.	.962.	.939.	1.195.	.929.	.873.	
	.809.	.849.	1.074.	.823.	.799.	.718.	.824.	.911.	1.002.	.974.	1.222.	.946.	.889.	
.565.	.929.	1.048.	.966.	.926.	.830.	.833.	.851.	.944.	1.017.	1.127.	1.076.	1.150.	1.087.	.658.
.596.	.979.	1.025.	.945.	.955.	.886.	.881.	.891.	.964.	1.001.	1.069.	1.042.	1.115.	1.055.	.639.
.697.	.945.	1.132.	1.113.	.990.	.924.	.855.	.938.	.935.	1.094.	1.142.	1.296.	1.259.	1.102.	.798.
.742.	1.012.	1.146.	1.089.	1.006.	.968.	.883.	.957.	.924.	1.037.	1.083.	1.168.	1.222.	1.076.	.786.
.873.	1.090.	1.146.	1.130.	1.072.	.932.	.990.	.996.	1.060.	1.053.	1.208.	1.268.	1.316.	1.264.	.968.
.911.	1.164.	1.182.	1.122.	1.082.	.956.	1.001.	.991.	1.024.	.995.	1.136.	1.177.	1.242.	1.220.	.955.
.851.	1.090.	1.120.	1.159.	1.087.	1.068.	1.053.	1.071.	1.089.	1.164.	1.218.	1.322.	1.312.	1.255.	.937.
.868.	1.137.	1.178.	1.184.	1.104.	1.069.	1.033.	1.042.	1.048.	1.098.	1.140.	1.228.	1.222.	1.179.	.901.
.940.	1.211.	1.221.	1.152.	1.135.	1.065.	1.150.	1.125.	1.136.	1.088.	1.269.	1.282.	1.337.	1.276.	.976.
.947.	1.214.	1.242.	1.187.	1.160.	1.035.	1.087.	1.073.	1.098.	1.053.	1.187.	1.219.	1.276.	1.249.	.975.
.803.	1.105.	1.253.	1.189.	1.129.	1.195.	1.116.	1.205.	1.072.	1.154.	1.174.	1.270.	1.307.	1.105.	.781.
.800.	1.103.	1.264.	1.227.	1.165.	1.150.	1.061.	1.136.	1.068.	1.165.	1.185.	1.252.	1.292.	1.130.	.820.
.668.	1.118.	1.168.	1.087.	1.203.	1.221.	1.248.	1.241.	1.261.	1.184.	1.345.	1.174.	1.227.	1.113.	.647.
.665.	1.112.	1.192.	1.141.	1.209.	1.186.	1.208.	1.185.	1.214.	1.195.	1.223.	1.158.	1.212.	1.133.	.678.
	.916.	.995.	1.720.	1.149.	1.307.	1.303.	1.364.	1.323.	1.359.	1.280.	1.540.	1.072.	.936.	
	.962.	1.045.	1.386.	1.155.	1.262.	1.247.	1.278.	1.251.	1.271.	1.166.	1.402.	1.058.	.976.	
	.565.	1.112.	1.013.	1.210.	1.359.	1.382.	1.344.	1.366.	1.381.	1.333.	1.130.	1.172.	.591.	
	.579.	1.149.	1.053.	1.217.	1.310.	1.309.	1.271.	1.312.	1.316.	1.225.	1.063.	1.161.	.585.	
		.569.	.951.	1.101.	1.108.	1.253.	1.237.	1.320.	1.176.	1.210.	1.028.	.593.		
		.582.	.977.	1.142.	1.149.	1.283.	1.226.	1.286.	1.153.	1.149.	.985.	.587.		
				.660.	.807.	.978.	.915.	1.017.	.848.	.699.				
				.686.	.835.	1.002.	.936.	1.004.	.838.	.690.				

MEAS
EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FCHN IPP2 MD 25, 50PC, BOL, BASE B10, D AT 190, 8-24-73
R 1 1

Figure C-23



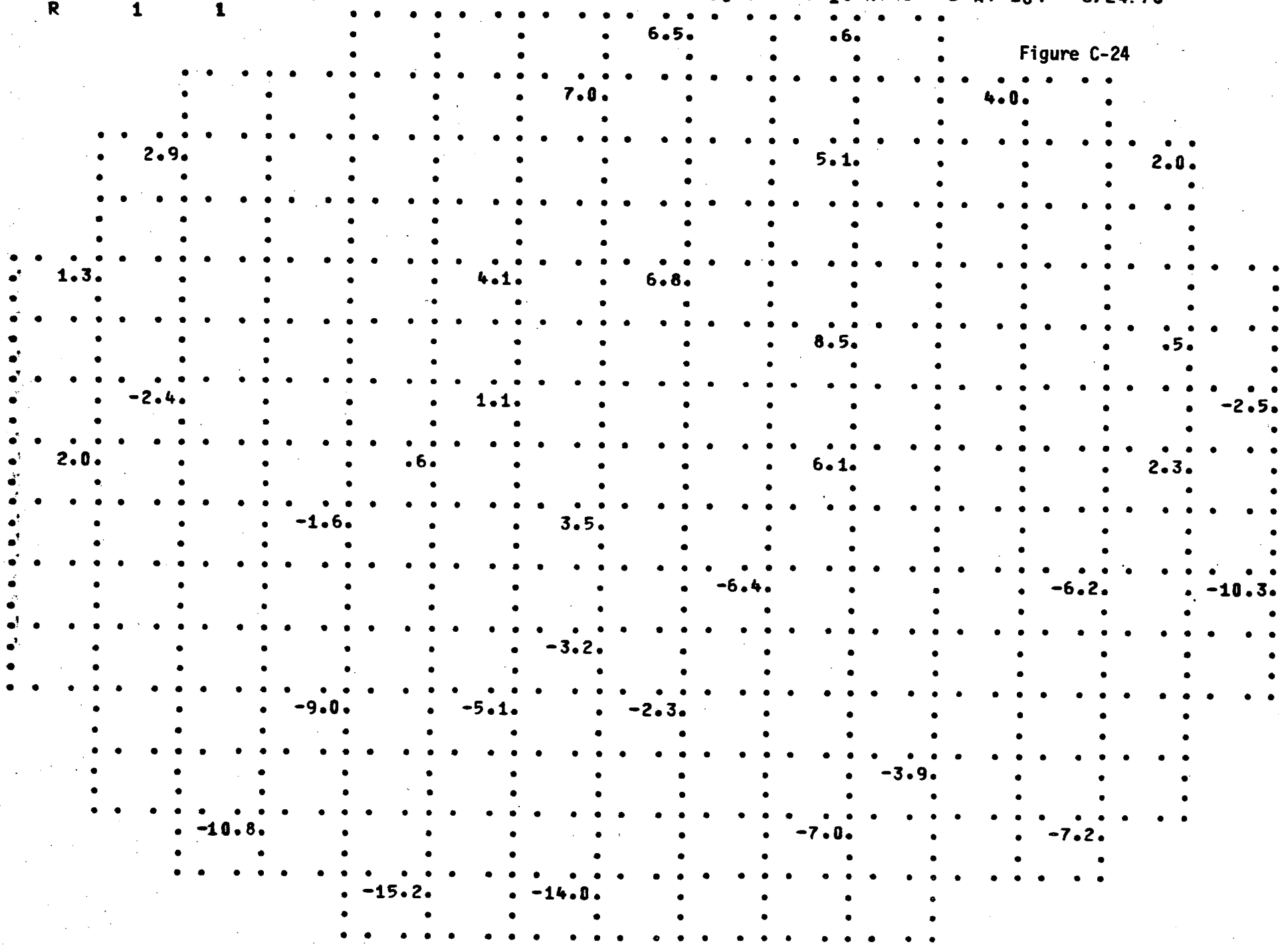
EASURED AND EXPECTED FDHN IPP2 MD 25, 50PC, BOL, BASE B10, D AT 190, 8-24-73

R 1 1

								.644.	.762.	.945.	.884.	.933.	.743.	.625.				
								.615.	.728.	.908.	.854.	.908.	.728.	.615.				
						.529.	.909.	1.078.	1.080.	1.199.	1.161.	1.181.	1.061.	1.051.	.900.	.526.		
						.520.	.891.	1.028.	1.034.	1.145.	1.115.	1.145.	1.034.	1.028.	.891.	.520.		
				.527.	1.081.	.951.	1.122.	1.229.	1.235.	1.185.	1.231.	1.218.	1.130.	.942.	1.073.	.527.		
				.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.		
				.900.	.948.	1.291.	1.065.	1.190.	1.182.	1.233.	1.165.	1.190.	1.058.	1.279.	.943.	.982.		
				.891.	.932.	1.265.	1.017.	1.136.	1.103.	1.147.	1.103.	1.136.	1.017.	1.265.	.932.	.891.		
	.611.	1.022.	1.175.	1.087.	1.162.	1.106.	1.169.	1.148.	1.176.	1.134.	1.197.	1.017.	1.098.	1.026.	.613.			
	.615.	1.028.	1.099.	1.017.	1.101.	1.056.	1.091.	1.051.	1.091.	1.056.	1.101.	1.017.	1.099.	1.028.	.615.			
	.714.	1.004.	1.204.	1.215.	1.114.	1.101.	1.002.	1.117.	1.022.	1.147.	1.148.	1.136.	1.170.	1.024.	.704.			
	.728.	1.033.	1.171.	1.136.	1.056.	1.056.	.945.	1.036.	.945.	1.056.	1.056.	1.136.	1.171.	1.033.	.728.			
	.877.	1.104.	1.183.	1.167.	1.142.	.983.	1.067.	1.041.	1.085.	1.015.	1.159.	1.147.	1.193.	1.122.	.862.			
	.908.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.908.			
	.827.	1.078.	1.098.	1.161.	1.087.	1.079.	1.032.	1.061.	1.042.	1.099.	1.104.	1.193.	1.151.	1.112.	.830.			
	.854.	1.115.	1.126.	1.147.	1.051.	1.036.	.982.	1.003.	.982.	1.036.	1.051.	1.147.	1.126.	1.115.	.854.			
	.883.	1.116.	1.156.	1.093.	1.104.	.988.	1.067.	1.014.	1.040.	.974.	1.146.	1.096.	1.151.	1.096.	.865.			
	.908.	1.145.	1.176.	1.103.	1.091.	.945.	1.016.	.982.	1.016.	.945.	1.091.	1.103.	1.176.	1.145.	.908.			
	.712.	1.009.	1.149.	1.119.	1.041.	1.074.	.970.	1.069.	.939.	1.039.	1.040.	1.048.	1.081.	.951.	.669.			
	.728.	1.033.	1.171.	1.136.	1.056.	1.056.	.945.	1.036.	.945.	1.056.	1.056.	1.136.	1.171.	1.033.	.728.			
	.601.	1.006.	1.042.	.932.	1.052.	1.046.	1.083.	1.060.	1.101.	1.040.	1.072.	.938.	1.014.	.948.	.565.			
	.615.	1.028.	1.099.	1.017.	1.101.	1.056.	1.091.	1.051.	1.091.	1.056.	1.101.	1.017.	1.099.	1.028.	.615.			
		.817.	.854.	1.160.	.972.	1.129.	1.101.	1.152.	1.084.	1.094.	.991.	1.233.	.860.	.822.				
D		.891.	.932.	1.265.	1.017.	1.136.	1.103.	1.147.	1.103.	1.136.	1.017.	1.265.	.932.	.891.				
		.486.	.984.	.861.	1.051.	1.165.	1.182.	1.107.	1.123.	1.112.	1.066.	.894.	.993.	.487.				
C		.520.	1.061.	.932.	1.099.	1.171.	1.176.	1.126.	1.176.	1.171.	1.099.	.932.	1.061.	.520.				
			.486.	.823.	.932.	.918.	1.006.	1.021.	1.072.	.958.	.975.	.848.	.487.					
B			.520.	.891.	1.028.	1.034.	1.145.	1.115.	1.145.	1.034.	1.028.	.891.	.520.					
				.556.	.648.	.797.	.751.	.836.	.670.	.566.								MEAS
A				.615.	.728.	.908.	.854.	.908.	.728.	.615.								EXP

RCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP FLUX MAP 26 50PCT B-10 AT 0 D AT 184 8/24/73
R 1 1

Figure C-24



ASURED AND EXPECTED FDHN IPP FLUX MAP 26 50PCT G-10 AT 0 D AT 184 8/24/73

R 1 1

				.712.	.863.	1.038.	.970.	1.010.	.816.	.683.				
				.666.	.808.	.973.	.911.	.975.	.811.	.670.				
			.585.	.980.	1.188.	1.181.	1.334.	1.275.	1.300.	1.142.	1.154.	1.000.	.593.	
			.568.	.953.	1.109.	1.109.	1.247.	1.193.	1.249.	1.115.	1.117.	.962.	.575.	
	.581.	1.156.	1.058.	1.235.	1.368.	1.371.	1.333.	1.346.	1.348.	1.253.	1.082.	1.171.	.585.	
	.565.	1.124.	1.028.	1.187.	1.275.	1.277.	1.241.	1.280.	1.283.	1.197.	1.040.	1.138.	.574.	
	.961.	1.049.	1.413.	1.177.	1.286.	1.287.	1.337.	1.299.	1.311.	1.203.	1.431.	1.058.	.976.	
	.940.	1.020.	1.357.	1.130.	1.236.	1.221.	1.252.	1.225.	1.245.	1.142.	1.376.	1.037.	.957.	
.655.	1.096.	1.181.	1.163.	1.236.	1.212.	1.253.	1.246.	1.284.	1.276.	1.307.	1.157.	1.208.	1.123.	.672.
.647.	1.082.	1.164.	1.117.	1.187.	1.164.	1.188.	1.167.	1.195.	1.176.	1.205.	1.137.	1.189.	1.107.	.663.
.773.	1.053.	1.199.	1.219.	1.178.	1.165.	1.090.	1.200.	1.139.	1.249.	1.269.	1.257.	1.289.	1.106.	.791.
.776.	1.069.	1.235.	1.205.	1.148.	1.136.	1.048.	1.123.	1.056.	1.151.	1.170.	1.235.	1.270.	1.101.	.801.
.921.	1.155.	1.181.	1.180.	1.160.	1.038.	1.092.	1.078.	1.171.	1.123.	1.266.	1.229.	1.289.	1.231.	.934.
.923.	1.184.	1.217.	1.169.	1.148.	1.027.	1.080.	1.065.	1.092.	1.047.	1.180.	1.207.	1.260.	1.228.	.958.
.866.	1.111.	1.129.	1.166.	1.105.	1.088.	1.063.	1.080.	1.115.	1.168.	1.210.	1.298.	1.248.	1.193.	.887.
.849.	1.113.	1.157.	1.172.	1.098.	1.071.	1.035.	1.040.	1.051.	1.101.	1.141.	1.224.	1.212.	1.166.	.889.
.913.	1.167.	1.140.	1.094.	1.081.	.993.	1.058.	1.010.	1.030.	1.024.	1.217.	1.109.	1.206.	1.170.	.898.
.890.	1.138.	1.163.	1.112.	1.087.	.970.	1.022.	1.012.	1.046.	1.012.	1.147.	1.181.	1.238.	1.210.	.945.
.740.	1.006.	1.104.	1.065.	1.001.	1.006.	.932.	.984.	.904.	1.004.	1.036.	1.110.	1.149.	.977.	.699.
.722.	.983.	1.126.	1.086.	1.020.	1.004.	.930.	1.011.	.966.	1.073.	1.107.	1.182.	1.224.	1.067.	.779.
.595.	.875.	.920.	.857.	.908.	.908.	.946.	.952.	.993.	.988.	1.069.	1.000.	1.058.	.973.	.573.
.580.	.955.	1.007.	.941.	.978.	.947.	.978.	.987.	1.042.	1.056.	1.108.	1.065.	1.127.	1.059.	.637.
	.719.	.754.	.961.	.776.	.847.	.877.	.965.	.997.	1.040.	.985.	1.217.	.907.	.814.	
	.788.	.828.	1.056.	.835.	.893.	.910.	.987.	1.018.	1.078.	1.021.	1.261.	.966.	.901.	
	.400.	.768.	.653.	.689.	.695.	.793.	.886.	.968.	1.015.	1.002.	.888.	.969.	.494.	
	.447.	.854.	.723.	.743.	.735.	.824.	.905.	1.015.	1.074.	1.043.	.935.	1.044.	.532.	
		.360.	.527.	.473.	.291.	.586.	.703.	.883.	.840.	.900.	.800.	.482.		
		.403.	.603.	.558.	.341.	.681.	.816.	.953.	.903.	.952.	.849.	.519.		
				.261.	.290.	.452.	.519.	.675.	.599.	.518.				
				.308.	.339.	.525.	.603.	.728.	.647.	.559.				

MEAS
EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2-MD 29-BOL-50PC-D AT 198-PL AT 228-30MAR74

Figure C-26

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
R					8.4			3.5		6.7					
P												1.8			
N		7.1	4.0									3.1		10.1	
M									.2						
L			-2.4			-5.8		.6							
K				-2.6						-4.1				-2.9	
J		1.9				.1		1.2	-4.9						4.2
H					-.1					-7.1		-4.3			
G							-1.5				-6.4				
F		3.3						-2.6	.0				1.5		6.5
E							-7.4								
D		2.5		-4.2									4.0		
C									-.7		2.1				
B			10.4					-4.4		-2.2					
A					7.8										

MEASURED AND EXPECTED FDHN IPP2-MD 29-BOL-50PC-D AT 198-PL AT 228-30MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.624.	.734.	.896.	.834.	.911.	.723.	.603.				
					.575.	.677.	.866.	.806.	.866.	.677.	.575.				
			.501.	.901.	1.064.	1.104.	1.146.	1.154.	1.166.	1.086.	1.016.	.865.	.498.		
			.476.	.849.	.980.	1.021.	1.107.	1.115.	1.107.	1.021.	.980.	.849.	.476.		
		.510.	1.057.	.901.	1.204.	1.097.	1.145.	1.120.	1.213.	1.162.	1.137.	.898.	1.072.	.525.	
N		.476.	1.017.	.872.	1.107.	1.160.	1.211.	1.118.	1.211.	1.160.	1.107.	.872.	1.017.	.475.	
		.881.	.892.	1.266.	.942.	1.121.	1.090.	1.216.	1.120.	1.190.	1.031.	1.300.	.930.	.935.	
M		.849.	.872.	1.259.	.998.	1.188.	1.118.	1.211.	1.118.	1.188.	.998.	1.259.	.872.	.849.	
	.560.	.956.	1.081.	.974.	1.102.	1.017.	1.136.	1.090.	1.158.	1.054.	1.110.	1.031.	1.074.	.948.	.556
L	.575.	.980.	1.107.	.998.	1.154.	1.079.	1.166.	1.083.	1.166.	1.079.	1.154.	.998.	1.107.	.980.	.575
	.689.	1.019.	1.144.	1.158.	1.050.	1.099.	.967.	1.113.	.949.	1.084.	1.037.	1.155.	1.124.	.992.	.682
K	.677.	1.021.	1.160.	1.188.	1.079.	1.131.	.973.	1.117.	.973.	1.131.	1.079.	1.188.	1.160.	1.021.	.677
	.882.	1.128.	1.215.	1.100.	1.158.	.974.	1.114.	1.035.	1.045.	.916.	1.107.	1.073.	1.169.	1.118.	.902
J	.866.	1.107.	1.211.	1.118.	1.166.	.973.	1.099.	1.023.	1.099.	.973.	1.166.	1.118.	1.211.	1.107.	.866
	.822.	1.137.	1.142.	1.210.	1.082.	1.113.	1.025.	1.074.	.978.	1.038.	1.018.	1.159.	1.074.	1.174.	.848
H	.806.	1.115.	1.118.	1.211.	1.083.	1.117.	1.023.	1.082.	1.023.	1.117.	1.083.	1.211.	1.118.	1.115.	.806
	.900.	1.151.	1.264.	1.118.	1.164.	.963.	1.083.	1.009.	1.071.	.923.	1.091.	1.078.	1.204.	1.153.	.924
G	.866.	1.107.	1.211.	1.118.	1.166.	.973.	1.099.	1.023.	1.099.	.973.	1.166.	1.118.	1.211.	1.107.	.866
	.702.	1.055.	1.209.	1.138.	1.078.	1.078.	.933.	1.087.	.973.	1.105.	1.008.	1.169.	1.177.	1.059.	.721
F	.677.	1.021.	1.160.	1.188.	1.079.	1.131.	.973.	1.117.	.973.	1.131.	1.079.	1.188.	1.160.	1.021.	.677
	.593.	1.012.	1.117.	.956.	1.105.	.994.	1.080.	1.041.	1.157.	1.084.	1.182.	1.026.	1.138.	1.021.	.614
E	.575.	.980.	1.107.	.998.	1.154.	1.079.	1.166.	1.083.	1.166.	1.079.	1.154.	.998.	1.107.	.980.	.575
		.871.	.864.	1.205.	.956.	1.096.	1.031.	1.163.	1.117.	1.202.	1.023.	1.301.	.906.	.883.	
D		.849.	.872.	1.259.	.998.	1.188.	1.118.	1.211.	1.118.	1.188.	.998.	1.259.	.872.	.849.	
		.503.	1.058.	.885.	1.061.	1.113.	1.154.	1.091.	1.203.	1.163.	1.131.	.898.	1.057.	.495.	
C		.476.	1.017.	.872.	1.107.	1.160.	1.211.	1.118.	1.211.	1.160.	1.107.	.872.	1.017.	.475.	
			.526.	.931.	1.059.	1.095.	1.051.	1.065.	1.080.	.999.	.984.	.871.	.495.		
B			.476.	.849.	.980.	1.021.	1.107.	1.115.	1.107.	1.021.	.980.	.849.	.476.		
					.620.	.729.	.821.	.766.	.834.	.661.	.563.				MEAS
A					.575.	.677.	.866.	.806.	.866.	.677.	.575.				EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2-MD 30-BOL-50PC-D AT 198-PL AT 5-30MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					7.0			1.8		5.7					
												3.2			
		6.1	3.8									4.1		3.1	
I									.5						
			-2.2			-1.5		-.2							
				-4.8						-2.0				-1.9	
J		-.0				2.5		2.1	-.8						.5
	3.0				-.5					-4.1		-3.5			
G							.7				-4.8				
F		-.0						-1.8	1.5				-2.6		4.8
E							-5.6								
D		3.1		-3.4		-6.3							3.4		
C									-3.5						
B			5.7					-2.9		-3.7					
A					5.8										

Figure C-27

ASURED AND EXPECTED FDHN IPP2-MD 30-BDL-50PC-D AT 198-PL AT 5-30MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
					.630.	.741.	.906.	.845.	.925.	.734.	.617.					
					.589.	.695.	.891.	.830.	.891.	.695.	.589.					
			.510.	.914.	1.068.	1.101.	1.147.	1.159.	1.172.	1.091.	1.038.	.894.	.513.			
			.488.	.866.	.995.	1.036.	1.128.	1.138.	1.128.	1.036.	.995.	.866.	.488.			
		.517.	1.075.	.909.	1.192.	1.131.	1.198.	1.134.	1.219.	1.151.	1.145.	.915.	1.097.	.532.		
		.488.	1.036.	.880.	1.103.	1.143.	1.210.	1.125.	1.210.	1.143.	1.103.	.880.	1.036.	.488.		
		.894.	.899.	1.263.	.959.	1.081.	1.087.	1.209.	1.101.	1.105.	1.012.	1.307.	.940.	.945.		
		.866.	.880.	1.255.	.973.	1.102.	1.096.	1.207.	1.096.	1.102.	.973.	1.255.	.880.	.866.		
	.576.	.973.	1.079.	.943.	1.092.	1.033.	1.145.	1.081.	1.149.	1.037.	1.097.	1.012.	1.091.	.980.	.580.	
	.589.	.995.	1.103.	.973.	1.122.	1.049.	1.155.	1.083.	1.155.	1.049.	1.122.	.973.	1.103.	.995.	.589.	
	.690.	1.019.	1.117.	1.049.	1.032.	1.132.	.989.	1.139.	.975.	1.101.	1.026.	1.097.	1.129.	1.016.	.690.	
	.695.	1.036.	1.143.	1.102.	1.049.	1.124.	.979.	1.131.	.979.	1.124.	1.049.	1.102.	1.143.	1.036.	.695.	
	.903.	1.127.	1.192.	1.064.	1.151.	1.003.	1.151.	1.068.	1.111.	.955.	1.116.	1.059.	1.183.	1.124.	.895.	
	.891.	1.127.	1.210.	1.096.	1.155.	.979.	1.120.	1.047.	1.120.	.979.	1.155.	1.096.	1.210.	1.127.	.891.	
	.855.	1.157.	1.126.	1.198.	1.078.	1.143.	1.068.	1.127.	1.033.	1.085.	1.037.	1.154.	1.088.	1.150.	.837.	
	.830.	1.138.	1.125.	1.207.	1.083.	1.131.	1.047.	1.112.	1.047.	1.131.	1.083.	1.207.	1.125.	1.138.	.830.	
	.910.	1.147.	1.223.	1.087.	1.144.	.982.	1.128.	1.048.	1.110.	.950.	1.099.	1.055.	1.176.	1.144.	.936.	
	.891.	1.127.	1.210.	1.096.	1.155.	.979.	1.120.	1.047.	1.120.	.979.	1.155.	1.096.	1.210.	1.127.	.891.	
	.697.	1.035.	1.155.	1.060.	1.038.	1.096.	.956.	1.111.	.994.	1.116.	.997.	1.051.	1.113.	1.047.	.728.	
	.695.	1.036.	1.143.	1.102.	1.049.	1.124.	.979.	1.131.	.979.	1.124.	1.049.	1.102.	1.143.	1.036.	.695.	
	.600.	1.014.	1.106.	.938.	1.071.	.988.	1.090.	1.055.	1.159.	1.072.	1.057.	.975.	1.108.	1.016.	.619.	
	.589.	.995.	1.103.	.973.	1.122.	1.049.	1.155.	1.083.	1.155.	1.049.	1.122.	.973.	1.103.	.995.	.589.	
		.893.	.880.	1.212.	.929.	1.033.	1.135.	1.150.	1.159.	1.169.	1.036.	1.298.	.911.	.896.		
D		.866.	.880.	1.255.	.973.	1.102.	1.096.	1.207.	1.096.	1.102.	.973.	1.255.	.880.	.866.		
		.508.	1.062.	.883.	1.058.	1.087.	1.165.	1.089.	1.168.	1.110.	1.081.	.911.	1.072.	.504.		
C		.488.	1.036.	.880.	1.103.	1.143.	1.210.	1.125.	1.210.	1.143.	1.103.	.880.	1.036.	.488.		
			.515.	.922.	1.066.	1.101.	1.096.	1.105.	1.092.	.997.	.958.	.847.	.504.			
B			.488.	.866.	.995.	1.036.	1.128.	1.138.	1.128.	1.036.	.995.	.866.	.488.			
					.630.	.741.	.856.	.807.	.865.	.672.	.572.					MEAS
A					.589.	.695.	.891.	.830.	.891.	.695.	.589.					EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2-MD 31-BOL-50PC-D AT 195-PL AT 40-30MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					5.8			.2		3.5					
												2.7			
		5.5	2.6									3.9		7.9	
									.4						
			-2.0			-.4		1.9							
				-5.3						-1.6				-2.7	
		-.1				2.9		2.2	.1						.5
	2.2				1.0					-2.7		-3.3			
							-.5				-2.8				
		-2.0						-1.1	1.7				-2.0		2.3
							-4.1								
		2.7		-2.8		-6.3							4.2		
									-3.6		-.8				
			6.7					-2.9		-3.8					
					4.7										

Figure C-28

EASURED AND EXPECTED FDHN IPP2-MD 31-BOL-50PC-D AT 195-PL AT 40-30MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.634.	.746.	.909.	.849.	.925.	.731.	.618.				
					.599.	.707.	.908.	.847.	.908.	.707.	.599.				
			.514.	.916.	1.067.	1.099.	1.145.	1.161.	1.165.	1.078.	1.039.	.901.	.518.		
			.496.	.878.	1.005.	1.045.	1.142.	1.155.	1.142.	1.045.	1.005.	.878.	.496.		
		.523.	1.078.	.905.	1.176.	1.131.	1.211.	1.136.	1.213.	1.133.	1.139.	.921.	1.105.	.535.	
		.496.	1.051.	.887.	1.100.	1.130.	1.208.	1.131.	1.208.	1.130.	1.100.	.887.	1.051.	.496.	
		.902.	.901.	1.254.	.952.	1.027.	1.091.	1.219.	1.085.	1.036.	.993.	1.303.	.941.	.947.	
		.878.	.887.	1.252.	.955.	1.040.	1.081.	1.205.	1.081.	1.040.	.955.	1.252.	.887.	.878.	
	.590.	.989.	1.078.	.925.	1.078.	1.024.	1.159.	1.105.	1.152.	1.016.	1.077.	.993.	1.078.	.981.	.583.
	.599.	1.005.	1.100.	.955.	1.099.	1.028.	1.147.	1.084.	1.147.	1.028.	1.099.	.955.	1.100.	1.005.	.599.
	.702.	1.032.	1.107.	.986.	1.017.	1.137.	1.004.	1.163.	.989.	1.101.	1.008.	1.028.	1.107.	1.017.	.699.
	.707.	1.045.	1.130.	1.040.	1.028.	1.120.	.985.	1.142.	.985.	1.120.	1.028.	1.040.	1.130.	1.045.	.707.
	.916.	1.140.	1.193.	1.057.	1.153.	1.014.	1.169.	1.087.	1.137.	.970.	1.116.	1.043.	1.176.	1.133.	.912.
	.908.	1.142.	1.208.	1.081.	1.147.	.985.	1.136.	1.064.	1.136.	.985.	1.147.	1.081.	1.208.	1.142.	.908.
	.865.	1.169.	1.132.	1.214.	1.095.	1.159.	1.080.	1.145.	1.060.	1.111.	1.051.	1.165.	1.093.	1.170.	.856.
	.847.	1.155.	1.131.	1.205.	1.084.	1.142.	1.064.	1.133.	1.064.	1.142.	1.084.	1.205.	1.131.	1.155.	.847.
	.915.	1.143.	1.195.	1.088.	1.155.	.986.	1.130.	1.064.	1.133.	.959.	1.115.	1.050.	1.179.	1.148.	.931.
	.908.	1.142.	1.208.	1.081.	1.147.	.985.	1.136.	1.064.	1.136.	.985.	1.147.	1.081.	1.208.	1.142.	.908.
	.694.	1.024.	1.118.	1.005.	1.033.	1.094.	.965.	1.130.	1.002.	1.123.	.998.	1.010.	1.108.	1.047.	.723.
	.707.	1.045.	1.130.	1.040.	1.028.	1.120.	.985.	1.142.	.985.	1.120.	1.028.	1.040.	1.130.	1.045.	.707.
	.602.	1.012.	1.096.	.926.	1.053.	.978.	1.100.	1.067.	1.157.	1.052.	1.091.	.965.	1.113.	1.024.	.614.
	.599.	1.005.	1.100.	.955.	1.099.	1.028.	1.147.	1.084.	1.147.	1.028.	1.099.	.955.	1.100.	1.005.	.599.
		.901.	.887.	1.217.	.916.	.974.	1.031.	1.157.	1.040.	1.016.	.949.	1.282.	.924.	.915.	
D		.878.	.887.	1.252.	.955.	1.040.	1.081.	1.205.	1.081.	1.040.	.955.	1.252.	.887.	.878.	
		.517.	1.082.	.896.	1.061.	1.077.	1.166.	1.095.	1.165.	1.101.	1.092.	.899.	1.095.	.517.	
C		.496.	1.051.	.887.	1.100.	1.130.	1.208.	1.131.	1.208.	1.130.	1.100.	.887.	1.051.	.496.	
			.529.	.933.	1.056.	1.088.	1.110.	1.122.	1.102.	1.006.	.985.	.875.	.517.		
B			.496.	.878.	1.005.	1.045.	1.142.	1.155.	1.142.	1.045.	1.005.	.878.	.496.		
					.627.	.739.	.882.	.823.	.877.	.679.	.576.				MEAS
A					.599.	.707.	.908.	.847.	.908.	.707.	.599.				EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2-MD 32-BOL-50PC-D AT 193-PL AT 80-30MAR74

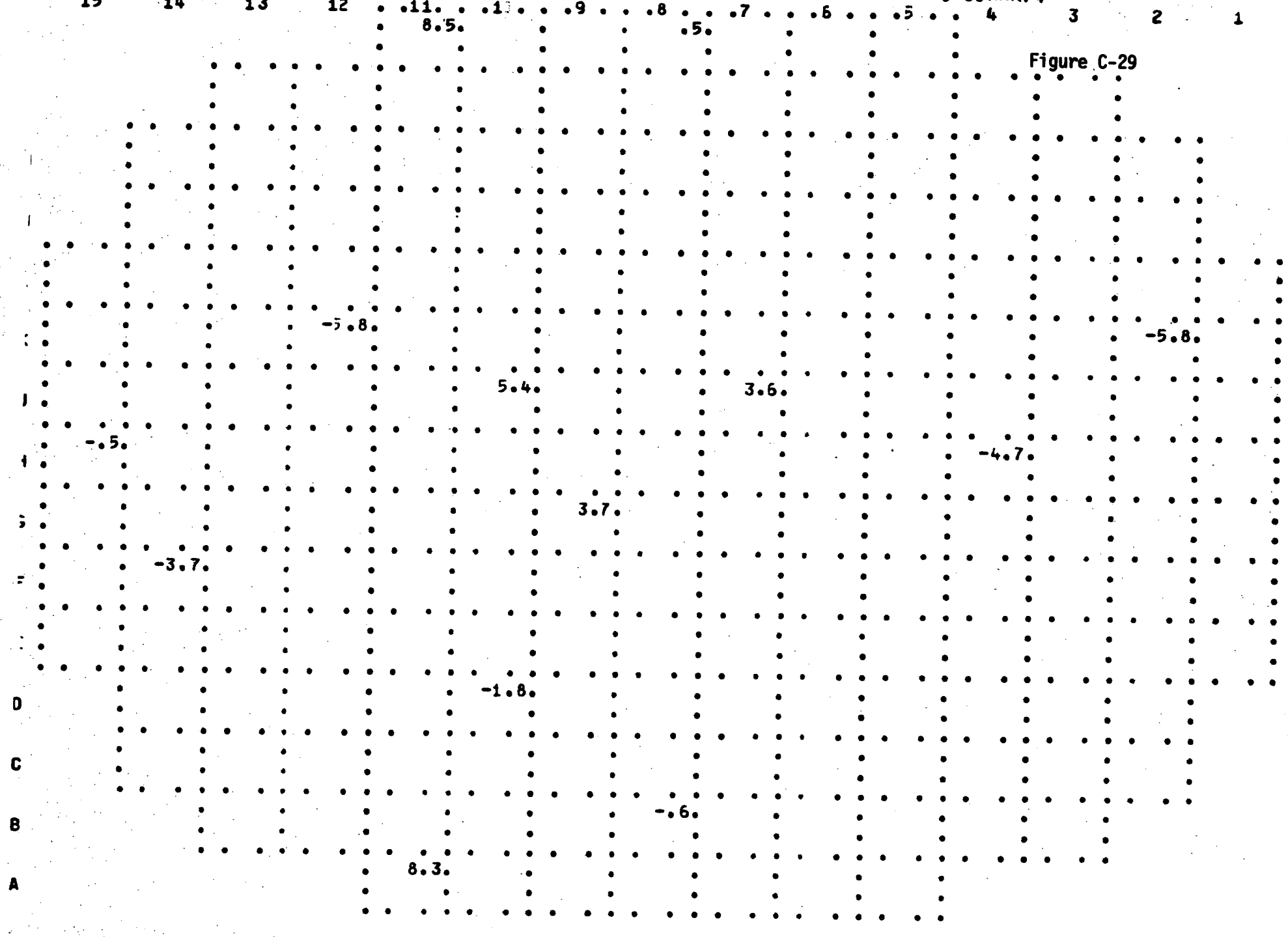


Figure C-29

EASURED AND EXPECTED FDHN IPP2-MD 32-BOL-50PC-D AT 193-PL AT 80-30MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.657.	.774.	.925.	.862.	.925.	.722.	.610.				
					.605.	.715.	.919.	.858.	.919.	.715.	.605.				
			.548.	.967.	1.101.	1.135.	1.160.	1.172.	1.160.	1.068.	1.020.	.888.	.475.		
			.500.	.885.	1.012.	1.054.	1.151.	1.165.	1.151.	1.054.	1.012.	.885.	.500.		
		.548.	1.161.	.976.	1.203.	1.230.	1.218.	1.141.	1.218.	1.137.	1.108.	.847.	1.006.	.475.	
I		.500.	1.059.	.890.	1.098.	1.124.	1.208.	1.134.	1.208.	1.124.	1.098.	.890.	1.059.	.500.	
		.863.	.865.	1.209.	.906.	.947.	1.128.	1.209.	1.110.	1.041.	.901.	1.191.	.847.	.840.	
H		.885.	.890.	1.250.	.944.	1.005.	1.071.	1.202.	1.071.	1.005.	.944.	1.250.	.890.	.885.	
	.602.	.988.	1.064.	.906.	1.039.	1.068.	1.202.	1.122.	1.183.	1.051.	1.124.	.901.	1.044.	.958.	.572.
	.605.	1.012.	1.098.	.944.	1.084.	1.015.	1.142.	1.083.	1.142.	1.015.	1.084.	.944.	1.098.	1.012.	.605.
	.711.	1.034.	1.086.	.947.	1.009.	1.175.	1.040.	1.188.	1.022.	1.156.	1.051.	.964.	1.068.	.992.	.675.
C	.715.	1.054.	1.124.	1.005.	1.015.	1.115.	.986.	1.147.	.986.	1.115.	1.015.	1.005.	1.124.	1.054.	.715.
	.914.	1.147.	1.171.	1.030.	1.162.	1.040.	1.207.	1.112.	1.185.	1.022.	1.087.	1.019.	1.150.	1.089.	.869.
J	.919.	1.151.	1.208.	1.071.	1.142.	.986.	1.144.	1.074.	1.144.	.986.	1.142.	1.071.	1.208.	1.151.	.919.
	.854.	1.162.	1.135.	1.162.	1.141.	1.202.	1.122.	1.188.	1.112.	1.188.	1.032.	1.146.	1.082.	1.104.	.812.
A	.858.	1.165.	1.134.	1.202.	1.083.	1.147.	1.074.	1.147.	1.074.	1.147.	1.083.	1.202.	1.134.	1.165.	.858.
	.905.	1.128.	1.176.	1.048.	1.184.	1.023.	1.185.	1.113.	1.186.	1.022.	1.087.	1.019.	1.152.	1.108.	.869.
G	.919.	1.151.	1.208.	1.071.	1.142.	.986.	1.144.	1.074.	1.144.	.986.	1.142.	1.071.	1.208.	1.151.	.919.
	.691.	1.015.	1.094.	.987.	1.013.	1.157.	1.023.	1.190.	1.023.	1.062.	.965.	.951.	1.071.	1.008.	.684.
F	.715.	1.054.	1.124.	1.005.	1.015.	1.115.	.986.	1.147.	.986.	1.115.	1.015.	1.005.	1.124.	1.054.	.715.
	.586.	.981.	1.070.	.944.	1.082.	1.013.	1.145.	1.091.	1.184.	1.053.	1.031.	.898.	1.047.	.967.	.579.
E	.605.	1.012.	1.098.	.944.	1.084.	1.015.	1.142.	1.083.	1.142.	1.015.	1.084.	.944.	1.098.	1.012.	.605.
		.861.	.868.	1.260.	.944.	.987.	1.073.	1.211.	1.070.	1.011.	.943.	1.191.	.849.	.845.	
D		.885.	.890.	1.250.	.944.	1.005.	1.071.	1.202.	1.071.	1.005.	.944.	1.250.	.890.	.885.	
		.487.	1.155.	.901.	1.109.	1.132.	1.212.	1.129.	1.204.	1.122.	1.095.	.886.	1.053.	.478.	
C		.500.	1.059.	.890.	1.098.	1.124.	1.208.	1.134.	1.208.	1.124.	1.098.	.890.	1.059.	.500.	
			.546.	.963.	1.099.	1.136.	1.144.	1.158.	1.144.	1.047.	1.006.	.880.	.497.		
B			.500.	.885.	1.012.	1.054.	1.151.	1.165.	1.151.	1.054.	1.012.	.885.	.500.		
					.656.	.773.	.913.	.852.	.913.	.710.	.601.				MEAS
A					.605.	.715.	.919.	.858.	.919.	.715.	.605.				EXP

PERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2-MD 33-BOL-50PC-D AT 202-PL AT 120-31MAR74

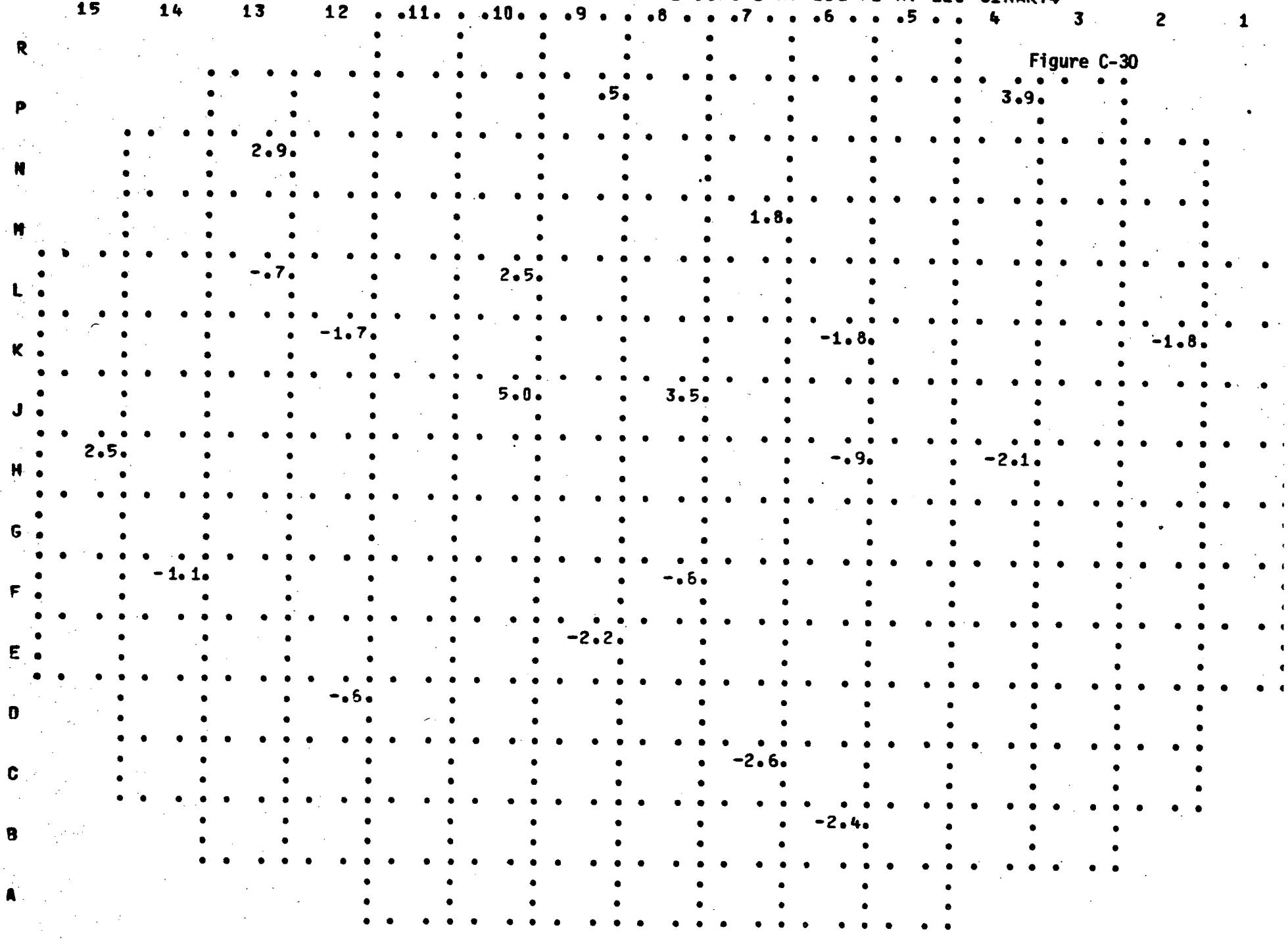


Figure C-30

MEASURED AND EXPECTED FDHN IPP2-MD 33-BOL-50PC-D AT 202-PL AT 120-31MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.609.	.721.	.923.	.860.	.923.	.746.	.630.				
R					.607.	.719.	.919.	.855.	.919.	.719.	.607.				
			.510.	.905.	1.020.	1.072.	1.159.	1.170.	1.179.	1.111.	1.055.	.914.	.515.		
P			.495.	.880.	1.015.	1.069.	1.153.	1.163.	1.153.	1.069.	1.015.	.880.	.495.		
		.510.	1.079.	.912.	1.134.	1.143.	1.220.	1.148.	1.234.	1.155.	1.146.	.921.	1.090.	.515.	
N		.495.	1.049.	.885.	1.101.	1.133.	1.210.	1.131.	1.210.	1.133.	1.101.	.885.	1.049.	.495.	
		.889.	.895.	1.260.	.972.	1.044.	1.102.	1.221.	1.092.	1.037.	.963.	1.297.	.874.	.867.	
M		.880.	.885.	1.246.	.947.	1.026.	1.072.	1.197.	1.072.	1.026.	.947.	1.246.	.885.	.880.	
	.603.	1.008.	1.093.	.940.	1.099.	1.041.	1.168.	1.095.	1.141.	1.010.	1.065.	.938.	1.087.	.999.	.596.
L	.607.	1.015.	1.101.	.947.	1.086.	1.015.	1.136.	1.075.	1.136.	1.015.	1.086.	.947.	1.101.	1.015.	.607.
	.736.	1.064.	1.127.	1.038.	1.033.	1.151.	1.015.	1.175.	.981.	1.088.	.995.	1.022.	1.119.	1.050.	.706.
K	.719.	1.069.	1.133.	1.026.	1.015.	1.108.	.977.	1.135.	.977.	1.108.	1.015.	1.026.	1.133.	1.069.	.719.
	.942.	1.184.	1.207.	1.055.	1.168.	1.025.	1.181.	1.103.	1.143.	.964.	1.117.	1.049.	1.190.	1.135.	.903.
J	.919.	1.153.	1.210.	1.072.	1.136.	.977.	1.133.	1.066.	1.133.	.977.	1.136.	1.072.	1.210.	1.153.	.919.
	.877.	1.194.	1.165.	1.193.	1.128.	1.191.	1.112.	1.194.	1.075.	1.124.	1.058.	1.172.	1.108.	1.145.	.841.
H	.855.	1.163.	1.131.	1.197.	1.075.	1.135.	1.066.	1.154.	1.066.	1.135.	1.075.	1.197.	1.131.	1.163.	.855.
	.930.	1.160.	1.207.	1.074.	1.192.	1.025.	1.128.	1.062.	1.126.	.968.	1.118.	1.049.	1.185.	1.131.	.903.
G	.919.	1.153.	1.210.	1.072.	1.136.	.977.	1.133.	1.066.	1.133.	.977.	1.136.	1.072.	1.210.	1.153.	.919.
	.712.	1.057.	1.130.	1.016.	1.008.	1.082.	.964.	1.128.	.972.	1.097.	1.005.	1.001.	1.110.	1.049.	.705.
F	.719.	1.069.	1.133.	1.026.	1.015.	1.108.	.977.	1.135.	.977.	1.108.	1.015.	1.026.	1.133.	1.069.	.719.
	.602.	1.008.	1.096.	.940.	1.078.	.989.	1.111.	1.060.	1.130.	.987.	1.056.	.926.	1.078.	.995.	.595.
E	.607.	1.015.	1.101.	.947.	1.086.	1.015.	1.136.	1.075.	1.136.	1.015.	1.086.	.947.	1.101.	1.015.	.607.
		.876.	.881.	1.238.	.940.	.994.	1.047.	1.168.	1.043.	.996.	.932.	1.224.	.869.	.863.	
D		.880.	.885.	1.246.	.947.	1.026.	1.072.	1.197.	1.072.	1.026.	.947.	1.246.	.885.	.880.	
		.493.	1.044.	.881.	1.094.	1.127.	1.184.	1.101.	1.178.	1.107.	1.080.	.869.	1.029.	.486.	
C		.495.	1.049.	.885.	1.101.	1.133.	1.210.	1.131.	1.210.	1.133.	1.101.	.885.	1.049.	.495.	
			.493.	.876.	1.010.	1.065.	1.122.	1.132.	1.125.	1.044.	.994.	.863.	.486.		
B			.495.	.880.	1.015.	1.069.	1.153.	1.163.	1.153.	1.069.	1.015.	.880.	.495.		
					.604.	.716.	.895.	.837.	.899.	.703.	.594.				MEAS
A					.607.	.719.	.919.	.855.	.919.	.719.	.607.				EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FOHN IPP2-MD 34-BOL-50PC-D AT 188-PL AT 175-31MAR74

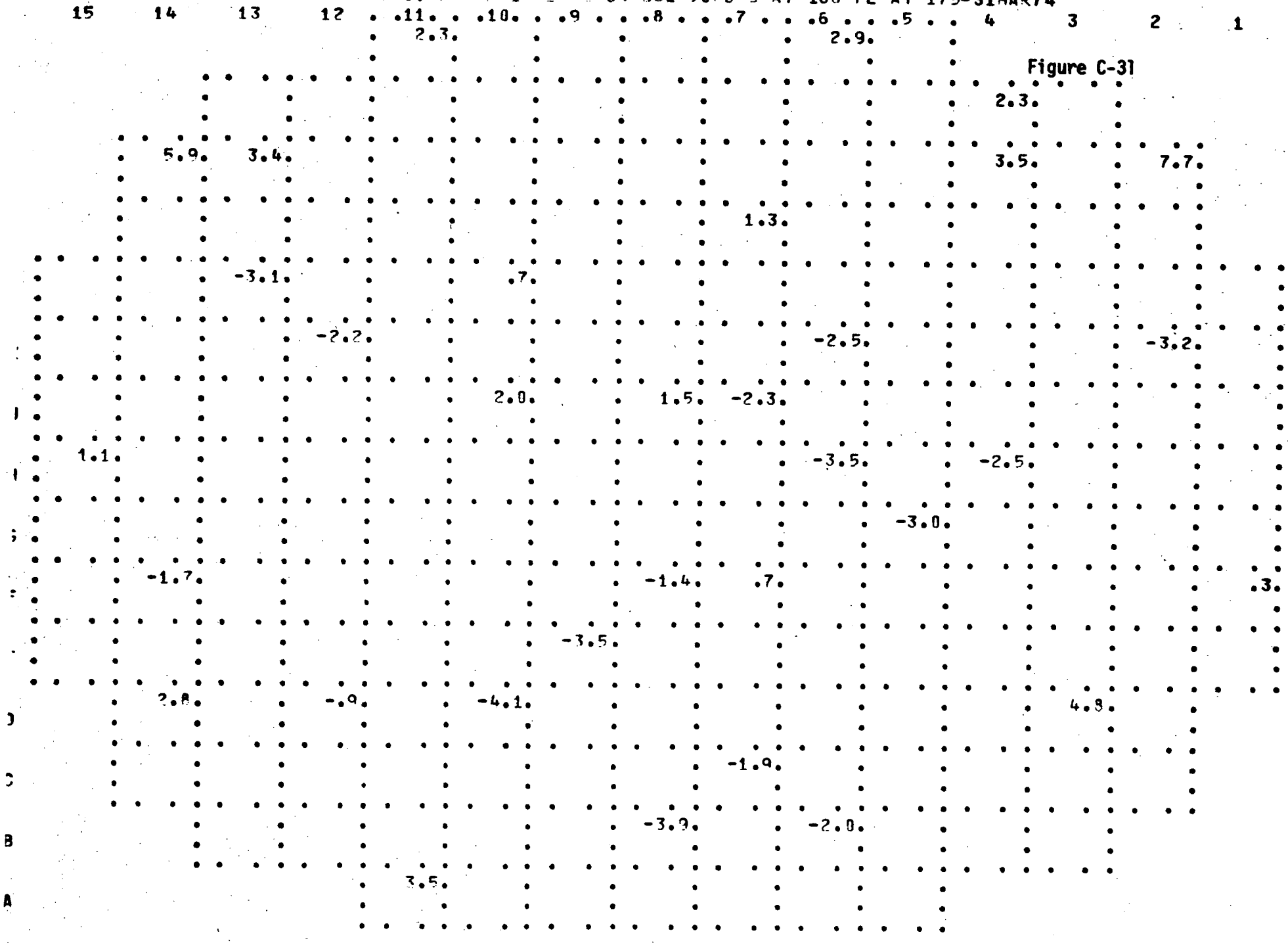


Figure C-31

EASURED AND EXPECTED FDHN IPP2-MD 34-90L-50PC-0 AT 188-PL AT 175-31MAR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.598.	.705.	.903.	.852.	.912.	.709.	.601.				
					.585.	.689.	.883.	.823.	.883.	.689.	.585.				
			.507.	.886.	1.014.	1.054.	1.147.	1.171.	1.157.	1.055.	1.019.	.883.	.506.		
			.486.	.863.	.991.	1.031.	1.121.	1.131.	1.121.	1.031.	.991.	.863.	.486.		
		.515.	1.069.	.905.	1.130.	1.156.	1.220.	1.139.	1.225.	1.160.	1.137.	.910.	1.084.	.524.	
I		.486.	1.034.	.879.	1.103.	1.144.	1.208.	1.123.	1.208.	1.144.	1.103.	.879.	1.034.	.486.	
		.886.	.892.	1.253.	.985.	1.125.	1.110.	1.225.	1.115.	1.129.	1.015.	1.304.	.930.	.930.	
I		.863.	.879.	1.256.	.977.	1.116.	1.101.	1.209.	1.101.	1.116.	.977.	1.256.	.879.	.863.	
	.566.	.958.	1.068.	.952.	1.125.	1.064.	1.169.	1.102.	1.159.	1.046.	1.103.	1.015.	1.076.	.965.	.569.
	.585.	.990.	1.102.	.977.	1.128.	1.056.	1.160.	1.087.	1.160.	1.056.	1.128.	.977.	1.102.	.990.	.585.
	.696.	.996.	1.115.	1.092.	1.057.	1.145.	.999.	1.137.	.968.	1.101.	1.032.	1.088.	1.114.	.998.	.669.
G	.689.	1.031.	1.144.	1.116.	1.056.	1.129.	.983.	1.135.	.983.	1.129.	1.056.	1.116.	1.144.	1.031.	.689.
	.892.	1.133.	1.188.	1.081.	1.167.	1.003.	1.146.	1.062.	1.096.	.953.	1.128.	1.073.	1.179.	1.091.	.860.
J	.883.	1.121.	1.208.	1.101.	1.160.	.983.	1.122.	1.046.	1.122.	.983.	1.160.	1.101.	1.208.	1.121.	.883.
	.832.	1.144.	1.137.	1.189.	1.110.	1.157.	1.069.	1.109.	1.027.	1.095.	1.054.	1.179.	1.096.	1.103.	.830.
H	.823.	1.131.	1.123.	1.209.	1.087.	1.135.	1.046.	1.105.	1.046.	1.135.	1.087.	1.209.	1.123.	1.131.	.823.
	.885.	1.118.	1.197.	1.093.	1.185.	1.003.	1.195.	1.043.	1.112.	.961.	1.125.	1.071.	1.179.	1.127.	.888.
G	.883.	1.121.	1.208.	1.101.	1.160.	.983.	1.122.	1.046.	1.122.	.983.	1.160.	1.101.	1.208.	1.121.	.883.
	.680.	1.013.	1.131.	1.103.	1.046.	1.088.	.957.	1.119.	.990.	1.124.	1.025.	1.087.	1.149.	1.028.	.691.
F	.689.	1.031.	1.144.	1.116.	1.056.	1.129.	.983.	1.135.	.983.	1.129.	1.056.	1.116.	1.144.	1.031.	.689.
	.589.	.999.	1.106.	.960.	1.100.	1.016.	1.120.	1.069.	1.162.	1.059.	1.096.	1.025.	1.157.	1.018.	.588.
E	.585.	.990.	1.102.	.977.	1.128.	1.056.	1.160.	1.087.	1.160.	1.056.	1.128.	.977.	1.102.	.990.	.585.
		.887.	.888.	1.245.	.953.	1.070.	1.059.	1.178.	1.082.	1.094.	1.025.	1.316.	.921.	.904.	
D		.863.	.879.	1.256.	.977.	1.116.	1.101.	1.209.	1.101.	1.116.	.977.	1.256.	.879.	.863.	
		.500.	1.045.	.872.	1.076.	1.099.	1.160.	1.090.	1.185.	1.126.	1.090.	.922.	1.083.	.509.	
C		.486.	1.034.	.879.	1.103.	1.144.	1.208.	1.123.	1.208.	1.144.	1.103.	.879.	1.034.	.486.	
			.483.	.897.	1.026.	1.062.	1.074.	1.087.	1.094.	1.010.	.977.	.855.	.509.		
B			.486.	.863.	.991.	1.031.	1.121.	1.131.	1.121.	1.031.	.991.	.863.	.486.		
					.606.	.712.	.946.	.788.	.858.	.678.	.576.				MEAS
A					.585.	.689.	.883.	.823.	.883.	.689.	.585.				EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2-MD 35-BOL-50PC-D AT 165-PL AT 228-01APR74

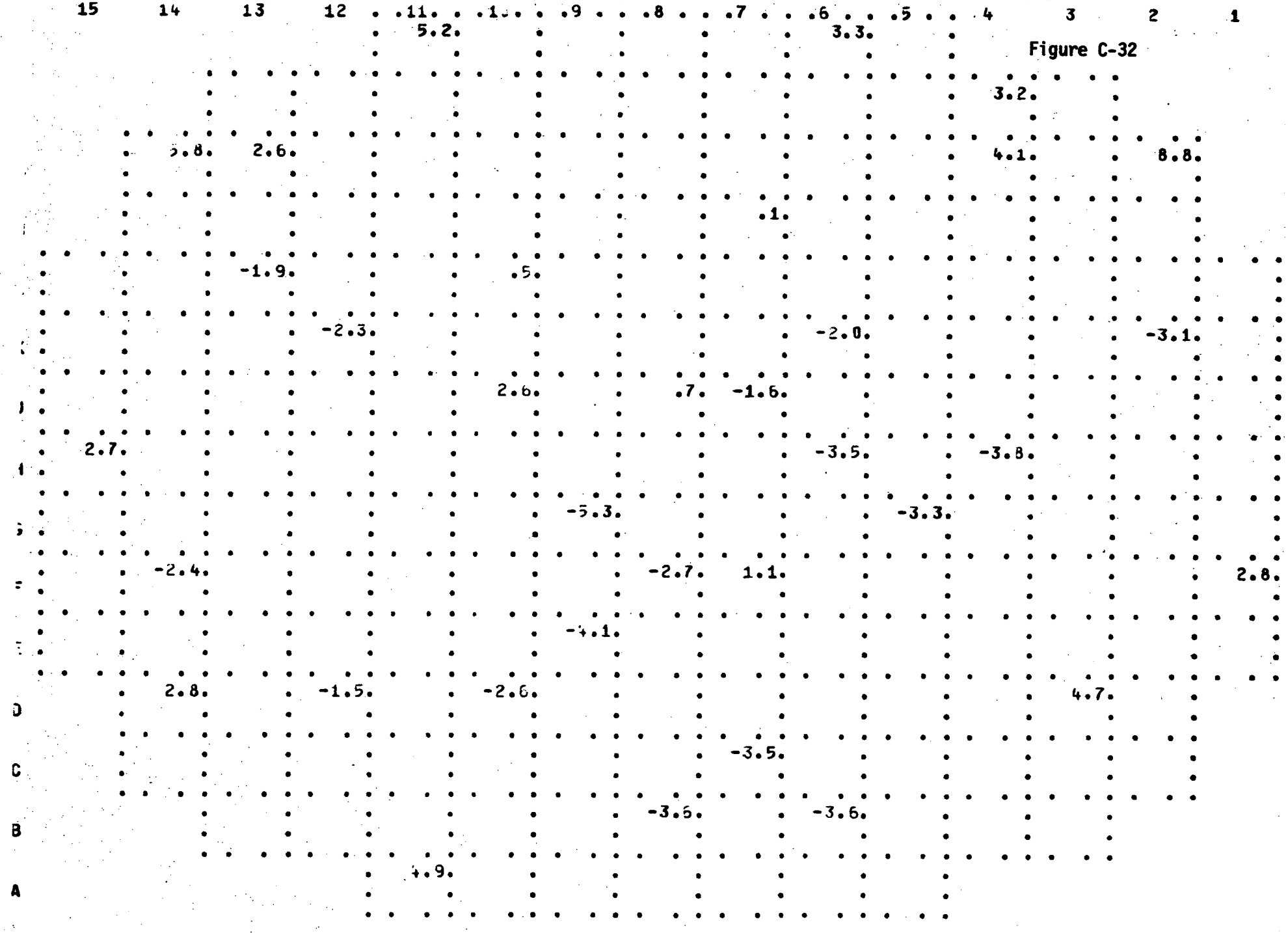


Figure C-32

EASURED AND EXPECTED FDHN IPP2-MD 35-BOL-50PC-D AT 165-PL AT 228-01APR74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.585.	.680.	.884.	.819.	.871.	.668.	.574.				
					.556.	.647.	.840.	.789.	.840.	.647.	.556.				
			.499.	.882.	1.007.	.997.	1.136.	1.143.	1.119.	.979.	.990.	.875.	.505.		
			.481.	.849.	.956.	.953.	1.078.	1.099.	1.078.	.953.	.956.	.849.	.481.		
		.509.	1.056.	.897.	1.167.	1.156.	1.216.	1.120.	1.207.	1.147.	1.146.	.915.	1.087.	.524.	
		.481.	1.029.	.879.	1.104.	1.145.	1.206.	1.119.	1.206.	1.145.	1.104.	.879.	1.029.	.481.	
		.873.	.893.	1.277.	1.020.	1.213.	1.143.	1.233.	1.137.	1.206.	1.056.	1.331.	.936.	.923.	
		.849.	.879.	1.277.	1.014.	1.206.	1.136.	1.232.	1.136.	1.206.	1.014.	1.277.	.879.	.849.	
	.545.	.939.	1.083.	.992.	1.176.	1.113.	1.203.	1.112.	1.188.	1.095.	1.159.	1.056.	1.090.	.938.	.544.
	.555.	.956.	1.104.	1.014.	1.182.	1.108.	1.197.	1.112.	1.197.	1.108.	1.182.	1.014.	1.104.	.956.	.556.
	.662.	.938.	1.122.	1.178.	1.107.	1.182.	1.012.	1.144.	.987.	1.141.	1.086.	1.195.	1.128.	.923.	.631.
	.647.	.953.	1.145.	1.206.	1.108.	1.164.	.998.	1.144.	.998.	1.164.	1.108.	1.206.	1.145.	.953.	.647.
	.861.	1.107.	1.178.	1.110.	1.206.	1.025.	1.137.	1.033.	1.098.	.974.	1.159.	1.092.	1.175.	1.058.	.823.
	.840.	1.078.	1.206.	1.136.	1.197.	.998.	1.115.	1.025.	1.115.	.998.	1.197.	1.136.	1.206.	1.078.	.840.
	.810.	1.130.	1.154.	1.204.	1.141.	1.137.	1.013.	1.015.	1.008.	1.104.	1.072.	1.185.	1.075.	1.082.	.817.
	.789.	1.099.	1.119.	1.232.	1.112.	1.144.	1.025.	1.026.	1.025.	1.144.	1.112.	1.232.	1.119.	1.099.	.789.
	.849.	1.082.	1.200.	1.137.	1.128.	.941.	1.057.	.999.	1.104.	.977.	1.158.	1.097.	1.159.	1.115.	.867.
	.840.	1.078.	1.206.	1.136.	1.197.	.998.	1.115.	1.025.	1.115.	.998.	1.197.	1.136.	1.206.	1.078.	.840.
	.635.	.930.	1.137.	1.187.	1.090.	1.105.	.955.	1.114.	1.010.	1.163.	1.073.	1.170.	1.189.	.972.	.665.
	.647.	.953.	1.145.	1.206.	1.108.	1.164.	.998.	1.144.	.998.	1.164.	1.108.	1.206.	1.145.	.953.	.647.
	.560.	.964.	1.108.	.998.	1.159.	1.070.	1.148.	1.086.	1.196.	1.128.	1.146.	1.051.	1.157.	.996.	.573.
	.556.	.956.	1.104.	1.014.	1.182.	1.108.	1.197.	1.112.	1.197.	1.108.	1.182.	1.014.	1.104.	.956.	.556.
		.872.	.885.	1.258.	.994.	1.175.	1.098.	1.184.	1.096.	1.163.	1.061.	1.337.	.921.	.890.	
D		.849.	.879.	1.277.	1.014.	1.206.	1.136.	1.232.	1.136.	1.206.	1.014.	1.277.	.879.	.849.	
		.494.	1.036.	.866.	1.083.	1.118.	1.170.	1.079.	1.164.	1.109.	1.077.	.921.	1.078.	.504.	
C		.481.	1.029.	.879.	1.104.	1.145.	1.206.	1.119.	1.206.	1.145.	1.104.	.879.	1.029.	.481.	
			.474.	.899.	1.005.	.988.	1.039.	1.059.	1.042.	.918.	.929.	.828.	.504.		
B			.481.	.849.	.956.	.953.	1.078.	1.099.	1.078.	.953.	.956.	.849.	.481.		
					.583.	.676.	.809.	.760.	.812.	.626.	.539.				MEAS
A					.556.	.647.	.840.	.789.	.840.	.647.	.556.				EXP

'ERCENT. DIFF. OF EXPECT. AND MEAS. FOHN IPP2 MD 36 BO. 75PC D AT 190 4-2-74

Figure C-33

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
L					5.7					4.7					
K							-2.2					3.4			
I		6.4	3.1							-1.4		4.0		3.3	
H									1.5						
G	4.5		-.8				1.3								
F				-1.3						-.4				-2.5	
J							4.5		3.8	1.2					
H	2.2									-1.1		-2.1		-5.2	
G				-3.5			-1.9				-2.2				
F		-2.4							-.5	3.8					3.8
E							-3.9								
D		3.1		-2.8		-2.5		-3.5					3.5		
C									-3.1		-4.5				
B								-3.1		-2.9			7.1		
A					4.8		-2.3								

EASURED AND EXPECTED FOHN IPP2 MD 36 BOL 75PC D AT 193 4-2-74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.607.	.693.	.845.	.784.	.908.	.708.	.599.				
					.574.	.676.	.865.	.805.	.865.	.676.	.574.				
			.497.	.887.	1.037.	1.024.	1.082.	1.090.	1.124.	1.030.	1.007.	.878.	.501.		
			.477.	.849.	.980.	1.019.	1.106.	1.114.	1.106.	1.019.	.980.	.849.	.477.		
		.507.	1.049.	.893.	1.177.	1.135.	1.186.	1.117.	1.212.	1.143.	1.126.	.906.	1.075.	.519.	
I		.477.	1.017.	.872.	1.107.	1.159.	1.211.	1.118.	1.211.	1.159.	1.107.	.872.	1.017.	.477.	
		.882.	.892.	1.269.	1.013.	1.206.	1.135.	1.233.	1.135.	1.190.	1.011.	1.311.	.929.	.925.	
I		.849.	.872.	1.259.	.999.	1.189.	1.119.	1.211.	1.119.	1.189.	.999.	1.259.	.872.	.849.	
	.600.	.998.	1.098.	.988.	1.159.	1.094.	1.182.	1.103.	1.177.	1.084.	1.150.	1.040.	1.089.	.961.	.563.
	.574.	.980.	1.107.	.999.	1.155.	1.080.	1.167.	1.084.	1.167.	1.080.	1.155.	.999.	1.107.	.980.	.574.
	.705.	1.036.	1.148.	1.174.	1.091.	1.165.	1.006.	1.151.	.985.	1.128.	1.074.	1.173.	1.139.	.994.	.661.
C	.676.	1.019.	1.159.	1.189.	1.080.	1.132.	.973.	1.118.	.973.	1.132.	1.080.	1.189.	1.159.	1.019.	.676.
	.883.	1.130.	1.196.	1.104.	1.192.	1.017.	1.148.	1.052.	1.113.	.971.	1.151.	1.095.	1.172.	1.061.	.829.
J	.865.	1.106.	1.211.	1.119.	1.167.	.973.	1.100.	1.023.	1.100.	.973.	1.167.	1.119.	1.211.	1.106.	.865.
	.823.	1.139.	1.079.	1.168.	1.089.	1.139.	1.040.	1.099.	1.033.	1.105.	1.063.	1.186.	1.073.	1.045.	.755.
H	.805.	1.114.	1.118.	1.211.	1.084.	1.118.	1.023.	1.080.	1.023.	1.118.	1.084.	1.211.	1.118.	1.114.	.805.
	.869.	1.102.	1.177.	1.079.	1.125.	.953.	1.079.	1.024.	1.115.	.971.	1.141.	1.095.	1.162.	1.081.	.864.
G	.865.	1.106.	1.211.	1.119.	1.167.	.973.	1.100.	1.023.	1.100.	.973.	1.167.	1.119.	1.211.	1.106.	.865.
	.662.	.995.	1.131.	1.147.	1.041.	1.094.	.949.	1.111.	1.010.	1.153.	1.055.	1.163.	1.208.	1.055.	.702.
F	.676.	1.019.	1.159.	1.189.	1.080.	1.132.	.973.	1.118.	.973.	1.132.	1.080.	1.189.	1.159.	1.019.	.676.
	.577.	.985.	1.102.	.971.	1.126.	1.043.	1.121.	1.066.	1.175.	1.129.	1.095.	1.034.	1.146.	1.016.	.597.
E	.574.	.980.	1.107.	.999.	1.155.	1.080.	1.167.	1.084.	1.167.	1.080.	1.155.	.999.	1.107.	.980.	.574.
		.876.	.873.	1.224.	.973.	1.159.	1.080.	1.168.	1.082.	1.140.	.948.	1.261.	.902.	.873.	
D		.849.	.872.	1.259.	.999.	1.189.	1.119.	1.211.	1.119.	1.189.	.999.	1.259.	.872.	.849.	
		.491.	1.019.	.848.	1.080.	1.134.	1.175.	1.081.	1.174.	1.123.	1.056.	.879.	1.071.	.502.	
C		.477.	1.017.	.872.	1.107.	1.159.	1.211.	1.118.	1.211.	1.159.	1.107.	.872.	1.017.	.477.	
			.463.	.892.	1.027.	1.029.	1.077.	1.079.	1.077.	.990.	.948.	.869.	.510.		
B			.477.	.849.	.980.	1.019.	1.106.	1.114.	1.106.	1.019.	.980.	.849.	.477.		
					.602.	.684.	.845.	.784.	.844.	.663.	.565.				MEAS
A					.574.	.676.	.865.	.805.	.865.	.676.	.574.				EXP

ERCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP2 MD 37 BOL 85PC D AT 217 4-17-74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					2.9					.3					
												3.1			
		5.1	1.3							-3.8		3.8		8.0	
									.3						
	.5		-2.4			4.9									
				-1.5						1.6				-5.0	
						6.9		4.4	3.1						
	1.3									1.6		-1.9		-8.4	
											.1				
		-6.2						.9	5.4						-.8
							-1.2								
		1.8		-1.5		-1.8		-4.5					3.9		
									-5.6						
								-4.9		-6.5			4.7		
					1.9										

Figure C-34

EASURED AND EXPECTED FDHN IPP2 MD 37 BOL 85PC D AT 217 4-17-74

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					.603.	.715.	.906.	.818.	.882.	.696.	.594.				
					.586.	.694.	.880.	.815.	.880.	.694.	.586.				
			.486.	.864.	1.023.	1.091.	1.157.	1.126.	1.101.	1.038.	1.004.	.876.	.496.		
			.474.	.850.	.994.	1.060.	1.124.	1.123.	1.124.	1.060.	.994.	.850.	.474.		
		.498.	1.022.	.872.	1.141.	1.225.	1.274.	1.127.	1.193.	1.123.	1.115.	.901.	1.062.	.511.	
		.474.	1.009.	.867.	1.109.	1.168.	1.214.	1.117.	1.214.	1.168.	1.109.	.867.	1.009.	.474.	
		.864.	.873.	1.235.	1.038.	1.236.	1.162.	1.209.	1.112.	1.158.	.988.	1.298.	.919.	.917.	
		.850.	.867.	1.248.	.990.	1.179.	1.108.	1.199.	1.108.	1.179.	.990.	1.248.	.867.	.850.	
	.589.	.984.	1.082.	.970.	1.166.	1.115.	1.204.	1.076.	1.160.	1.075.	1.155.	1.029.	1.053.	.944.	.556.
	.586.	.994.	1.109.	.990.	1.139.	1.063.	1.148.	1.067.	1.148.	1.063.	1.139.	.990.	1.109.	.994.	.586.
	.698.	1.049.	1.145.	1.161.	1.092.	1.177.	1.010.	1.146.	.985.	1.129.	1.078.	1.119.	1.109.	1.007.	.659.
	.694.	1.060.	1.168.	1.179.	1.063.	1.112.	.958.	1.102.	.958.	1.112.	1.063.	1.179.	1.168.	1.060.	.694.
	.892.	1.139.	1.197.	1.093.	1.189.	1.024.	1.152.	1.066.	1.123.	.978.	1.151.	1.084.	1.151.	1.048.	.821.
I	.880.	1.124.	1.214.	1.108.	1.148.	.958.	1.090.	1.021.	1.090.	.958.	1.148.	1.108.	1.214.	1.124.	.880.
	.826.	1.138.	1.132.	1.182.	1.140.	1.177.	1.080.	1.158.	1.051.	1.120.	1.066.	1.176.	1.058.	1.029.	.747.
H	.815.	1.123.	1.117.	1.199.	1.067.	1.162.	1.021.	1.113.	1.021.	1.102.	1.067.	1.199.	1.117.	1.123.	.815.
	.866.	1.087.	1.138.	1.039.	1.227.	1.024.	1.091.	1.047.	1.125.	.979.	1.149.	1.098.	1.150.	1.062.	.847.
G	.880.	1.124.	1.214.	1.108.	1.148.	.958.	1.090.	1.021.	1.090.	.958.	1.148.	1.108.	1.214.	1.124.	.880.
	.651.	.994.	1.095.	1.161.	1.047.	1.103.	.955.	1.111.	1.009.	1.155.	1.065.	1.181.	1.158.	1.051.	.688.
F	.694.	1.060.	1.168.	1.179.	1.063.	1.112.	.958.	1.102.	.958.	1.112.	1.063.	1.179.	1.168.	1.060.	.694.
	.573.	.972.	1.087.	.975.	1.119.	1.048.	1.134.	1.062.	1.164.	1.129.	1.141.	1.029.	1.152.	1.010.	.581.
E	.586.	.994.	1.109.	.990.	1.139.	1.063.	1.148.	1.067.	1.148.	1.063.	1.139.	.990.	1.109.	.994.	.586.
		.865.	.869.	1.23..	.973.	1.157.	1.080.	1.144.	1.050.	1.112.	1.029.	1.297.	.902.	.883.	
D		.850.	.867.	1.248.	.990.	1.179.	1.108.	1.199.	1.108.	1.179.	.990.	1.248.	.867.	.850.	
		.482.	1.011.	.855.	1.090.	1.145.	1.168.	1.060.	1.147.	1.096.	1.035.	.905.	1.053.	.494.	
C		.474.	1.009.	.867.	1.109.	1.168.	1.214.	1.117.	1.214.	1.168.	1.109.	.867.	1.009.	.474.	
			.467.	.866.	1.013.	1.080.	1.070.	1.069.	1.060.	.991.	.928.	.890.	.496.		
B			.474.	.850.	.994.	1.060.	1.124.	1.123.	1.124.	1.060.	.994.	.850.	.474.		
					.597.	.707.	.838.	.776.	.830.	.648.	.547.				MEAS
A					.586.	.694.	.880.	.815.	.880.	.694.	.586.				EXP

RCENT. DIFF. OF EXPECT. AND MEAS. FDHN IPP MAP 39 D AT 160 85 PC PWR 6/5/74

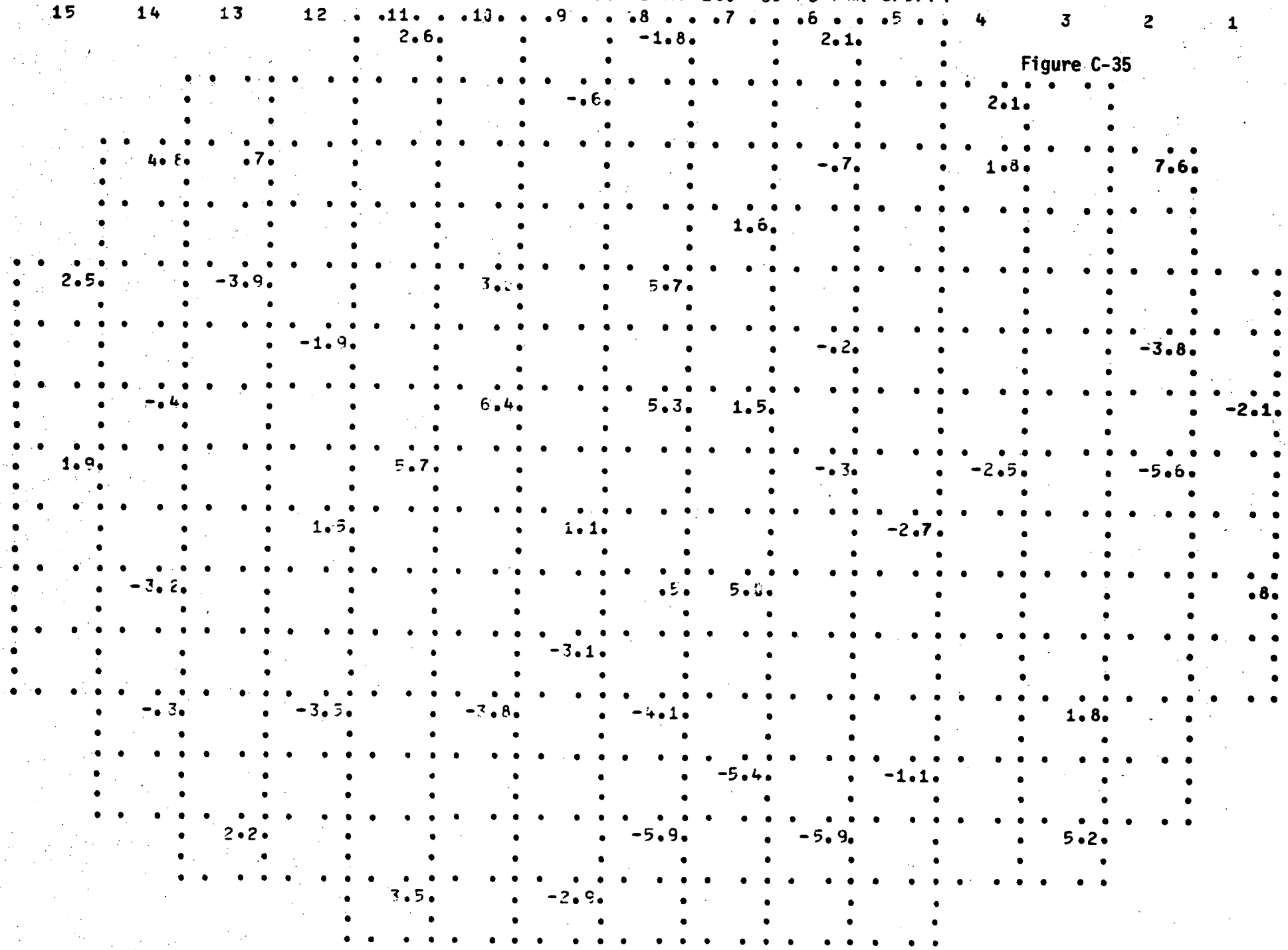


Figure C-35

ASUREC AND EXPECTED FDHN IPF MAP 39 D AT 160 85 PC PWR 6/5/74

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
				.572.	.656.	.831.	.776.	.844.	.663.	.570.				
				.557.	.649.	.842.	.790.	.842.	.649.	.557.				
			.491.	.864.	.985.	.958.	1.074.	1.088.	1.079.	.956.	.972.	.867.	.498.	
			.481.	.849.	.958.	.958.	1.080.	1.100.	1.080.	.958.	.958.	.849.	.481.	
		.504.	1.035.	.877.	1.144.	1.143.	1.204.	1.125.	1.209.	1.138.	1.114.	.895.	1.070.	.518.
		.481.	1.028.	.879.	1.104.	1.146.	1.206.	1.119.	1.206.	1.146.	1.104.	.879.	1.028.	.481.
		.863.	.877.	1.249.	1.043.	1.241.	1.189.	1.278.	1.153.	1.208.	1.018.	1.298.	.920.	.914.
		.849.	.879.	1.276.	1.012.	1.204.	1.135.	1.230.	1.135.	1.204.	1.012.	1.276.	.879.	.849.
.571.	.949.	1.061.	.984.	1.194.	1.138.	1.250.	1.174.	1.228.	1.109.	1.176.	1.030.	1.080.	.931.	.540.
.557.	.957.	1.104.	1.012.	1.180.	1.106.	1.195.	1.110.	1.195.	1.106.	1.180.	1.012.	1.104.	.957.	.557.
.656.	.945.	1.120.	1.182.	1.127.	1.216.	1.050.	1.198.	1.023.	1.159.	1.102.	1.183.	1.118.	.922.	.633.
.649.	.958.	1.146.	1.204.	1.106.	1.162.	.997.	1.142.	.997.	1.162.	1.106.	1.204.	1.146.	.958.	.649.
.847.	1.076.	1.196.	1.152.	1.247.	1.060.	1.184.	1.079.	1.131.	.998.	1.183.	1.107.	1.163.	1.043.	.824.
.842.	1.080.	1.206.	1.135.	1.195.	.997.	1.114.	1.025.	1.114.	.997.	1.195.	1.135.	1.206.	1.080.	.842.
.805.	1.110.	1.123.	1.275.	1.173.	1.200.	1.068.	1.068.	1.045.	1.139.	1.089.	1.200.	1.072.	1.039.	.760.
.790.	1.100.	1.119.	1.230.	1.110.	1.142.	1.025.	1.030.	1.025.	1.142.	1.110.	1.230.	1.119.	1.100.	.790.
.845.	1.075.	1.207.	1.152.	1.237.	1.027.	1.126.	1.046.	1.143.	.999.	1.163.	1.105.	1.156.	1.045.	.827.
.842.	1.080.	1.206.	1.135.	1.195.	.997.	1.114.	1.025.	1.114.	.997.	1.195.	1.135.	1.206.	1.080.	.842.
.632.	.927.	1.139.	1.216.	1.116.	1.149.	.989.	1.148.	1.046.	1.190.	1.073.	1.170.	1.166.	.959.	.654.
.649.	.958.	1.146.	1.204.	1.106.	1.162.	.997.	1.142.	.997.	1.162.	1.106.	1.204.	1.146.	.958.	.649.
.550.	.946.	1.085.	.977.	1.136.	1.066.	1.158.	1.099.	1.211.	1.171.	1.175.	1.030.	1.126.	.974.	.563.
.557.	.957.	1.104.	1.012.	1.180.	1.106.	1.195.	1.110.	1.195.	1.106.	1.180.	1.012.	1.104.	.957.	.557.
	.847.	.862.	1.231.	.975.	1.159.	1.093.	1.179.	1.081.	1.169.	1.007.	1.287.	.895.	.865.	
	.849.	.879.	1.276.	1.012.	1.204.	1.135.	1.230.	1.135.	1.204.	1.012.	1.276.	.879.	.849.	
	.484.	1.027.	.868.	1.065.	1.104.	1.150.	1.061.	1.141.	1.101.	1.093.	.894.	1.065.	.498.	
	.481.	1.028.	.879.	1.104.	1.146.	1.206.	1.119.	1.206.	1.146.	1.104.	.879.	1.028.	.481.	
		.492.	.876.	.993.	.953.	1.032.	1.035.	1.016.	.941.	.926.	.874.	.506.		
		.481.	.849.	.958.	.958.	1.080.	1.100.	1.080.	.958.	.958.	.849.	.481.		
				.577.	.651.	.817.	.755.	.789.	.609.	.524.				
				.557.	.649.	.842.	.790.	.842.	.649.	.557.				

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