

# REACTOR CONTAINMENT BUILDING INTEGRATED LEAKAGE RATE TEST

## TYPES A, B, AND C PERIODIC TEST



### CONSOLIDATED EDISON COMPANY INDIAN POINT 2 STATION

DOCKET No. 50-247  
OPERATING LICENSE No. DPR-26

JUNE 1991



Prepared by

STONE & WEBSTER ENGINEERING CORPORATION  
BOSTON, MASSACHUSETTS

9109300061 910920  
PDR - ADUCK 05000247  
PDR

ERRATA

Page	Valve	Change from	Change to
8	9th line	psig	psia
81	4927	Repair note at 201, 202	Repair note at 4927
88	SWN-41-2-A SWN-44-2-1 SWN-44-1-A	21 FCU 21 FCU Valve replaced	22 FCU 22 FCU SWN-44-1-A replaced
	SWN 42-1, 43-1	Valve replaced	SWN-44-1-A replaced
89	All 24 FCU's valves	Replaced valve	Replaced SWN-41-4-A
91	250A, 4925	12.30	0.00
94	1214, 1214A 744	181.33 43048	11.33 43046
98	SWN-41-2-A SWN-44-2-A	21 FCU 21 FCU	22 FCU 22 FCU
99	SWN-42-2, 43-4	5.00	5.60
100	E1, E2, E3, E5, EA1	(VIV EA!)	(VIV EA1)

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### ATTACHMENT

### TITLE

4A	1991 Local Leakage Rate Test Data
4B	1989 Local Leakage Rate Test Data

## REFERENCES

1. 10CFR Part 50 , Appendix J, Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors, January 1, 1989.
2. PT-3Y1, Integrated Leakrate Test.
3. ANSI N45.4, American National Standard, Leakage-Rate Testing of Containment Structures for Nuclear Reactors, March 16, 1972.
4. ANSI/ANS-56.8, Containment System Leakage Testing Requirements, January 20, 1987.<sup>1</sup>
5. PT-C1, Type "B" and "C" Tests Running Total Leak Rate Monitoring.

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<sup>1</sup> This document used only as a guideline and any reference to said document in no way implies compliance.

## **SECTION 1**

### **1.0 PURPOSE**

The purpose of this report is to present a description and analysis of the June 1991 Periodic Type A Primary Containment Integrated Leakage Rate Test (ILRT) and a summary of the Periodic Types B and C Local Leakage Rate Tests (LLRT) conducted since December 1987 at the Indian Point 2 Station. Indian Point 2 Station is operated by the Consolidated Edison Company of New York (Con Edison). Specific plant information and technical data is contained in Attachment 1A.

Stone & Webster Engineering Corporation (SWEC) provided engineering consultation services to Con Edison during the performance of this test.

This report is submitted as required by 10CFR50, Appendix J, Paragraph V.B.

**ATTACHMENT 1A**  
**TEST DATA SUMMARY**

**A. Plant Information**

Operator	Consolidated Edison Company of New York, Inc.
Plant	Indian Point 2 Station
Location	Buchanan, New York
Containment Type	VC/PWR
Docket Number	50-247
Operating License No.	DPR-26
Date Test Completed	June 23, 1991

**B. Technical Data**

Containment Net Free Air Volume as Tested	2,610,000 cu. ft.
Design Pressure	47 psig
Calculated Peak Accident Pressure	47 psig
Containment Design Temperature	271 °F
Containment ILRT Average Temperature Limits	60-100 °F



## SECTION 2

### 2.0 SUMMARY

#### 2.1 TYPE A TEST

##### 2.1.1 Test Summary

Pressurization of the containment started at 0715 on June 20, 1991. The inner door of the personnel air lock has been left open because it could not be sealed. Pressurization was stopped at 1218 hours to rework a temporary air hose in the pressurization line up. The hose had developed a kink. While the compressors were shut down, leak investigations were started. Pressurization was restarted at 1530 on June 20, 1991. Containment air circulation fans had been started during the pump up to provide better mixing of the air. Between 35 and 36 psig the fans started tripping on overcurrent. The last fan was tripped manually. The use of the fans without cooling water resulted in a higher temperature rise than is normally seen. Pressurization was stopped at 0115 hours on June 21, 1991 with a peak pressure of 63.243 psig. After pressurization was secured, the pressurization piping system was isolated and vented.

Because of the high temperature rise during pump up, the stabilization period was extended. The ANSI 56.8 stabilization criteria was achieved at 0630 on June 21 however, the temperature was still dropping rapidly (1.3 degrees over the last 2 hours). Stabilization was extended until .5 degree change in temperature over the last 2 hours was achieved. The test was started at 1100 hours on June 21, 1991.

Temperature, pressure and relative humidity data was continuously collected at 15 minute intervals for the entire test period. Leakage surveys were conducted through the duration of the test. No significant leakage was found.

At 2100 hours on June 21, 1991 the test was restarted. Review of the data since the start of the test indicated that thermal stability had not actually been achieved when the test was started the first time. The mass trend in the early part of the test showed a negative leak followed by a larger positive leak. The instability may have been due in part to running the fans without cooling water during the pressurization. The fans appeared to have had the desired effect of mixing the air; the temperature readings within each zone agreed very well. However, the lower portions of the containment were hotter than the dome. This is opposite the normal pattern where the thermal stratification results in a gradient of cold to hot from the bottom of the containment to the top.

At approximately 1800 hours on June 22, 1991 the site experienced a loss of off-site power. As a result of this transient, the Residual Heat Removal and Charging pumps were lost. The effects were evident in the test data by temperature and pressure dropping and relative humidity increasing. The transient lasted about 45 minutes. The mass trend during the transient remained consistent with the rest of the test although the transient is clearly visible in the plots of temperature, pressure and relative humidity.

The Type A test was successfully completed at 2100 hours on June 22, 1991 with a Mass Point Upper Confidence Limit (MP-UCL) of 0.047791 percent per day. This was well below the acceptance limit of 0.075 percent per day.

The Superimposed Leakage Verification Test was started at 2215 hours on June 22, 1991 and was successfully completed at 0315 hours on June 23, 1991.

Depressurization of the containment started at 0545 hours on June 23, 1991 and was completed at 0415 hours on June 24, 1991.

### **2.1.2 Conclusion**

The June 1991 Indian Point Station - Unit No. 2 Type A Test was successfully completed, thus demonstrating the leak-tight integrity of the containment boundary. The Upper Confidence Level (UCL) was well below the acceptance criteria of 0.075 percent/day as required by IP2 Technical Specifications.

## 2.2

### LOCAL LEAKAGE RATE TESTS (Types B and C)

The Local Leakage Rate Tests (LLRT) of containment isolation valves and other containment penetrations were conducted as required by the methods described in the plant surveillance procedures, Reference 5, for the Types B and C Tests.

Section 4 of this report summarizes the data for the LLRT conducted since the December, 1987 Type A test in accordance with Appendix J, 10CFR50, Paragraph V.B.

## SECTION 3

### 3.0 TYPE A TEST

#### 3.1 EDITED LOG OF EVENTS

This log was edited from information contained in the ILRT Test Director's Official Type A Log of Events or from Reference 2.

#### June 20, 1991

- 0300 Containment inspection successfully completed.
- 0616 Inner containment personnel air lock door will not seal. It will be left open for the test.
- 0715 Pressurization started.
- 0915 Temperature has risen 10 degrees. Cut back 2 compressors. Pressurization rate at 4.4 psi/hour.
- 0959 Containment fans have been turned on. Temperature at lower elevations is now rising faster than the dome.
- 1058 Turned off an additional compressor.
- 1135 Have adjusted back pressure on air driers to 90 psi as recommended by the Atlas-Copco main office.
- 1218 Shut down all compressors to straighten a section of temporary air hose that is kinked. Walk down of potential leakage paths initiated.
- 1510 Pressurization restarted with 7 compressors.
- 1648 Mensor pressure manometer # 1 is sticking. It will not be used for the test.
- 2115 FCU 23 has tripped at 35 psig.
- 2125 FCU 25 has tripped on over current at 36 psig.
- 2230 FCU 21 has tripped.
- 2240 Last remaining Fan has been manually tripped.
- 2300 With temperature dropping as the result of not running the fans, another compressor has been added.

**June 21, 1991**

- 0115 Containment pressurization secured at peak pressure of 63.243 psia.
- 0630 ANSI thermal stabilization criteria satisfied but total change over last 2 hours was 1.3 °F.
- 0930 Pressurization penetrations have not been vented. Operations is preparing to vent now.
- Power to test trailer has been lost. All instrumentation except for the pressure transmitters was on a UPS. The pressure readings for the 0945 data set were taken manually.
- 0955 Power restored. Review of data reveals that the humidity sensors were affected by the change in power supply.
- 1100 Test started after control room advised that the pressurization penetrations had been vented.
- 2100 Test restarted based on the containment instability.

**June 22, 1991**

- 1800 Loss of off-site power. Temperature and pressure dropping, humidity increasing and mass not being effected.
- 1845 Transient from off-site power loss ended.
- 2100 Successfully completed 24 hour ILRT.
- 2155 Superimposed leak imposed.
- 2215 Start of verification test.

**June 23, 1991**

- 0315 Verification test successfully completed.
- 0545 Containment depressurization initiated.

**June 24, 1991**

- 0415 Containment depressurized.

## **3.2 GENERAL TEST DESCRIPTION**

### **3.2.1 Prerequisites**

In accordance with Reference 2, the following is a listing of the pertinent prerequisites and other procedural requirements completed and documented prior to containment pressurization:

- a. Site meteorological data recorded during the performance of the ILRT (Attachment 3.2A)
- b. All required test instrumentation installed and functionally verified within 6 months of the test.
- c. Verification flowmeter installed.
- d. Satisfactory inspection of the primary containment in accordance with Reference 2.
- e. Pressurization system lined-up and ready for operation.
- f. RCS temperature maintained stable prior to and during the performance of the ILRT.
- g. Data acquisition and analysis computer systems used for the test are operational.
- h. All required system valve lineups completed.
- i. Instrument Selection Guide (ISG) calculated.
- j. Restricted plant access plan in effect.
- k. An Official Type A Log of Events established and maintained by the ILRT Coordinator.
- l. All pressurized components and systems either removed from the containment or vented.
- m. All required Types B and C leakage rate testing completed.

### 3.2.2 Equipment and Instrumentation

The various containment parameters required to calculate containment leakage during the test, were monitored using instrumentation which consisted of 33 resistance temperature detectors, 9 relative humidity sensors, and 1 absolute pressure indicator. Pertinent data for the test instrumentation is listed in Attachment 3.2B, and the general locations of the test instrumentation for both the drywell and the suppression chamber are shown in Attachments 3.2C and 3.2D. Elevations are approximate.

A rotometer was used to perform the superimposed leakage verification test.

#### Instrument Selection Guide (ISG)

<u>Sensor Type</u>	<u>No. of Sensors</u>	<u>Sensitivity Error</u>	<u>System Error</u>
Pressure	1	0.001 psi	0.000 psi
Temperature	33	0.015 °F	0.100 °F
Dewpoint Temp.	9	0.100 °F	0.250 °F

Test Duration (t)      24 hrs.  
 Test Pressure      61.696 psia  
 Test Temperature 89 °F = 549 °R  
 Test Dewpoint Temp. 58 °F

$$ISG = \pm \frac{2400}{24} \sqrt{2 \times \left(\frac{EP}{P}\right)^2 + 2 \times \left(\frac{ET}{T}\right)^2 + 2 \times \left(\frac{EP_v}{P}\right)^2}$$

ISG ≤ 0.25 L<sub>a</sub> which equals 0.025% per day since L<sub>a</sub> = 0.1% per day

a. EP = error associated with absolute pressure instruments

$$EP = \frac{0.001}{\sqrt{1}} = 0.001$$

b. ET = error associated with temperature instruments

$$ET = \frac{0.1011}{\sqrt{33}} = 0.0176$$

c.  $EP_v$  = error associated with vapor pressure instruments

$$EP_v = \frac{0.0024772}{\sqrt{9}} = 0.00082573$$

Using values established in a,b and c above, calculate ISG.

$$ISG = \pm \frac{2400}{24} \sqrt{2 \times \left( \frac{0.001}{61.696} \right)^2 + 2 \times \left( \frac{0.0176}{549} \right)^2 + 2 \times \left( \frac{0.00082573}{61.696} \right)^2}$$

$ISG = \pm 0.0054292$  which is less than 0.025%/day (25% of  $L_d$ )

### 3.2.3 Data Acquisition System

A programmable, multichannel data logger was used to scan the data from the 33 resistance temperature detectors, 9 relative humidity sensors, and 1 pressure sensor. Data was taken at 15 minute intervals throughout the test.

### 3.2.4 Data Resolution System

The recorded data was manually inputted to a dedicated computer system using Stone & Webster Engineering Corporation's (SWEC) ILRT analysis program for data reduction and leakage rate calculations. The following calculations used the instantaneous values of the ILRT sensors to determine the Mass Point Analysis Method leakage rate.



### Absolute Method of Mass Point Analysis

The Absolute Method of Mass Point Analysis consists of calculating the air mass within the containment structure, over the test period using pressure, temperature, and dewpoint temperature observations made during the ILRT. The air mass is computed using the ideal gas law as follows:

$$M = 144 \times V \frac{(P - P_v)}{RT} \quad (\text{Eq. 1})$$

where:

- M = air mass, lbm
- P = total pressure, psia
- P<sub>v</sub> = average vapor pressure, psia
- R = 53.35 ft-lbf/lbm°R (for air)
- T = average containment temperature, °R
- V = containment free volume, ft<sup>3</sup>

The leakage rate is then determined by plotting the air mass as a function of time, using a least-squares fit to determine the slope,  $A = dM/dT$ . The leakage rate is expressed as a percentage of the air mass lost in 24 hours or symbolically:

$$\text{Leakage Rate} = -2400 \left[ \frac{A}{B} \right] \quad (\text{Eq. 2})$$

Where A is the slope of the least-squares curve and B is the y-intercept. The sign convention is such that the leakage out of the containment is positive, and the units are in percent/day.

A confidence interval is calculated using a Student's T distribution. The sum of the leakage rate and confidence interval is the Upper Confidence Limit - Mass Point (UCL-MP).

# ATTACHMENT 3.2A

## SITE METEOROLOGY

<u>Date</u>	<u>Time</u>	<u>Ambient Temp. (Deg F)</u>	<u>Dewpoint Temp. (Deg F)</u>
June 20, 1991	0100	66.5	52.4
	0200	66.7	52.5
	0300	65.8	52.1
	0400	65.1	51.7
	0500	64.9	51.4
	0600	65.6	52.1
	0700	67.9	53.2
	0800	70.7	54.2
	0900	74.5	56.2
	1000	76.8	57.7
	1100	80.7	56.9
	1200	83.2	55.3
	1300	84.7	53.4
	1400	86.4	52.5
	1500	87.4	54.4
	1600	88.4	54.4
	1700	88.4	56.6
	1800	87.4	55.9
	1900	84.2	57.3
	2000	81.7	52.3
	2100	78.7	51.7
	2200	74.5	51.4
	2300	72.1	50.3
June 21, 1991	0100	68.4	48.2
	0200	66.8	46.8
	0300	66.8	45.4
	0400	65.8	45.0
	0500	64.6	45.3
	0600	65.6	45.4
	0700	68.4	47.5
	0800	72.7	47.8
	0900	76.1	48.2
	1000	77.9	47.9
	1100	79.8	47.8
	1200	81.7	48.6
	1300	83.1	49.0
	1400	82.5	*
	1500	86.8	*
	1600	87.8	*
	1700	87.4	*
	1800	86.7	*
	1900	84.3	51.7
	2000	79.7	52.8
	2100	76.2	52.0
	2200	73.7	52.4
	2300	71.9	51.8
June 22, 1991	0100	70.2	50.0
	0200	69.9	48.2
	0300	68.4	47.5
	0400	67.8	45.4
	0500	66.4	45.0
	0600	66.4	45.8
	0700	67.9	46.8
	0800	68.9	46.1

**ATTACHMENT 3.2A**  
**SITE METEOROLOGY**

0900	68.2	45.1
1000	67.1	44.8
1100	65.7	46.2
1200	65.8	47.6
1300	66.3	46.4
1400	66.8	47.1
1500	66.8	47.6
1600	66.5	47.6
1700	65.4	47.9
1800	65.1	48.9
1900	65.3	49.3
2000	64.2	49.7
2100	64.0	49.9
2200	64.2	49.2

**NOTES:**

\*

During this period, the dewpoint sensor was not displaying properly.

**ATTACHMENT 3.2B**

**INSTRUMENTATION LIST**

The following instruments were calibrated and functionally verified within 6 months prior to the performance of this test and in accordance with 10CFR50, Appendix J.

<b>Instrument</b>	<b>Weight Fraction</b>	<b>Computer Point</b>	<b>Zone</b>	<b>Assoc. RTD</b>	<b>Elevation</b>	<b>Range</b>	<b>Accuracy</b>
<b>A.</b>	<b>Temperature</b>						
T1	0.033934	C0	1		212	0-150°F	±0.5°F
T2	0.033934	C1	1		212	0-150°F	±0.5°F
T3	0.000000	C2	1		212	0-150°F	±0.5°F
T4	0.033934	C3	1		212	0-150°F	±0.5°F
T5	0.033934	C4	1		212	0-150°F	±0.5°F
T6	0.033934	C5	1		212	0-150°F	±0.5°F
T7	0.033934	C6	1		212	0-150°F	±0.5°F
T8	0.033934	C7	1		212	0-150°F	±0.5°F
T9	0.042046	C8	1		212	0-150°F	±0.5°F
T10	0.042046	C9	2		161	0-150°F	±0.5°F
T11	0.042046	C10	2		161	0-150°F	±0.5°F
T12	0.042046	C11	2		161	0-150°F	±0.5°F
T13	0.000000	C12	2		161	0-150°F	±0.5°F
T14	0.000000	C13	2		161	0-150°F	±0.5°F
T15	0.042046	C14	2		161	0-150°F	±0.5°F
T16	0.042046	C15	2		161	0-150°F	±0.5°F
T17	0.028792	C16	3		120	0-150°F	±0.5°F
T18	0.028792	C17	3		120	0-150°F	±0.5°F
T19	0.000000	C18	3		120	0-150°F	±0.5°F
T20	0.028792	C19	3		120	0-150°F	±0.5°F
T21	0.028792	C40	3		120	0-150°F	±0.5°F
T22	0.028792	C41	3		120	0-150°F	±0.5°F
T23	0.028792	C42	3		120	0-150°F	±0.5°F
T24	0.000000	C43	3		120	0-150°F	±0.5°F
T25	0.000000	C44	1		212	0-150°F	±0.5°F
T26	0.033934	C45	1		212	0-150°F	±0.5°F
T27	0.020876	C46	4		98	0-150°F	±0.5°F
T28	0.020876	C47	4		98	0-150°F	±0.5°F

**ATTACHMENT 3.2B**

**INSTRUMENTATION LIST**

<b>Instrument</b>	<b>Weight Fraction</b>	<b>Computer Point</b>	<b>Zone</b>	<b>Assoc. RTD</b>	<b>Elevation</b>	<b>Range</b>	<b>Accuracy</b>
T29	0.020876	C48	4		98	0-150°F	±0.5°F
T30	0.020876	C49	4		98	0-150°F	±0.5°F
T31	0.020870	C50	4		98	0-150°F	±0.5°F
T32	0.020870	C51	4		98	0-150°F	±0.5°F
T33	0.029708	C52	5		68	0-150°F	±0.5°F
T34	0.029708	C53	5		68	0-150°F	±0.5°F
T35	0.029708	C54	5		68	0-150°F	±0.5°F
T36	0.029708	C55	5		68	0-150°F	±0.5°F
T37	0.000000	C56	5		68	0-150°F	±0.5°F
T38	0.029708	C57	5		68	0-150°F	±0.5°F
T39	0.029708	C58	5		68	0-150°F	±0.5°F
T40	0.000000	C59	5		68	0-150°F	±0.5°F

**B. Dewpoint Temperature**

D1	0.069239	C110	1	T2	210	0-100%RH	±2.5%RH
D2	0.069239	C111	1	T4	210	0-100%RH	±2.5%RH
D3	0.069239	C112	1	T6	210	0-100%RH	±2.5%RH
D4	0.069239	C113	1	T26	210	0-100%RH	±2.5%RH
D5	0.129794	C114	2	T10	161	0-100%RH	±2.5%RH
D6	0.129794	C115	2	T11	161	0-100%RH	±2.5%RH
D7	0.129794	C116	2	T15	161	0-100%RH	±2.5%RH
D8	0.000000	C117	5	T33	68	0-100%RH	±2.5%RH
D9	0.166832	C118	5	T39	68	0-100%RH	±2.5%RH
D10	0.166832	C119	5	T36	68	0-100%RH	±2.5%RH

ATTACHMENT 3.2B

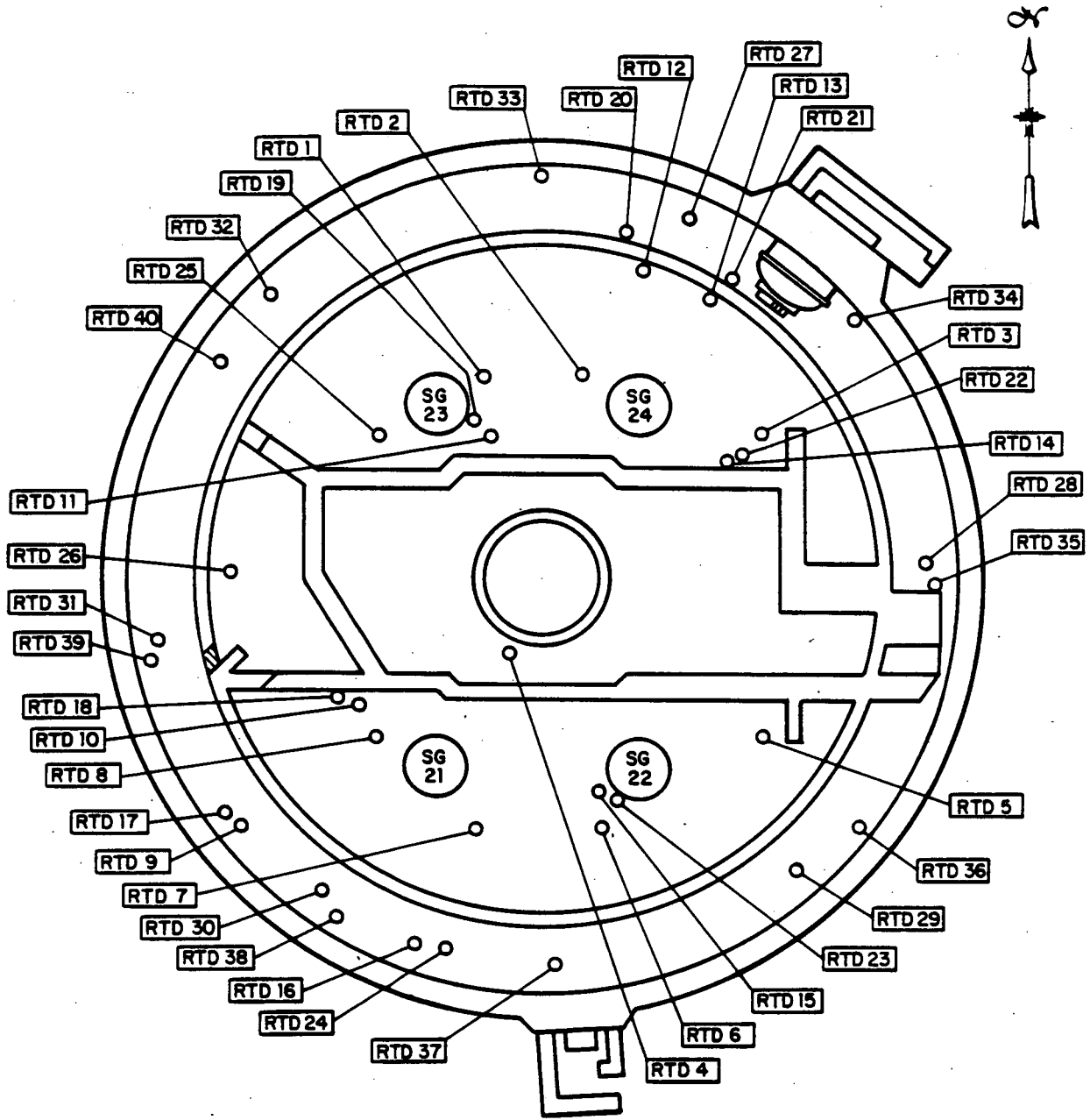
INSTRUMENTATION LIST

Instrument	Weight Fraction	Computer Point	Zone	Assoc. RTD	Elevation	Range	Accuracy
<b>C. Pressure</b>							
P1	0.000000	C140	-	-	-	0-100psia	± 0.02%FS
P2	1.000000	C160	-	-	-	0-100psia	± 0.02%FS
<b>D. Superimposed Leakage Verification Test Flow Instrument</b>							
Rotometer		-	Local	-	-	1.5-15scfm*	±1.0%F.S.

Notes:

\* Rotometers were calibrated at 48 psig.

ATTACHMENT 3.2C



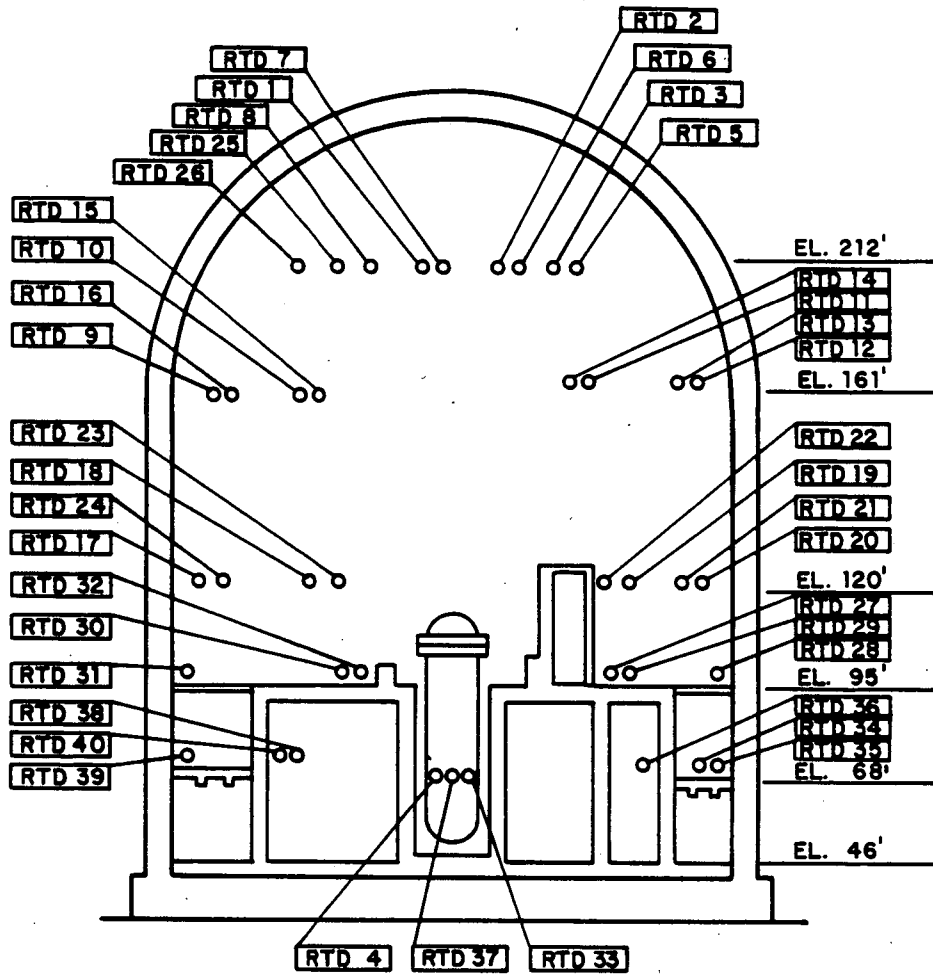
PLAN VIEW

NOTES:

1. INSTRUMENT LOCATIONS SHOWN ARE ONLY APPROXIMATE, REFERENCE IP2 DWG. No. A206586

ATTACHMENT 3.2C  
ILRT RESISTANCE TEMPERATURE  
DETECTOR LOCATIONS (RTD)  
INDIAN POINT STATION - UNIT No. 2

# ATTACHMENT 3.2D



PROFILE VIEW

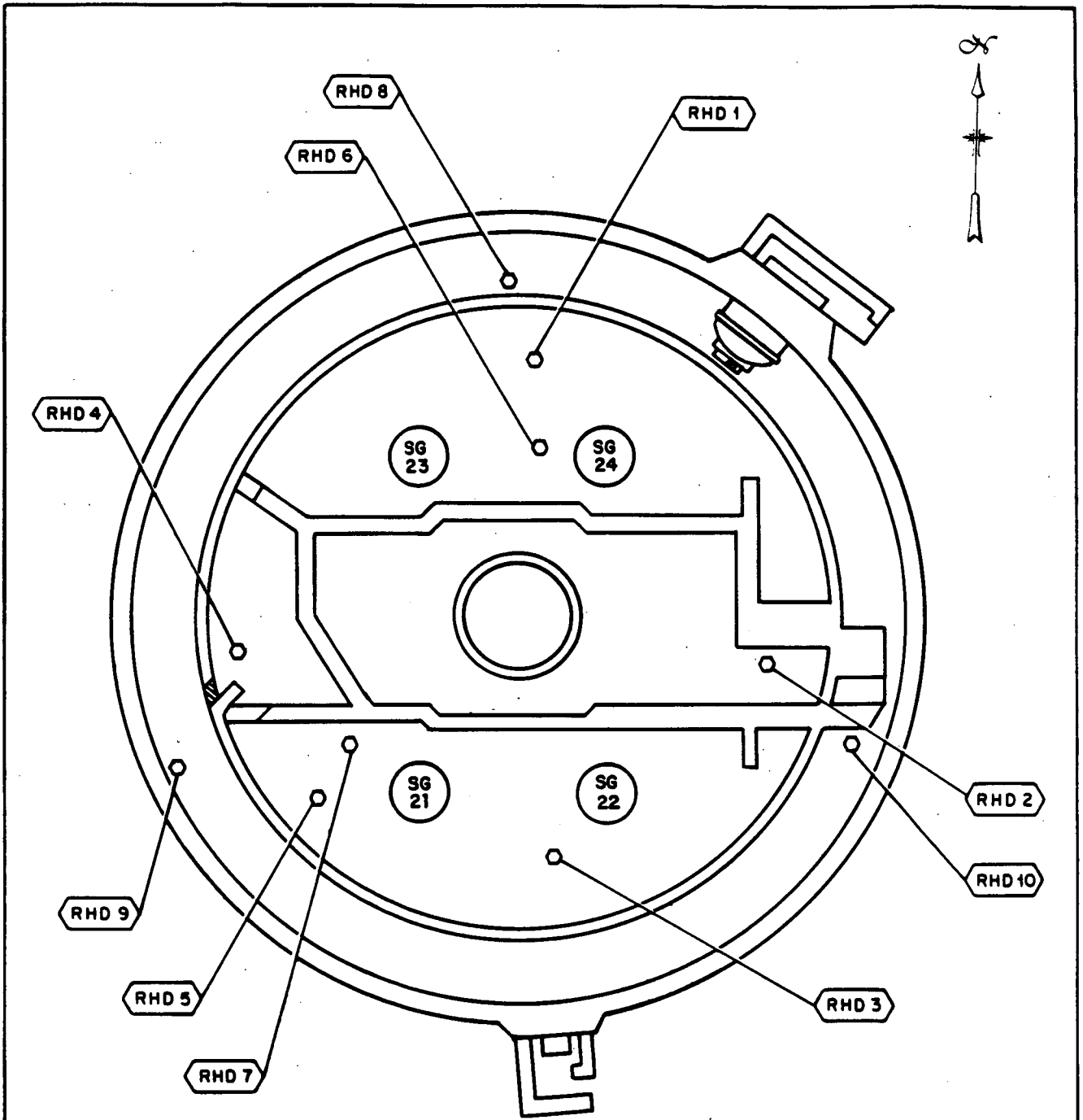
**NOTES:**

1. INSTRUMENT LOCATIONS SHOWN ARE ONLY APPROXIMATE, REFERENCE IP2 DWG. No. A206586

ATTACHMENT 3.2D  
 ILRT RESISTANCE TEMPERATURE  
 DETECTOR LOCATIONS (RTD)  
 INDIAN POINT STATION - UNIT No. 2



# ATTACHMENT 3.2E



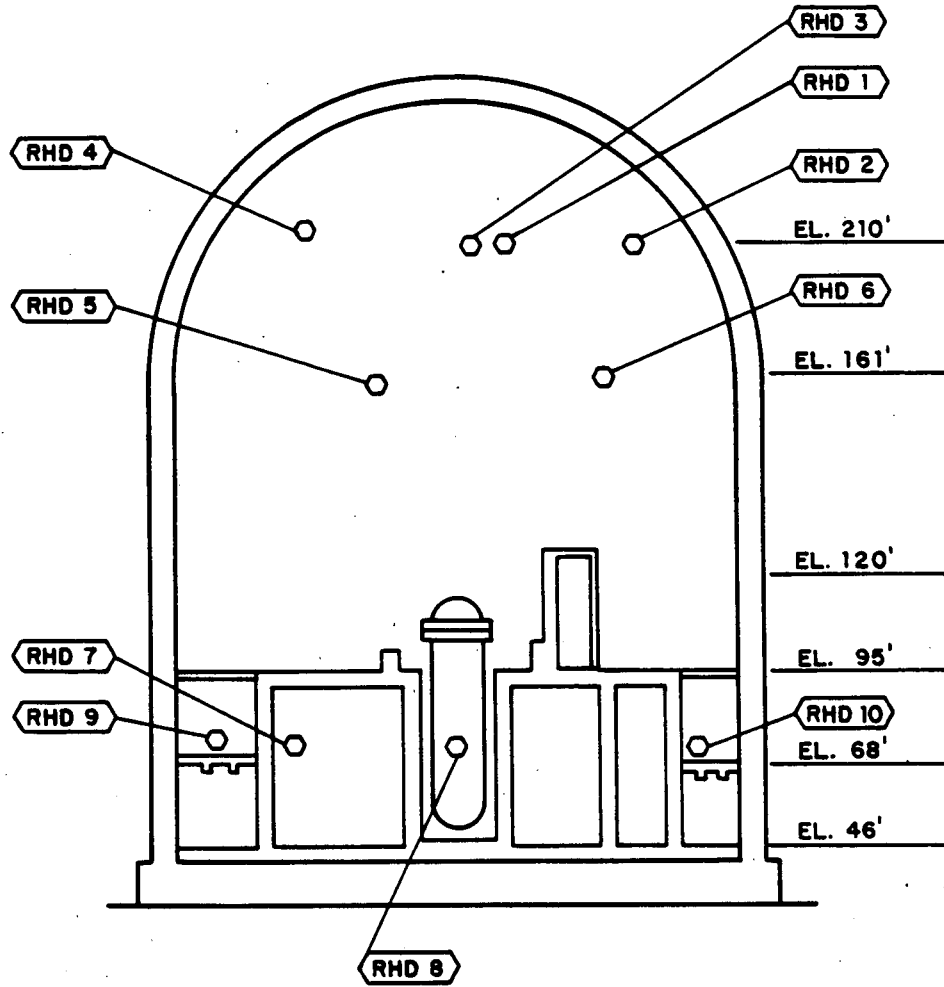
PLAN VIEW

**NOTES:**

1. INSTRUMENT LOCATIONS SHOWN ARE ONLY APPROXIMATE, REFERENCE IP2 DWG. No. A206586

ATTACHMENT 3.2 E  
ILRT RELATIVE HUMIDITY  
DETECTOR LOCATIONS (RHD)  
INDIAN POINT STATION - UNIT No. 2

# ATTACHMENT 3.2F



PROFILE VIEW

**NOTES:**

1. INSTRUMENT LOCATIONS SHOWN ARE ONLY APPROXIMATE, REFERENCE IP2 DWG. No. A206586

ATTACHMENT 3.2F  
ILRT RELATIVE HUMIDITY  
DETECTOR LOCATIONS (RHD)  
INDIAN POINT STATION - UNIT No. 2

### 3.3 TEST RESULTS

#### 3.3.1 Presentation of Test Results

The test data for the June 1991 ILRT is based on a 24 hour test period starting at 2100 hours on June 21, 1991. The final test results were determined using SWEC's ILRT computer program. The Measured Input Data, Reduced Input Variables, Mass Point Analysis Test Results, and representative graphs are contained in Attachments 3.3A through 3.3H.

The Mass Point Analysis Test Results for the ILRT satisfied the procedural acceptance criteria.

The Type A Test instrumentation was verified by the Superimposed Leakage Verification Test Method. The Measured Input Data, Reduced Input Variables, Mass Point Analysis Test Results, and representative graphs are contained in Attachments 3.3I through 3.3M.

The Mass Point Analysis Test Results for the Superimposed Leakage Verification Test satisfied the procedural acceptance criteria.

#### 3.3.2 ILRT Results

The 61.696 psia ILRT was conducted in accordance with Reference 2. The results for the ILRT and for the Supplemental Test are shown below.

##### 3.3.2.1 ILRT Results - Mass Point Analysis

	<u>Item</u>	<u>(Percent/Day)</u>
1.	$L_{am}$ , Leakage Rate Calculated	0.045934
2.	UCL, Upper Confidence Level	0.001857
3.	UCL-MP, $L_{am}$ Leakage Rate plus UCL (1+2)	0.047791

Results were within the acceptable limits of 0.75  $L_a$  or 0.075 percent/day.

### 3.3.2.2 Supplemental Test Results

The Supplemental Verification Test was performed using the Superimposed Leakage Verification Test Method in accordance with Reference 2. The results for the Superimposed Leakage Verification Test are shown below.

1. The Superimposed Leakage Verification Test is acceptable provided  $L_c$  falls within the following range:

$$(L_{am} + L_o - 0.25 \times L_a) \leq L_c \leq (L_{am} + L_o + 0.25 \times L_a)$$

Where:  $L_{am}$  = Type A calculated leakage rate (computer)  
( $L_{am}$  - MP = 0.045934 %/day)

$L_o$  = Superimposed leakage rate (rotometer)  
( $L_o$  = 0.09829 %/day)

$L_a$  = Maximum allowable leakage rate  
( $L_a$  = 0.1 %/day)

$L_c$  = Composite leakage rate (computer)  
( $L_c$  - MP = 0.122200 %/day)

#### a. Mass Point

$$(0.045934 + 0.09829 - 0.025) \leq 0.1222 \leq (0.045934 + 0.09829 + 0.025)$$

$$(0.119224) \leq 0.1222 \leq (0.169224)$$

The Superimposed Leakage Verification Test met the requirements set forth in Reference 2.

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/21/91 21:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.36	92.77	0.00	92.83	92.96	92.86	93.07	92.82	93.09	92.90
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
93.07	93.13	0.00	0.00	93.13	92.71	93.03	93.07	0.00	93.11
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.55	92.95	93.10	0.00	0.00	92.39	93.00	92.97	93.04	93.04
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.85	92.87	93.04	92.82	92.69	93.34	0.00	92.89	93.21	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
70.97	71.76	71.71	72.00	70.82	71.33	70.97	0.00	70.91	69.64
C140	C160								
61.803	61.826								

06/21/91 21:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.34	92.75	0.00	92.77	92.94	92.83	93.04	92.77	93.07	92.87
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
93.03	93.20	0.00	0.00	93.09	92.73	93.03	93.04	0.00	93.09
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.53	92.96	93.13	0.00	0.00	92.40	92.96	92.92	92.98	93.02
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.90	92.87	93.00	92.81	92.68	93.32	0.00	92.83	93.17	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.03	71.84	71.74	72.04	70.86	71.35	71.01	0.00	70.93	69.65
C140	C160								
61.797	61.822								

06/21/91 21:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.31	92.71	0.00	92.74	92.88	92.82	93.04	92.78	93.01	92.88
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.99	93.14	0.00	0.00	93.06	92.67	92.95	93.04	0.00	93.04
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.53	92.92	93.07	0.00	0.00	92.38	92.94	92.90	92.96	93.02
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.96	92.77	92.94	92.77	92.66	93.26	0.00	92.79	93.15	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.02	71.80	71.74	72.05	70.87	71.26	71.06	0.00	70.91	69.68
C140	C160								
61.797	61.818								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/21/91 21:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.30	92.71	0.00	92.73	92.86	92.79	93.01	92.75	92.99	92.82
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.96	93.09	0.00	0.00	93.03	92.66	92.92	93.01	0.00	93.01
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.39	92.91	93.06	0.00	0.00	92.38	92.89	92.85	92.97	92.93
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.87	92.78	92.95	92.74	92.48	93.23	0.00	92.78	93.10	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.09	71.82	71.82	72.04	70.90	71.29	71.05	0.00	70.99	69.67
C140	C160								
61.794	61.814								

06/21/91 22:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.28	92.68	0.00	92.70	92.85	92.77	92.96	92.70	92.96	92.81
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.94	93.09	0.00	0.00	93.04	92.60	92.92	92.98	0.00	93.00
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.43	92.88	93.03	0.00	0.00	92.32	92.90	92.88	92.96	92.94
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.83	92.75	92.90	92.69	92.62	93.18	0.00	92.73	93.09	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.02	71.88	71.84	72.07	70.87	71.34	70.99	0.00	71.00	69.69
C140	C160								
61.794	61.811								

06/21/91 22:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.24	92.64	0.00	92.66	92.82	92.75	92.94	92.71	92.92	92.79
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.92	93.03	0.00	0.00	93.01	92.56	92.82	92.96	0.00	92.99
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.47	92.83	92.98	0.00	0.00	92.30	92.92	92.81	92.92	92.87
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.77	92.70	92.87	92.68	92.57	93.21	0.00	92.73	93.04	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.07	71.92	71.80	72.08	70.90	71.37	71.02	0.00	71.00	69.74
C140	C160								
61.786	61.808								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/21/91 22:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.20	92.61	0.00	92.65	92.80	92.69	92.93	92.67	92.93	92.74
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.91	92.99	0.00	0.00	92.97	92.54	92.84	92.88	0.00	92.97
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.40	92.81	92.96	0.00	0.00	92.26	92.86	92.75	92.87	92.87
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.73	92.68	92.90	92.64	92.56	93.11	0.00	92.68	93.00	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.08	71.86	71.83	72.13	70.90	71.43	70.97	0.00	71.06	69.74
C140	C160								
61.780	61.804								

06/21/91 22:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.18	92.59	0.00	92.63	92.78	92.67	92.91	92.65	92.88	92.74
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.87	93.01	0.00	0.00	92.97	92.54	92.76	92.93	0.00	92.95
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.40	92.77	92.92	0.00	0.00	92.25	92.79	92.79	92.83	92.83
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.68	92.62	92.83	92.62	92.49	93.13	0.00	92.83	93.00	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.19	71.89	71.92	72.17	70.92	71.55	71.13	0.00	71.15	69.81
C140	C160								
61.780	61.801								

06/21/91 23:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.18	92.59	0.00	92.61	92.76	92.67	92.88	92.69	92.84	92.69
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.82	92.95	0.00	0.00	92.93	92.48	92.80	92.88	0.00	92.91
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.34	92.79	92.90	0.00	0.00	92.25	92.81	92.77	92.87	92.83
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.70	92.62	92.77	92.51	92.51	93.09	0.00	92.68	92.98	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.19	71.94	71.94	72.14	71.00	71.53	71.06	0.00	71.10	69.80
C140	C160								
61.780	61.798								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/21/91 23:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.12	92.54	0.00	92.59	92.74	92.63	92.84	92.61	92.82	92.67
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.84	92.93	0.00	0.00	92.88	92.48	92.74	92.84	0.00	92.91
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.36	92.77	92.90	0.00	0.00	92.26	92.79	92.75	92.81	92.79
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.64	92.62	92.77	92.58	92.49	93.13	0.00	92.79	92.96	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.15	71.92	71.88	72.20	70.94	71.57	71.11	0.00	71.09	69.81
C140	C160								
61.775	61.795								

06/21/91 23:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.09	92.52	0.00	92.54	92.71	92.61	92.84	92.59	92.80	92.65
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.82	92.93	0.00	0.00	92.88	92.46	92.71	92.82	0.00	92.91
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.32	92.74	92.87	0.00	0.00	92.19	92.77	92.73	92.79	92.79
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.66	92.57	92.77	92.53	92.51	93.11	0.00	92.66	92.94	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.16	71.93	71.91	72.19	71.01	71.55	71.13	0.00	71.14	69.87
C140	C160								
61.775	61.792								

06/21/91 23:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.09	92.50	0.00	92.52	92.67	92.59	92.82	92.56	92.74	92.63
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.80	92.91	0.00	0.00	92.87	92.43	92.69	92.78	0.00	92.82
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.34	92.69	92.86	0.00	0.00	92.17	92.73	92.69	92.79	92.75
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.64	92.53	92.73	92.47	92.45	93.03	0.00	92.66	92.90	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.17	71.95	72.01	72.20	71.05	71.57	71.17	0.00	71.17	69.83
C140	C160								
61.769	61.789								



**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 00:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.05	92.48	0.00	92.50	92.67	92.56	92.80	92.54	92.76	92.61
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.78	92.87	0.00	0.00	92.84	92.41	92.65	92.78	0.00	92.82
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.26	92.69	92.83	0.00	0.00	92.13	92.71	92.66	92.77	92.73
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.58	92.53	92.71	92.49	92.36	92.96	0.00	92.62	92.90	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.24	71.98	71.97	72.23	70.96	71.60	71.18	0.00	71.15	69.95
C140	C160								
61.761	61.786								

06/22/91 00:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.02	92.45	0.00	92.47	92.64	92.54	92.77	92.49	92.75	92.60
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.77	92.79	0.00	0.00	92.82	92.39	92.66	92.77	0.00	92.77
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.26	92.66	92.81	0.00	0.00	92.11	92.64	92.62	92.75	92.71
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.62	92.52	92.64	92.43	92.41	92.99	0.00	92.56	92.83	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.25	71.98	71.96	72.23	71.08	71.58	71.18	0.00	71.20	69.94
C140	C160								
61.761	61.781								

06/22/91 00:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.00	92.43	0.00	92.47	92.62	92.54	92.75	92.52	92.69	92.56
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.71	92.79	0.00	0.00	92.75	92.41	92.62	92.73	0.00	92.79
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.26	92.64	92.77	0.00	0.00	92.11	92.62	92.62	92.73	92.69
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.56	92.49	92.66	92.41	92.41	92.96	0.00	92.58	92.83	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.22	71.98	71.99	72.24	71.06	71.51	71.17	0.00	71.22	69.94
C140	C160								
61.761	61.780								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 00:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
92.01	92.41	0.00	92.41	92.59	92.50	92.74	92.48	92.69	92.56
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.69	92.80	0.00	0.00	92.78	92.37	92.59	92.74	0.00	92.76
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.19	92.60	92.73	0.00	0.00	92.06	92.62	92.60	92.66	92.66
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.49	92.49	92.64	92.34	92.36	92.94	0.00	92.56	92.79	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.27	72.02	71.96	72.30	70.99	71.54	71.20	0.00	71.21	69.94
C140	C160								
61.754	61.777								

06/22/91 01:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.99	92.39	0.00	92.39	92.56	92.48	92.71	92.48	92.69	92.54
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.69	92.84	0.00	0.00	92.78	92.33	92.61	92.69	0.00	92.74
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.19	92.60	92.83	0.00	0.00	92.06	92.52	92.49	92.64	92.64
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.52	92.47	92.64	92.39	92.32	92.90	0.00	92.58	92.77	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.30	72.05	71.98	72.25	71.04	71.56	71.18	0.00	71.21	70.02
C140	C160								
61.754	61.774								

06/22/91 01:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.94	92.36	0.00	92.39	92.56	92.45	92.69	92.43	92.69	92.52
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.64	92.77	0.00	0.00	92.73	92.43	92.60	92.64	0.00	92.69
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.15	92.57	92.83	0.00	0.00	92.04	92.49	92.44	92.68	92.62
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.49	92.43	92.57	92.36	92.21	92.81	0.00	92.47	92.77	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.24	72.13	72.06	72.27	71.02	71.56	71.26	0.00	71.28	69.99
C140	C160								
61.754	61.771								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 01:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.94	92.34	0.00	92.36	92.54	92.45	92.66	92.41	92.66	92.49
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.64	92.75	0.00	0.00	92.73	92.28	92.58	92.66	0.00	92.71
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.15	92.56	92.79	0.00	0.00	92.00	92.49	92.47	92.62	92.58
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.49	92.41	92.58	92.36	92.13	92.86	0.00	92.47	92.73	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.27	72.07	71.99	72.28	71.09	71.56	71.31	0.00	71.26	70.04
C140	C160								
61.749	61.767								

06/22/91 01:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.92	92.33	0.00	92.37	92.52	92.43	92.67	92.41	92.61	92.46
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.63	92.74	0.00	0.00	92.69	92.26	92.54	92.61	0.00	92.69
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.15	92.55	92.79	0.00	0.00	91.97	92.47	92.43	92.64	92.57
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.43	92.40	92.55	92.34	92.08	92.83	0.00	92.47	92.70	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.32	72.16	72.05	72.34	71.08	71.59	71.19	0.00	71.27	70.00
C140	C160								
61.741	61.765								

06/22/91 02:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.89	92.30	0.00	92.32	92.47	92.39	92.62	92.39	92.60	92.47
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.60	92.69	0.00	0.00	92.66	92.26	92.52	92.60	0.00	92.62
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.11	92.53	92.77	0.00	0.00	91.95	92.43	92.39	92.60	92.56
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.47	92.39	92.53	92.30	92.15	92.81	0.00	92.49	92.69	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.34	72.11	72.04	72.36	71.09	71.50	71.25	0.00	71.28	70.02
C140	C160								
61.741	61.763								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 02:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.87	92.28	0.00	92.32	92.49	92.39	92.62	92.34	92.58	92.47
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.60	92.66	0.00	0.00	92.62	92.24	92.56	92.60	0.00	92.64
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.08	92.49	92.77	0.00	0.00	91.97	92.43	92.36	92.55	92.57
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.44	92.34	92.51	92.30	92.15	92.79	0.00	92.43	92.64	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.34	72.14	72.05	72.32	71.11	71.50	71.25	0.00	71.32	70.12
C140	C160								
61.741	61.761								

06/22/91 02:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.88	92.29	0.00	92.31	92.46	92.37	92.63	92.35	92.56	92.39
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.56	92.69	0.00	0.00	92.63	92.22	92.48	92.59	0.00	92.61
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.06	92.49	92.73	0.00	0.00	91.94	92.39	92.41	92.60	92.52
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.41	92.32	92.47	92.26	92.15	92.77	0.00	92.45	92.64	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.37	72.06	72.01	72.34	71.15	71.63	71.33	0.00	71.31	70.07
C140	C160								
61.736	61.759								

06/22/91 02:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.86	92.27	0.00	92.29	92.48	92.35	92.57	92.35	92.52	92.42
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.55	92.67	0.00	0.00	92.63	92.22	92.46	92.57	0.00	92.61
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.08	92.47	92.70	0.00	0.00	91.89	92.38	92.38	92.53	92.47
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.40	92.32	92.47	92.23	92.10	92.73	0.00	92.44	92.64	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.39	72.13	72.09	72.41	71.12	71.63	71.28	0.00	71.30	70.08
C140	C160								
61.736	61.758								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 03:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.83	92.24	0.00	92.26	92.43	92.33	92.56	92.31	92.52	92.37
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.52	92.63	0.00	0.00	92.59	92.20	92.43	92.52	0.00	92.61
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.04	92.43	92.69	0.00	0.00	91.89	92.34	92.36	92.56	92.47
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.34	92.34	92.47	92.21	92.17	92.73	0.00	92.39	92.62	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.35	72.09	72.11	72.33	71.06	71.63	71.21	0.00	71.31	70.10
C140	C160								
61.736	61.756								

06/22/91 03:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.83	92.24	0.00	92.28	92.41	92.32	92.56	92.30	92.49	92.39
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.54	92.69	0.00	0.00	92.58	92.15	92.45	92.52	0.00	92.56
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.02	92.44	92.68	0.00	0.00	91.91	92.34	92.30	92.44	92.44
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.32	92.30	92.44	92.15	92.15	92.79	0.00	92.36	92.60	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.35	72.11	72.01	72.40	71.13	71.65	71.18	0.00	71.32	70.14
C140	C160								
61.736	61.754								

06/22/91 03:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.83	92.20	0.00	92.26	92.41	92.31	92.52	92.26	92.48	92.33
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.52	92.54	0.00	0.00	92.54	92.20	92.39	92.50	0.00	92.56
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
92.04	92.40	92.70	0.00	0.00	91.85	92.30	92.34	92.49	92.43
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.34	92.25	92.43	92.19	92.10	92.66	0.00	92.32	92.57	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.33	72.08	72.03	72.36	71.18	71.70	71.30	0.00	71.35	70.18
C140	C160								
61.736	61.752								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 03:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.81	92.19	0.00	92.26	92.41	92.30	92.52	92.28	92.49	92.34
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.49	92.60	0.00	0.00	92.54	92.13	92.39	92.52	0.00	92.54
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.95	92.44	92.68	0.00	0.00	91.86	92.31	92.25	92.44	92.39
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.29	92.25	92.38	92.14	92.03	92.68	0.00	92.31	92.55	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.10	72.01	72.34	71.13	71.66	71.25	0.00	71.36	70.17
C140	C160								
61.736	61.749								

06/22/91 04:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.78	92.17	0.00	92.21	92.36	92.26	92.49	92.26	92.45	92.32
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.49	92.58	0.00	0.00	92.49	92.17	92.39	92.45	0.00	92.49
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.97	92.38	92.62	0.00	0.00	91.82	92.27	92.27	92.44	92.40
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.30	92.21	92.38	92.13	92.00	92.64	0.00	92.27	92.51	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.31	72.07	72.04	72.40	71.11	71.65	71.29	0.00	71.39	70.13
C140	C160								
61.736	61.748								

06/22/91 04:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.77	92.15	0.00	92.19	92.36	92.28	92.47	92.21	92.43	92.30
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.45	92.52	0.00	0.00	92.49	92.08	92.39	92.47	0.00	92.45
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.95	92.41	92.64	0.00	0.00	91.87	92.30	92.28	92.43	92.39
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.23	92.23	92.36	92.11	92.08	92.66	0.00	92.39	92.52	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.39	72.10	72.06	72.38	71.15	71.67	71.19	0.00	71.35	70.17
C140	C160								
61.736	61.745								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 04:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.74	92.15	0.00	92.19	92.34	92.24	92.47	92.21	92.41	92.28
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.43	92.54	0.00	0.00	92.49	92.08	92.36	92.45	0.00	92.49
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.93	92.36	92.60	0.00	0.00	91.82	92.25	92.25	92.40	92.36
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.25	92.21	92.36	92.10	92.00	92.62	0.00	92.30	92.49	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.40	72.06	72.01	72.43	71.19	71.74	71.31	0.00	71.37	70.15
C140	C160								
61.736	61.743								

06/22/91 04:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.74	92.13	0.00	92.19	92.30	92.21	92.43	92.19	92.39	92.26
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.41	92.52	0.00	0.00	92.47	92.04	92.32	92.43	0.00	92.43
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.93	92.34	92.55	0.00	0.00	91.80	92.25	92.23	92.43	92.34
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.21	92.23	92.32	92.10	92.00	92.60	0.00	92.25	92.47	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.38	72.10	72.12	72.42	71.11	71.80	71.27	0.00	71.40	70.17
C140	C160								
61.736	61.740								

06/22/91 05:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.72	92.13	0.00	92.17	92.30	92.21	92.45	92.19	92.41	92.28
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.41	92.47	0.00	0.00	92.47	92.02	92.32	92.43	0.00	92.47
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.91	92.34	92.55	0.00	0.00	91.78	92.21	92.21	92.40	92.32
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.21	92.19	92.32	91.95	91.97	92.55	0.00	92.27	92.44	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.37	72.13	72.02	72.38	71.16	71.77	71.34	0.00	71.39	70.30
C140	C160								
61.736	61.738								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 05:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.72	92.13	0.00	92.15	92.30	92.19	92.43	92.17	92.39	92.26
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.39	92.54	0.00	0.00	92.43	92.02	92.30	92.36	0.00	92.45
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.85	92.32	92.55	0.00	0.00	91.80	92.21	92.19	92.36	92.32
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.17	92.15	92.27	92.00	91.80	92.51	0.00	92.23	92.44	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.41	72.10	72.04	72.40	71.16	71.76	71.33	0.00	71.40	70.20
C140	C160								
61.736	61.735								

06/22/91 05:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.70	92.11	0.00	92.15	92.30	92.19	92.41	92.19	92.36	92.24
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.39	92.45	0.00	0.00	92.43	92.02	92.28	92.36	0.00	92.41
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.85	92.32	92.56	0.00	0.00	91.76	92.23	92.21	92.34	92.30
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.15	92.15	92.28	91.98	91.89	92.53	0.00	92.23	92.41	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.48	72.12	72.05	72.41	71.14	71.77	71.39	0.00	71.44	70.22
C140	C160								
61.736	61.734								

06/22/91 05:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.68	92.08	0.00	92.11	92.26	92.17	92.39	92.15	92.34	92.26
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.36	92.45	0.00	0.00	92.41	92.00	92.28	92.34	0.00	92.45
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.85	92.32	92.51	0.00	0.00	91.76	92.21	92.15	92.32	92.25
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.15	92.15	92.27	91.91	91.91	92.49	0.00	92.25	92.38	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.43	72.14	72.06	72.43	71.11	71.77	71.38	0.00	71.42	70.30
C140	C160								
61.736	61.732								



**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 06:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.66	92.08	0.00	92.11	92.26	92.17	92.39	92.13	92.34	92.19
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.36	92.47	0.00	0.00	92.41	92.00	92.28	92.34	0.00	92.41
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.85	92.30	92.51	0.00	0.00	91.74	92.19	92.17	92.34	92.25
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.15	92.08	92.23	91.97	91.95	92.47	0.00	92.19	92.36	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.51	72.14	72.13	72.43	71.21	71.80	71.34	0.00	71.48	70.27
C140	C160								
61.736	61.729								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.66	92.07	0.00	92.08	92.24	92.13	92.36	92.13	92.34	92.19
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.34	92.41	0.00	0.00	92.39	91.98	92.28	92.30	0.00	92.39
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.83	92.26	92.47	0.00	0.00	91.72	92.13	92.15	92.30	92.23
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.15	92.06	92.23	91.94	91.94	92.49	0.00	92.19	92.36	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.45	72.17	72.15	72.42	71.24	71.85	71.32	0.00	71.47	70.29
C140	C160								
61.736	61.726								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.64	92.04	0.00	92.11	92.21	92.15	92.36	92.11	92.32	92.17
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.32	92.41	0.00	0.00	92.36	91.94	92.21	92.32	0.00	92.43
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.78	92.25	92.50	0.00	0.00	91.71	92.16	92.12	92.31	92.25
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.08	92.05	92.22	91.92	91.91	92.42	0.00	92.18	92.33	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.17	72.16	72.43	71.26	71.79	71.28	0.00	71.43	70.31
C140	C160								
61.736	61.725								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.64	92.04	0.00	92.07	92.24	92.13	92.34	92.11	92.30	92.17
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.32	92.39	0.00	0.00	92.36	91.94	92.21	92.30	0.00	92.39
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.80	92.23	92.47	0.00	0.00	91.68	92.17	92.15	92.27	92.21
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.08	92.06	92.21	91.95	91.82	92.43	0.00	92.15	92.32	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.46	72.14	72.14	72.42	71.15	71.81	71.42	0.00	71.49	70.32
C140	C160								
61.709	61.723								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.59	92.02	0.00	92.07	92.21	92.11	92.32	92.08	92.28	92.15
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.28	92.36	0.00	0.00	92.32	91.96	92.21	92.28	0.00	92.36
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.75	92.22	92.39	0.00	0.00	91.67	92.12	92.08	92.29	92.18
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.10	92.05	92.18	91.86	91.84	92.42	0.00	92.05	92.29	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.14	72.07	72.47	71.19	71.82	71.39	0.00	71.50	70.41
C140	C160								
61.709	61.720								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.61	92.02	0.00	92.07	92.24	92.11	92.32	92.08	92.28	92.17
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.26	92.34	0.00	0.00	92.30	91.94	92.19	92.26	0.00	92.30
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.78	92.20	92.44	0.00	0.00	91.67	92.10	92.10	92.20	92.18
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.05	91.99	92.14	91.86	91.86	92.46	0.00	92.10	92.29	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.12	72.14	72.44	71.13	71.80	71.36	0.00	71.49	70.35
C140	C160								
61.709	61.718								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.57	91.98	0.00	92.02	92.17	92.07	92.32	92.04	92.26	92.15
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.28	92.41	0.00	0.00	92.30	91.91	92.17	92.24	0.00	92.32
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.76	92.19	92.43	0.00	0.00	91.65	92.08	92.08	92.27	92.19
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.04	92.04	92.13	91.85	91.82	92.40	0.00	92.08	92.27	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.47	72.18	72.08	72.44	71.11	71.79	71.34	0.00	71.52	70.35
C140	C160								
61.709	61.716								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.57	91.98	0.00	92.02	92.17	92.08	92.30	92.04	92.28	92.08
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.28	92.39	0.00	0.00	92.28	91.87	92.17	92.21	0.00	92.34
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.69	92.21	92.38	0.00	0.00	91.65	92.10	92.06	92.23	92.17
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.97	92.00	92.13	91.87	91.74	92.34	0.00	92.08	92.25	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.43	72.16	72.20	72.41	71.20	71.82	71.47	0.00	71.52	70.34
C140	C160								
61.709	61.714								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.55	91.96	0.00	91.98	92.15	92.04	92.28	92.04	92.24	92.15
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.24	92.32	0.00	0.00	92.26	91.89	92.11	92.21	0.00	92.30
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.72	92.17	92.40	0.00	0.00	91.63	92.08	92.06	92.19	92.13
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
92.00	92.00	92.15	91.82	91.74	92.32	0.00	92.06	92.25	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.53	72.19	72.20	72.44	71.16	71.79	71.31	0.00	71.50	70.41
C140	C160								
61.581	61.711								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.55	91.96	0.00	91.98	92.15	92.04	92.26	92.02	92.24	92.08
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.24	92.34	0.00	0.00	92.28	91.85	92.13	92.21	0.00	92.30
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.72	92.15	92.36	0.00	0.00	91.61	92.08	92.06	92.19	92.08
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.95	92.00	92.10	91.82	91.80	92.34	0.00	92.06	92.23	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.17	72.18	72.47	71.24	71.77	71.40	0.00	71.54	70.41
C140	C160								
61.581	61.711								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.55	91.94	0.00	91.96	92.13	92.04	92.26	92.00	92.21	92.08
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.21	92.32	0.00	0.00	92.26	91.87	92.11	92.19	0.00	92.30
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.69	92.12	92.35	0.00	0.00	91.61	92.05	92.03	92.18	92.10
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.99	91.92	92.08	91.78	91.65	92.27	0.00	91.99	92.20	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.52	72.14	72.17	72.49	71.19	71.67	71.43	0.00	71.55	70.42
C140	C160								
61.581	61.708								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.53	91.94	0.00	91.96	92.11	92.04	92.24	92.00	92.21	92.11
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.21	92.28	0.00	0.00	92.24	91.87	92.08	92.19	0.00	92.26
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.65	92.13	92.34	0.00	0.00	91.61	92.06	92.02	92.19	92.06
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.95	91.95	92.04	91.78	91.63	92.27	0.00	91.97	92.21	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.50	72.17	72.09	72.45	71.18	71.76	71.41	0.00	71.53	70.38
C140	C160								
61.581	61.708								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 09:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.53	91.94	0.00	91.98	92.11	92.02	92.24	92.00	92.19	92.11
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.21	92.28	0.00	0.00	92.26	91.85	92.08	92.17	0.00	92.26
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.69	92.16	92.33	0.00	0.00	91.58	92.03	91.99	92.10	92.05
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.95	91.92	92.05	91.78	91.80	92.31	0.00	91.97	92.18	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.51	72.16	72.09	72.46	71.16	71.75	71.42	0.00	71.56	70.48
C140	C160								
61.581	61.706								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.52	91.94	0.00	91.96	92.12	92.01	92.24	91.99	92.22	92.09
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.22	92.29	0.00	0.00	92.22	91.83	92.07	92.18	0.00	92.26
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.67	92.10	92.35	0.00	0.00	91.58	92.05	92.01	92.16	92.05
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.97	91.91	92.03	91.78	91.75	92.25	0.00	91.97	92.16	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.52	72.18	72.09	72.43	71.17	71.78	71.47	0.00	71.52	70.46
C140	C160								
61.581	61.704								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.51	91.91	0.00	91.94	92.11	92.02	92.24	91.98	92.19	92.07
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.17	92.28	0.00	0.00	92.22	91.83	92.07	92.15	0.00	92.19
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.63	92.15	92.32	0.00	0.00	91.57	92.02	91.93	92.17	92.06
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.91	91.91	92.04	91.76	91.65	92.23	0.00	92.02	92.17	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.53	72.16	72.11	72.47	71.15	71.84	71.43	0.00	71.58	70.45
C140	C160								
61.581	61.702								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.49	91.89	0.00	91.94	92.08	92.00	92.21	91.98	92.19	92.08
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.15	92.21	0.00	0.00	92.21	91.81	92.07	92.13	0.00	92.19
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.65	92.13	92.27	0.00	0.00	91.57	92.02	91.97	92.13	92.02
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.91	91.87	92.02	91.74	91.78	92.23	0.00	91.97	92.15	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.46	72.17	72.19	72.45	71.15	71.76	71.36	0.00	71.59	70.47
C140	C160								
61.581	61.701								

06/22/91 10:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.49	91.89	0.00	91.91	92.11	91.98	92.21	91.96	92.19	92.02
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.17	92.24	0.00	0.00	92.19	91.78	92.04	92.11	0.00	92.19
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.61	92.10	92.25	0.00	0.00	91.52	91.93	91.97	92.10	91.99
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.88	91.84	91.97	91.71	91.71	92.23	0.00	91.93	92.10	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.16	72.14	72.45	71.20	71.80	71.44	0.00	71.60	70.48
C140	C160								
61.671	61.699								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.49	91.89	0.00	91.91	92.08	91.98	92.19	91.96	92.15	92.07
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.15	92.28	0.00	0.00	92.17	91.81	92.00	92.13	0.00	92.21
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.61	92.08	92.20	0.00	0.00	91.54	91.99	91.97	92.12	92.01
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.88	91.86	91.99	91.78	91.61	92.20	0.00	91.99	92.12	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.51	72.15	72.08	72.50	71.13	71.81	71.35	0.00	71.61	70.46
C140	C160								
61.671	61.698								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.47	91.87	0.00	91.89	92.04	91.98	92.19	91.94	92.15	92.07
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.17	92.19	0.00	0.00	92.17	91.78	92.00	92.08	0.00	92.15
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.58	92.10	92.20	0.00	0.00	91.54	91.99	91.91	92.08	92.01
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.92	91.86	91.97	91.73	91.54	92.16	0.00	91.88	92.10	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.17	72.17	72.46	71.10	71.76	71.43	0.00	71.60	70.46
C140	C160								
61.671	61.695								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.46	91.87	0.00	91.89	92.04	91.95	92.17	91.93	92.13	92.04
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.15	92.19	0.00	0.00	92.17	91.76	92.00	92.06	0.00	92.17
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.61	92.10	92.20	0.00	0.00	91.52	91.95	91.95	92.10	91.97
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.91	91.84	91.97	91.71	91.56	92.18	0.00	91.95	92.10	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.52	72.23	72.10	72.46	71.15	71.75	71.43	0.00	71.60	70.55
C140	C160								
61.664	61.693								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.46	91.85	0.00	91.89	92.06	91.95	92.19	91.91	92.13	92.06
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.17	92.19	0.00	0.00	92.15	91.76	91.98	92.06	0.00	92.17
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.61	92.03	92.18	0.00	0.00	91.47	91.92	91.95	92.05	91.99
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.88	91.86	91.95	91.71	91.67	92.16	0.00	91.91	92.08	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.51	72.18	72.14	72.46	71.13	71.91	71.30	0.00	71.63	70.47
C140	C160								
61.663	61.692								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 11:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.44	91.83	0.00	91.87	92.04	91.94	92.17	91.91	92.13	92.02
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.11	92.19	0.00	0.00	92.15	91.74	91.96	92.07	0.00	92.13
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.54	92.08	92.18	0.00	0.00	91.47	91.92	91.92	92.10	91.97
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.86	91.78	91.95	91.71	91.47	92.10	0.00	91.86	92.08	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.51	72.19	72.10	72.46	71.10	71.83	71.36	0.00	71.61	70.50
C140	C160								
61.663	61.689								

06/22/91 11:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.42	91.85	0.00	91.87	92.04	91.96	92.15	91.94	92.11	92.02
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.11	92.17	0.00	0.00	92.13	91.74	91.94	92.02	0.00	92.11
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.54	92.03	92.16	0.00	0.00	91.47	91.91	91.86	91.99	91.92
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.88	91.78	91.91	91.63	91.65	92.14	0.00	91.88	92.05	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.50	72.19	72.19	72.48	71.13	71.79	71.47	0.00	71.62	70.57
C140	C160								
61.663	61.687								

06/22/91 11:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.41	91.82	0.00	91.83	92.01	91.94	92.13	91.90	92.07	92.01
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.09	92.22	0.00	0.00	92.12	91.73	91.94	92.05	0.00	92.09
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.55	92.06	92.17	0.00	0.00	91.48	91.93	91.91	92.04	91.93
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.82	91.80	91.91	91.61	91.52	92.10	0.00	91.89	92.06	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.57	72.21	72.15	72.46	71.15	71.89	71.46	0.00	71.65	70.54
C140	C160								
61.660	61.685								



**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 12:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.40	91.78	0.00	91.81	92.00	91.91	92.11	91.91	92.08	92.02
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.08	92.17	0.00	0.00	92.08	91.72	91.91	92.00	0.00	92.11
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.54	92.01	92.14	0.00	0.00	91.45	91.88	91.92	92.01	91.91
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.82	91.78	91.88	91.65	91.45	92.08	0.00	91.82	92.01	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.21	72.18	72.48	71.10	71.86	71.43	0.00	71.68	70.59
C140	C160								
61.660	61.683								

06/22/91 12:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.38	91.81	0.00	91.81	91.98	91.89	92.13	91.87	92.08	91.96
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.08	92.15	0.00	0.00	92.07	91.70	91.94	92.00	0.00	92.11
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.53	92.02	92.15	0.00	0.00	91.47	91.91	91.89	92.02	91.91
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.83	91.76	91.87	91.64	91.48	92.06	0.00	91.83	92.00	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.53	72.27	72.11	72.54	71.13	71.88	71.45	0.00	71.65	70.56
C140	C160								
61.660	61.682								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.36	91.77	0.00	91.79	91.96	91.90	92.12	91.86	92.07	91.99
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.07	92.12	0.00	0.00	92.07	91.71	91.92	91.99	0.00	92.05
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.52	92.00	92.13	0.00	0.00	91.44	91.89	91.87	91.95	91.89
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.85	91.74	91.87	91.63	91.61	92.06	0.00	91.78	92.02	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.27	72.22	72.47	71.18	71.88	71.50	0.00	71.67	70.58
C140	C160								
61.660	61.679								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 12:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.36	91.77	0.00	91.78	91.96	91.91	92.11	91.85	92.04	91.98
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.07	92.15	0.00	0.00	92.04	91.68	91.87	91.98	0.00	92.04
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.47	91.99	92.12	0.00	0.00	91.43	91.88	91.86	91.95	91.91
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.73	91.75	91.86	91.56	91.39	92.01	0.00	91.78	91.99	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.53	72.20	72.20	72.47	71.15	71.84	71.48	0.00	71.67	70.59
C140	C160								
61.655	61.676								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.31	91.74	0.00	91.77	91.94	91.85	92.08	91.83	92.00	92.00
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.02	92.11	0.00	0.00	92.04	91.66	91.87	91.94	0.00	92.04
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.50	91.97	92.08	0.00	0.00	91.42	91.85	91.85	91.95	91.85
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.76	91.72	91.85	91.61	91.44	92.02	0.00	91.76	91.97	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.21	72.19	72.47	71.17	71.84	71.45	0.00	71.65	70.62
C140	C160								
61.652	61.675								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.32	91.75	0.00	91.75	91.94	91.83	92.09	91.83	92.03	91.94
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.03	92.09	0.00	0.00	92.03	91.66	91.88	91.96	0.00	92.07
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.46	91.93	92.10	0.00	0.00	91.42	91.89	91.87	91.91	91.87
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.74	91.74	91.82	91.55	91.46	92.06	0.00	91.80	91.95	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.52	72.24	72.18	72.50	71.17	71.86	71.46	0.00	71.68	70.60
C140	C160								
61.652	61.673								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.32	91.75	0.00	91.75	91.96	91.86	92.09	91.82	92.03	91.94
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.05	92.13	0.00	0.00	92.03	91.60	91.88	91.96	0.00	92.05
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.46	91.97	92.10	0.00	0.00	91.39	91.87	91.85	91.91	91.85
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.74	91.69	91.80	91.57	91.44	92.02	0.00	91.72	91.95	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.53	72.24	72.13	72.54	71.17	71.88	71.49	0.00	71.70	70.61
C140	C160								
61.646	61.671								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.30	91.72	0.00	91.74	91.94	91.83	92.08	91.81	92.04	91.94
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.02	92.11	0.00	0.00	92.00	91.64	91.81	91.94	0.00	92.02
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.45	91.91	92.05	0.00	0.00	91.37	91.84	91.80	91.92	91.82
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.69	91.71	91.80	91.54	91.54	91.99	0.00	91.80	91.95	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.48	72.23	72.19	72.49	71.18	71.86	71.50	0.00	71.70	70.62
C140	C160								
61.646	61.669								

06/22/91 14:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.30	91.73	0.00	91.73	91.90	91.83	92.09	91.82	92.01	91.94
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.05	92.12	0.00	0.00	91.99	91.62	91.83	91.94	0.00	91.99
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.46	91.93	92.08	0.00	0.00	91.39	91.82	91.78	91.89	91.85
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.72	91.65	91.78	91.55	91.52	92.00	0.00	91.78	91.93	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.53	72.23	72.11	72.51	71.11	71.93	71.45	0.00	71.70	70.62
C140	C160								
61.646	61.668								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 14:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.27	91.74	0.00	91.72	91.89	91.83	92.07	91.78	91.94	91.94
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.04	92.11	0.00	0.00	92.00	91.59	91.81	91.91	0.00	92.00
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.42	91.93	92.06	0.00	0.00	91.42	91.82	91.78	91.87	91.82
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.65	91.69	91.80	91.48	91.46	91.97	0.00	91.80	91.93	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.46	72.22	72.13	72.45	71.09	71.86	71.47	0.00	71.69	70.63
C140	C160								
61.646	61.668								

06/22/91 14:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.27	91.70	0.00	91.72	91.89	91.81	92.08	91.78	91.98	91.89
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.98	92.07	0.00	0.00	91.96	91.61	91.81	91.87	0.00	91.98
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.44	91.95	92.04	0.00	0.00	91.39	91.82	91.72	91.89	91.82
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.65	91.63	91.80	91.52	91.50	91.93	0.00	91.78	91.91	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.45	72.19	72.16	72.48	71.15	71.94	71.52	0.00	71.72	70.61
C140	C160								
61.639	61.666								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.28	91.71	0.00	91.71	91.90	91.82	92.05	91.82	92.01	91.96
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.01	92.07	0.00	0.00	91.94	91.60	91.79	91.88	0.00	92.01
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.43	91.91	91.97	0.00	0.00	91.39	91.80	91.78	91.91	91.82
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.65	91.67	91.75	91.47	91.39	91.92	0.00	91.78	91.88	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.45	72.21	72.12	72.46	71.13	71.86	71.47	0.00	71.73	70.63
C140	C160								
61.639	61.665								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 15:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.32	91.73	0.00	91.73	91.90	91.83	92.09	91.82	91.99	91.88
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.99	92.12	0.00	0.00	91.94	91.58	91.77	91.88	0.00	91.99
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.42	91.91	91.98	0.00	0.00	91.38	91.81	91.78	91.89	91.81
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.66	91.64	91.74	91.51	91.34	91.94	0.00	91.76	91.89	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.46	72.20	72.17	72.46	71.10	71.89	71.39	0.00	71.70	70.62
C140	C160								
61.639	61.664								

06/22/91 15:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.27	91.72	0.00	91.76	91.89	91.77	92.07	91.81	91.98	91.87
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.00	92.11	0.00	0.00	91.96	91.55	91.78	91.87	0.00	91.98
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.39	91.91	92.00	0.00	0.00	91.38	91.78	91.74	91.85	91.80
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.63	91.65	91.74	91.46	91.50	91.97	0.00	91.76	91.89	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.38	72.18	72.13	72.44	71.12	71.85	71.48	0.00	71.70	70.65
C140	C160								
61.639	61.663								

06/22/91 15:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.27	91.72	0.00	91.72	91.89	91.83	92.07	91.78	91.96	91.89
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
92.00	92.04	0.00	0.00	91.94	91.55	91.78	91.85	0.00	91.94
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.39	91.87	91.97	0.00	0.00	91.38	91.76	91.76	91.91	91.76
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.63	91.61	91.74	91.48	91.29	91.89	0.00	91.76	91.87	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.51	72.17	72.06	72.43	71.15	71.91	71.51	0.00	71.69	70.66
C140	C160								
61.639	61.662								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 15:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.25	91.70	0.00	91.70	91.85	91.81	92.07	91.81	91.91	91.83
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.98	92.04	0.00	0.00	91.89	91.53	91.78	91.85	0.00	91.98
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.37	91.84	91.95	0.00	0.00	91.34	91.73	91.78	91.88	91.75
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.65	91.61	91.71	91.37	91.24	91.82	0.00	91.67	91.84	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.51	72.16	72.05	72.44	71.13	71.83	71.46	0.00	71.72	70.66
C140	C160								
61.633	61.661								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.26	91.69	0.00	91.69	91.88	91.77	92.05	91.77	91.96	91.82
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.99	91.99	0.00	0.00	91.90	91.56	91.77	91.83	0.00	91.94
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.34	91.79	91.94	0.00	0.00	91.34	91.73	91.75	91.84	91.73
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.62	91.58	91.71	91.41	91.26	91.88	0.00	91.69	91.82	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.44	72.18	72.04	72.44	71.11	71.87	71.39	0.00	71.73	70.69
C140	C160								
61.633	61.659								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.25	91.68	0.00	91.70	91.87	91.78	92.04	91.74	91.96	91.83
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.98	92.00	0.00	0.00	91.89	91.51	91.77	91.85	0.00	91.91
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.34	91.84	91.95	0.00	0.00	91.34	91.69	91.65	91.82	91.73
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.61	91.58	91.73	91.39	91.26	91.82	0.00	91.63	91.84	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.17	72.04	72.43	71.12	71.89	71.45	0.00	71.70	70.70
C140	C160								
61.632	61.658								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 16:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.26	91.69	0.00	91.69	91.86	91.79	92.05	91.77	91.96	91.82
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.96	92.05	0.00	0.00	91.88	91.52	91.73	91.83	0.00	91.92
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.33	91.84	91.91	0.00	0.00	91.37	91.71	91.73	91.84	91.71
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.58	91.58	91.71	91.41	91.22	91.80	0.00	91.61	91.82	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.38	72.18	72.02	72.43	71.11	71.95	71.45	0.00	71.72	70.66
C140	C160								
61.632	61.656								

06/22/91 16:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.26	91.71	0.00	91.71	91.88	91.82	92.05	91.77	91.94	91.88
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.96	92.03	0.00	0.00	91.90	91.52	91.77	91.83	0.00	91.94
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.34	91.82	91.94	0.00	0.00	91.34	91.69	91.69	91.77	91.71
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.60	91.52	91.71	91.39	91.30	91.84	0.00	91.58	91.82	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.41	72.14	72.09	72.42	71.10	71.94	71.45	0.00	71.71	70.67
C140	C160								
61.632	61.655								

06/22/91 17:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.25	91.70	0.00	91.68	91.85	91.77	92.07	91.77	91.96	91.85
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.96	91.96	0.00	0.00	91.89	91.49	91.74	91.83	0.00	91.94
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.32	91.79	91.90	0.00	0.00	91.34	91.69	91.73	91.82	91.71
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.60	91.58	91.69	91.43	91.24	91.79	0.00	91.60	91.79	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.39	72.12	72.00	72.41	71.09	71.96	71.42	0.00	71.70	70.66
C140	C160								
61.632	61.654								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 17:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.23	91.68	0.00	91.70	91.85	91.78	92.07	91.77	91.94	91.83
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.94	92.00	0.00	0.00	91.89	91.47	91.72	91.81	0.00	91.89
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.28	91.80	91.91	0.00	0.00	91.34	91.67	91.65	91.78	91.69
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.61	91.56	91.69	91.39	91.26	91.75	0.00	91.61	91.78	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.44	72.15	72.00	72.40	71.17	71.87	71.49	0.00	71.73	70.68
C140	C160								
61.624	61.653								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.23	91.66	0.00	91.68	91.83	91.77	92.04	91.77	91.87	91.81
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.94	91.98	0.00	0.00	91.87	91.49	91.70	91.78	0.00	91.89
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.33	91.78	91.91	0.00	0.00	91.34	91.65	91.63	91.75	91.67
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.56	91.50	91.67	91.37	91.26	91.86	0.00	91.61	91.78	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.35	72.21	72.02	72.39	71.16	71.88	71.43	0.00	71.72	70.72
C140	C160								
61.624	61.652								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.23	91.66	0.00	91.66	91.83	91.74	92.02	91.72	91.89	91.77
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.89	91.94	0.00	0.00	91.83	91.47	91.68	91.78	0.00	91.87
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.26	91.78	91.91	0.00	0.00	91.33	91.65	91.67	91.78	91.67
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.58	91.52	91.63	91.34	91.20	91.73	0.00	91.54	91.75	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.38	72.23	72.00	72.44	71.15	71.90	71.42	0.00	71.73	70.69
C140	C160								
61.624	61.649								



**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 18:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.19	91.61	0.00	91.61	91.78	91.72	91.96	91.68	91.78	91.66
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.81	91.81	0.00	0.00	91.78	91.44	91.66	91.70	0.00	91.78
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.24	91.65	91.82	0.00	0.00	91.28	91.65	91.65	91.80	91.63
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.50	91.50	91.65	91.24	91.15	91.75	0.00	91.47	91.73	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.53	72.22	72.00	72.44	71.26	72.02	71.52	0.00	71.79	70.77
C140	C160								
61.621	61.644								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.08	91.51	0.00	91.51	91.70	91.61	91.87	91.59	91.74	91.64
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.72	91.81	0.00	0.00	91.72	91.44	91.59	91.66	0.00	91.74
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.21	91.60	91.82	0.00	0.00	91.17	91.56	91.56	91.75	91.60
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.47	91.43	91.47	91.15	91.19	91.60	0.00	91.30	91.62	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.56	72.24	72.19	72.51	71.22	71.96	71.54	0.00	71.88	71.01
C140	C160								
61.607	61.633								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.08	91.51	0.00	91.52	91.70	91.63	91.89	91.57	91.74	91.70
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.76	91.87	0.00	0.00	91.72	91.35	91.57	91.65	0.00	91.78
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.22	91.67	91.78	0.00	0.00	91.15	91.56	91.54	91.75	91.61
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.43	91.41	91.45	91.17	91.24	91.61	0.00	91.24	91.58	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.60	72.22	72.17	72.51	71.21	71.99	71.51	0.00	71.90	71.08
C140	C160								
61.607	61.631								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.11	91.54	0.00	91.54	91.71	91.62	91.92	91.62	91.75	91.69
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.79	91.82	0.00	0.00	91.73	91.41	91.58	91.62	0.00	91.82
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.17	91.71	91.78	0.00	0.00	91.20	91.56	91.54	91.73	91.58
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.39	91.43	91.41	91.24	91.15	91.61	0.00	91.30	91.65	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.45	72.22	72.07	72.49	71.20	72.00	71.49	0.00	71.85	71.07
C140	C160								
61.607	61.631								

06/22/91 19:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.10	91.55	0.00	91.55	91.72	91.66	91.91	91.66	91.77	91.68
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.77	91.94	0.00	0.00	91.72	91.36	91.57	91.68	0.00	91.77
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.21	91.70	91.74	0.00	0.00	91.21	91.53	91.49	91.64	91.57
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.42	91.40	91.47	91.19	91.25	91.66	0.00	91.34	91.64	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.45	72.21	72.08	72.48	71.19	72.00	71.53	0.00	71.84	70.92
C140	C160								
61.607	61.631								

06/22/91 19:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.12	91.57	0.00	91.55	91.72	91.64	91.94	91.61	91.83	91.66
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.77	91.87	0.00	0.00	91.72	91.36	91.59	91.68	0.00	91.77
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.19	91.65	91.71	0.00	0.00	91.21	91.54	91.54	91.60	91.56
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.45	91.41	91.52	91.21	91.28	91.65	0.00	91.45	91.65	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.19	72.06	72.43	71.20	71.99	71.54	0.00	71.83	70.88
C140	C160								
61.607	61.630								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.13	91.58	0.00	91.58	91.73	91.66	91.92	91.66	91.79	91.66
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.77	91.82	0.00	0.00	91.73	91.34	91.58	91.69	0.00	91.77
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.17	91.70	91.72	0.00	0.00	91.23	91.57	91.51	91.60	91.57
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.42	91.38	91.49	91.21	91.23	91.60	0.00	91.42	91.64	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.45	72.23	72.07	72.44	71.16	71.96	71.48	0.00	71.83	70.88
C140	C160								
61.607	61.630								

06/22/91 19:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.12	91.55	0.00	91.55	91.72	91.66	91.91	91.61	91.70	91.61
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.78	91.83	0.00	0.00	91.70	91.36	91.57	91.66	0.00	91.77
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.15	91.71	91.73	0.00	0.00	91.24	91.54	91.52	91.63	91.54
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.41	91.41	91.50	91.22	91.24	91.61	0.00	91.43	91.65	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.52	72.20	72.06	72.45	71.17	72.05	71.53	0.00	71.82	70.90
C140	C160								
61.607	61.630								

06/22/91 20:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.12	91.55	0.00	91.57	91.74	91.64	91.94	91.68	91.72	91.61
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.78	91.83	0.00	0.00	91.70	91.36	91.55	91.66	0.00	91.74
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.15	91.65	91.71	0.00	0.00	91.24	91.54	91.54	91.60	91.58
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.43	91.41	91.52	91.19	91.21	91.60	0.00	91.39	91.62	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.18	72.10	72.41	71.21	72.08	71.54	0.00	71.81	70.89
C140	C160								
61.607	61.630								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.13	91.58	0.00	91.58	91.75	91.69	91.96	91.66	91.71	91.66
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.79	91.83	0.00	0.00	91.75	91.34	91.56	91.69	0.00	91.75
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.15	91.69	91.73	0.00	0.00	91.26	91.52	91.50	91.63	91.56
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.43	91.34	91.52	91.20	91.24	91.58	0.00	91.41	91.61	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.45	72.19	72.04	72.44	71.20	71.94	71.53	0.00	71.85	70.90
C140	C160								
61.607	61.630								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.14	91.59	0.00	91.57	91.74	91.68	91.94	91.70	91.70	91.64
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.77	91.81	0.00	0.00	91.72	91.34	91.55	91.66	0.00	91.77
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.18	91.65	91.69	0.00	0.00	91.22	91.55	91.55	91.68	91.55
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.44	91.38	91.50	91.18	91.25	91.55	0.00	91.44	91.61	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.47	72.22	72.08	72.42	71.16	72.00	71.49	0.00	71.83	70.92
C140	C160								
61.607	61.629								

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C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.15	91.58	0.00	91.56	91.75	91.66	91.94	91.64	91.73	91.60
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.75	91.83	0.00	0.00	91.71	91.32	91.56	91.66	0.00	91.75
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.15	91.65	91.71	0.00	0.00	91.24	91.52	91.54	91.65	91.54
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.41	91.34	91.50	91.17	91.05	91.56	0.00	91.43	91.63	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.18	72.04	72.43	71.25	71.89	71.49	0.00	71.82	70.93
C140	C160								
61.606	61.628								

**ATTACHMENT 3.3A**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**MEASURED INPUT DATA**

06/22/91 21:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.15	91.56	0.00	91.56	91.73	91.64	91.94	91.64	91.66	91.56
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.73	91.82	0.00	0.00	91.71	91.36	91.52	91.64	0.00	91.71
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.13	91.65	91.69	0.00	0.00	91.22	91.52	91.52	91.63	91.52
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.39	91.34	91.47	91.15	91.22	91.56	0.00	91.37	91.61	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.44	72.17	72.07	72.40	71.17	71.89	71.54	0.00	71.82	70.98
C140	C160								
61.600	61.624								

**ATTACHMENT 3.3B**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**REDUCED INPUT VARIABLES**

<b>Time (hh:mm)</b>	<b>Press. (PSIA)</b>	<b>V.P. (PSI)</b>	<b>Temp. (R)</b>	<b>Dewpoint (V)</b>	<b>Mass (LbM)</b>
21:00	61.826	0.5443	552.599	0.544	781249.00
21:15	61.822	0.5440	552.581	0.544	781226.82
21:30	61.818	0.5435	552.549	0.543	781227.65
21:45	61.814	0.5431	552.515	0.543	781228.77
22:00	61.811	0.5428	552.497	0.543	781220.79
22:15	61.808	0.5426	552.467	0.543	781227.06
22:30	61.804	0.5420	552.436	0.542	781228.88
22:45	61.801	0.5425	552.420	0.542	781206.57
23:00	61.798	0.5419	552.393	0.542	781212.56
23:15	61.795	0.5418	552.378	0.542	781198.61
23:30	61.792	0.5416	552.354	0.542	781195.77
23:45	61.789	0.5412	552.324	0.541	781204.81
00:00	61.786	0.5409	552.300	0.541	781205.59
00:15	61.781	0.5407	552.274	0.541	781179.55
00:30	61.780	0.5402	552.257	0.540	781198.32
00:45	61.777	0.5399	552.232	0.540	781199.64
01:00	61.774	0.5398	552.222	0.540	781177.01
01:15	61.771	0.5393	552.191	0.539	781187.53
01:30	61.767	0.5393	552.171	0.539	781164.73
01:45	61.765	0.5389	552.151	0.539	781172.80
02:00	61.763	0.5386	552.130	0.539	781182.45
02:15	61.761	0.5385	552.115	0.538	781178.08
02:30	61.759	0.5383	552.100	0.538	781176.76
02:45	61.758	0.5381	552.083	0.538	781189.76
03:00	61.756	0.5375	552.062	0.538	781202.14
03:15	61.754	0.5379	552.052	0.538	781186.11
03:30	61.752	0.5373	552.027	0.537	781203.98
03:45	61.749	0.5371	552.013	0.537	781186.30
04:00	61.748	0.5365	551.988	0.537	781216.55
04:15	61.745	0.5365	551.982	0.537	781186.79
04:30	61.743	0.5364	551.962	0.536	781192.14
04:45	61.740	0.5361	551.940	0.536	781187.69
05:00	61.738	0.5361	551.928	0.536	781180.18
05:15	61.735	0.5357	551.909	0.536	781174.24
05:30	61.734	0.5357	551.901	0.536	781172.82
05:45	61.732	0.5354	551.883	0.535	781176.00
06:00	61.729	0.5353	551.875	0.535	781150.22
06:15	61.726	0.5352	551.856	0.535	781139.48
06:30	61.725	0.5347	551.842	0.535	781153.82
06:45	61.723	0.5347	551.831	0.535	781143.45
07:00	61.720	0.5344	551.804	0.534	781146.41
07:15	61.718	0.5343	551.800	0.534	781127.68
07:30	61.716	0.5339	551.786	0.534	781127.50
07:45	61.714	0.5338	551.770	0.534	781127.59
08:00	61.711	0.5335	551.754	0.534	781114.58
08:15	61.711	0.5336	551.746	0.534	781125.31
08:30	61.708	0.5330	551.724	0.533	781125.34
08:45	61.708	0.5330	551.714	0.533	781138.93
09:00	61.706	0.5332	551.715	0.533	781109.67
09:15	61.704	0.5328	551.709	0.533	781097.83
09:30	61.702	0.5327	551.693	0.533	781096.85
09:45	61.701	0.5324	551.681	0.532	781103.99
10:00	61.699	0.5322	551.660	0.532	781111.04
10:15	61.698	0.5321	551.662	0.532	781096.75
10:30	61.695	0.5319	551.640	0.532	781091.84
10:45	61.693	0.5320	551.636	0.532	781071.80

**ATTACHMENT 3.3B**  
**Indian Point 2 -1991 ILRT**  
**FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91**  
**REDUCED INPUT VARIABLES**

<b>Time (hh:mm)</b>	<b>Press. (PSIA)</b>	<b>V.P. (PSI)</b>	<b>Temp. (R)</b>	<b>Dewpoint (V)</b>	<b>Mass (LbM)</b>
11:00	61.692	0.5318	551.630	0.532	781069.06
11:15	61.689	0.5313	551.608	0.531	781068.31
11:30	61.687	0.5316	551.600	0.532	781050.30
11:45	61.685	0.5314	551.591	0.531	781039.61
12:00	61.683	0.5310	551.570	0.531	781050.04
12:15	61.682	0.5308	551.565	0.531	781046.09
12:30	61.679	0.5310	551.556	0.531	781018.90
12:45	61.676	0.5306	551.534	0.531	781016.50
13:00	61.675	0.5303	551.519	0.530	781028.82
13:15	61.673	0.5303	551.517	0.530	781006.27
13:30	61.671	0.5303	551.511	0.530	780988.34
13:45	61.669	0.5300	551.499	0.530	780984.54
14:00	61.668	0.5300	551.496	0.530	780975.69
14:15	61.668	0.5298	551.481	0.530	780999.35
14:30	61.666	0.5294	551.470	0.529	780994.80
14:45	61.665	0.5294	551.467	0.529	780986.50
15:00	61.664	0.5292	551.465	0.529	780978.93
15:15	61.663	0.5293	551.460	0.529	780971.97
15:30	61.662	0.5292	551.443	0.529	780984.55
15:45	61.661	0.5284	551.417	0.528	781017.90
16:00	61.659	0.5284	551.412	0.528	780999.32
16:15	61.658	0.5284	551.403	0.528	781000.08
16:30	61.656	0.5282	551.402	0.528	780977.62
16:45	61.655	0.5285	551.407	0.529	780954.21
17:00	61.654	0.5280	551.395	0.528	780965.15
17:15	61.653	0.5280	551.384	0.528	780967.96
17:30	61.652	0.5281	551.374	0.528	780968.73
17:45	61.649	0.5273	551.351	0.527	780972.86
18:00	61.644	0.5272	551.296	0.527	780988.56
18:15	61.633	0.5261	551.226	0.526	780959.81
18:30	61.631	0.5264	551.228	0.526	780928.24
18:45	61.631	0.5265	551.239	0.526	780912.24
19:00	61.631	0.5264	551.246	0.526	780903.08
19:15	61.630	0.5263	551.249	0.526	780886.55
19:30	61.630	0.5261	551.245	0.526	780895.35
19:45	61.630	0.5262	551.235	0.526	780908.11
20:00	61.630	0.5260	551.234	0.526	780911.53
20:15	61.630	0.5262	551.243	0.526	780895.90
20:30	61.629	0.5260	551.239	0.526	780893.05
20:45	61.628	0.5258	551.226	0.526	780900.97
21:00	61.624	0.5256	551.214	0.526	780868.74

# ATTACHMENT 3.3C

**Indian Point 2 -1991 ILRT  
FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91  
ABSOLUTE TEST METHOD, MASS POINT ANALYSIS TEST RESULTS**

<u>Time</u> (hh:mm) -----	<u>Mass</u> (LbM) -----	<u>Leakage</u> (PCT./DAY) -----	<u>Confidence</u> (PCT./DAY) -----	<u>UCL</u> (PCT./DAY) -----
21:00	781249.00	0.000000	0.000000	0.000000
21:15	781226.82	0.000000	0.000000	0.000000
21:30	781227.65	0.131160	0.697967	0.829127
21:45	781228.77	0.073559	0.145246	0.218805
22:00	781220.79	0.066924	0.067712	0.134635
22:15	781227.06	0.044465	0.048733	0.093198
22:30	781228.88	0.029287	0.037049	0.066336
22:45	781206.57	0.043368	0.030964	0.074331
23:00	781212.56	0.042142	0.023423	0.065565
23:15	781198.61	0.048565	0.019594	0.068159
23:30	781195.77	0.051450	0.016063	0.067513
23:45	781204.81	0.046863	0.014060	0.060922
00:00	781205.59	0.042231	0.012716	0.054947
00:15	781179.55	0.047253	0.011979	0.059232
00:30	781198.32	0.043571	0.010974	0.054545
00:45	781199.64	0.039790	0.010290	0.050080
01:00	781177.01	0.041866	0.009274	0.051140
01:15	781187.53	0.040320	0.008353	0.048673
01:30	781164.73	0.043002	0.007916	0.050918
01:45	781172.80	0.042923	0.007100	0.050023
02:00	781182.45	0.040769	0.006756	0.047524
02:15	781178.08	0.039304	0.006296	0.045600
02:30	781176.76	0.037939	0.005892	0.043831
02:45	781189.76	0.034910	0.006169	0.041079
03:00	781202.14	0.030826	0.006958	0.037784
03:15	781186.11	0.029035	0.006650	0.035685
03:30	781203.98	0.025641	0.007000	0.032640
03:45	781186.30	0.024339	0.006615	0.030954
04:00	781216.55	0.020557	0.007187	0.027744
04:15	781186.79	0.019709	0.006750	0.026460
04:30	781192.14	0.018499	0.006418	0.024916
04:45	781187.69	0.017707	0.006060	0.023766
05:00	781180.18	0.017449	0.005692	0.023141
05:15	781174.24	0.017515	0.005352	0.022866
05:30	781172.82	0.017569	0.005041	0.022611
05:45	781176.00	0.017360	0.004761	0.022122
06:00	781150.22	0.018461	0.004627	0.023088
06:15	781139.48	0.019857	0.004586	0.024443
06:30	781153.82	0.020294	0.004368	0.024662
06:45	781143.45	0.021061	0.004214	0.025274
07:00	781146.41	0.021521	0.004030	0.025551
07:15	781127.68	0.022611	0.003980	0.026591
07:30	781127.50	0.023492	0.003888	0.027379
07:45	781127.59	0.024183	0.003769	0.027952
08:00	781114.58	0.025179	0.003727	0.028906
08:15	781125.31	0.025615	0.003588	0.029203
08:30	781125.34	0.025928	0.003447	0.029376
08:45	781138.93	0.025713	0.003309	0.029021
09:00	781109.67	0.026339	0.003230	0.029569
09:15	781097.83	0.027174	0.003203	0.030377
09:30	781096.85	0.027881	0.003151	0.031032
09:45	781103.99	0.028257	0.003051	0.031307



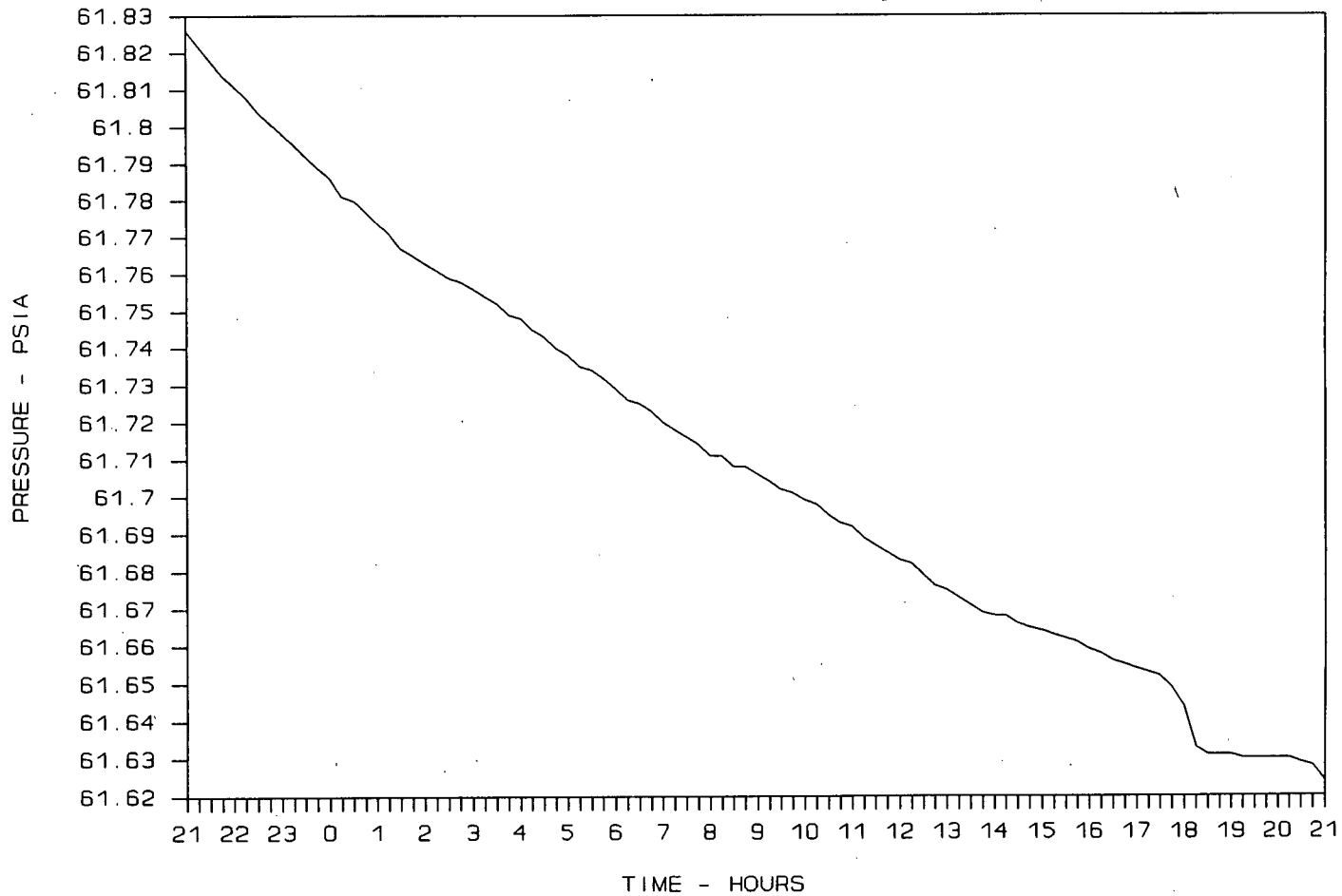
## ATTACHMENT 3.3C

**Indian Point 2 -1991 ILRT  
FROM 21:00 HOURS ON 06/21/91 TO 21:00 HOURS ON 06/22/91  
ABSOLUTE TEST METHOD, MASS POINT ANALYSIS TEST RESULTS**

Time (hh:mm)	Mass (LbM)	Leakage (PCT./DAY)	Confidence (PCT./DAY)	UCL (PCT./DAY)
10:00	781111.04	0.028351	0.002936	0.031287
10:15	781096.75	0.028732	0.002850	0.031582
10:30	781091.84	0.029136	0.002773	0.031908
10:45	781071.80	0.029905	0.002774	0.032679
11:00	781069.06	0.030603	0.002760	0.033363
11:15	781068.31	0.031194	0.002724	0.033918
11:30	781050.30	0.032049	0.002758	0.034807
11:45	781039.61	0.032984	0.002813	0.035798
12:00	781050.04	0.033574	0.002779	0.036354
12:15	781046.09	0.034133	0.002742	0.036875
12:30	781018.90	0.035086	0.002809	0.037895
12:45	781016.50	0.035944	0.002844	0.038788
13:00	781028.82	0.036463	0.002801	0.039264
13:15	781006.27	0.037263	0.002823	0.040086
13:30	780988.34	0.038235	0.002893	0.041128
13:45	780984.54	0.039134	0.002938	0.042072
14:00	780975.69	0.040044	0.002984	0.043028
14:15	780999.35	0.040479	0.002928	0.043407
14:30	780994.80	0.040896	0.002873	0.043769
14:45	780986.50	0.041349	0.002827	0.044175
15:00	780978.93	0.041823	0.002786	0.044609
15:15	780971.97	0.042307	0.002750	0.045057
15:30	780984.55	0.042546	0.002686	0.045232
15:45	781017.90	0.042303	0.002625	0.044928
16:00	780999.32	0.042264	0.002557	0.044821
16:15	781000.08	0.042177	0.002492	0.044670
16:30	780977.62	0.042320	0.002433	0.044752
16:45	780954.21	0.042679	0.002397	0.045075
17:00	780965.15	0.042852	0.002343	0.045194
17:15	780967.96	0.042944	0.002287	0.045231
17:30	780968.73	0.042985	0.002232	0.045217
17:45	780972.86	0.042944	0.002179	0.045123
18:00	780988.56	0.042712	0.002139	0.044851
18:15	780959.81	0.042746	0.002089	0.044835
18:30	780928.24	0.043047	0.002061	0.045108
18:45	780912.24	0.043446	0.002050	0.045496
19:00	780903.08	0.043871	0.002045	0.045916
19:15	780886.55	0.044384	0.002059	0.046443
19:30	780895.35	0.044755	0.002045	0.046800
19:45	780908.11	0.044961	0.002010	0.046971
20:00	780911.53	0.045094	0.001971	0.047065
20:15	780895.90	0.045318	0.001940	0.047259
20:30	780893.05	0.045521	0.001909	0.047431
20:45	780900.97	0.045620	0.001872	0.047492
21:00	780868.74	0.045934	0.001857	0.047791

# CONTAINMENT PRESSURE vs. TIME

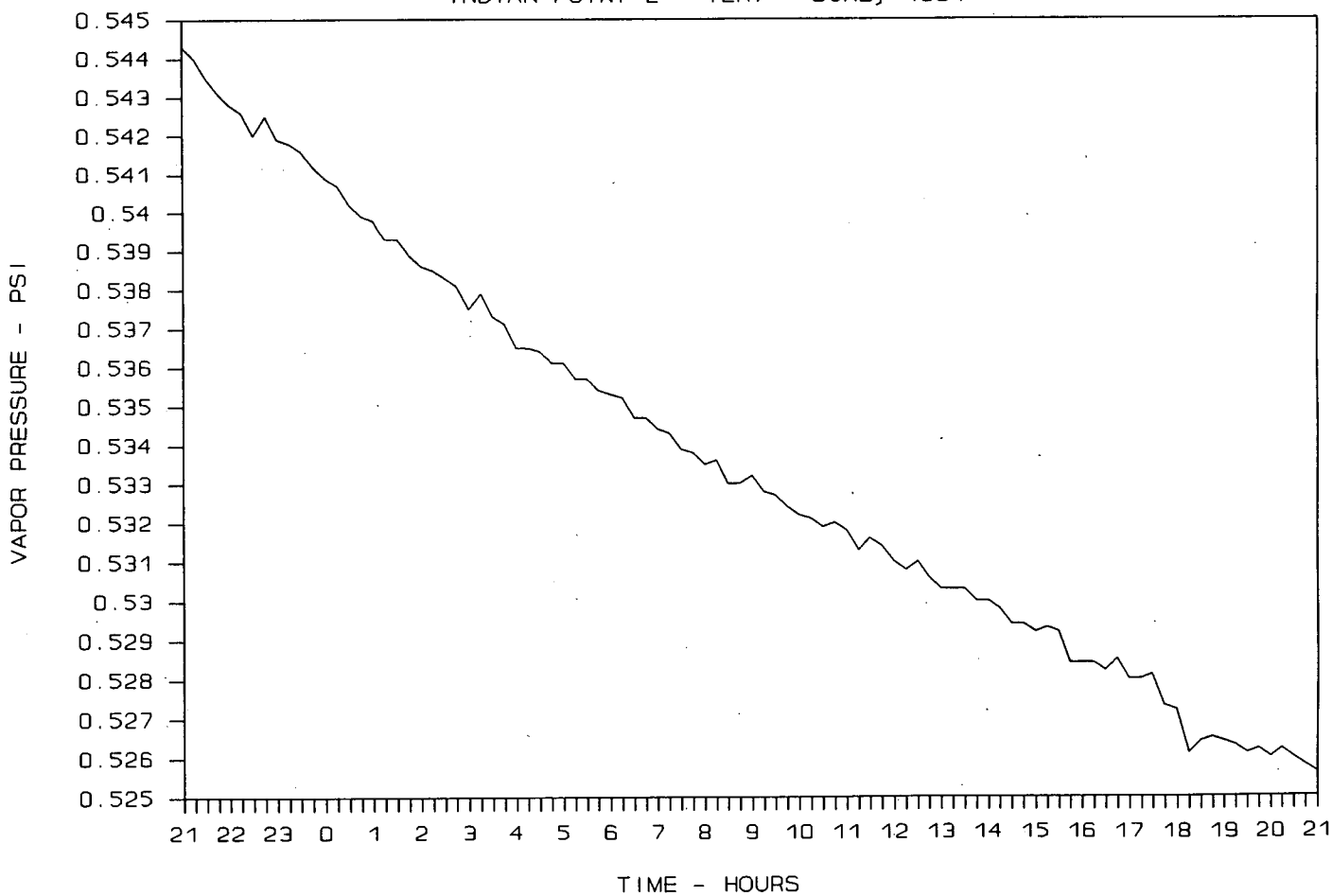
INDIAN POINT 2 - ILRT - JUNE, 1991



ATTACHMENT 3.3D  
GRAPH 1

# CONTAINMENT VAPOR PRESSURE vs. TIME

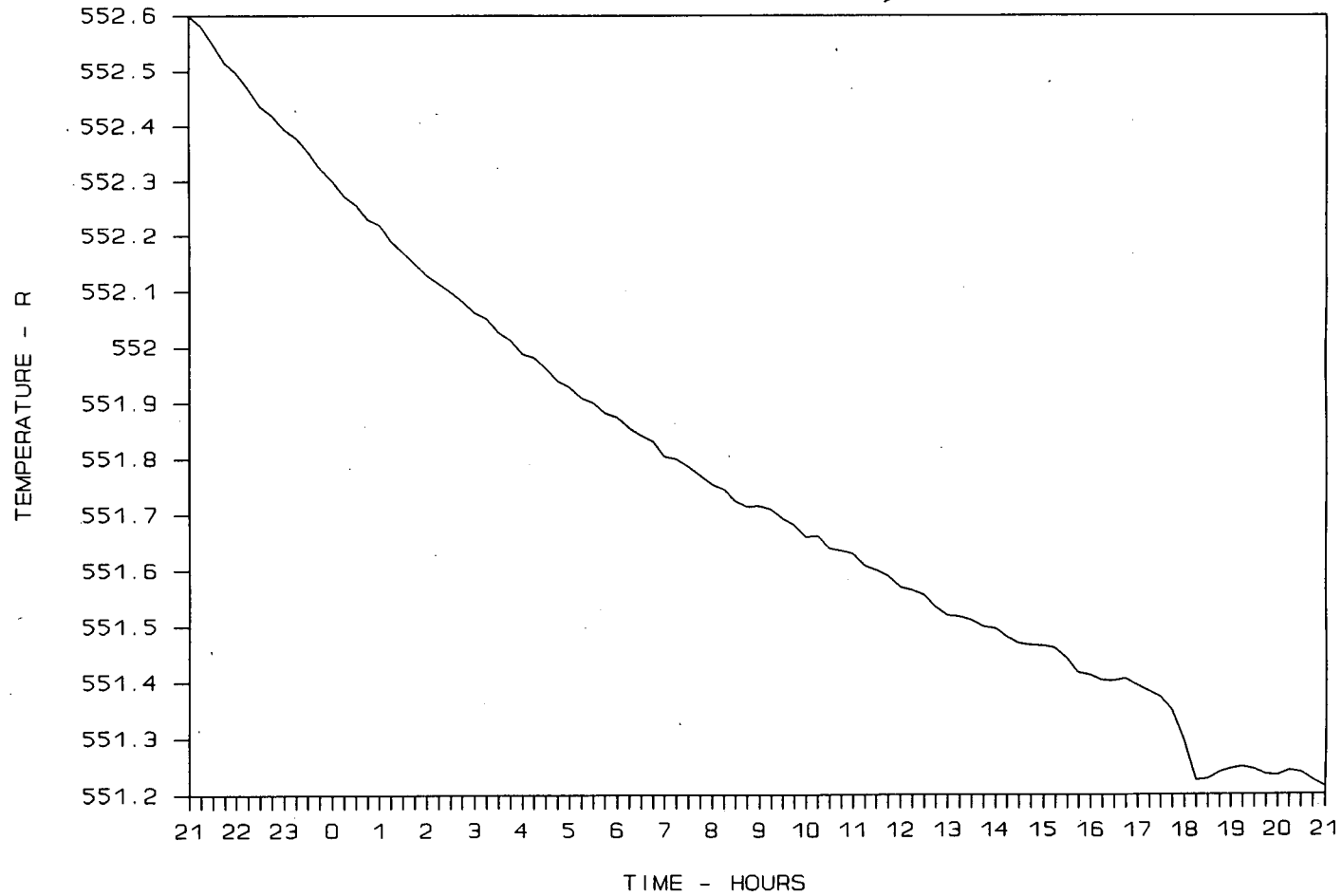
INDIAN POINT 2 - ILRT - JUNE, 1991



ATTACHMENT 3.3E  
GRAPH 2

# CONTAINMENT TEMPERATURE vs. TIME

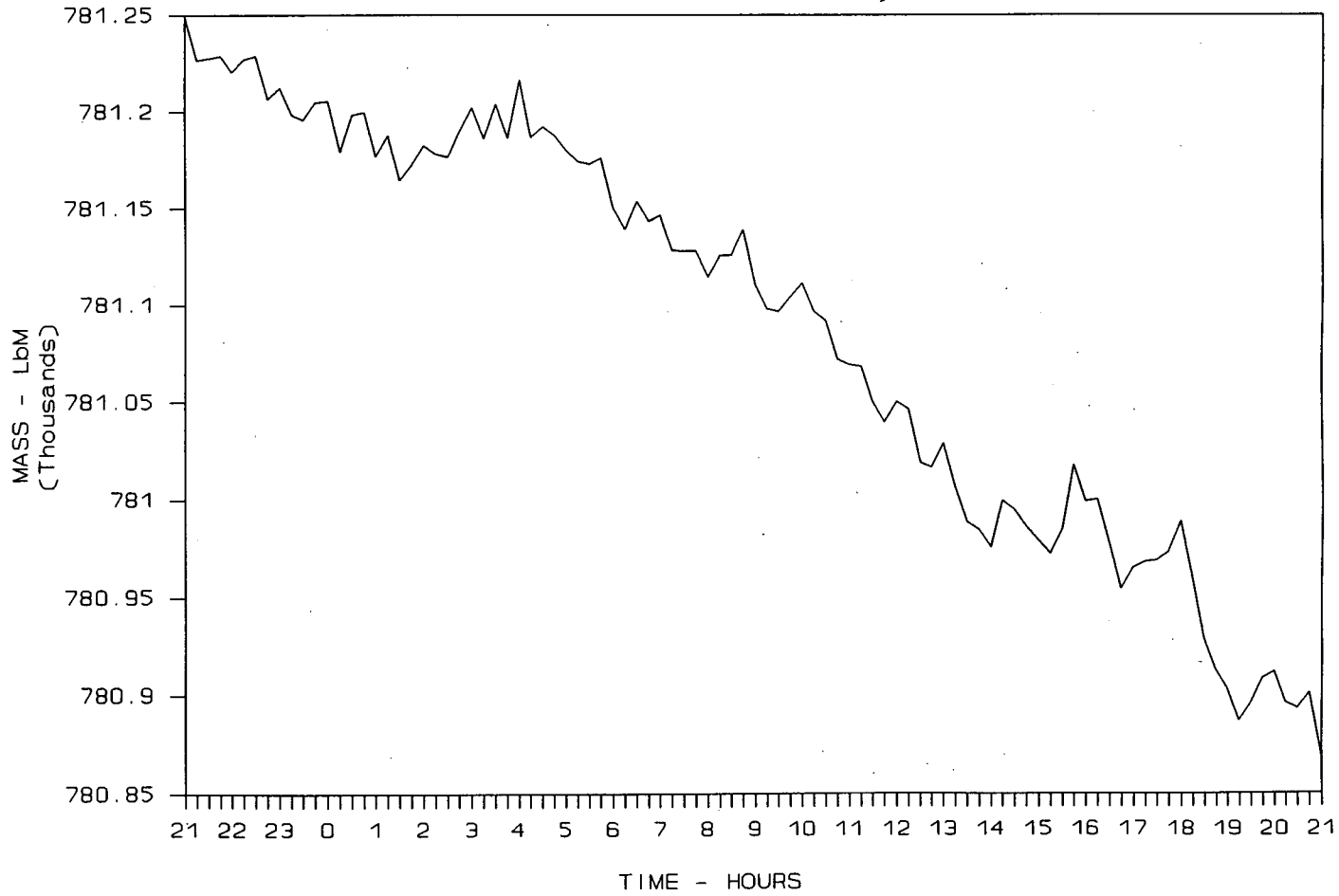
INDIAN POINT 2 - ILRT - JUNE, 1991



ATTACHMENT 3.3F  
GRAPH 3

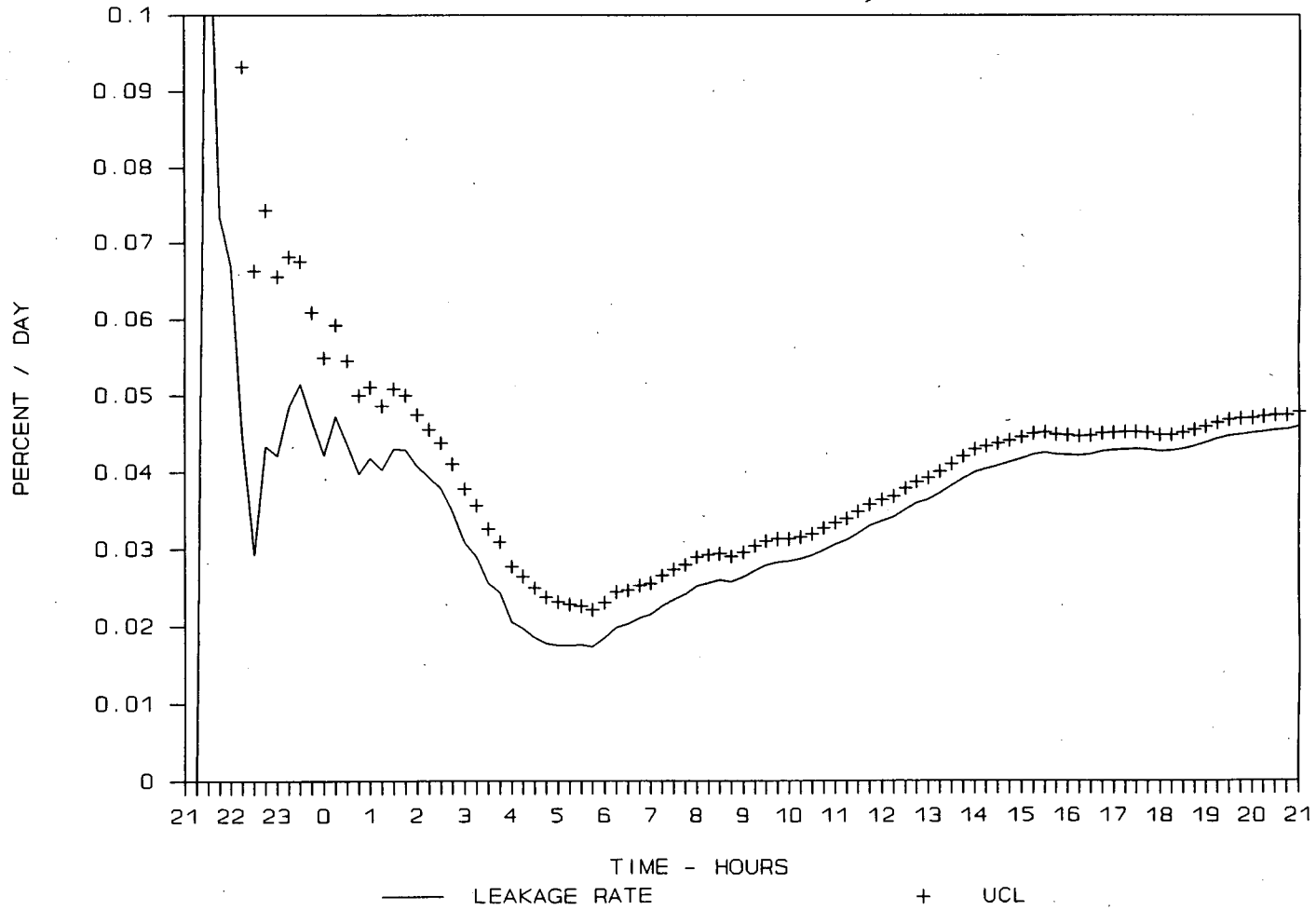
# CONTAINMENT MASS vs. TIME

INDIAN POINT 2 - ILRT - JUNE, 1991



# MASS POINT LEAKAGE & UCL

INDIAN POINT 2 - ILRT - JUNE, 1991



# ATTACHMENT 3.3I

## Indian Point 2 -1991 ILRT FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91 MEASURED INPUT DATA - VERIFICATION TEST

06/22/91 22:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.10	91.57	0.00	91.55	91.72	91.66	91.91	91.64	91.74	91.55
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.68	91.81	0.00	0.00	91.68	91.30	91.49	91.61	0.00	91.70
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.10	91.59	91.63	0.00	0.00	91.22	91.46	91.50	91.61	91.48
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.38	91.33	91.48	91.14	91.03	91.50	0.00	91.35	91.57	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.46	72.16	72.03	72.39	71.21	71.91	71.45	0.00	71.84	70.95
C140	C160								
61.597	61.617								

06/22/91 22:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.08	91.54	0.00	91.52	91.71	91.64	91.92	91.62	91.66	91.52
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.69	91.77	0.00	0.00	91.66	91.30	91.49	91.58	0.00	91.69
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.08	91.61	91.65	0.00	0.00	91.22	91.48	91.50	91.59	91.48
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.35	91.31	91.44	91.10	91.01	91.48	0.00	91.35	91.55	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.40	72.15	72.05	72.45	71.25	71.81	71.46	0.00	71.83	70.96
C140	C160								
61.593	61.616								

06/22/91 22:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.08	91.53	0.00	91.51	91.70	91.61	91.91	91.64	91.68	91.49
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.66	91.81	0.00	0.00	91.61	91.30	91.44	91.57	0.00	91.66
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.08	91.58	91.62	0.00	0.00	91.19	91.43	91.45	91.60	91.47
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.36	91.30	91.43	91.13	91.02	91.49	0.00	91.34	91.54	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.41	72.25	72.02	72.40	71.21	71.80	71.50	0.00	71.85	70.97
C140	C160								
61.590	61.612								

06/22/91 23:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.08	91.54	0.00	91.54	91.71	91.62	91.92	91.62	91.64	91.52
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.71	91.79	0.00	0.00	91.66	91.28	91.45	91.60	0.00	91.69
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.05	91.56	91.61	0.00	0.00	91.18	91.41	91.46	91.54	91.43
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.30	91.24	91.41	91.11	91.11	91.46	0.00	91.28	91.52	0.00

# ATTACHMENT 3.3I

## Indian Point 2 -1991 ILRT FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91 MEASURED INPUT DATA - VERIFICATION TEST

C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.15	72.03	72.38	71.19	71.74	71.56	0.00	71.87	70.99
C140	C160								
61.590	61.612								
06/22/91 23:15									
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.08	91.54	0.00	91.52	91.71	91.60	91.92	91.64	91.64	91.52
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.69	91.77	0.00	0.00	91.64	91.28	91.47	91.60	0.00	91.69
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.07	91.58	91.62	0.00	0.00	91.19	91.45	91.49	91.56	91.47
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.32	91.30	91.45	91.07	91.00	91.47	0.00	91.28	91.52	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.43	72.18	72.02	72.36	71.15	71.79	71.50	0.00	71.86	70.98
C140	C160								
61.586	61.608								
06/22/91 23:30									
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.07	91.52	0.00	91.52	91.69	91.60	91.90	91.62	91.60	91.52
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.66	91.71	0.00	0.00	91.64	91.28	91.47	91.58	0.00	91.64
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.07	91.58	91.61	0.00	0.00	91.20	91.41	91.52	91.61	91.45
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.33	91.30	91.43	91.13	91.03	91.45	0.00	91.28	91.54	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.40	72.20	72.03	72.37	71.15	71.71	71.44	0.00	71.84	70.99
C140	C160								
61.586	61.608								
06/22/91 23:45									
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.04	91.52	0.00	91.49	91.69	91.60	91.90	91.58	91.60	91.54
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.64	91.73	0.00	0.00	91.64	91.24	91.45	91.54	0.00	91.64
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.08	91.56	91.60	0.00	0.00	91.17	91.43	91.45	91.58	91.45
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.32	91.24	91.41	91.07	90.98	91.41	0.00	91.30	91.52	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.44	72.16	72.01	72.37	71.18	71.79	71.49	0.00	71.83	71.03
C140	C160								
61.586	61.608								
06/23/91 00:00									
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.06	91.51	0.00	91.51	91.68	91.59	91.89	91.59	91.61	91.53



# ATTACHMENT 3.3I

## Indian Point 2 -1991 ILRT FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91 MEASURED INPUT DATA - VERIFICATION TEST

C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.64	91.74	0.00	0.00	91.61	91.23	91.44	91.57	0.00	91.66
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.07	91.54	91.60	0.00	0.00	91.17	91.41	91.45	91.56	91.43
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.34	91.28	91.41	91.04	91.00	91.41	0.00	91.26	91.49	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.12	72.01	72.37	71.20	71.85	71.47	0.00	71.86	70.99
C140	C160								
61.584	61.608								

06/23/91 00:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.04	91.49	0.00	91.49	91.68	91.59	91.87	91.59	91.57	91.49
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.61	91.72	0.00	0.00	91.61	91.25	91.42	91.53	0.00	91.64
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.07	91.56	91.56	0.00	0.00	91.17	91.39	91.45	91.56	91.43
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.34	91.24	91.37	91.09	91.05	91.41	0.00	91.30	91.50	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.44	72.14	72.00	72.36	71.15	71.81	71.41	0.00	71.85	71.01
C140	C160								
61.584	61.606								

06/23/91 00:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.04	91.49	0.00	91.47	91.69	91.60	91.92	91.58	91.58	91.45
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.62	91.73	0.00	0.00	91.62	91.24	91.41	91.58	0.00	91.64
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.03	91.55	91.59	0.00	0.00	91.18	91.42	91.46	91.55	91.46
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.29	91.33	91.42	91.12	90.95	91.42	0.00	91.27	91.50	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.41	72.16	71.99	72.38	71.24	71.98	71.41	0.00	71.85	70.98
C140	C160								
61.584	61.604								

06/23/91 00:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.04	91.51	0.00	91.47	91.68	91.57	91.89	91.59	91.59	91.47
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.64	91.77	0.00	0.00	91.59	91.23	91.42	91.55	0.00	91.61
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.03	91.54	91.58	0.00	0.00	91.17	91.41	91.43	91.52	91.41
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.30	91.22	91.39	91.07	91.05	91.41	0.00	91.22	91.47	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.40	72.11	71.98	72.33	71.15	71.95	71.47	0.00	71.85	70.99
C140	C160								
61.579	61.604								

# ATTACHMENT 3.3I

## Indian Point 2 -1991 ILRT FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91 MEASURED INPUT DATA - VERIFICATION TEST

06/23/91 01:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.02	91.49	0.00	91.44	91.66	91.57	91.87	91.55	91.55	91.47
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.59	91.70	0.00	0.00	91.57	91.21	91.42	91.51	0.00	91.61
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.05	91.54	91.58	0.00	0.00	91.17	91.41	91.43	91.54	91.41
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.28	91.26	91.41	91.09	90.98	91.39	0.00	91.24	91.47	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.40	72.10	71.96	72.36	71.11	71.92	71.49	0.00	71.83	71.04
C140	C160								
61.579	61.601								

06/23/91 01:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.02	91.49	0.00	91.47	91.66	91.56	91.88	91.58	91.58	91.47
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.62	91.69	0.00	0.00	91.58	91.21	91.41	91.54	0.00	91.62
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.00	91.52	91.56	0.00	0.00	91.17	91.39	91.43	91.54	91.43
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.30	91.28	91.39	91.03	90.96	91.39	0.00	91.24	91.50	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.49	72.14	71.96	72.35	71.23	72.03	71.52	0.00	71.86	71.02
C140	C160								
61.579	61.598								

06/23/91 01:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.02	91.49	0.00	91.45	91.66	91.58	91.90	91.58	91.56	91.45
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.60	91.71	0.00	0.00	91.62	91.24	91.41	91.52	0.00	91.62
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.04	91.52	91.56	0.00	0.00	91.15	91.36	91.39	91.52	91.41
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.30	91.21	91.36	91.07	90.96	91.39	0.00	91.17	91.45	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.43	72.11	72.01	72.32	71.17	71.97	71.47	0.00	71.83	71.04
C140	C160								
61.573	61.597								

06/23/91 01:45

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.02	91.49	0.00	91.47	91.66	91.57	91.89	91.57	91.55	91.47
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.57	91.72	0.00	0.00	91.57	91.19	91.38	91.55	0.00	91.61
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.03	91.52	91.56	0.00	0.00	91.13	91.39	91.39	91.50	91.39

# ATTACHMENT 3.3I

## Indian Point 2 -1991 ILRT FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91 MEASURED INPUT DATA - VERIFICATION TEST

C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.33	91.24	91.37	91.05	90.96	91.37	0.00	91.24	91.47	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.39	72.16	71.96	72.33	71.13	72.00	71.47	0.00	71.82	71.02
C140	C160								
61.573	61.595								

06/23/91 02:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.02	91.49	0.00	91.47	91.64	91.55	91.85	91.59	91.55	91.47
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.59	91.68	0.00	0.00	91.57	91.19	91.38	91.51	0.00	91.59
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.00	91.51	91.55	0.00	0.00	91.14	91.34	91.42	91.51	91.36
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.27	91.23	91.34	91.00	90.89	91.36	0.00	91.21	91.44	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.43	72.09	71.95	72.34	71.14	71.96	71.43	0.00	71.83	71.02
C140	C160								
61.572	61.594								

06/23/91 02:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.02	91.47	0.00	91.44	91.66	91.55	91.87	91.53	91.57	91.42
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.59	91.66	0.00	0.00	91.57	91.17	91.40	91.51	0.00	91.61
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.04	91.49	91.51	0.00	0.00	91.12	91.38	91.42	91.51	91.38
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.25	91.23	91.34	91.02	90.89	91.31	0.00	91.12	91.44	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.41	72.06	71.94	72.29	71.11	71.92	71.41	0.00	71.82	71.03
C140	C160								
61.572	61.593								

06/23/91 02:30

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
91.00	91.47	0.00	91.47	91.64	91.56	91.88	91.56	91.54	91.45
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.58	91.64	0.00	0.00	91.58	91.19	91.41	91.49	0.00	91.62
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
90.97	91.49	91.53	0.00	0.00	91.12	91.34	91.40	91.51	91.36
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.27	91.21	91.31	90.95	90.87	91.34	0.00	91.19	91.42	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.44	72.13	71.94	72.33	71.10	71.98	71.40	0.00	71.84	71.04
C140	C160								
61.567	61.589								

06/23/91 02:45

# ATTACHMENT 3.3I

## Indian Point 2 -1991 ILRT FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91 MEASURED INPUT DATA - VERIFICATION TEST

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
90.98	91.47	0.00	91.43	91.62	91.54	91.86	91.56	91.52	91.36
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.58	91.69	0.00	0.00	91.56	91.19	91.34	91.49	0.00	91.60
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
91.00	91.49	91.49	0.00	0.00	91.10	91.31	91.38	91.49	91.36
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.25	91.19	91.34	91.02	90.93	91.34	0.00	91.19	91.40	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.38	72.10	71.97	72.33	71.20	71.98	71.45	0.00	71.85	71.06
C140	C160								
61.562	61.589								

06/23/91 03:00

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
90.98	91.45	0.00	91.43	91.62	91.54	91.86	91.54	91.56	91.43
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.58	91.66	0.00	0.00	91.54	91.19	91.39	91.47	0.00	91.58
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
90.98	91.47	91.52	0.00	0.00	91.13	91.34	91.41	91.49	91.36
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.24	91.13	91.30	91.00	90.87	91.30	0.00	91.17	91.39	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.42	72.11	71.95	72.29	71.12	71.93	71.47	0.00	71.85	71.03
C140	C160								
61.562	61.587								

06/23/91 03:15

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
90.98	91.45	0.00	91.43	91.62	91.54	91.83	91.56	91.60	91.43
C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
91.58	91.69	0.00	0.00	91.54	91.17	91.39	91.47	0.00	91.56
C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
90.98	91.45	91.49	0.00	0.00	91.11	91.34	91.41	91.47	91.34
C50	C51	C52	C53	C54	C55	C56	C57	C58	C59
91.24	91.21	91.30	91.00	90.89	91.32	0.00	91.15	91.41	0.00
C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
71.38	72.09	71.97	72.29	71.10	71.99	71.38	0.00	71.83	71.06
C140	C160								
61.562	61.582								

# ATTACHMENT 3.3J

## Indian Point 2 -1991 ILRT FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91 REDUCED INPUT VARIABLES - VERIFICATION TEST

Time (hh:mm) -----	Press. (PSIA) -----	V.P. (PSI) -----	Temp. (R) -----	Dewpoint (V) -----	Mass (LbM) -----
22:15	61.617	0.5251	551.190	0.525	780820.57
22:30	61.616	0.5248	551.173	0.525	780835.45
22:45	61.612	0.5245	551.162	0.524	780802.98
23:00	61.612	0.5246	551.160	0.525	780804.91
23:15	61.608	0.5245	551.160	0.524	780755.01
23:30	61.608	0.5243	551.152	0.524	780768.76
23:45	61.608	0.5242	551.137	0.524	780791.74
00:00	61.608	0.5241	551.134	0.524	780797.94
00:15	61.606	0.5238	551.125	0.524	780787.65
00:30	61.604	0.5240	551.128	0.524	780755.70
00:45	61.604	0.5238	551.120	0.524	780770.19
01:00	61.601	0.5235	551.106	0.523	780755.31
01:15	61.598	0.5240	551.107	0.524	780708.20
01:30	61.597	0.5236	551.102	0.524	780707.49
01:45	61.595	0.5234	551.099	0.523	780689.28
02:00	61.594	0.5233	551.084	0.523	780698.98
02:15	61.593	0.5228	551.076	0.523	780703.64
02:30	61.589	0.5231	551.073	0.523	780653.09
02:45	61.589	0.5229	551.064	0.523	780668.95
03:00	61.587	0.5227	551.060	0.523	780650.68
03:15	61.582	0.5227	551.061	0.523	780584.83

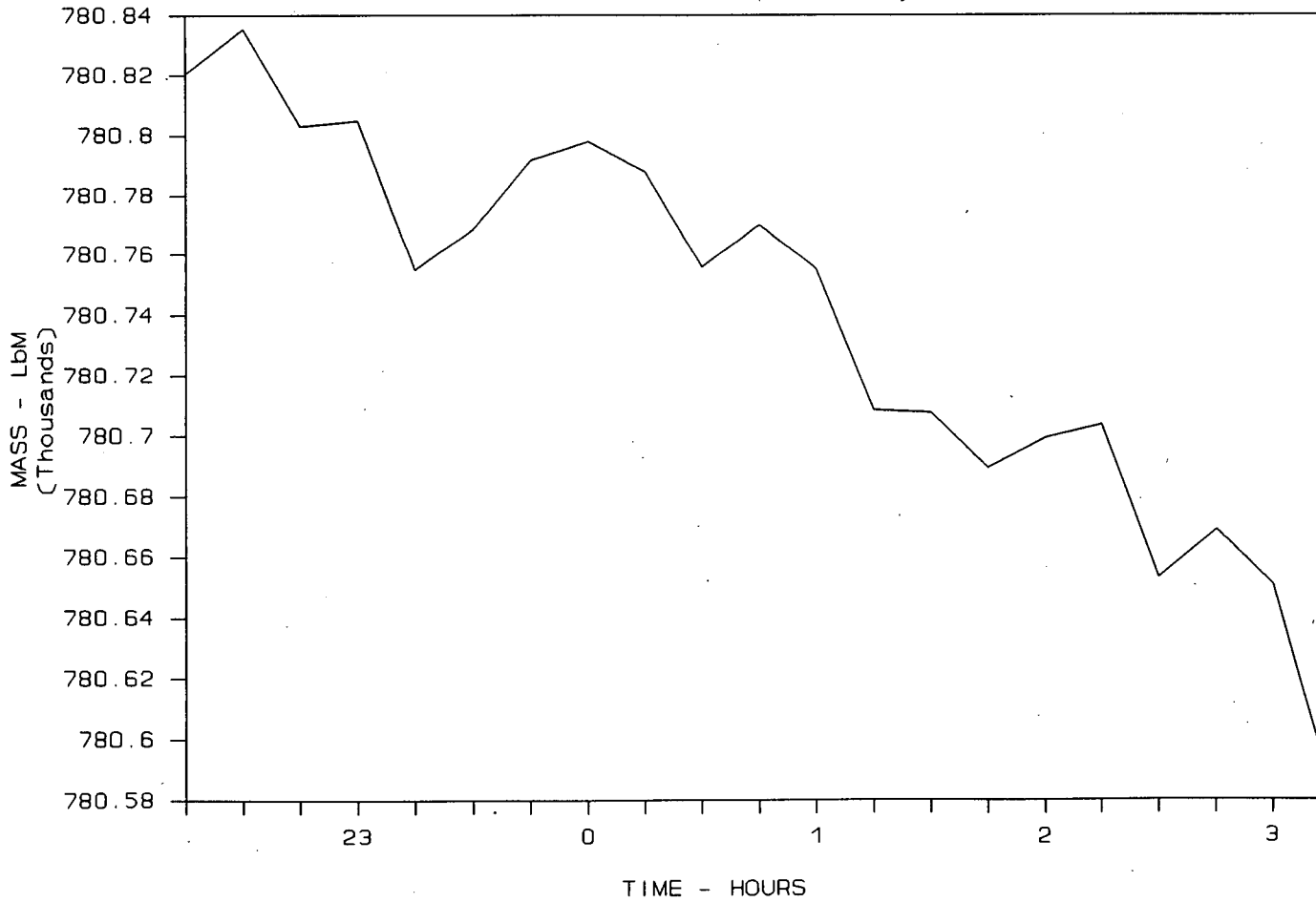
# ATTACHMENT 3.3K

**Indian Point 2 -1991 ILRT**  
**FROM 22:15 HOURS ON 06/22/91 TO 03:15 HOURS ON 06/23/91**  
**ABSOLUTE TEST METHOD, MASS POINT ANALYSIS TEST RESULTS**  
**VERIFICATION TEST**

Time (hh:mm) -----	Mass (LbM) -----	Leakage (PCT./DAY) -----	Confidence (PCT./DAY) -----	UCL (PCT./DAY) -----
22:15	780820.57	0.000000	0.000000	0.000000
22:30	780835.45	0.000000	0.000000	0.000000
22:45	780802.98	0.108120	1.437927	1.546047
23:00	780804.91	0.097700	0.221849	0.319549
23:15	780755.01	0.198769	0.171417	0.370186
23:30	780768.76	0.175097	0.105698	0.280796
23:45	780791.74	0.117614	0.097278	0.214892
00:00	780797.94	0.077505	0.083151	0.160656
00:15	780787.65	0.062056	0.065033	0.127089
00:30	780755.70	0.072235	0.052079	0.124313
00:45	780770.19	0.066406	0.042369	0.108775
01:00	780755.31	0.067523	0.034876	0.102399
01:15	780708.20	0.085066	0.034407	0.119473
01:30	780707.49	0.093914	0.030626	0.124539
01:45	780689.28	0.102914	0.027914	0.130828
02:00	780698.98	0.104035	0.024304	0.128339
02:15	780703.64	0.101642	0.021471	0.123113
02:30	780653.09	0.109081	0.020426	0.129506
02:45	780668.95	0.109606	0.018211	0.127817
03:00	780650.68	0.111630	0.016458	0.128088
03:15	780584.83	0.122193	0.018209	0.140403

# CONTAINMENT MASS vs. TIME

INDIAN POINT 2 - VERIF. - JUNE, 1991

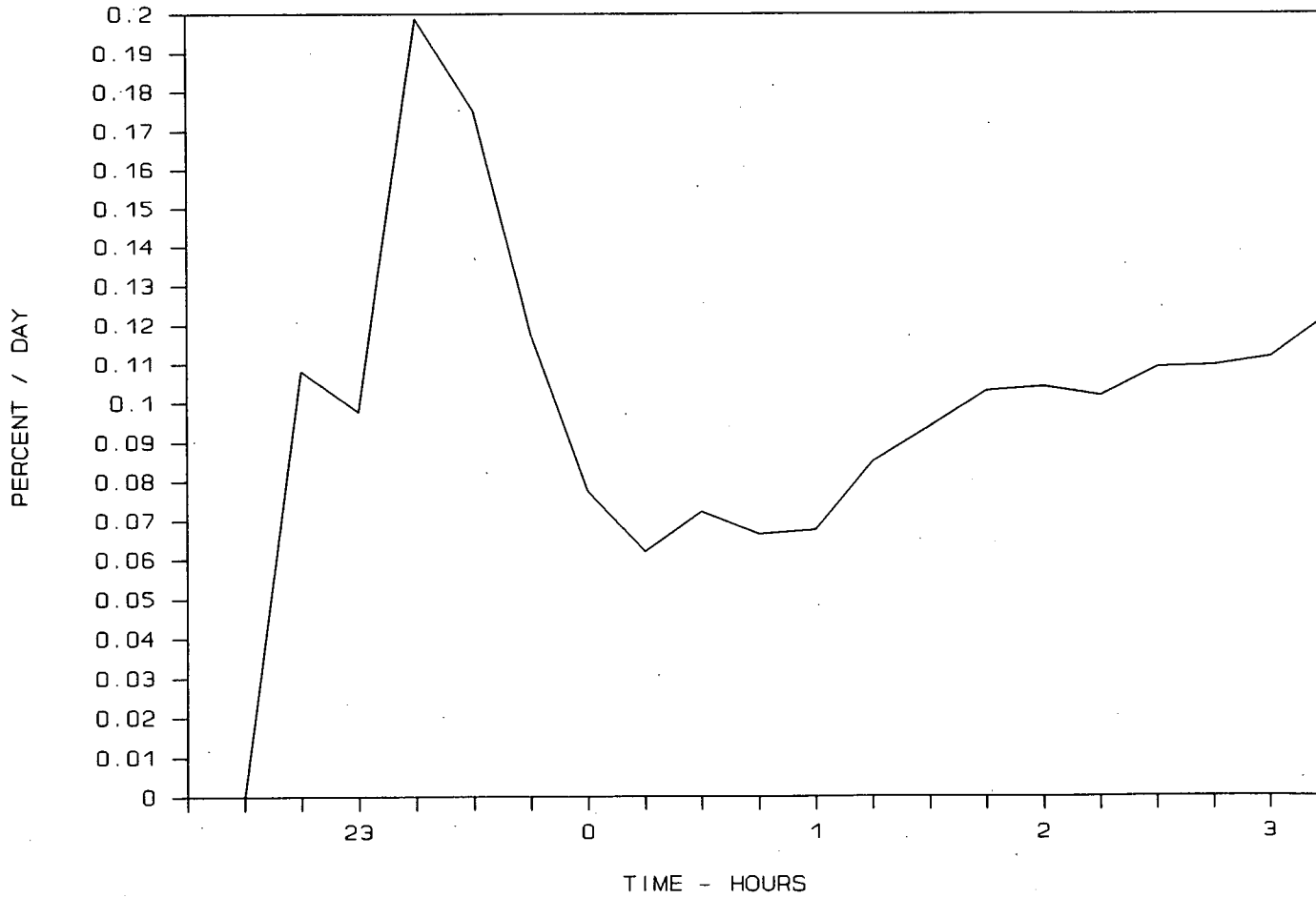


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ATTACHMENT 3.3L  
GRAPH 6

# MASS POINT LEAKAGE

INDIAN POINT 2 - VERIF. - JUNE, 1991





## SECTION 4

### 4.0 LOCAL LEAKAGE RATE TESTS (TYPES B AND C)

Section 4 summarizes the results of the Local Leakage Rate Test's (LLRT's) data which has been obtained from periodic testing performed since the December 1987 Periodic Type A test. Maintenance data is provided for surveillance testing performed in 1989 and 1991. Each penetration's leakage rate can be obtained from site reference material.

The acceptance criteria for Types B and C testing are in accordance with 10CFR50, Appendix J. The combined as left leakage rate for all penetrations and valves, subject to Types B and C tests in 1991, were well below the acceptance criteria of less than  $0.60L_n$ .

The data contained in this section are summarized below:

<u>Attachment No.</u>	<u>Title</u>
4A	1991 Local Leakage Rate Test Data
4B	1989 Local Leakage Rate Test Data

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	01	Charging Line	205, 226, 227	5.30	5.60	(Vlv 227) 49822/Valve PM, New disk
	02	Letdown	201, 202	Note 1	0.00	(Vlv 202) 54430/Checked cage spacer, stack height (Vlv 201) 43338/Complete rebuild (Vlv 4927) 54073/New stem and restack
	03	21 RCP Seal Inj.	250A, 4925	0.00	0.00	
	04	22 RCP Seal Inj.	250B, 4926	0.00	0.00	
	05	23 RCP Seal Inj.	250C, 4927	Note 1	2.00	(Vlv 250C) 53848/Reach rod adjustment
	06	24 RCP Seal Inj.	250D, 4928	2.90	2.90	
	07	Seal Return	222	2.00	2.00	
	08	HRSS Pumps Return to VC Sump	5132, 4399	0.00	0.00	
	09	PZR Steam Space Sample	956A, 956B	1.00	1.00	
	10	PZR Liquid Space Sample	956C, 956D	9.00	9.00	
	11	23 HL Sample	956E, 956F	0.66	0.66	
	12	Accumulator Sample	956G, 956H	0.00	0.00	

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	13	RCP Motor Bearing Return	784	1.60	1.60	
	14	RCP CCW Supply	797	Note 1	2.00	53604/Valve overhaul and refaced seats
	15	CCW to Excess Letdown Hx	791, 798	0.03	9.16	(Vlv 798) 51238/New diaphragm, Full PM
	16	CCW from Excess Letdown Hx	793, 796	3.67	14.00	(Vlv 796) 49764/Full PM, New trim set
	17	RCP Thermal Barrier Return	625	6.00	6.00	
	18	Cont. Sump Pump Discharge	1723, 1728	0.00	0.67	(Vlv 1728) 49804/Full PM (Vlv 1723) 49803/Full PM
	19	RCDT to Vent Header	1786, 1787	0.34	0.34	
	20	RCDT to Gas Anal.	1788, 1789	0.34	0.34	
	21	RCDT Pump Disch.	1702, 1705	0.34	0.00	(Vlv 1702) 49769/Full PM, Cleaned rust and set stroke
	22	PRT to Gas Anal.	548, 549	0.00	0.00	
	23	Pri. Wtr. to Cont.	519, 552	100.00	0.00	(Vlv 519) 53459/Full PM and overhaul
	24	City Water	MW17, MW17-1	1.00	1.00	

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	25	Station Air to Containment	SA 24-2, SA 24-3	0.07	0.07	
	26	Aux. Steam to Containment	UH 43	0.00	0.00	
	27	Aux. Steam from Containment	UH 44	0.00	4.00	55192/Cleaned internals
	28	SIS Pump Test Line	859A, 859C	0.00	0.00	
	29	21 Spray Pump Discharge	869A	0.34	1.00	54463/Readjusted reach rod, MOVATs diagnostics
	30	22 Spray Pump Discharge	869B	0.00	0.00	
	31	21 SIS Pump Discharge	850A	1.60	1.60	
	32	23 SIS Pump Discharge	850B	0.80	0.80	
	33	22 SIS Pump Disch. to 21 SIS	851A	0.33	1.66	47641/New Limitorque
	34	22 SIS Pump Disch. to 23 SIS	851B	0.17	0.33	50541/Moved valve location MOVATs diagnostics
	35	21 SG Blowdown	1214, 1214A	39.00	9.50	51033/Both vlvs, new trim sets
	36	22 SG Blowdown	1215, 1215A	10.00	1.00	51224/Both vlvs, new trim sets

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	37	23 SG Blowdown	1216, 1216A	100.00	0.00	51225/Both vlvs, new trim sets
	38	24 SG Blowdown	1217, 1217A	23.30	0.00	51227/Both vlvs, new trim sets
R26B	01	SIS Hi Hd Lo Hd Recirc.	888A	0.00	0.00	
	02	SIS Hi Hd Lo Hd Recirc.	888B	10.19	10.19	
	03	Recirc Pump Sample	990A, 990B	5.10	5.10	
	04	RHR Sample	958, 959, 990D	0.00	0.00	
	05	RHR Pump Disch.	744	40.80	40.80	
	06	RHR Pump Suction	732	51.00	309.00	44442/Replaced body to bonnet gasket
	07	RHR Miniflow	1870, 743	30.60	309.00	(Vlv 743) 51917/Packing adjusted
R27	01	21 Spray Pump	867A	509.34	509.34	
	02	22 Spray Pump	867B	40.80	40.80	
	03	PRT N <sub>2</sub> Supply	518	Note 1	0.00	53542/Complete overhaul, Replaced plug, Lapped seat
	04	PRT N <sub>2</sub> Supply	3418,3419,4136	0.00	0.00	

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27	05	RCDT N <sub>2</sub> Supply	1616	818.00	126.60	54580/Lapped seat, cleaned internals
	05	RCDT N <sub>2</sub> Supply	3417,3416,5459	0.00	0.00	
	06	Cont. Pressure	1814A	0.00	0.00	
	06	Cont. Pressure	PT 948A, 949A	0.00	0.00	
	07	Cont. Pressure	1814B	0.00	0.00	
	07	Cont. Pressure	PT 948B, 949B	0.00	0.00	
	08	Cont. Pressure	1814C	0.00	0.00	
	08	Cont. Pressure	PT 948C, 949C	0.00	0.00	
	09	Dead Weight Tester	580A	0.00	0.00	
	09	Dead Weight Tester	580B	0.00	0.00	
	10	O <sub>2</sub> Supply to Cont.	IV 2A, IV 2B	0.00	0.00	
	10	O <sub>2</sub> Supply to Cont.	IV 1A, IV 1B	0.00	0.00	
	11	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3420	20.30	0.00	48143/Repaired SOV coil
	11	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 3A	0.00	0.00	
	12	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 5A	0.00	0.00	48115/New valve installed

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27	12	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3421	0.00	15.00	48146/PM SOV
	13	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 3B	0.00	0.00	
	13	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3422	0.00	0.00	
	14	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 5B	0.00	0.00	
	14	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3423	0.00	0.00	
	15	PACASS	5018	0.00	0.00	
	15	PACASS	5019	75.00	0.00	48159/PM on SOV
	16	PACASS	5020	85.10	40.26	54815/Replaced SOV
	16	PACASS	5021	1.27	0.00	48161/Replaced SOV
	17	PACASS	5022,5024	0.00	0.00	
	17	PACASS	5023	1.30	0.00	48163/PM Solenoid
	17	PACASS	5025	0.00	0.00	48165/PM Solenoid
	18	Instru. Air to Cont.	IA 39	0.00	0.00	

ATTACHMENT 4A

1991 LOCAL LEAKAGE RATE TEST DATA

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27	18	Instru. Air to Cont.	PCV 1228	120.10	120.10	
	19	N <sub>2</sub> to Accum.	863	0.00	0.00	
	19	N <sub>2</sub> to Accum.	4312	0.00	0.00	
	20	80 Ft. Airlock	85A	0.00	0.00	
	20	80 Ft. Airlock	85B	0.00	0.00	
	21	95 Ft. Airlock	95A	Note 1	0.00	53445/Replaced 1" check valve
	21	95 Ft. Airlock	95B	56.10	0.00	53445/Replaced 1" check valve
	22	Fuel Xfer Tube	Blind Flange	40.00	40.00	
	23	21 S/G Level	IIP 500	45.87	45.87	
	24	21 S/G Level	IIP 501	35.75	35.75	
	25	22 S/G Level	IIP 502	43.40	43.40	
	26	22 S/G Level	IIP 503	38.28	38.28	
	27	PZR Pressure	IIP 504	0.00	0.00	
	28	PZR Pressure	IIP 505	0.00	0.00	
	29	PZR Level	IIP 506	2.55	2.55	
	30	PZR Level	IIP 507	0.00	0.00	



**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27A	01	RHR Pump Disch. Check	741A	0.04	0.04	
	02	Cont. Sump Recirc.	885A	0.00	0.00	
	02	Cont. Sump Recirc.	885B	1.00	0.50	51907/Replaced bonnet gasket
R27B.1	01	Service Water In-21 FCU	SWN 41-1-A	Note 1	0.00	54830/Valve replaced
	01	Service Water Out-21FCU	SWN 44-1-A	70.00	0.00	54830/Valve replaced
	01	Motor Cooler Out-21FCU	SWN 71-1-A	0.00	01.00	49832/Overhaul valve
	01	Service Wtr Relief & Drain-21FCU	SWN 42-1, 43-1	0.00	0.33	54830/Valves replaced
R27B.2	02	Service Water In-21FCU	SWN 41-2-A	0.00	0.00	
	02	Service Water Out-21FCU	SWN 44-2-A	0.00	0.00	
	02	Motor Cooler Out-22FCU	SWN 71-2-A	0.00	0.00	
	02	Service Wtr Relief & Drain-22FCU	SWN 42-2, 43-2	0.00	0.00	

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27B.3	03	Service Wtr In-23FCU	SWN 41-3-A	0.00	0.00	
	03	Service Wtr Out-23FCU	SWN 44-3-A	9.00	9.00	
	03	Motor Cooler Out-23FCU	SWN 71-3-A	0.00	0.00	
	03	Service Wtr Relief & Drain-23FCU	SWN 42-3, 43-3	8.66	8.66	
R27B.4	04	Service Wtr In-24FCU	SWN 41-4-A	Note 1	0.00	54831/Replaced valve
	04	Service Wtr Out-24FCU	SWN 44-4-A	11,000.00	0.00	54831/Replaced valve
	04	Motor Cooler Out-24FCU	SWN 71-4-A	0.00	0.00	54831/Replaced valve
	04	Service Wtr & Drain-24FCU	SWN 42-4, 43-4	Note 1	0.00	54831/Replaced valve
R27B.5	05	Service Wtr In-25FCU	SWN 41-5-A	400.00	480.00	54997/MOVATs diagnostics
	05	Service Wtr Out-25FCU	SWN 44-5-A	Note 1	0.00	47891/MOVATs diagnostics
	05	Motor Cooler Out-25FCU	SWN 71-5-A	Note 1	0.00	47883/MOVATs diagnostics

**ATTACHMENT 4A**

**1991 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27B.5	05	Service Wtr Relief & Drain-25FCU	SWN 42-5, 43-5	Note 1	0.00	49733/PM SWN 42-5
R27C	01	Cont. Press Relief	PCV 1190, 1191	Note 1	1,189.27	(Vlv 1191) 55140/Set vlv stroke
	02	Cont. Press Relief	PCV 1191, 1192	Note 1	555.20	(Vlv 1191) 55140/Set vlv stroke
	03	Cont. Purge Supply	FCV 1170, 1171	11,777.00	611.30	(Vlv 1171) 51054/PM and replaced T-ring
	04	Cont. Purge Exhaust	FCV 1172, 1173	13,165.8	3,772.00	(Vlv 1172) 51057/Overhaul
	05	SJAE Exhaust to Cont.	PCV 1229, 1230	6,120.50	232.00	(Vlv 1230) 51236/Overhaul
	06	R-11, R-12 Supply	PCV 1234, 1235	Note 1	0.00	(Vlv 1235) 54001/Replaced in-body diaphragm
	07	R-11, R-12 Exhaust	PCV 1236, 1237	0.00	0.00	
	08	PACV	E1,E2,E3,E5,EA1	311.38	311.38	
	09	80 Ft. Airlock	85C	0.00	0.00	
	10	80 Ft. Airlock	85D	0.00	0.00	
	11	95 Ft. Airlock	95C	51.00	51.00	
	12	95 Ft. Airlock	95D	20.40	20.40	

**NOTES:**

1. Leakage was greater than the capacity of the instrument used.

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	01	Charging Line	205, 226, 227	11.30	68.80	(Vlv 205) 41031/Overhaul
	02	Letdown	201, 202	48.30	48.30	
	03	21 RCP Seal Inj.	250A, 4925	1.00	12.30	(Vlv Vlv 4925) 38924/Replaced valve stem, MOVATs diagnostics
	04	22 RCP Seal Inj.	250B, 4926	0.00	0.00	
	05	23 RCP Seal Inj.	250C, 4927	20.00	20.00	
	06	24 RCP Seal Inj.	250D, 4928	1.00	1.00	
	07	Seal Return	222	0.00	0.00	
	08	HRSS Pumps Return to VC Sump	5132, 4399	0.33	0.33	
	09	PZR Steam Space Sample	956A, 956B	0.00	0.00	
	10	PZR Liquid Space Sample	956C, 956D	0.00	0.00	
	11	23 HL Sample	956E, 956F	0.00	0.00	
	12	Accumulator Sample	956G, 956H	0.00	0.00	
	13	RCP Motor Bearing Return	784	10.00	0.00	38931/MOVATs diagnostics

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	14	RCP CCW Supply	797	0.83	0.83	
	15	CCW to Excess Letdown Hx	791, 798	Note 1	0.00	(Vlv 791) 43097/Repaired diaphragm (Vlv 791) 43904/Replaced spring (Vlv 798) 43098/Replaced diaphragm (Vlv 798) 43905/Replaced spring
	16	CCW from Excess Letdown Hx	793, 796	0.50	1.00	(Vlv 793) 42012/Replaced diaphragm
	17	RCP Thermal Barrier Return	625	0.00	3.00	39667/PM Limitorque
	18	Cont. Sump Pump Discharge	1723, 1728	0.00	0.00	
	19	RCDT to Vent Header	1786, 1787	0.66	0.66	
	20	RCDT to Gas Anal.	1788, 1789	0.66	0.66	
	21	RCDT Pump Disch.	1702, 1705	1.00	1.00	
	22	PRT to Gas Anal.	548, 549	0.33	0.33	

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	23	Pri. Wtr. to Cont.	519, 552	0.33	0.00	(Vlv 519) 36520/Replaced diaphragm (Vlv 552) 44126/Replaced diaphragm
	24	City Water	MW17, MW17-1	0.66	0.66	
	25	Station Air to Containment	SA 24-2, SA 24-3	0.00	0.00	
	26	Aux. Steam to Containment	UH 43	0.50	0.50	
	27	Aux. Steam from Containment	UH 44	0.66	0.66	
	28	SIS Pump Test Line	859A, 859C	0.33	0.33	
	29	21 Spray Pump Discharge	869A	3.50	1.00	43613/Reset limits
	30	22 Spray Pump Discharge	869B	0.00	0.00	
	31	21 SIS Pump Discharge	850A	0.33	1.00	38937/MOVATs diagnostics, Adjusted limits
	32	23 SIS Pump Discharge	850B	40.60	4.00	44012/Overhaul and replace spring, plug
	33	22 SIS Pump Disch. to 21 SIS	851A	Note 1	0.00	43110/Replaced wedge spring

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R26A	34	22 SIS Pump Disch. to 23 SIS	851B	0.00	1.00	38944/MOVATs diagnostics
	35	21 SG Blowdown	1214, 1214A	18.66	181.33	(Vlv 1214A) 40080/Repacked
	36	22 SG Blowdown	1215, 1215A	31.30	11.00	(Vlv 1215A) 43198/Replaced trim set
	37	23 SG Blowdown	1216, 1216A	2.30	2.30	
	38	24 SG Blowdown	1217, 1217A	10.30	7.00	(Vlv 1217A) 51828/Adjusted stroke
R26B	01	SIS Hi Hd Lo Hd Recirc.	888A	0.00	0.00	
	02	SIS Hi Hd Lo Hd Recirc.	888B	122.00	0.00	43542/Reset limits
	03	Recirc Pump Sample	990A, 990B	0.00	0.00	
	04	RHR Sample	958, 959, 990D	0.00	0.00	
	05	RHR Pump Disch.	744	48.75	0.00	43048/Vlv inspection
	06	RHR Pump Suction	732	39.00	39.00	
	07	RHR Miniflow	1870, 743	0.00	0.00	
R27	01	21 Spray Pump	867A	0.00	0.00	
	01	21 Spray Pump	878A	465.60	465.60	

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27	02	22 Spray Pump	867B	0.00	0.00	
	03	PRT N <sub>2</sub> Supply	518	Note 1	77.00	43996/Overhaul and lapped seat
	04	PRT N <sub>2</sub> Supply	3418,3419,4136	26.90	26.90	
	05	RCDT N <sub>2</sub> Supply	1616	8,183.00	33.00	43860/Hand lapped seat
	05	RCDT N <sub>2</sub> Supply	3417,3416,5459	158.00	158.00	
	06	Cont. Pressure	1814A	0.00	0.00	
	06	Cont. Pressure	PT 948A, 949A	0.00	0.00	
	07	Cont. Pressure	1814B	0.00	0.00	
	07	Cont. Pressure	PT 948B, 949B	0.00	0.00	
	08	Cont. Pressure	1814C	0.00	0.00	
	08	Cont. Pressure	PT 948C, 949C	0.00	0.00	
	09	Dead Weight Tester	580A	0.00	0.00	
	09	Dead Weight Tester	580B	0.00	0.00	
	10	O <sub>2</sub> Supply to Cont.	IV 2A, IV 2B	0.00	0.00	
	10	O <sub>2</sub> Supply to Cont.	IV 1A, IV 1B	0.00	0.00	
	11	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 3A	0.00	0.00	



**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27	11	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3420	0.00	0.00	
	12	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 5A	0.00	0.00	
	12	21 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3421	0.00	0.00	
	13	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 3B	0.00	0.00	
	13	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3422	0.00	0.00	
	14	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	IV 5B	0.00	0.00	
	14	22 H <sub>2</sub> Recomb. H <sub>2</sub> Supply	3423	0.00	0.00	
	15	PACASS	5018	0.00	0.00	
	15	PACASS	5019	14.21	14.21	
	16	PACASS	5021	0.00	0.00	
	16	PACASS	5020	20.58	20.58	
	17	PACASS	5022,5024	0.00	0.00	
	17	PACASS	5023	0.00	0.00	

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27	17	PACASS	5025	0.00	0.00	
	18	Instru. Air to Cont.	IA 39	0.00	0.00	
	18	Instru. Air to Cont.	PCV 1228	119.92	119.92	
	19	N <sub>2</sub> to Accum.	863	53.00	53.00	
	19	N <sub>2</sub> to Accum.	4312	59.00	59.00	
	20	80 Ft. Airlock	85A	0.00	0.00	
	20	80 Ft. Airlock	85B	0.00	0.00	
	21	95 Ft. Airlock	95A	0.00	0.00	
	21	95 Ft. Airlock	95B	0.00	0.00	
	22	Fuel Xfer Tube	Blind Flange	11.98	11.98	
	23	21 S/G Level	IIP 500	0.00	0.00	
	24	21 S/G Level	IIP 501	0.00	0.00	
	25	22 S/G Level	IIP 502	14.62	14.62	
	26	22 S/G Level	IIP 503	9.75	9.75	
	27	PZR Pressure	IIP 504	0.00	0.00	
	28	PZR Pressure	IIP 505	0.00	0.00	

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27	29	PZR Level	IIP 506	0.00	0.00	
	30	PZR Level	IIP 507	0.00	0.00	
R27A	01	RHR Pump Disch. Check	741A	Note 1	0.00	43099/Replaced disk, arm and pin
	02	Cont. Sump Recirc.	885B	0.00	0.00	
	02	Cont. Sump Recirc.	885A	0.00	0.00	
R27B.1	01	Service Water In-21 FCU39171	SWN 41-1-A	220.00	400.00	44163/MOVATs diagnostics
	01	Service Water Out-21FCU	SWN 44-1-A	700.00	0.00	44163 & 43160/MOVATs diagnostics, adjusted limits
	01	Motor Cooler Out-21FCU	SWN 71-1-A	0.00	0.00	43171/MOVATs diagnostics
	01	Service Wtr Relief & Drain-21FCU	SWN 42-1, 43-1	0.00	0.00	
R27B.2	02	Service Water In-21FCU	SWN 41-2-A	0.00	50.00	44164/MOVATS set limits
	02	Service Water Out-21FCU	SWN 44-2-A	1500.00	380.00	43203/MOVATS adjust limits
	02	Motor Cooler Out-22FCU	SWN 71-2-A	0.00	0.00	39424/MOVATS adjust torque settings

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
R27B.2	02	Service Wtr Relief & Drain-22FCU	SWN 42-2, 43-2	0.00	0.00	
R27B.3	03	Service Wtr In-23FCU	SWN 41-3-A	0.00	0.00	44165/MOVATS adjust limits
	03	Service Wtr Out-23FCU	SWN 44-3-A	100.00	130.00	44167/MOVATS adjust limits
	03	Motor Cooler Out-23FCU	SWN 71-3-A	125.00	0.00	43161/Lapped seat
R27B.3	03	Service Wtr Relief & Drain-23FCU	SWN 42-3, 43-3	0.00	0.00	
R27B.4	04	Service Wtr In-24FCU	SWN 41-4-A	Note 1	25.00	43194/Overhaul, lapped seat
	04	Service Wtr Out-24FCU	SWN 44-4-A	5000.00	5.00	43196/Overhaul, lapped seat
	04	Motor Cooler Out-24FCU	SWN 71-4-A	0.00	0.00	
R27B.4	04	Service Wtr & Drain-24FCU	SWN 42-4, 43-4	NOTE 1	5.00	See above WO for SWN-41-4-A
R27B.5	05	Service Wtr In-25FCU	SWN 41-5-A	0.00	0.00	
	05	Service Wtr Out-25FCU	SWN 44-5-A	0.00	0.00	

**ATTACHMENT 4B**

**1989 LOCAL LEAKAGE RATE TEST DATA**

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
	05	Motor Cooler Out-25FCU	SWN 71-5-A	0.00	0.00	
	05	Service Wtr Relief & Drain-25FCU	SWN 42-5, 43-5	0.00	0.00	
R27C	01	Cont. Press Relief	PCV 1190, 1191	4,185.70	1,384.60	(Vlv 1190)/Overhaul, new T-ring
	02	Cont. Press Relief	PCV 1191, 1192	177.70	177.70	
	03	Cont. Purge Supply	FCV 1170, 1171	7,865.00	3,956.00	(Vlv 1171) 40286/Packing and lubed
R27C	04	Cont. Purge Exhaust	FCV 1172, 1173	1,301.00	1,301.00	
	05	SJAE Exhaust to Cont.	PCV 1229, 1230	10,365.50	1,133.00	(Vlv 1229) 43037/Replaced air diaphragm (Vlv 1229) 44085) Replaced stem and plug (Vlv 1230) 44445/Replaced stem and plug
	06	R-11, R-12 Supply	PCV 1234, 1235	39.00	39.00	
	07	R-11, R-12 Exhaust	PCV 1236, 1237	33.88	33.88	
	08	PACV	E1,E2,E3,E5,EA1	4,900.00	28.90	(Vlv EA!) 43218/Replaced SOV
	09	80 Ft. Airlock	85C	0.00	0.00	

ATTACHMENT 4B

1989 LOCAL LEAKAGE RATE TEST DATA

<u>Test Procedure</u>	<u>Data Sheet</u>	<u>Name</u>	<u>Valve No(s)</u>	<u>Pre-Repair Leakage Rate (cc/min)</u>	<u>Post-Repair Leakage Rate (cc/min)</u>	<u>Repair/Notes</u>
	10	80 Ft. Airlock	85D	0.00	0.00	
	11	95 Ft. Airlock	95C	299.70	299.70	
	12	95 Ft. Airlock	95D	0.00	0.00	

NOTES:

1. Leakage was greater than the capacity of the instrument used.