UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENFORCEMENT

EPA-330/1-80-006

OMEGA-1 LIDAR: DATA ANALYSIS REPORT

INDIANAPOLIS POWER AND LIGHT COMPANY
PETERSBURG GENERATING STATION

Petersburg, Indiana

October 1980

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
Denver, Colorado

EPA

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I. INTRODUCTION

The National Enforcement Investigations Center (NEIC) conducted an investigation of visible emissions from two stationary sources at the Petersburg Generating Station operated by the Indianapolis Power and Light Company (IP&L), in Petersburg, Indiana, during the late afternoon hours of June 13, 1980. Opacities of observed visible emissions were measured remotely with a new instrumentation method* using the NEIC Omega-1 Lidar. Figure 1 depicts the location of the Lidar during the observations.

The Petersburg Station contains three coal-fired boilers (boilers 1, 2, and 3) which supply steam to three electric generating turbines (units 1, 2, and 3). Boiler 1 is equipped with two electrostatic precipitators (ESP) in series, and boiler 2 is also equipped with an ESP. Boiler 3 is equipped with an ESP and a limestone scrubber. The emissions from boilers 1 and 2 are discharged through Units 1 and 2 Stack (South Stack) which is 550 ft high. The emissions from this stack are subject to the opacity requirements of the Indiana State Implementation Plan (SIP). The emissions from boiler 3 are discharged through the Unit 3 Stack (North Stack) which is 615 ft in height. The emissions from this stack are subject to the opacity limits set forth in the New Source Performance Standards (NSPS). Visible emissions from these sources are alleged to be in violation of the applicable opacity limits of the Indiana SIP and the NSPS.

On April 21, 1980, the Enforcement Division of EPA, Region V, Chicago, Illinois, requested assistance from NEIC in documenting the opacity of the emissions from the Petersburg Station.

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* This method has been proposed in the Federal Register, Vol, 45, No. 128, Tuesday, July 1, 1980, pages 44329 through 44351, as an alternate method to Reference Method 9.

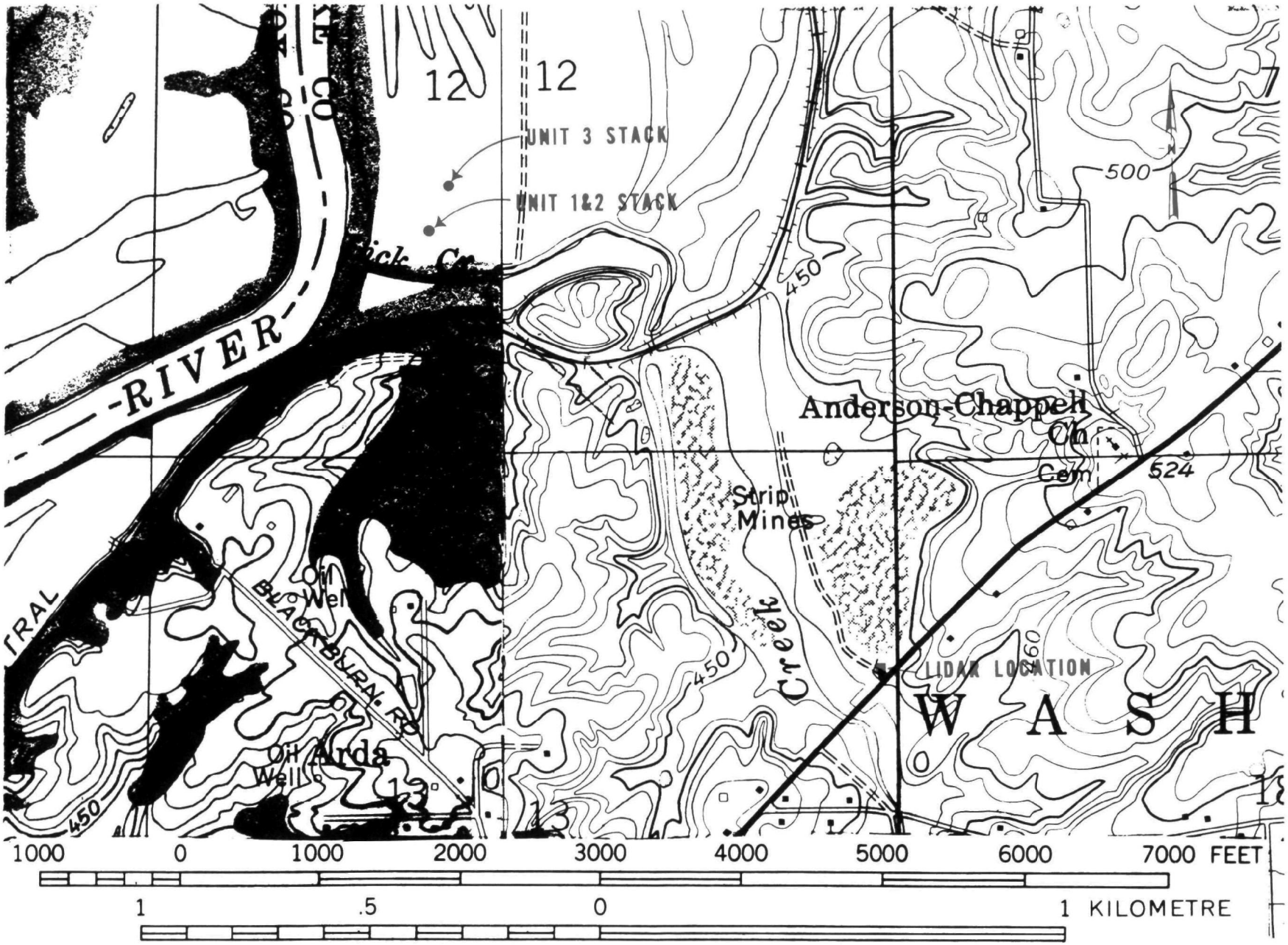

Figure 1. Location Map

To provide the requested assistance to Region V, NEIC conducted the investigation with the following objectives:

1. Document the opacity of visible emissions from the Units 1 and 2 Stack and the Unit 3 Stack.
2. Evaluate the compliance of the observed emissions with the Indiana SIP and the NSPS.

II. SUMMARY AND CONCLUSIONS

SUMMARY OF INVESTIGATIONS

The opacity of the visible emissions from the two stationary sources within the Petersburg Generating Station, Indianapolis Power and Light Company (IP&L), Petersburg, Indiana, were measured during the late afternoon hours on June 13, 1980. The sources investigated were the Units 1 and 2 Stack, and the Unit 3 Stack. All measurements were conducted remotely from off the plant site.

Opacities were measured remotely with the NEIC Omega-1 Lidar which is a new instrumentation method. This method has been proposed in the Federal Register as Alternate Method 1 to Reference Method 9.

Six sets of opacity measurements were made, the total of which was about 1.9 hours of observation, and about 740 individual measurements. The sets of measurements ranged in length from 7 to 30 minutes. Measurements were made at a temporal frequency of once about every 10 seconds.

All opacity measurements were subsequently analyzed and reduced with the NEIC laboratory computer using the methods given in Alternate Method 1 (proposed).

The results of the lidar observations are summarized in Table 1 according to the official designation of each stationary source.

CONCLUSIONS

The visible emissions from the Unit 1 and 2 Stack exceeded the maximum allowable limit of the Indiana State Implementation Plan (40% for a 6-min. average) during the second run (Table 1). The opacity of the emissions

Table 1

DATA ANALYSIS SUMMARY
IP&L, PETERSBURG GENERATING STATION
Petersburg, Indiana

Source Designation	Applicable Opacity Limit (%)	Date June 1980	Time Interval (hr.min sec)	Approx length of Observation (min)	Approx Time Exceeding Limit (min)	% of Time in Excess of limit	± Max Lidar Calibration	
							Peak Opacity (6-min avg)	Error Mag (%) [From 0% to 80%]
Units 1 & 2 Stack	40	13	14 34.28 15 04.14	30	0	0	29	-0 53, +0 31
Units 1 and 2 Stack	40	13	15·09 01 15 38 50	30	14	47	44	-0 53, +0 31
Unit 3 Stack	20	13	15:59 37 16.14 19	15	10	67	23	-0.53, +0 31
Units 1 & 2 Stack	40	13	16·21 50 16 36 23	15	0	0	38	-0 48, +0 09
Units 1 & 2 Stack	40	13	16.42·40 16·49 54	7	0	0	23	-0 48, +0 09
Units 1 & 2 Stack	40	13	16 51 36 17 06.13	15	0	0	25	-0 48, +0 09

exceeded the limit for 14 minutes or 40% of the observation time. A total of five data runs or observations were conducted on this source.

The emissions from the Unit 3 Stack were observed for one period of 15 minutes. The data indicates that the opacity of the emissions exceeded the limit of the NSPS (20% for a 6-minute average) for 10 minutes during this run or 67% of the time. However, the average standard deviation for the averaged opacity values (run 3 of Section IV) ranged from 3 to 4% (full scale) during the indicated violations. This means that for the peak average opacity of 23% with a standard deviation of 4%, there is a 68% probability that the actual average opacity of the emissions, during this 6-minute averaging interval, was between 19 and 27%. Therefore, these indications may not be violations. The uncertainty comes from atmospheric noise along the lidar line-of-sight through the plume.

III. METHODS

LIDAR OPACITY MEASUREMENTS

Alternate Method 1 (proposed) employs a lidar (lasar radar) which is an optical system installed in a truck-mounted van enclosure. This mobile lidar is specifically designed and fabricated for measuring the opacity of visible emissions from a given stationary source during both day and nighttime ambient lighting conditions. The laser transmitter within the lidar emits a short pulse of light. The lidar receiver collects the laser light backscattered from the atmospheric aerosols before and beyond the visible plume as well as that from the aerosols (particulates) within the plume. The lidar receiver converts the backscattered optical signals to electronic signals or data. The Lidar has an inherent data processing capability that calculates the opacity values from the backscatter data from just before and beyond the plume. It subsequently records these opacity values in hard copy form, and also records the original lidar receiver data (signal amplitude vs range) on magnetic tape for future reference or use.

The nominal data gathering rate of the lidar is an opacity measurement or determination once every 10 seconds. This data rate can be maintained in continuous operation for minutes or even hours. The lidar method is intended for use during nighttime, as well as during the day.

The Omega-1 Lidar is internally calibrated in the field periodically over the opacity values of 0, 10, 20, 40, 60, and 80%.

DATA ANALYSIS AND REDUCTION

The lidar data were analyzed in accordance with Section 2 of Alternate Method 1 (proposed) using the NEIC PDP-11-70 laboratory computer. The

individual opacity values were calculated using the backscatter data recorded on magnetic tape, with the opacity equation given in Section 2.4.1. The associated statistics, which includes the standard deviation, S_o, of each individual opacity value, were calculated using the appropriate equations in Section 2.4.1. The running- or sliding-average, $\bar{O}p$, of the individual opacity values was calculated over the 6- minute averaging interval, given in the Indiana State Implementation Plan (SIP), according to the requirements of Section 2.4.2.

The number of opacity values included in the running-average is nominally 36 (six measurements/minute for 6 minutes according to the NSPS and SIP). The 6-minute interval remains constant although the number of opacity values may vary above or below the nominal. In accordance with the Opacity Data Acceptance/Rejection Criterion in Section 2.4.3, if the standard deviation, S_o, for a given opacity value is greater than 8% (full scale) then that value is discarded from the running-average set decreasing the total number by one. The number of opacity values in the 6-minute interval may be greater than 36 which is caused by the lidar data rate being set faster than six opacity measurements/minute (one opacity measurement every 10 seconds).

DATA PRESENTATION

The opacity values are presented in two separate formats in Section IV of this data analysis report. For each data run the values are given in tabular form followed by graphic plots. An identification header is located across the top of the tabular form which provides the following information:

- EPA-NEIC identification block.
- EPA-NEIC Omega control number (evidentiary parameter).
- Official designation for the stationary source.
- Facility name.
- Facility location.
- Location of the lidar during tests.
- Length of the running average interval.

This tabular presentation provides the applicable data in columns identified as follows:

- Date of data run.
- Time of the opacity measurement (nearest second).
- Opacity values as calculated in %.
- Standard deviation SO (S_0 in Alternate Method 1) in %.
- Individual violation flags, not applicable in Indiana.
- Average opacity (%) calculated over the running-average interval.
- Average standard deviation (%) calculated over the running-average interval.
- Average opacity violation flag, applicable in Indiana.
- Number of opacity values discarded due to the Opacity Data Acceptance/Rejection Criterion (§ 2.4.3 of the Alternate Method 1).

In the average opacity violation column, any violations that occurred over and above the respective 20% (NSPS) or the 40% (SIP) average opacity limits are indicated with a flag of four asterisks.

Referring to the third sheet of the tabular data outupt, Section IV, for the second data run, (Omega-0065), the average opacity violation flag (column 8 in the tabular format) does not show up until the average opacity (6 minutes of data has been averaged) has exceeded 40%. As soon as the average opacity if greater than 40% (or 20%, whichever is applicable) then the first violation flag occurs at the end of this 6-minute interval and continues until the average opacity drops below the regulation limit or the data run is completed. This data run began at 15:09:01 and the average opacity (column 6) reads zero until 6 minutes of data has been recorded. During the second 6-minute interval the average opacity went above 40% (15:20:53 to 15:26:58) and the first average opacity violation flag is indicated.

The running-average permits one to easily locate the 6-minute interval(s) which has the highest average opacity. In the example of the second

data run (Omega-0065), the highest average occurred for the 6-minute interval ending at 15:30:40 (sheet 3). However, the first violation occurred for the 6-minute time interval ending at 15:26:58. The next violation does not occur until 6 minutes after 15:26:58 or 15:33:03 which had an average opacity of 40%.

The computer graphical plots, located in Section IV immediately after each respective tabular data set, show the individual opacity values (column 3 of the tabular data set) along with their respective standard deviations as error bars (column 4 of the tabular data set). The standard deviation gives an indication of the magnitude of the error associated with each opacity value due to atmospheric noise along the lidar line-of-sight. The magnitude of the average opacity established in the NSPS or the SIP is indicated on each plot by the dashed line at the 20 or 40% value. Each graphical plot is fixed in time along the horizontal axis, being 10 minutes in length.

The lidar internal calibration data are presented in Table 1 of Section II for each respective observation period as the extreme values that occurred throughout the opacity range given above. A negative value indicates that the lidar was determining opacity low or below the respective standard while a positive value indicates a high value with respect to the standard.

IV. DATA ANALYSIS PRESENTATION

OMEGA-0065

INDIANAPOLIS POWER AND LIGHT COMPANY

PETERSBURG STATION

Units 1 and 2 Stack

June 13, 1980, 14:34:28 to 15:04:14

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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DENVER, COLORADO 80225

OMEGA-0065, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	14 34 28	12	2		0	0		0 OF 0
6/13/80	14 34 37	14	2		0	0		0 OF 0
6/13/80	14 34 46	15	2		0	0		0 OF 0
6/13/80	14 34 55	31	2		0	0		0 OF 0
6/13/80	14 35 4	12	3		0	0		0 OF 0
6/13/80	14 35 13	15	2		0	0		0 OF 0
6/13/80	14 35 21	53	1		0	0		0 OF 0
6/13/80	14 35 30	37	2		0	0		0 OF 0
6/13/80	14 35 39	7	2		0	0		0 OF 0
6/13/80	14 35 48	1	3		0	0		0 OF 0
6/13/80	14 35 57	5	3		0	0		0 OF 0
6/13/80	14 36 6	22	2		0	0		0 OF 0
6/13/80	14 36 15	7	2		0	0		0 OF 0
6/13/80	14 36 24	3	3		0	0		0 OF 0
6/13/80	14 36 33	11	3		0	0		0 OF 0
6/13/80	14 36 42	13	3		0	0		0 OF 0
6/13/80	14 36 51	8	3		0	0		0 OF 0
6/13/80	14 37 0	13	3		0	0		0 OF 0
6/13/80	14 37 9	10	3		0	0		0 OF 0
6/13/80	14 37 18	9	3		0	0		0 OF 0
6/13/80	14 37 26	19	3		0	0		0 OF 0
6/13/80	14 37 35	13	3		0	0		0 OF 0
6/13/80	14 37 44	10	4		0	0		0 OF 0
6/13/80	14 37 53	44	2		0	0		0 OF 0
6/13/80	14 38 2	9	4		0	0		0 OF 0
6/13/80	14 38 11	26	2		0	0		0 OF 0
6/13/80	14 38 20	24	2		0	0		0 OF 0
6/13/80	14 38 29	27	3		0	0		0 OF 0
6/13/80	14 38 38	18	2		0	0		0 OF 0
6/13/80	14 38 47	33	2		0	0		0 OF 0
6/13/80	14 38 56	39	3		0	0		0 OF 0
6/13/80	14 39 5	36	2		0	0		0 OF 0
6/13/80	14 39 14	32	2		0	0		0 OF 0
6/13/80	14 39 23	50	3		0	0		0 OF 0
6/13/80	14 39 32	35	3		0	0		0 OF 0
6/13/80	14 39 41	43	2		0	0		0 OF 0
6/13/80	14 39 50	11	2		0	0		0 OF 0
6/13/80	14 39 59	35	2		0	0		0 OF 0
6/13/80	14 40 7	23	2		0	0		0 OF 0
6/13/80	14 40 16	31	2		21	3		0 OF 40
6/13/80	14 40 25	16	2		21	2		0 OF 41
6/13/80	14 40 34	19	2		21	2		0 OF 41
6/13/80	14 40 43	25	2		22	2		0 OF 41
6/13/80	14 40 52	26	2		22	2		0 OF 41
6/13/80	14 41 1	25	2		22	3		0 OF 41
6/13/80	14 41 10	36	3		22	2		0 OF 41
6/13/80	14 41 19	34	3		23	3		0 OF 41
6/13/80	14 41 28	26	2		22	3		0 OF 41
6/13/80	14 41 37	26	2		22	3		0 OF 41
6/13/80	14 41 46	27	4		22	3		0 OF 41

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DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	14 49 20	53	3		25	3		0 OF 41
6/13/80	14 49 29	16	3		25	3		0 OF 41
6/13/80	14 49 38	12	3		24	3		0 OF 41
6/13/80	14 49 47	4	3		24	3		0 OF 41
6/13/80	14 49 56	48	2		25	3		0 OF 41
6/13/80	14 50 5	17	2		25	3		0 OF 41
6/13/80	14 50 14	15	2		24	3		0 OF 41
6/13/80	14 50 23	14	3		24	3		0 OF 41
6/13/80	14 50 32	12	3		24	3		0 OF 41
6/13/80	14 50 41	15	3		24	3		0 OF 41
6/13/80	14 50.50	11	3		24	3		0 OF 41
6/13/80	14 50 59	11	3		24	3		0 OF 41
6/13/80	14 51 8	8	3		24	3		0 OF 41
6/13/80	14 51 16	20	3		24	3		0 OF 41
6/13/80	14 51 25	20	2		24	3		0 OF 41
6/13/80	14 51 34	15	3		24	3		0 OF 41
6/13/80	14 51 43	16	2		24	3		0 OF 41
6/13/80	14 51 52	15	2		24	3		0 OF 41
6/13/80	14 52 10	4	3		23	3		0 OF 40
6/13/80	14 52 19	4	3		22	3		0 OF 40
6/13/80	14 52 28	3	4		22	3		0 OF 40
6/13/80	14 52 37	5	3		22	3		0 OF 40
6/13/80	14 52 46	11	2		21	3		0 OF 40
6/13/80	14 52 55	20	3		22	3		0 OF 40
6/13/80	14.53 4	11	3		21	3		0 OF 40
6/13/80	14 53 13	15	2		21	3		0 OF 40
6/13/80	14 53 22	58	3		22	3		0 OF 40
6/13/80	14 53 31	23	3		21	3		0 OF 40
6/13/80	14 53 40	8	3		20	3		0 OF 40
6/13/80	14 53 49	2	2		19	3		0 OF 40
6/13/80	14 53 58	24	3		19	3		0 OF 40
6/13/80	14 54 6	37	3		18	3		0 OF 40
6/13/80	14 54 15	10	3		18	3		0 OF 40
6/13/80	14 54 24	6	3		17	3		0 OF 40
6/13/80	14 54 33	13	3		17	3		0 OF 40
6/13/80	14 54 42	12	3		17	3		0 OF 40
6/13/80	14 54 51	8	3		17	3		0 OF 40
6/13/80	14 55 0	11	3		16	3		0 OF 40
6/13/80	14 55 9	13	2		16	3		0 OF 40
6/13/80	14 55 18	18	2		16	3		0 OF 40
6/13/80	14 55 27	30	2		15	3		0 OF 40
6/13/80	14 55 36	22	2		16	3		0 OF 40
6/13/80	14 55 45	16	3		16	3		0 OF 40
6/13/80	14 55 54	17	3		16	3		0 OF 40
6/13/80	14 56 3	37	3		16	3		0 OF 40
6/13/80	14 56 12	18	2		16	3		0 OF 40
6/13/80	14 56 21	40	3		16	3		0 OF 40
6/13/80	14 56 29	64	2		18	3		0 OF 40
6/13/80	14 56 38	21	4		18	3		0 OF 40
6/13/80	14 56 47	36	3		18	3		0 OF 40

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DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	14 41 55	72	1		24	2		0 OF 41
6/13/80	14 42 4	25	2		25	2		0 OF 41
6/13/80	14 42 13	25	2		25	2		0 OF 41
6/13/80	14 42 22	26	2		25	2		0 OF 41
6/13/80	14 42 31	28	2		26	2		0 OF 41
6/13/80	14 42 40	13	3		26	2		0 OF 41
6/13/80	14 42 48	37	3		26	2		0 OF 41
6/13/80	14 42 57	21	3		27	2		0 OF 41
6/13/80	14 43 6	29	3		27	2		0 OF 41
6/13/80	14 43 15	24	2		27	2		0 OF 41
6/13/80	14 43 24	41	3		28	2		0 OF 41
6/13/80	14 43 33	42	2		29	2		0 OF 41
6/13/80	14 43 42	12	3		29	2		0 OF 41
6/13/80	14 43 51	14	2		29	2		0 OF 41
6/13/80	14 44 0	17	3		28	2		0 OF 41
6/13/80	14 44 9	25	2		29	2		0 OF 41
6/13/80	14 44 16	14	3		28	2		0 OF 41
6/13/80	14 44 25	15	3		28	2		0 OF 41
6/13/80	14 44 34	25	3		28	2		0 OF 41
6/13/80	14 44 43	9	3		28	2		0 OF 41
6/13/80	14 44 52	26	3		28	2		0 OF 41
6/13/80	14 45 1	11	3		27	2		0 OF 41
6/13/80	14 45 10	2	3		26	2		0 OF 41
6/13/80	14 45 19	22	2		26	2		0 OF 41
6/13/80	14 45 28	16	2		25	2		0 OF 41
6/13/80	14 45 37	26	3		25	2		0 OF 41
6/13/80	14 45 46	11	4		24	3		0 OF 41
6/13/80	14 45 54	62	2		25	2		0 OF 41
6/13/80	14 46 3	14	3		25	3		0 OF 41
6/13/80	14 46 12	20	3		25	3		0 OF 41
6/13/80	14 46 21	22	3		25	3		0 OF 41
6/13/80	14 46 30	15	3		24	3		0 OF 41
6/13/80	14 46 39	13	3		24	3		0 OF 41
6/13/80	14 46 48	15	3		24	3		0 OF 41
6/13/80	14 46 57	24	4		24	3		0 OF 41
6/13/80	14 47 6	20	3		24	3		0 OF 41
6/13/80	14 47 15	19	3		24	3		0 OF 41
6/13/80	14 47 24	67	2		24	3		0 OF 41
6/13/80	14 47 33	42	3		25	3		0 OF 41
6/13/80	14 47 42	57	2		25	3		0 OF 41
6/13/80	14 47 51	26	3		25	3		0 OF 41
6/13/80	14 48 0	58	3		25	3		0 OF 41
6/13/80	14 48 9	31	2		25	3		0 OF 41
6/13/80	14 48 18	23	3		25	3		0 OF 41
6/13/80	14 48 27	19	2		25	3		0 OF 41
6/13/80	14 48 36	17	2		25	3		0 OF 41
6/13/80	14 48 44	16	2		25	3		0 OF 41
6/13/80	14 48 53	26	3		25	3		0 OF 41
6/13/80	14 49 2	26	2		25	3		0 OF 41
6/13/80	14 49 11	25	3		25	3		0 OF 41

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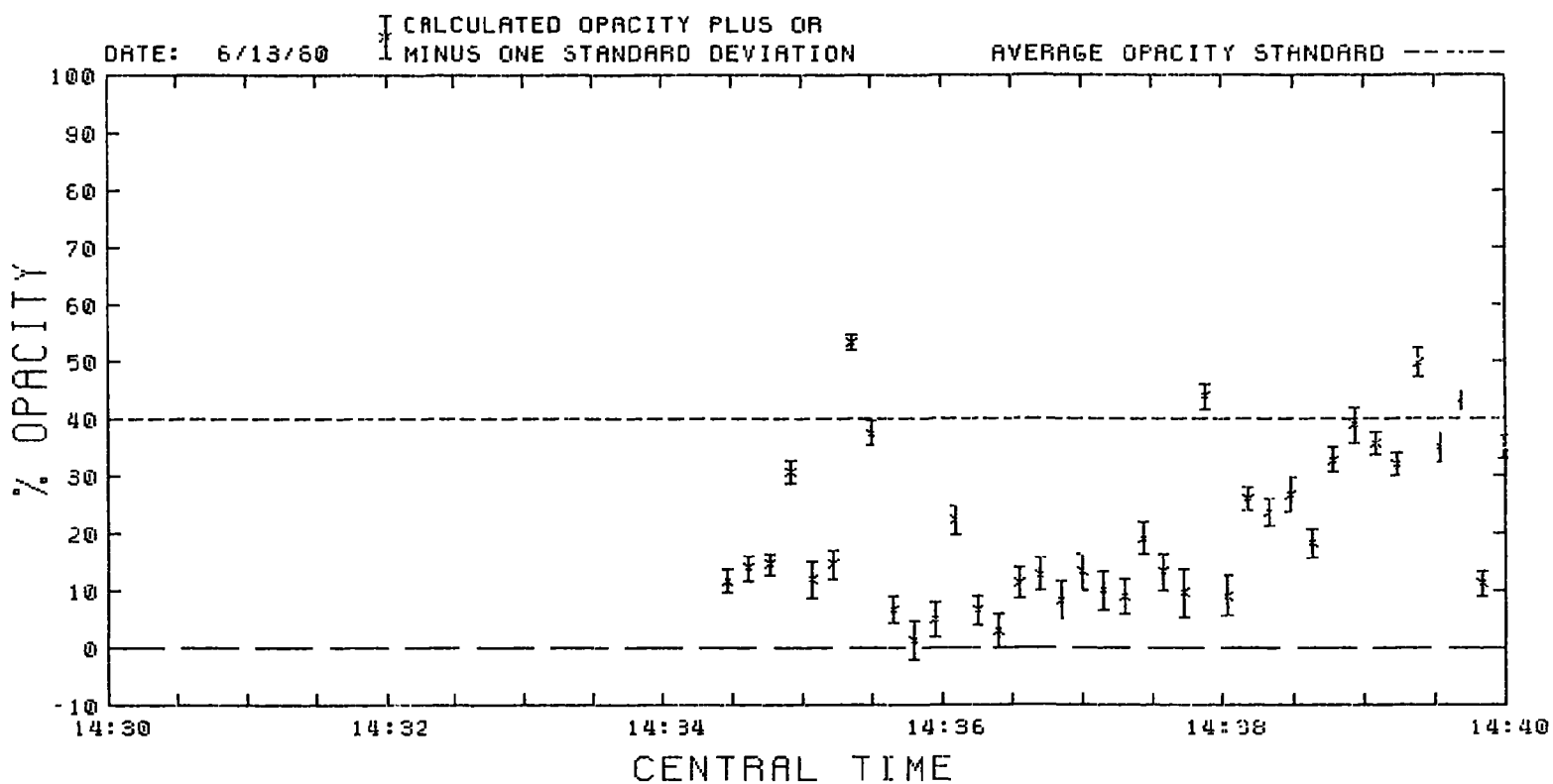
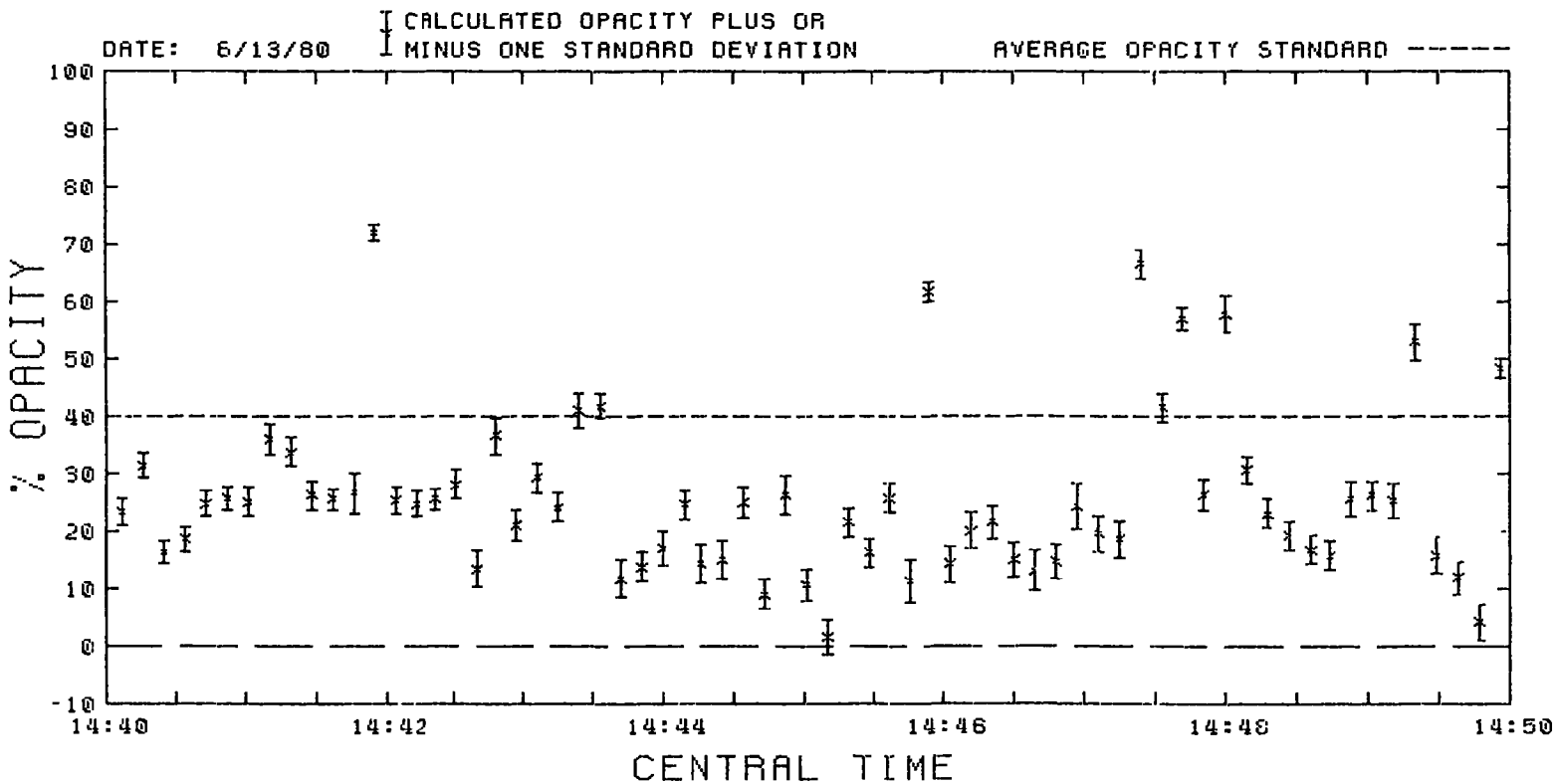
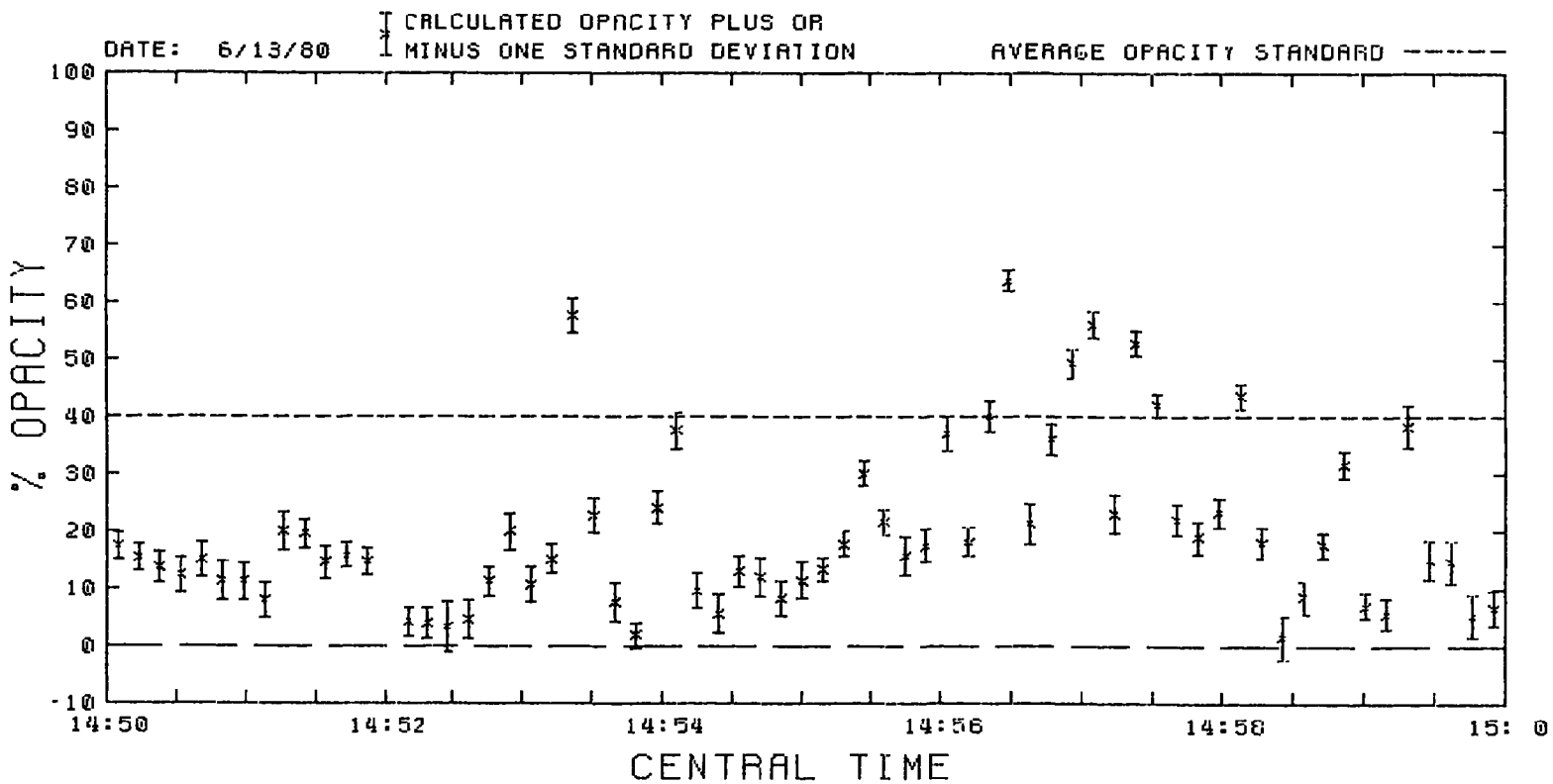
DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	14 56 56	49	2		19	3		0 OF 40
6/13/80	14 57 5	56	2		20	3		0 OF 40
6/13/80	14 57 14	23	3		21	3		0 OF 40
6/13/80	14 57 23	53	2		22	3		0 OF 40
6/13/80	14 57 32	42	2		22	3		0 OF 40
6/13/80	14 57 41	22	3		22	3		0 OF 40
6/13/80	14 57 50	19	3		22	3		0 OF 40
6/13/80	14 57 59	23	2		23	3		0 OF 40
6/13/80	14 58 8	44	2		23	3		0 OF 41
6/13/80	14 58 17	18	3		23	3		0 OF 41
6/13/80	14 58 26	2	4		23	3		0 OF 41
6/13/80	14 58 35	9	3		24	3		0 OF 41
6/13/80	14 58 43	18	2		24	3		0 OF 41
6/13/80	14 58 52	32	2		24	3		0 OF 41
6/13/80	14 59 1	7	2		24	3		0 OF 41
6/13/80	14 59 10	6	3		24	3		0 OF 41
6/13/80	14 59 19	38	4		24	3		0 OF 41
6/13/80	14 59 28	15	3		23	3		0 OF 41
6/13/80	14 59 37	15	4		23	3		0 OF 41
6/13/80	14 59 46	5	4		23	3		0 OF 41
6/13/80	14 59 55	7	3		23	3		0 OF 41
6/13/80	15 0 4	13	4		23	3		0 OF 41
6/13/80	15 0 13	4	3		22	3		0 OF 41
6/13/80	15 0 22	1	3		22	3		0 OF 41
6/13/80	15 0 31	18	3		22	3		0 OF 41
6/13/80	15 0 39	6	2		22	3		0 OF 41
6/13/80	15 0 48	5	2		22	3		0 OF 41
6/13/80	15 0 57	10	2		22	3		0 OF 41
6/13/80	15 1 6	10	2		22	3		0 OF 41
6/13/80	15 1 15	40	3		23	3		0 OF 41
6/13/80	15 1 24	33	3		23	3		0 OF 41
6/13/80	15 1 33	42	4		23	3		0 OF 41
6/13/80	15 1 42	13	4		23	3		0 OF 41
6/13/80	15 1 51	9	2		23	3		0 OF 41
6/13/80	15 2 0	23	2		23	3		0 OF 41
6/13/80	15 2 9	42	2		23	3		0 OF 41
6/13/80	15 2 18	10	3		23	3		0 OF 41
6/13/80	15 2 27	7	4		22	3		0 OF 41
6/13/80	15 2 44	19	3		21	3		0 OF 40
6/13/80	15 2 53	34	3		21	3		0 OF 40
6/13/80	15 3 2	11	3		20	3		0 OF 40
6/13/80	15 3 11	11	3		19	3		0 OF 40
6/13/80	15 3 20	39	3		19	3		0 OF 40
6/13/80	15 3 29	36	3		19	3		0 OF 40
6/13/80	15 3 38	21	3		18	3		0 OF 40
6/13/80	15 3 47	30	2		19	3		0 OF 40
6/13/80	15 3 56	29	3		19	3		0 OF 40
6/13/80	15 4 5	42	3		19	3		0 OF 40
6/13/80	15 4 14	17	4		19	3		0 OF 40



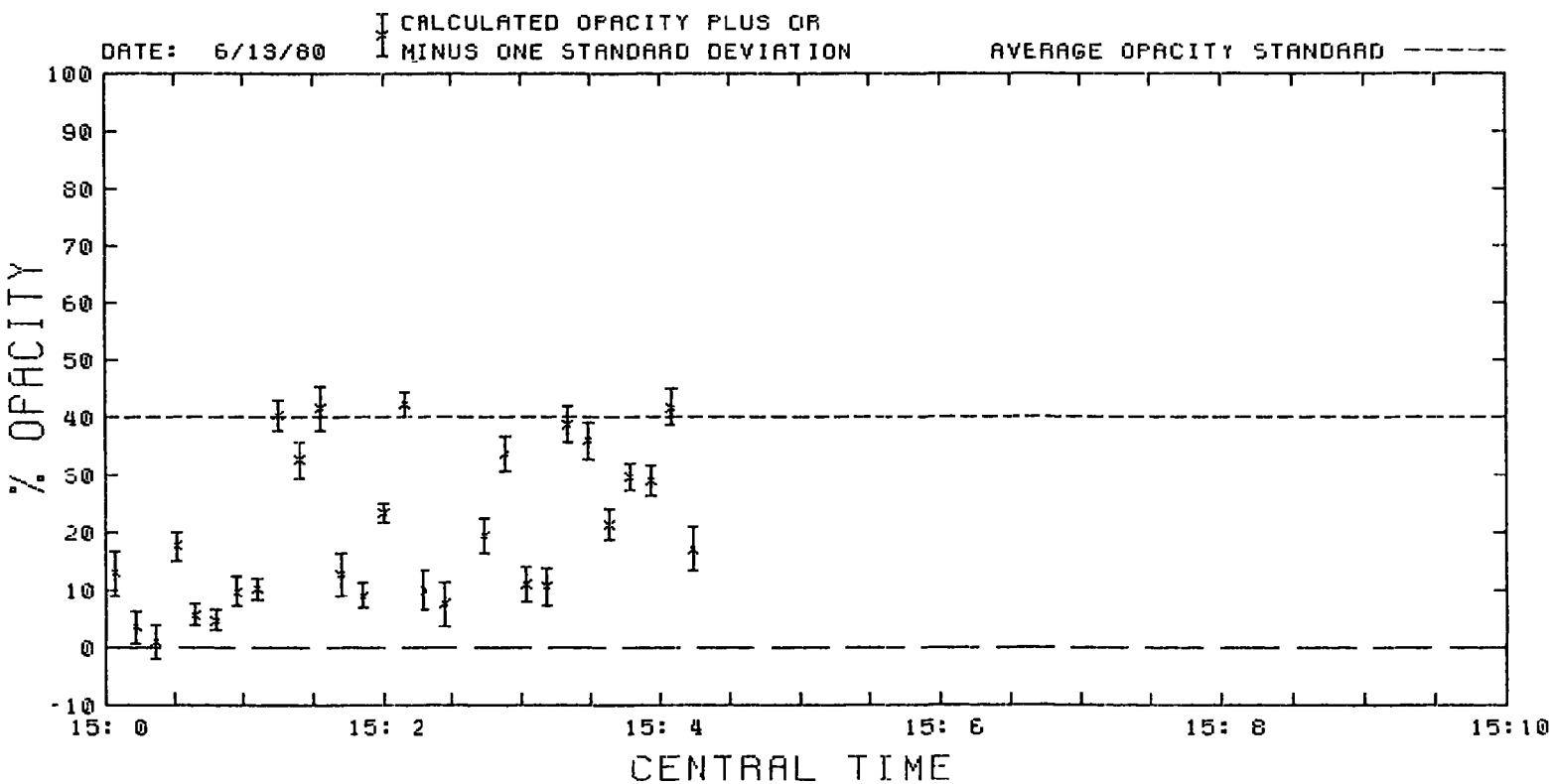
UNIT 1&2. IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 1&2. IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN

OMEGA-0065

INDIANAPOLIS POWER AND LIGHT COMPANY

PETERSBURG STATION

Units 1 and 2 Stack

June 13, 1980, 15:09:01 to 15:38:50

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0065, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	15 9 1	43	4		0	0		0 OF 0
6/13/80	15 9 9	30	2		0	0		0 OF 0
6/13/80	15 9 18	39	3		0	0		0 OF 0
6/13/80	15 9 27	23	3		0	0		0 OF 0
6/13/80	15 9 36	29	2		0	0		0 OF 0
6/13/80	15 9 45	10	2		0	0		0 OF 0
6/13/80	15 9 54	47	3		0	0		0 OF 0
6/13/80	15 10 2	17	2		0	0		0 OF 0
6/13/80	15 10 11	24	2		0	0		0 OF 0
6/13/80	15 10 20	21	2		0	0		0 OF 0
6/13/80	15 10 29	10	3		0	0		0 OF 0
6/13/80	15 10 38	19	2		0	0		0 OF 0
6/13/80	15 10 47	12	3		0	0		0 OF 0
6/13/80	15 10 56	30	2		0	0		0 OF 0
6/13/80	15 11 5	16	3		0	0		0 OF 0
6/13/80	15 11 14	10	3		0	0		0 OF 0
6/13/80	15 11 23	46	2		0	0		0 OF 0
6/13/80	15 11 32	26	2		0	0		0 OF 0
6/13/80	15 11 40	31	3		0	0		0 OF 0
6/13/80	15 11 49	18	3		0	0		0 OF 0
6/13/80	15 11 58	29	2		0	0		0 OF 0
6/13/80	15 12 7	22	2		0	0		0 OF 0
6/13/80	15 12 16	34	2		0	0		0 OF 0
6/13/80	15 12 25	21	2		0	0		0 OF 0
6/13/80	15 12 34	16	2		0	0		0 OF 0
6/13/80	15 12 43	27	2		0	0		0 OF 0
6/13/80	15 12 52	44	3		0	0		0 OF 0
6/13/80	15 13 1	33	3		0	0		0 OF 0
6/13/80	15 13 10	26	2		0	0		0 OF 0
6/13/80	15 13 18	22	2		0	0		0 OF 0
6/13/80	15 13 27	18	3		0	0		0 OF 0
6/13/80	15 13 36	20	3		0	0		0 OF 0
6/13/80	15 13 45	9	4		0	0		0 OF 0
6/13/80	15 13 54	54	2		0	0		0 OF 0
6/13/80	15 14. 3	16	2		0	0		0 OF 0
6/13/80	15 14 12	21	2		0	0		0 OF 0
6/13/80	15 14 21	14	3		0	0		0 OF 0
6/13/80	15 14 30	30	2		0	0		0 OF 0
6/13/80	15 14 39	22	2		0	0		0 OF 0
6/13/80	15 14 47	15	3		25	2		0 OF 40
6/13/80	15 14 56	19	2		25	2		0 OF 41
6/13/80	15 15 5	19	2		24	2		0 OF 41
6/13/80	15 15 14	4	3		23	2		0 OF 41
6/13/80	15 15 23	35	2		23	2		0 OF 41
6/13/80	15 15 32	45	2		24	2		0 OF 41
6/13/80	15 15 41	19	2		24	2		0 OF 41
6/13/80	15 15 50	17	2		24	2		0 OF 41
6/13/80	15 15 59	12	3		23	2		0 OF 41
6/13/80	15 16 8	24	3		23	2		0 OF 41
6/13/80	15 16 17	12	2		23	2		0 OF 41

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0065, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	15 16 25	12	3		23	2		0 OF 41
6/13/80	15 16 34	15	3		23	2		0 OF 41
6/13/80	15 16 43	27	3		23	2		0 OF 41
6/13/80	15 16 52	39	2		24	2		0 OF 41
6/13/80	15 17 1	34	2		24	2		0 OF 41
6/13/80	15 17 19	36	2		25	2		0 OF 40
6/13/80	15 17 28	22	2		24	2		0 OF 40
6/13/80	15 17 37	22	3		24	2		0 OF 40
6/13/80	15 17 46	10	2		23	2		0 OF 40
6/13/80	15 17 55	69	3		25	2		0 OF 40
6/13/80	15 18 3	20	2		24	2		0 OF 40
6/13/80	15 18 12	18	2		24	2		0 OF 40
6/13/80	15 18 21	1	2		24	2		0 OF 40
6/13/80	15 18 30	3	2		23	2		0 OF 40
6/13/80	15 18 39	1	3		23	2		0 OF 40
6/13/80	15 18 57	12	3		22	2		0 OF 39
6/13/80	15 19 6	14	2		21	2		0 OF 39
6/13/80	15 19 15	6	2		21	2		0 OF 39
6/13/80	15 19 24	59	2		22	2		0 OF 39
6/13/80	15 19 32	52	1		23	2		0 OF 39
6/13/80	15 19 41	41	3		23	2		0 OF 39
6/13/80	15 19 50	30	2		24	2		0 OF 39
6/13/80	15 19 59	54	2		24	2		0 OF 39
6/13/80	15 20 17	27	3		24	2		0 OF 38
6/13/80	15 20 26	31	3		24	2		0 OF 38
6/13/80	15 20 35	30	2		24	2		0 OF 38
6/13/80	15 20 44	31	3		25	2		0 OF 38
6/13/80	15 20 53	20	3		25	2		0 OF 38
6/13/80	15 21 1	17	4		25	2		0 OF 38
6/13/80	15 21 10	19	2		25	2		0 OF 38
6/13/80	15 21 19	55	2		26	2		0 OF 38
6/13/80	15 21 28	22	2		26	2		0 OF 38
6/13/80	15 21 37	40	3		26	2		0 OF 38
6/13/80	15 21 46	21	2		26	2		0 OF 38
6/13/80	15 21 55	85	2		28	2		0 OF 38
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6/13/80	15 22 13	37	3		28	2		0 OF 38
6/13/80	15 22 22	34	3		29	2		0 OF 38
6/13/80	15 22 31	47	3		30	2		0 OF 38
6/13/80	15 22 40	39	2		30	2		0 OF 38
6/13/80	15 22 49	16	4		30	2		0 OF 38
6/13/80	15 22 57	42	4		30	2		0 OF 38
6/13/80	15 23 6	36	3		30	2		0 OF 38
6/13/80	15 23 15	24	2		30	2		0 OF 39
6/13/80	15 23 24	53	2		30	2		0 OF 39
6/13/80	15 23 33	58	1		31	2		0 OF 39
6/13/80	15 23 42	16	3		31	2		0 OF 39
6/13/80	15 23 51	15	2		31	2		0 OF 39
6/13/80	15 24 9	69	2		32	2		0 OF 38
6/13/80	15 24 17	20	3		32	2		0 OF 38

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

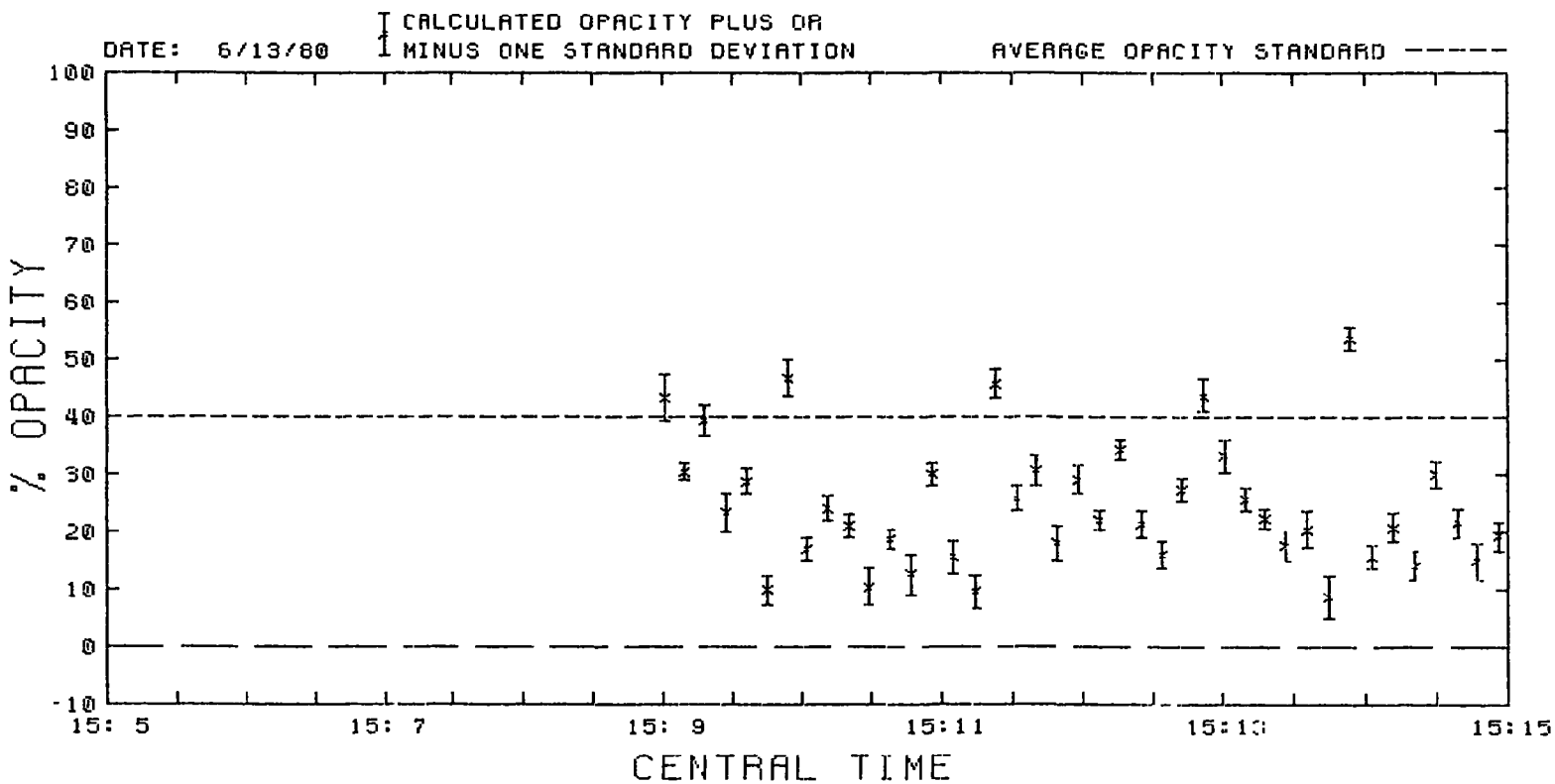
OMEGA-0065, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	15 24 35	22	2		33	2		0 OF 37
6/13/80	15 24 44	41	2		34	2		0 OF 37
6/13/80	15 24 53	32	3		34	2		0 OF 38
6/13/80	15 25 2	48	2		35	2		0 OF 38
6/13/80	15 25 11	18	2		35	2		0 OF 38
6/13/80	15 25 20	71	4		37	2		0 OF 38
6/13/80	15 25 29	46	2		37	2		0 OF 38
6/13/80	15 25 38	52	2		37	2		0 OF 38
6/13/80	15 25 46	39	2		37	2		0 OF 38
6/13/80	15 25 55	78	4		38	2		0 OF 38
6/13/80	15 26 4	51	1		38	2		0 OF 38
6/13/80	15 26 13	44	1		38	2		0 OF 39
6/13/80	15 26 22	62	1		39	2		0 OF 39
6/13/80	15 26 31	77	1		40	2		0 OF 39
6/13/80	15 26 40	25	2		40	2		0 OF 39
6/13/80	15 26 49	21	2		40	2		0 OF 39
6/13/80	15 26 58	59	1		41	2	****	0 OF 39
6/13/80	15 27 7	45	2		41	2	****	0 OF 39
6/13/80	15 27 16	16	5		41	2	****	0 OF 39
6/13/80	15 27 24	55	2		41	2	****	0 OF 39
6/13/80	15 27 33	24	3		41	2	****	0 OF 39
6/13/80	15 27 42	43	3		41	2	****	0 OF 39
6/13/80	15 27 51	32	2		42	2	****	0 OF 39
6/13/80	15 28 0	35	2		40	2	****	0 OF 39
6/13/80	15 28 9	22	3		40	2	****	0 OF 39
6/13/80	15 28 18	62	2		41	2	****	0 OF 39
6/13/80	15 28 27	47	2		41	2	****	0 OF 39
6/13/80	15 28 36	26	2		41	2	****	0 OF 39
6/13/80	15 28 45	30	3		40	2	****	0 OF 39
6/13/80	15 28 54	42	2		41	2	****	0 OF 39
6/13/80	15 29 2	36	3		41	2	****	0 OF 39
6/13/80	15 29 11	21	3		41	2	****	0 OF 39
6/13/80	15 29 20	79	2		42	2	****	0 OF 39
6/13/80	15 29 29	44	4		42	2	****	0 OF 39
6/13/80	15 29 38	42	3		41	2	****	0 OF 39
6/13/80	15 29 47	21	3		41	2	****	0 OF 39
6/13/80	15 29 56	80	2		43	2	****	0 OF 39
6/13/80	15 30 5	52	2		43	2	****	0 OF 40
6/13/80	15 30 14	37	2		42	2	****	0 OF 40
6/13/80	15 30 23	42	3		43	2	****	0 OF 40
6/13/80	15 30 31	56	1		43	2	****	0 OF 41
6/13/80	15 30 40	29	2		44	2	****	0 OF 41
6/13/80	15 30 49	17	2		43	2	****	0 OF 41
6/13/80	15 30 58	30	2		43	2	****	0 OF 41
6/13/80	15 31 7	28	2		42	2	****	0 OF 41
6/13/80	15 31 16	16	2		42	2	****	0 OF 41
6/13/80	15 31 25	54	3		42	2	****	0 OF 41
6/13/80	15 31 34	69	2		42	2	****	0 OF 41
6/13/80	15 31 43	26	3		42	2	****	0 OF 41
6/13/80	15 31 52	18	3		41	2	****	0 OF 41

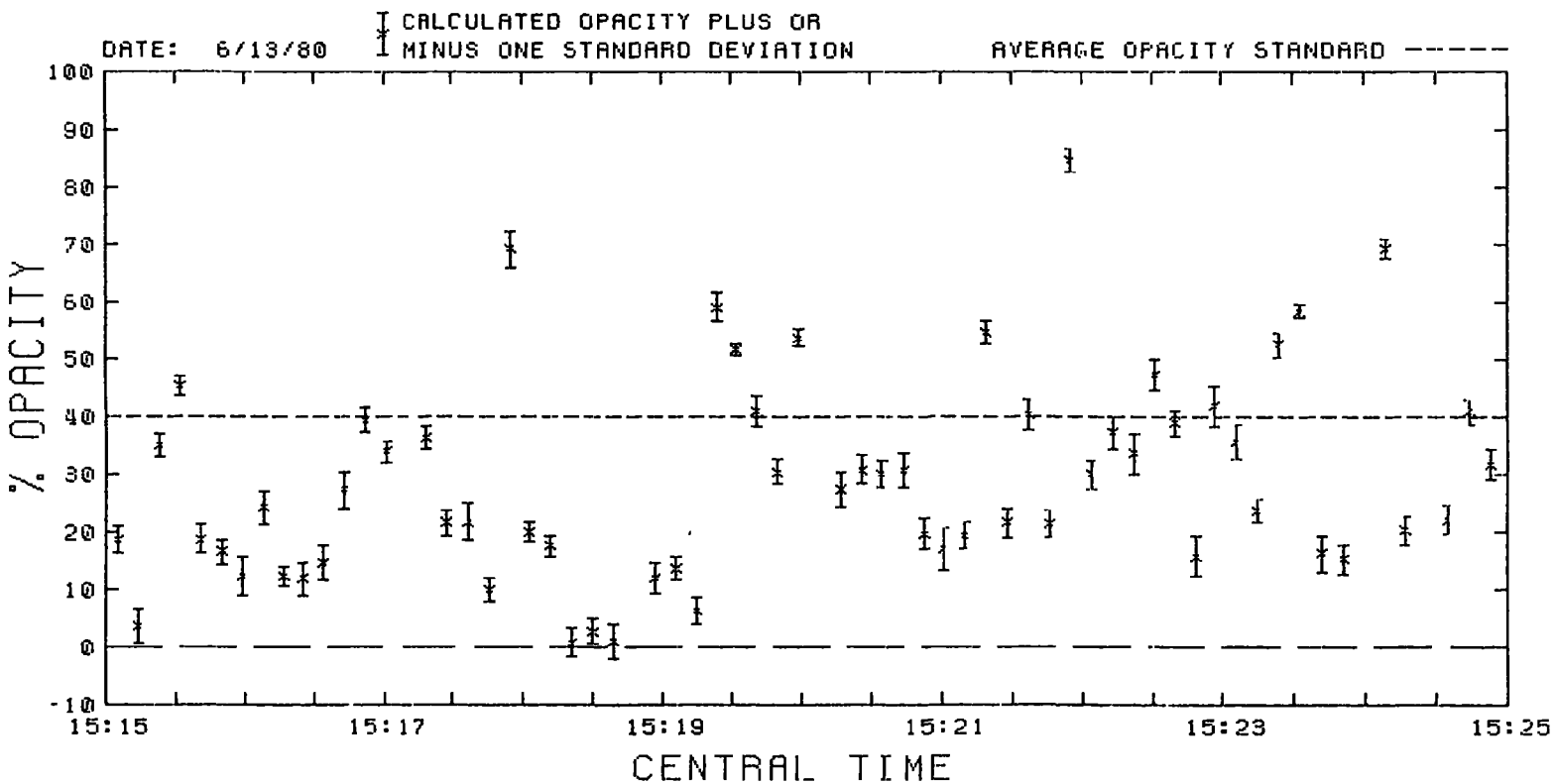
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0065, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

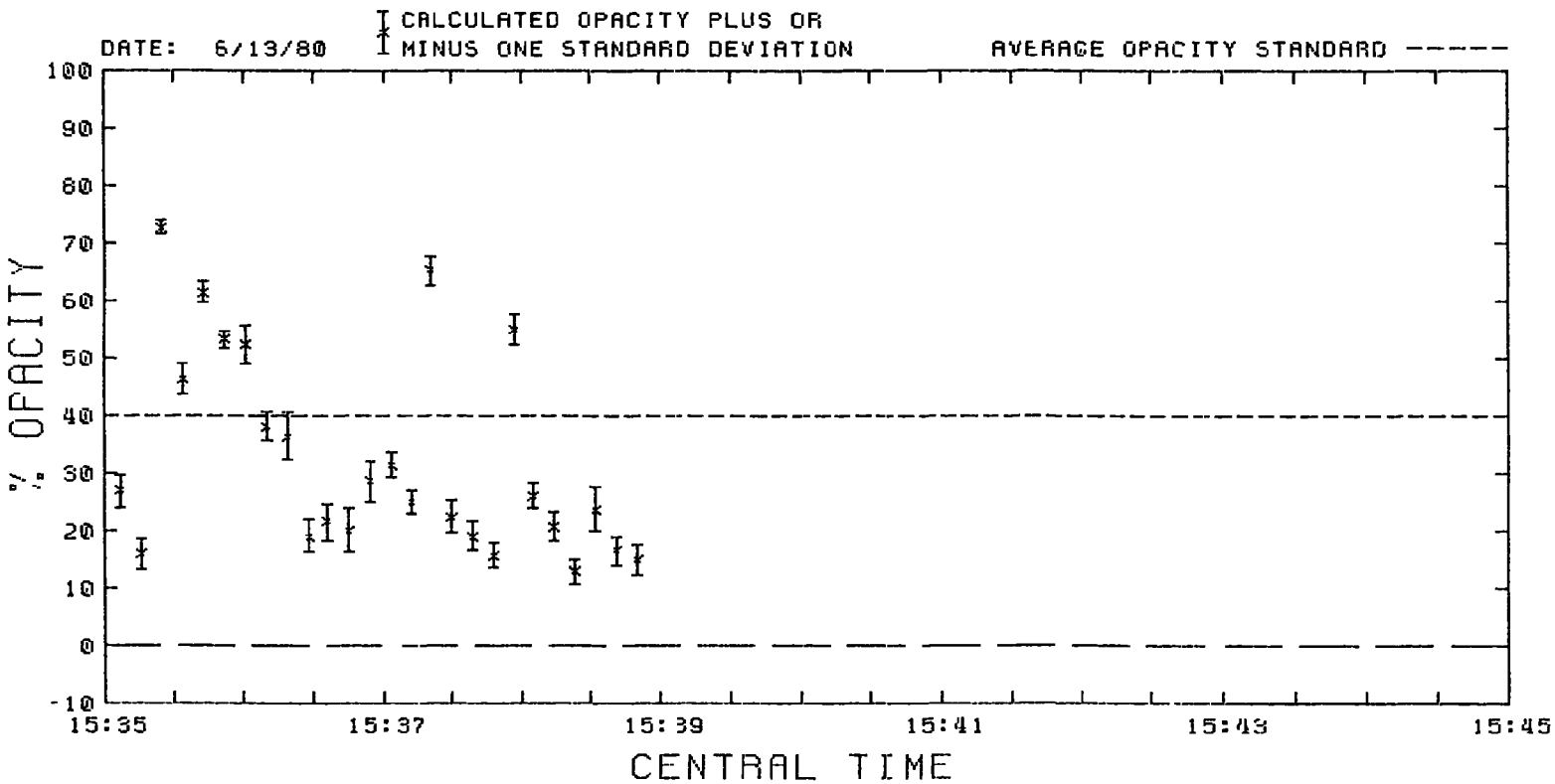
DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	15 32 0	52	2		41	2	****	0 OF 41
6/13/80	15 32 9	40	3		40	2	****	0 OF 41
6/13/80	15 32 18	47	2		40	2	****	0 OF 41
6/13/80	15 32 27	20	2		39	2		0 OF 41
6/13/80	15 32 36	11	3		38	2		0 OF 41
6/13/80	15 32 45	77	2		39	2		0 OF 41
6/13/80	15 32 54	51	2		40	2		0 OF 41
6/13/80	15 33 3	75	2		40	2	****	0 OF 41
6/13/80	15 33 12	66	1		41	2	****	0 OF 41
6/13/80	15 33 21	79	2		42	2	****	0 OF 41
6/13/80	15 33 29	57	2		42	2	****	0 OF 41
6/13/80	15 33 38	24	3		42	2	****	0 OF 41
6/13/80	15 33 47	15	2		42	2	****	0 OF 41
6/13/80	15 33 56	48	1		42	2	****	0 OF 41
6/13/80	15 34 5	28	3		42	2	****	0 OF 41
6/13/80	15 34 14	27	2		42	2	****	0 OF 41
6/13/80	15 34 23	26	3		41	2	****	0 OF 41
6/13/80	15 34 32	45	2		41	2	****	0 OF 41
6/13/80	15 34 41	19	3		41	2	****	0 OF 41
6/13/80	15 34 50	22	2		41	2	****	0 OF 41
6/13/80	15 34 58	24	3		40	2	****	0 OF 41
6/13/80	15 35 7	27	3		40	2	****	0 OF 41
6/13/80	15 35 16	16	3		40	2		0 OF 41
6/13/80	15 35.25	73	1		40	2		0 OF 41
6/13/80	15 35 34	46	3		40	2		0 OF 41
6/13/80	15 35 43	61	2		40	2	****	0 OF 41
6/13/80	15 35 52	53	2		41	2	****	0 OF 41
6/13/80	15 36 1	52	3		40	2	****	0 OF 41
6/13/80	15 36 10	38	2		40	2	****	0 OF 41
6/13/80	15 36 19	36	4		40	2	****	0 OF 41
6/13/80	15 36 28	19	3		40	2		0 OF 41
6/13/80	15 36 36	22	3		39	2		0 OF 41
6/13/80	15 36 45	20	4		38	2		0 OF 41
6/13/80	15 36 54	29	3		39	2		0 OF 41
6/13/80	15 37 3	31	2		39	2		0 OF 41
6/13/80	15 37 12	25	2		39	2		0 OF 41
6/13/80	15 37 21	65	2		40	2		0 OF 41
6/13/80	15 37 30	22	3		39	2		0 OF 41
6/13/80	15 37 39	19	2		38	2		0 OF 41
6/13/80	15 37 48	16	2		38	2		0 OF 41
6/13/80	15 37 57	55	3		39	2		0 OF 41
6/13/80	15 38 5	26	2		38	2		0 OF 41
6/13/80	15 38 14	21	2		37	2		0 OF 41
6/13/80	15 38 23	13	2		37	2		0 OF 41
6/13/80	15 38 32	24	4		37	2		0 OF 41
6/13/80	15 38 41	17	2		37	2		0 OF 41
6/13/80	15 38 50	15	3		35	2		0 OF 41



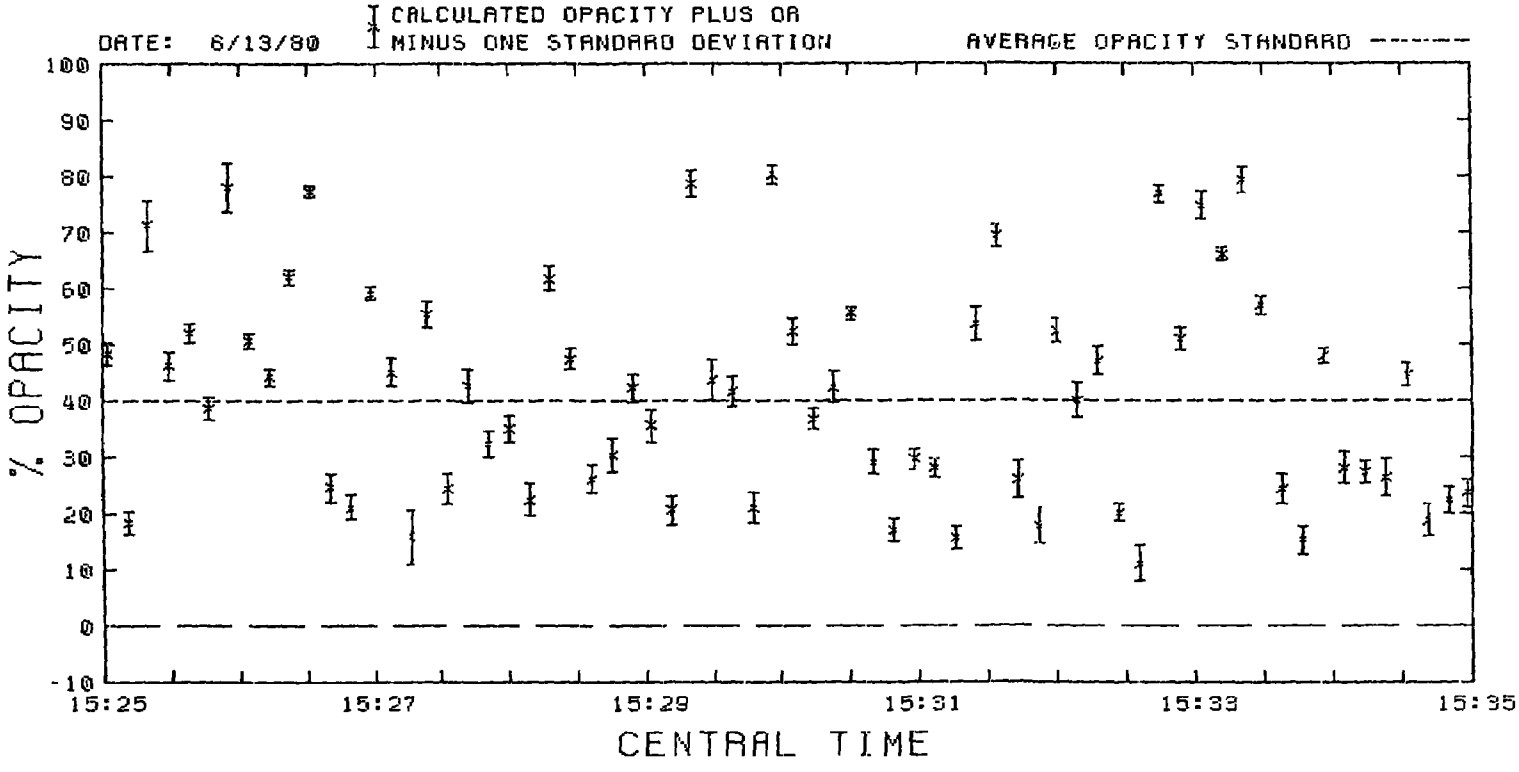
UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 1&2. IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN

OMEGA-0066

INDIANAPOLIS POWER AND LIGHT COMPANY

PETERSBURG STATION

Unit 3 Stack

June 13, 1980, 15:59:37 to 16:14:19

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

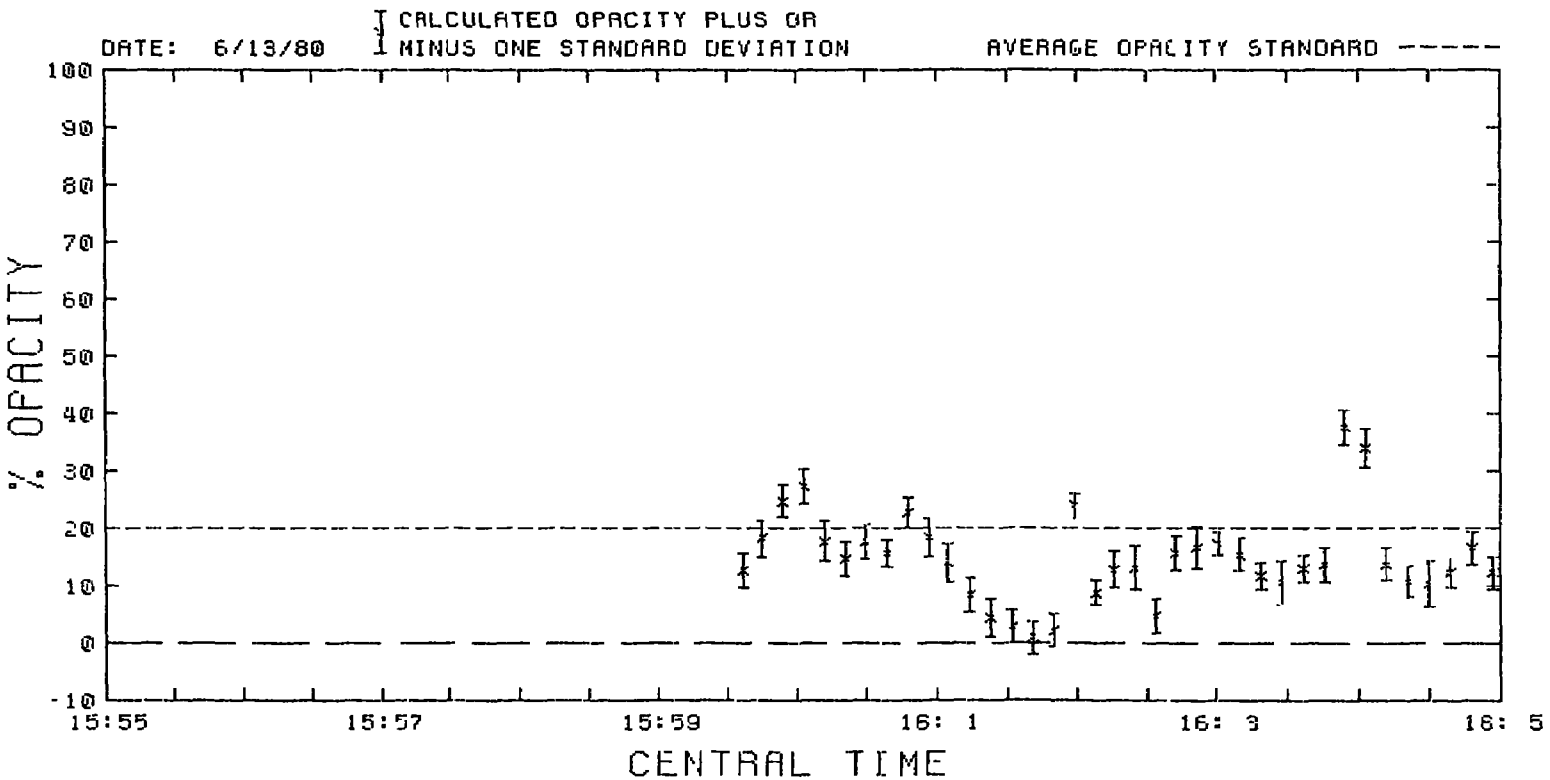
OMEGA-0066, UNIT 3, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	15 59 37	13	3		0	0		0 OF 0
6/13/80	15 59 45	18	3		0	0		0 OF 0
6/13/80	15 59 54	25	3		0	0		0 OF 0
6/13/80	16 0 3	27	3		0	0		0 OF 0
6/13/80	16 0 12	18	4		0	0		0 OF 0
6/13/80	16 0 21	15	3		0	0		0 OF 0
6/13/80	16 0 30	18	3		0	0		0 OF 0
6/13/80	16 0 39	16	2		0	0		0 OF 0
6/13/80	16 0 48	23	3		0	0		0 OF 0
6/13/80	16 0 57	18	3		0	0		0 OF 0
6/13/80	16 1 5	14	3		0	0		0 OF 0
6/13/80	16 1 14	8	3		0	0		0 OF 0
6/13/80	16 1 23	4	3		0	0		0 OF 0
6/13/80	16 1 32	3	3		0	0		0 OF 0
6/13/80	16 1 41	1	3		0	0		0 OF 0
6/13/80	16 1 50	2	3		0	0		0 OF 0
6/13/80	16 1 59	24	2		0	0		0 OF 0
6/13/80	16 2 8	9	2		0	0		0 OF 0
6/13/80	16 2 16	13	3		0	0		0 OF 0
6/13/80	16 2 25	13	4		0	0		0 OF 0
6/13/80	16 2 34	5	3		0	0		0 OF 0
6/13/80	16 2 43	16	3		0	0		0 OF 0
6/13/80	16 2 52	17	4		0	0		0 OF 0
6/13/80	16 3 1	17	2		0	0		0 OF 0
6/13/80	16 3 10	15	3		0	0		0 OF 0
6/13/80	16 3 19	12	2		0	0		0 OF 0
6/13/80	16 3 28	11	4		0	0		0 OF 0
6/13/80	16 3 37	13	2		0	0		0 OF 0
6/13/80	16 3 46	14	3		0	0		0 OF 0
6/13/80	16 3 54	38	3		0	0		0 OF 0
6/13/80	16 4 3	34	3		0	0		0 OF 0
6/13/80	16 4 12	14	3		0	0		0 OF 0
6/13/80	16 4 21	11	3		0	0		0 OF 0
6/13/80	16 4 30	10	4		0	0		0 OF 0
6/13/80	16 4 39	12	3		0	0		0 OF 0
6/13/80	16 4 48	17	3		0	0		0 OF 0
6/13/80	16 4 57	12	3		0	0		0 OF 0
6/13/80	16 5 6	15	3		0	0		0 OF 0
6/13/80	16 5 15	12	3		0	0		0 OF 0
6/13/80	16 5 23	12	2		15	3		0 OF 40
6/13/80	16 5 32	12	3		15	3		0 OF 41
6/13/80	16 5 41	16	3		15	3		0 OF 41
6/13/80	16 5 50	15	4		15	3		0 OF 41
6/13/80	16 5 59	50	3		15	3		0 OF 41
6/13/80	16 6 8	23	4		15	3		0 OF 41
6/13/80	16 6 17	17	4		15	3		0 OF 41
6/13/80	16 6 26	13	3		15	3		0 OF 41
6/13/80	16 6 35	18	3		15	3		0 OF 41
6/13/80	16 6 43	17	3		15	3		0 OF 41
6/13/80	16 6 52	27	4		15	3		0 OF 41

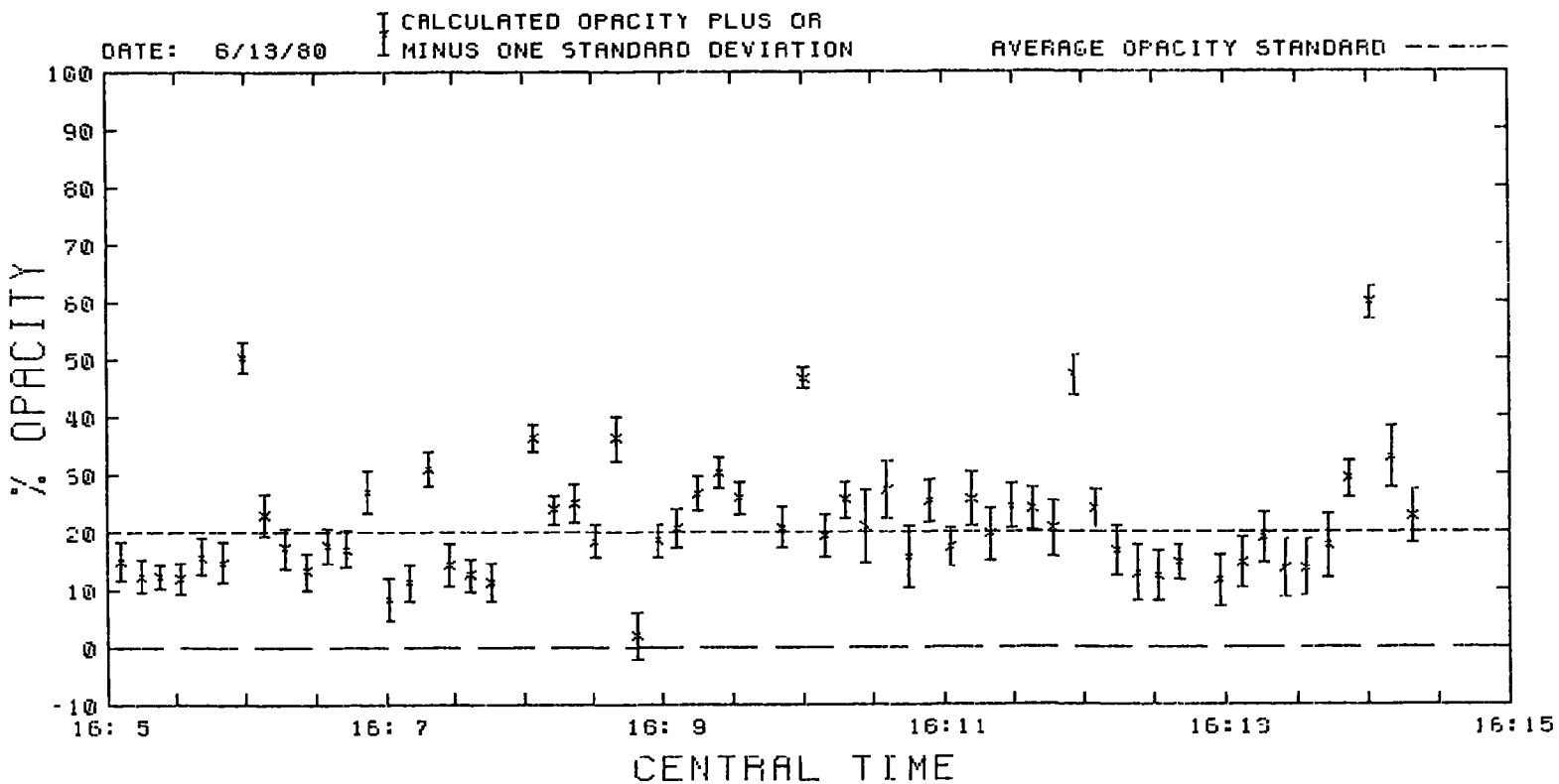
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0066, UNIT 3, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	16 7 1	8	4		15	3		0 OF 41
6/13/80	16 7 10	11	3		15	3		0 OF 41
6/13/80	16 7 19	31	3		15	3		0 OF 41
6/13/80	16 7 28	14	4		16	3		0 OF 41
6/13/80	16 7 37	12	3		16	3		0 OF 41
6/13/80	16 7 46	11	3		16	3		0 OF 41
6/13/80	16 8 4	36	2		17	3		0 OF 40
6/13/80	16 8 13	24	2		17	3		0 OF 40
6/13/80	16 8 22	25	3		18	3		0 OF 40
6/13/80	16 8 31	18	3		18	3		0 OF 40
6/13/80	16 8 40	36	4		18	3		0 OF 40
6/13/80	16 8 49	2	4		18	3		0 OF 40
6/13/80	16 8 58	19	3		18	3		0 OF 40
6/13/80	16 9 6	21	3		18	3		0 OF 40
6/13/80	16 9 15	27	3		19	3		0 OF 40
6/13/80	16 9 24	30	3		19	3		0 OF 40
6/13/80	16 9 33	26	3		19	3		0 OF 40
6/13/80	16 9 51	21	3		20	3		0 OF 39
6/13/80	16 10 0	47	2		20	3		0 OF 39
6/13/80	16 10 9	19	4		20	3		0 OF 39
6/13/80	16 10 18	26	3		20	3		0 OF 39
6/13/80	16 10 27	21	6		20	3	****	0 OF 39
6/13/80	16 10 36	27	5		21	3	****	0 OF 39
6/13/80	16 10 45	16	5		21	3	****	0 OF 39
6/13/80	16 10 54	25	4		21	3	****	0 OF 39
6/13/80	16 11 3	17	3		21	3	****	0 OF 39
6/13/80	16 11 12	26	5		21	3	****	0 OF 39
6/13/80	16 11 20	20	5		22	3	****	0 OF 39
6/13/80	16 11 29	24	4		22	3	****	0 OF 39
6/13/80	16 11 38	24	4		22	4	****	0 OF 39
6/13/80	16 11 47	21	5		22	4	****	0 OF 39
6/13/80	16 11 56	47	4		23	4	****	0 OF 39
6/13/80	16 12 5	24	3		22	4	****	0 OF 39
6/13/80	16 12 14	17	4		22	4	****	0 OF 39
6/13/80	16 12 23	13	5		22	4	****	0 OF 39
6/13/80	16 12 32	12	4		22	4	****	0 OF 39
6/13/80	16 12 41	15	3		22	4	****	0 OF 39
6/13/80	16 12 58	12	5		22	4	****	0 OF 38
6/13/80	16 13 7	15	4		22	4	****	0 OF 38
6/13/80	16 13 16	19	4		22	4	****	0 OF 38
6/13/80	16 13 25	14	5		22	4	****	0 OF 38
6/13/80	16 13 34	14	5		22	4	****	0 OF 38
6/13/80	16 13 43	18	6		22	4	****	0 OF 38
6/13/80	16 13 52	29	3		22	4	****	0 OF 38
6/13/80	16 14 1	60	3		23	4	****	0 OF 39
6/13/80	16 14 10	33	5		23	4	****	0 OF 39
6/13/80	16 14 19	23	5		23	4	****	0 OF 39



UNIT 3, IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 3, IP&L PETERSBURG STATION, PETERSBURG, IN

OMEGA-0067

INDIANAPOLIS POWER AND LIGHT COMPANY

PETERSBURG STATION

Units 1 and 2 Stack

June 13, 1980, 16:21:50 to 16:36:23

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

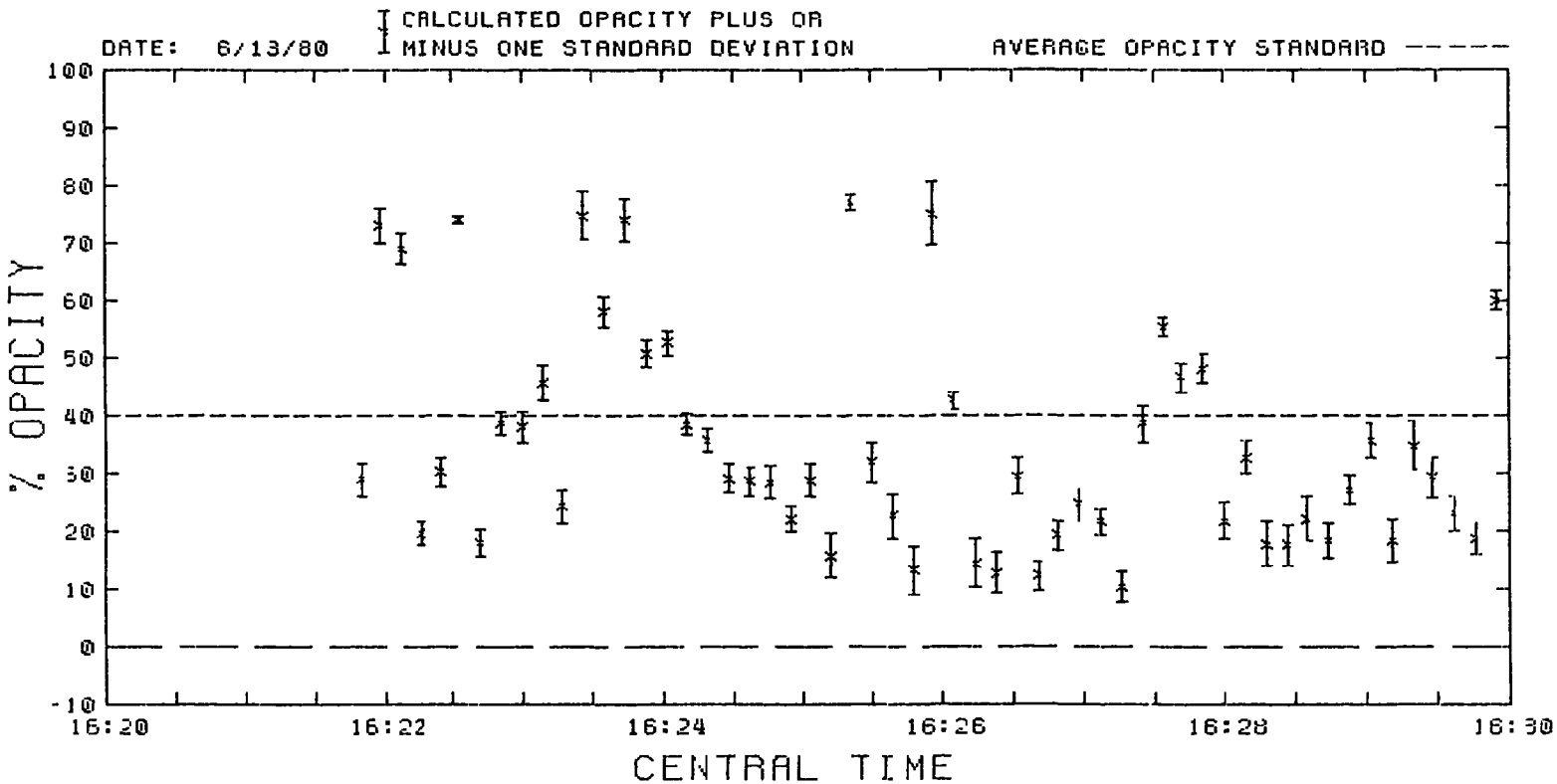
OMEGA-0067. UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	16 21 50	29	3		0	0		0 OF 0
6/13/80	16 21 58	73	3		0	0		0 OF 0
6/13/80	16 22 7	69	3		0	0		0 OF 0
6/13/80	16 22 16	20	2		0	0		0 OF 0
6/13/80	16 22 25	30	2		0	0		0 OF 0
6/13/80	16 22 33	74	1		0	0		0 OF 0
6/13/80	16 22 42	18	2		0	0		0 OF 0
6/13/80	16 22 51	39	2		0	0		0 OF 0
6/13/80	16 23 0	38	3		0	0		0 OF 0
6/13/80	16 23 9	46	3		0	0		0 OF 0
6/13/80	16 23 17	24	3		0	0		0 OF 0
6/13/80	16 23 26	75	4		0	0		0 OF 0
6/13/80	16 23 35	58	3		0	0		0 OF 0
6/13/80	16 23 44	74	4		0	0		0 OF 0
6/13/80	16 23 53	51	2		0	0		0 OF 0
6/13/80	16 24 2	53	2		0	0		0 OF 0
6/13/80	16 24 10	38	2		0	0		0 OF 0
6/13/80	16 24 19	36	2		0	0		0 OF 0
6/13/80	16 24 28	29	3		0	0		0 OF 0
6/13/80	16 24 37	29	2		0	0		0 OF 0
6/13/80	16 24 46	28	3		0	0		0 OF 0
6/13/80	16 24 55	22	2		0	0		0 OF 0
6/13/80	16 25 3	29	3		0	0		0 OF 0
6/13/80	16 25 12	16	4		0	0		0 OF 0
6/13/80	16 25 21	77	1		0	0		0 OF 0
6/13/80	16 25 30	32	4		0	0		0 OF 0
6/13/80	16 25 39	23	4		0	0		0 OF 0
6/13/80	16 25 48	13	4		0	0		0 OF 0
6/13/80	16 25 56	75	5		0	0		0 OF 0
6/13/80	16 26 5	43	2		0	0		0 OF 0
6/13/80	16 26 14	14	4		0	0		0 OF 0
6/13/80	16 26 23	13	4		0	0		0 OF 0
6/13/80	16 26 32	29	3		0	0		0 OF 0
6/13/80	16 26 41	12	2		0	0		0 OF 0
6/13/80	16 26 49	19	2		0	0		0 OF 0
6/13/80	16 26 58	25	3		0	0		0 OF 0
6/13/80	16 27 7	22	2		0	0		0 OF 0
6/13/80	16 27 16	10	3		0	0		0 OF 0
6/13/80	16 27 25	39	3		0	0		0 OF 0
6/13/80	16 27 34	55	2		37	3		0 OF 40
6/13/80	16 27 42	47	3		38	3		0 OF 41
6/13/80	16 27 51	48	3		38	3		0 OF 41
6/13/80	16 28 0	22	3		37	3		0 OF 41
6/13/80	16 28 9	33	3		36	3		0 OF 41
6/13/80	16 28 18	18	4		36	3		0 OF 41
6/13/80	16 28 27	18	4		36	3		0 OF 41
6/13/80	16 28 35	22	4		34	3		0 OF 41
6/13/80	16 28 44	18	3		34	3		0 OF 41
6/13/80	16 28 53	27	3		34	3		0 OF 41
6/13/80	16 29 2	36	3		34	3		0 OF 41

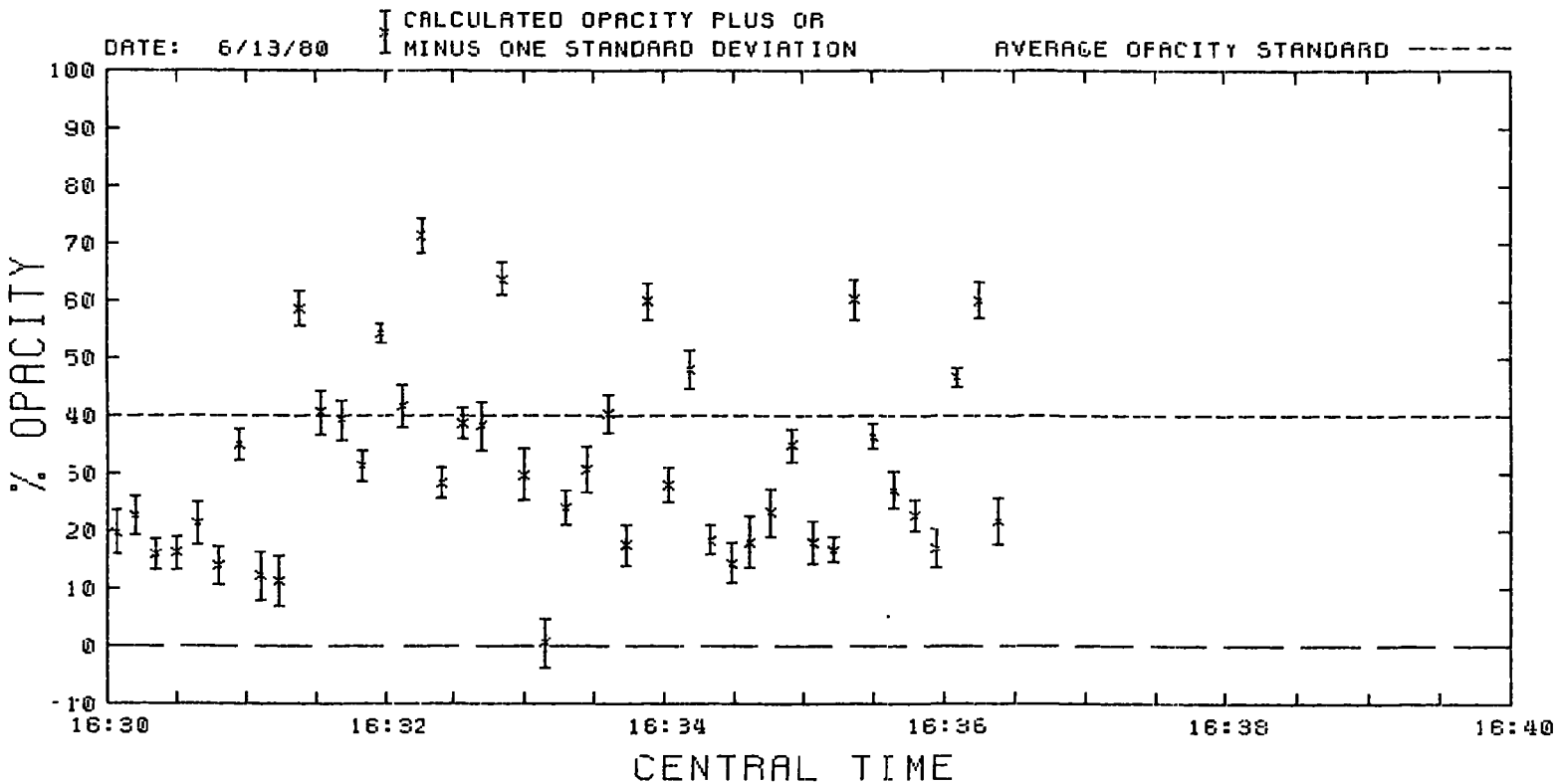
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0067, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	16 29 11	18	4		33	3		0 OF 41
6/13/80	16 29 20	35	4		34	3		0 OF 41
6/13/80	16 29 28	29	4		33	3		0 OF 41
6/13/80	16 29 37	23	3		32	3		0 OF 41
6/13/80	16 29 46	19	3		30	3		0 OF 41
6/13/80	16 29 55	60	2		31	3		0 OF 41
6/13/80	16 30 4	20	4		30	3		0 OF 41
6/13/80	16 30 12	23	3		29	3		0 OF 41
6/13/80	16 30 21	16	3		29	3		0 OF 41
6/13/80	16 30 30	16	3		29	3		0 OF 41
6/13/80	16 30 39	21	4		28	3		0 OF 41
6/13/80	16 30 48	14	3		28	3		0 OF 41
6/13/80	16 30 57	35	3		28	3		0 OF 41
6/13/80	16 31 6	12	4		28	3		0 OF 41
6/13/80	16 31 14	11	4		28	3		0 OF 41
6/13/80	16 31 23	59	3		27	3		0 OF 41
6/13/80	16 31 32	41	4		28	3		0 OF 41
6/13/80	16 31 41	39	3		28	3		0 OF 41
6/13/80	16 31 50	31	3		28	3		0 OF 41
6/13/80	16 31 58	54	2		28	3		0 OF 41
6/13/80	16 32 7	42	4		28	3		0 OF 41
6/13/80	16 32 16	71	3		29	3		0 OF 41
6/13/80	16 32 25	28	3		30	3		0 OF 41
6/13/80	16 32 34	39	3		30	3		0 OF 41
6/13/80	16 32 42	38	4		31	3		0 OF 41
6/13/80	16 32 51	64	3		32	3		0 OF 41
6/13/80	16 33 0	30	5		32	3		0 OF 41
6/13/80	16 33 9	1	4		31	3		0 OF 41
6/13/80	16 33 18	24	3		32	3		0 OF 41
6/13/80	16 33 27	31	4		31	3		0 OF 41
6/13/80	16 33 36	40	3		31	3		0 OF 41
6/13/80	16 33 44	18	4		30	3		0 OF 41
6/13/80	16 33 53	60	3		31	3		0 OF 41
6/13/80	16 34 2	28	3		31	3		0 OF 41
6/13/80	16 34 11	48	3		31	3		0 OF 41
6/13/80	16 34 20	18	2		31	3		0 OF 41
6/13/80	16 34 29	14	4		31	3		0 OF 41
6/13/80	16 34 37	18	5		31	3		0 OF 41
6/13/80	16 34 46	23	4		31	3		0 OF 41
6/13/80	16 34 55	35	3		31	3		0 OF 41
6/13/80	16 35 4	18	4		31	3		0 OF 41
6/13/80	16 35 13	17	2		31	3		0 OF 41
6/13/80	16 35 22	60	4		31	3		0 OF 41
6/13/80	16 35 30	36	2		32	3		0 OF 41
6/13/80	16 35 39	27	3		32	3		0 OF 41
6/13/80	16 35 48	23	3		32	3		0 OF 41
6/13/80	16 35 57	17	3		31	3		0 OF 41
6/13/80	16 36 6	47	2		31	3		0 OF 41
6/13/80	16 36 15	60	3		32	3		0 OF 41
6/13/80	16 36 23	22	4		32	3		0 OF 41



UNIT 1&2. IP&L PETERSBURG STATION, PETERSBURG, IN



UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN

OMEGA-0067

INDIANAPOLIS POWER AND LIGHT COMPANY

PETERSBURG STATION

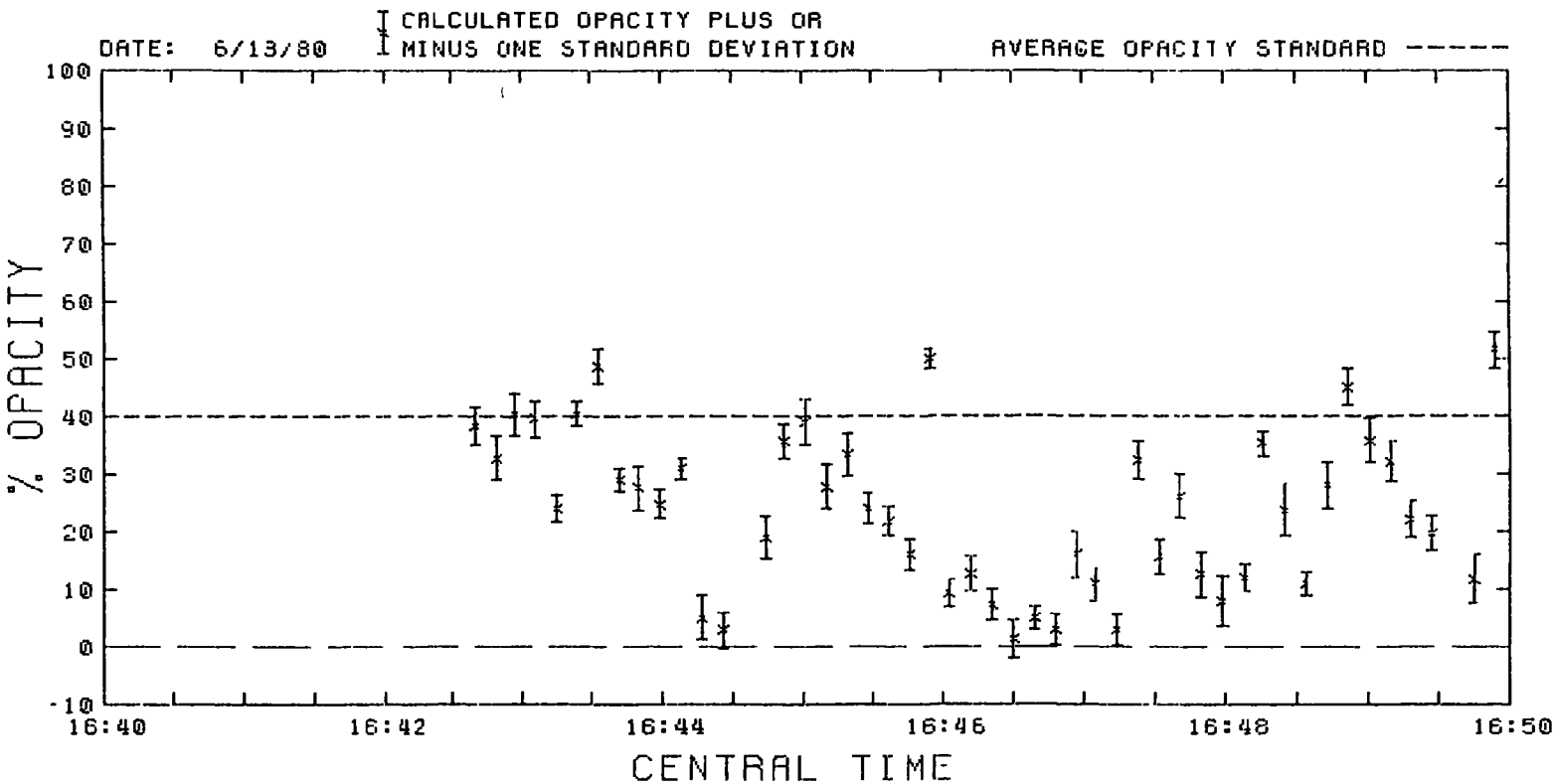
Units 1 and 2 Stack

June 13, 1980, 16:42:40 to 16:49:54

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0067, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER	DISCARDED
6/13/80	16 42 40	38	3		0	0		0	OF 0
6/13/80	16 42 49	33	4		0	0		0	OF 0
6/13/80	16 42 57	40	4		0	0		0	OF 0
6/13/80	16 43 6	40	3		0	0		0	OF 0
6/13/80	16 43 15	24	2		0	0		0	OF 0
6/13/80	16 43 24	40	2		0	0		0	OF 0
6/13/80	16 43 33	49	3		0	0		0	OF 0
6/13/80	16 43 42	29	2		0	0		0	OF 0
6/13/80	16 43 50	28	4		0	0		0	OF 0
6/13/80	16 43 59	25	3		0	0		0	OF 0
6/13/80	16 44 8	31	2		0	0		0	OF 0
6/13/80	16 44 17	5	4		0	0		0	OF 0
6/13/80	16 44 26	3	3		0	0		0	OF 0
6/13/80	16 44 44	19	4		0	0		0	OF 0
6/13/80	16 44 52	36	3		0	0		0	OF 0
6/13/80	16 45 1	39	4		0	0		0	OF 0
6/13/80	16 45 10	28	4		0	0		0	OF 0
6/13/80	16 45 19	33	4		0	0		0	OF 0
6/13/80	16 45 28	24	3		0	0		0	OF 0
6/13/80	16 45 37	22	2		0	0		0	OF 0
6/13/80	16 45 46	16	3		0	0		0	OF 0
6/13/80	16 45 55	50	2		0	0		0	OF 0
6/13/80	16 46 3	9	2		0	0		0	OF 0
6/13/80	16 46 12	13	3		0	0		0	OF 0
6/13/80	16 46 21	7	3		0	0		0	OF 0
6/13/80	16 46 30	1	3		0	0		0	OF 0
6/13/80	16 46 39	5	2		0	0		0	OF 0
6/13/80	16 46 48	3	3		0	0		0	OF 0
6/13/80	16 46 57	16	4		0	0		0	OF 0
6/13/80	16 47 5	11	3		0	0		0	OF 0
6/13/80	16 47 14	3	3		0	0		0	OF 0
6/13/80	16 47 23	32	3		0	0		0	OF 0
6/13/80	16 47 32	16	3		0	0		0	OF 0
6/13/80	16 47 41	26	4		0	0		0	OF 0
6/13/80	16 47 50	12	4		0	0		0	OF 0
6/13/80	16 47 59	8	4		0	0		0	OF 0
6/13/80	16 48 8	12	2		0	0		0	OF 0
6/13/80	16 48 16	35	2		0	0		0	OF 0
6/13/80	16 48 25	24	5		23	3		0	OF 39
6/13/80	16 48 34	11	2		22	3		0	OF 40
6/13/80	16 48 43	28	4		22	3		0	OF 40
6/13/80	16 48 52	45	3		22	3		0	OF 40
6/13/80	16 49 1	36	4		22	3		0	OF 40
6/13/80	16 49 10	32	4		22	3		0	OF 40
6/13/80	16 49 18	22	3		22	3		0	OF 40
6/13/80	16 49 27	20	3		22	3		0	OF 40
6/13/80	16 49 45	12	4		20	3		0	OF 39
6/13/80	16 49 54	52	3		21	3		0	OF 39



UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN

OMEGA-0067

INDIANAPOLIS POWER AND LIGHT COMPANY

PETERSBURG STATION

Units 1 and 2 Stack

June 13, 1980, 16:51:36 to 17:06:13

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

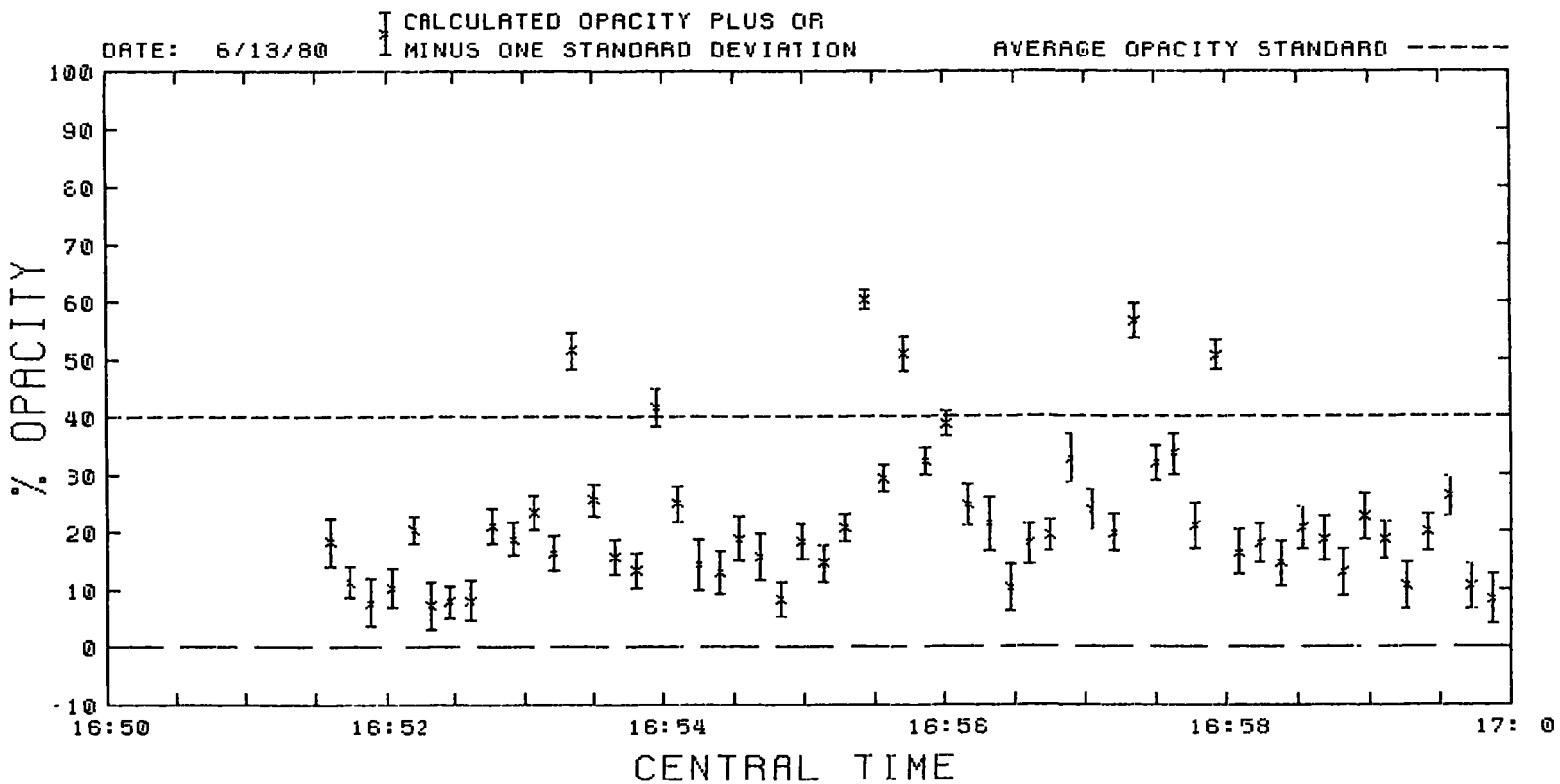
OMEGA-0067, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	16 51 36	18	4		0	0		0 OF 0
6/13/80	16 51 44	11	3		0	0		0 OF 0
6/13/80	16 51 53	8	4		0	0		0 OF 0
6/13/80	16 52 2	10	3		0	0		0 OF 0
6/13/80	16 52 11	20	2		0	0		0 OF 0
6/13/80	16 52 20	7	4		0	0		0 OF 0
6/13/80	16 52 28	8	3		0	0		0 OF 0
6/13/80	16 52 37	8	4		0	0		0 OF 0
6/13/80	16 52 46	21	3		0	0		0 OF 0
6/13/80	16 52 55	19	3		0	0		0 OF 0
6/13/80	16 53 4	23	3		0	0		0 OF 0
6/13/80	16 53 13	16	3		0	0		0 OF 0
6/13/80	16 53 21	52	3		0	0		0 OF 0
6/13/80	16 53 30	26	3		0	0		0 OF 0
6/13/80	16 53 39	16	3		0	0		0 OF 0
6/13/80	16 53 48	13	3		0	0		0 OF 0
6/13/80	16 53 57	42	3		0	0		0 OF 0
6/13/80	16 54 6	25	3		0	0		0 OF 0
6/13/80	16 54 15	14	4		0	0		0 OF 0
6/13/80	16 54 24	13	4		0	0		0 OF 0
6/13/80	16 54 32	19	4		0	0		0 OF 0
6/13/80	16 54 41	16	4		0	0		0 OF 0
6/13/80	16 54 50	8	3		0	0		0 OF 0
6/13/80	16 54 59	18	3		0	0		0 OF 0
6/13/80	16 55 8	15	3		0	0		0 OF 0
6/13/80	16 55 17	21	2		0	0		0 OF 0
6/13/80	16 55 26	60	2		0	0		0 OF 0
6/13/80	16 55 34	29	2		0	0		0 OF 0
6/13/80	16 55 43	51	3		0	0		0 OF 0
6/13/80	16 55 52	32	2		0	0		0 OF 0
6/13/80	16 56 1	39	2		0	0		0 OF 0
6/13/80	16 56 10	25	4		0	0		0 OF 0
6/13/80	16 56 19	21	5		0	0		0 OF 0
6/13/80	16 56 28	10	4		0	0		0 OF 0
6/13/80	16 56 36	18	4		0	0		0 OF 0
6/13/80	16 56 45	19	3		0	0		0 OF 0
6/13/80	16 56 54	33	4		0	0		0 OF 0
6/13/80	16 57 3	24	4		0	0		0 OF 0
6/13/80	16 57 12	20	3		0	0		0 OF 0
6/13/80	16 57 21	57	3		23	3		0 OF 40
6/13/80	16 57 30	32	3		23	3		0 OF 41
6/13/80	16 57 38	34	3		23	3		0 OF 41
6/13/80	16 57 47	21	4		23	3		0 OF 41
6/13/80	16 57 56	51	2		25	3		0 OF 41
6/13/80	16 58 5	16	4		25	3		0 OF 41
6/13/80	16 58 14	18	3		25	3		0 OF 41
6/13/80	16 58 23	15	4		25	3		0 OF 41
6/13/80	16 58 32	21	4		25	3		0 OF 41
6/13/80	16 58 41	19	4		25	3		0 OF 41
6/13/80	16 58 49	13	4		25	3		0 OF 41

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0067, UNIT 1&2, IP&L PETERSBURG STATION, PETERSBURG, IN FROM SE OF PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/13/80	16 58 58	23	4		25	3		0 OF 41
6/13/80	16 59 7	19	3		25	3		0 OF 41
6/13/80	16 59 16	11	4		25	3		0 OF 41
6/13/80	16 59 25	20	3		24	3		0 OF 41
6/13/80	16 59 34	26	4		24	3		0 OF 41
6/13/80	16 59 43	11	4		24	3		0 OF 41
6/13/80	16 59 52	8	4		24	3		0 OF 41
6/13/80	17 0 0	13	5		23	3		0 OF 41
6/13/80	17 0 9	15	4		23	3		0 OF 41
6/13/80	17 0 18	13	3		23	3		0 OF 41
6/13/80	17 0 27	13	4		23	3		0 OF 41
6/13/80	17 0 36	12	5		23	3		0 OF 41
6/13/80	17 0 45	16	4		23	3		0 OF 41
6/13/80	17 0 54	19	6		23	4		0 OF 41
6/13/80	17 1 3	19	4		23	4		0 OF 41
6/13/80	17 1 11	7	5		23	4		0 OF 41
6/13/80	17 1 20	42	7		24	4		0 OF 41
6/13/80	17 1 29	23	5		23	4		0 OF 41
6/13/80	17 1 38	18	4		22	4		0 OF 41
6/13/80	17 1 47	11	4		21	4		0 OF 41
6/13/80	17 1 56	46	5		22	4		0 OF 41
6/13/80	17 2 5	19	5		21	4		0 OF 41
6/13/80	17 2 13	16	5		21	4		0 OF 41
6/13/80	17 2 22	12	5		21	4		0 OF 41
6/13/80	17 2 31	20	4		21	4		0 OF 41
6/13/80	17 2 40	7	4		21	4		0 OF 41
6/13/80	17 2 49	10	4		20	4		0 OF 41
6/13/80	17 2 58	22	5		20	4		0 OF 41
6/13/80	17 3 7	15	5		20	4		0 OF 41
6/13/80	17 3 16	14	4		20	4		0 OF 41
6/13/80	17 3 24	40	4		19	4		0 OF 41
6/13/80	17 3 33	13	4		19	4		0 OF 41
6/13/80	17 3 42	30	4		19	4		0 OF 41
6/13/80	17 3 51	19	4		19	4		0 OF 41
6/13/80	17 4 0	31	3		18	4		0 OF 41
6/13/80	17 4 9	14	3		18	4		0 OF 41
6/13/80	17 4 18	27	4		19	4		0 OF 41
6/13/80	17 4 27	38	3		19	4		0 OF 41
6/13/80	17 4 35	25	5		19	4		0 OF 41
6/13/80	17 4 44	23	3		19	4		0 OF 41
6/13/80	17 4 53	18	4		19	4		0 OF 41
6/13/80	17 5 2	17	3		19	4		0 OF 41
6/13/80	17 5 11	17	4		19	4		0 OF 41
6/13/80	17 5 20	32	3		20	4		0 OF 41
6/13/80	17 5 29	28	4		20	4		0 OF 41
6/13/80	17 5 37	34	3		20	4		0 OF 41
6/13/80	17 5 46	29	5		21	4		0 OF 41
6/13/80	17 5 55	67	2		22	4		0 OF 41
6/13/80	17 6 4	39	2		23	4		0 OF 41
6/13/80	17 6 13	33	3		23	4		0 OF 41



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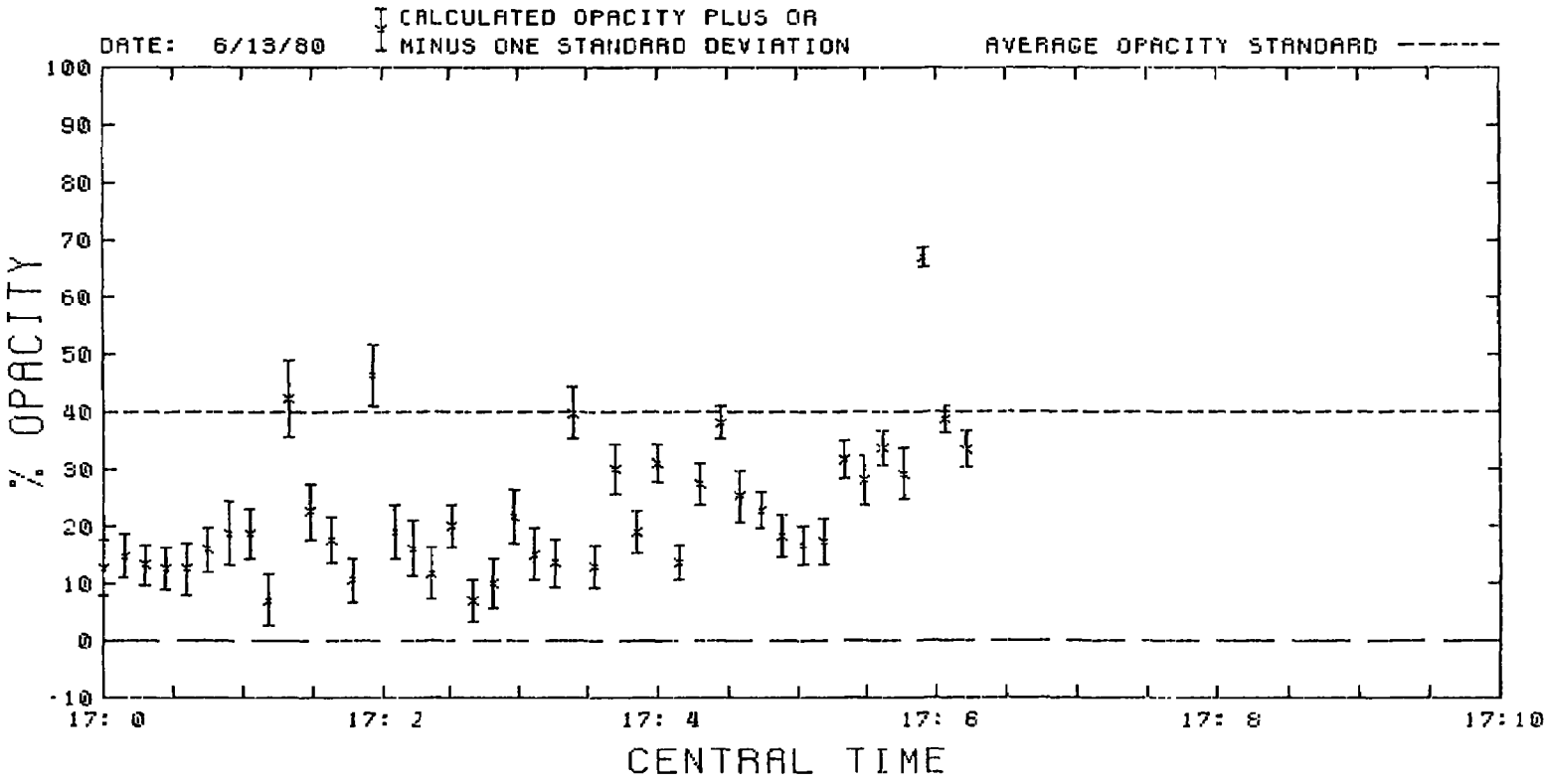

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